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# **django-oscar Documentation**

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# CONTENTS

<b>1 Domain-driven e-commerce for Django</b>	<b>3</b>
<b>Python Module Index</b>	<b>233</b>
<b>Index</b>	<b>235</b>







## DOMAIN-DRIVEN E-COMMERCE FOR DJANGO

Oscar is an e-commerce framework for building domain-driven applications. It has flexibility baked into its core so that complicated requirements can be elegantly captured. You can tame a spaghetti domain without writing spaghetti code.

Years of e-commerce hard-earned experience informs Oscar's design.

Oscar is “domain-driven” in the sense that the core business objects can be customised to suit the domain at hand. In this way, your application can accurately capture the subtleties of its domain, making feature development and maintenance much easier.

Features:

- Any product type can be handled including downloadable products, subscriptions, child products (e.g., a T-shirt in different sizes and colours).
- Customisable products, such as T-shirts with personalised messages.
- Large catalogue support - Oscar is used in production by sites with more than 20 million products.
- Multiple fulfilment partners for the same product.
- A range of merchandising blocks for promoting products throughout your site.
- Sophisticated offers that support virtually any kind of offer you can think of - multi-buys, bundles, buy X get 50% off Y etc
- Vouchers (built on top of the offers framework)
- Comprehensive dashboard that replaces the Django admin completely
- Support for complex order processing such split payment orders, multi-batch shipping, order status pipelines.
- Extension libraries available for many payment gateways, including [PayPal](#), [GoCardless](#), [DataCash](#) and more.

Oscar is a good choice if your domain has non-trivial business logic. Oscar's flexibility means it's straightforward to implement business rules that would be difficult to apply in other frameworks.

Example requirements that Oscar projects already handle:

- Paying for an order with multiple payment sources (e.g., using a bankcard, voucher, gift card and points account).
- Complex access control rules governing who can view and order what.
- Supporting a hierarchy of customers, sales reps and sales directors - each being able to “masquerade” as their subordinates.
- Multi-lingual products and categories.
- Digital products.
- Dynamically priced products (e.g. where the price is provided by an external service).

Oscar is used in production in several applications to sell everything from beer mats to hotel beds. The [source is on GitHub](#) - contributions are always welcome.

## 1.1 First steps

### 1.1.1 Sample Oscar projects

Oscar ships with one sample project: a ‘sandbox’ site, which is a vanilla install of Oscar using the default templates and styles.

#### The sandbox site

The sandbox site is a minimal implementation of Oscar where everything is left in its default state. It is useful for exploring Oscar’s functionality and developing new features.

It only has one notable customisation on top of Oscar’s core:

- A profile class is specified which defines a few simple fields. This is to demonstrate the account section of Oscar, which introspects the profile class to build a combined User and Profile form.

Note that some things are deliberately not implemented within core Oscar as they are domain-specific. For instance:

- All tax is set to zero.
- No shipping methods are specified. The default is free shipping which will be automatically selected during checkout (as it’s the only option).
- No payment is required to submit an order as part of the checkout process.

The sandbox is, in effect, the blank canvas upon which you can build your site.

#### Browse the external sandbox site

An instance of the sandbox site is made available at <https://latest.oscarcommerce.com>

**Warning:** It is possible for users to access the dashboard and edit the site content. Hence, the data can get quite messy. It is periodically cleaned up.

#### Run the sandbox locally

It’s pretty straightforward to get the sandbox site running locally so you can play around with Oscar.

In order to compile uWSGI, which is a dependency of the sandbox, you will first need to install the Python development headers with::

```
$ sudo apt install python3-dev
```

Install Oscar and its dependencies within a virtualenv:

```
$ git clone https://github.com/django-oscar/django-oscar.git
$ cd django-oscar
$ mkvirtualenv --python=python3 oscar # needs virtualenvwrapper
(oscar) $ make sandbox
(oscar) $ sandbox/manage.py runserver
```

**Warning:** Note, these instructions will install the head of Oscar’s ‘master’ branch, not an official release. Occasionally the sandbox installation process breaks while support for a new version of Django is being added (often due dependency conflicts with 3rd party libraries). Please ask on the mailing list if you have problems.

If you do not have mkvirtualenv, then replace that line with:

```
$ virtualenv --python=python3 oscar
$ source ./oscar/bin/activate
(oscar) $
```

The sandbox site (initialised with a sample set of products) will be available at: <http://localhost:8000>. A sample superuser is installed with credentials:

```
username: superuser
email: superuser@example.com
password: testing
```

**Warning:** The sandbox has Django Debug Toolbar enabled by default, which will affect its performance. You can disable it by setting INTERNAL\_IPS to an empty list in your local settings.

## Run the sandbox using Docker

To run the Oscar sandbox using [Docker](#), run the following commands:

```
$ docker pull oscarcommerce/django-oscar-sandbox
$ docker run -p 8080:8080/tcp oscarcommerce/django-oscar-sandbox:latest
```

### 1.1.2 Building your own shop

For simplicity, let’s assume you’re building a new e-commerce project from scratch and have decided to use Oscar. Let’s call this project frobshop

**Tip:** You can always review the set-up of the [Sandbox site](#) in case you have trouble with the below instructions.

### Install Oscar and its dependencies

Install Oscar (which will install Django as a dependency), then create the project:

```
$ mkvirtualenv oscar
$ pip install django-oscar[sorl-thumbnail]
$ django-admin startproject frobshop
```

If you do not have **mkvirtualenv**, then replace that line with:

```
$ virtualenv oscar
$ . ./oscar/bin/activate
(oscar) $
```

This will create a folder `frobshop` for your project. It is highly recommended to install Oscar in a virtualenv.

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**Tip:** `sorl-thumbnail` is an optional dependency for image thumbnail, but is what Oscar expects to use by default. It can be replaced with `easy-thumbnails` or a custom thumbnail backend. If you want to use a different backend then remember to change the `OSCAR_THUMBNAILER` setting to point to it.

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**Attention:** Please ensure that `pillow`, a fork of the the Python Imaging Library (PIL), gets installed with JPEG support. Supported formats are printed when `pillow` is first installed. [Instructions](#) on how to get JPEG support are highly platform specific, but guides for PIL should work for `pillow` as well. Generally speaking, you need to ensure that `libjpeg-dev` is installed and found during installation.

### Django settings

First, edit your settings file `frobshop/frobshop/settings.py` to import all of Oscar's default settings.

```
from oscar.defaults import *
```

Now add Oscar's context processors to the template settings, listed below:

```
'oscar.apps.search.context_processors.search_form',
'oscar.apps.checkout.context_processors.checkout',
'oscar.apps.communication.notifications.context_processors.notifications',
'oscar.core.context_processors.metadata',
```

Next, modify `INSTALLED_APPS` to be a list, and add `django.contrib.sites`, `django.contrib.flatpages`, Oscar's core apps, and third-party apps that Oscar depends on. Also set `SITE_ID`:

```
INSTALLED_APPS = [
    'django.contrib.admin',
    'django.contrib.auth',
    'django.contrib.contenttypes',
    'django.contrib.sessions',
    'django.contrib.messages',
    'django.contrib.staticfiles',

    'django.contrib.sites',
```

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```

'django.contrib.flatpages',

'oscar.config.Shop',
'oscar.apps.analytics.apps.AnalyticsConfig',
'oscar.apps.checkout.apps.CheckoutConfig',
'oscar.apps.address.apps.AddressConfig',
'oscar.apps.shipping.apps.ShippingConfig',
'oscar.apps.catalogue.apps.CatalogueConfig',
'oscar.apps.catalogue.reviews.apps.CatalogueReviewsConfig',
'oscar.apps.communication.apps.CommunicationConfig',
'oscar.apps.partner.apps.PartnerConfig',
'oscar.apps.basket.apps.BasketConfig',
'oscar.apps.payment.apps.PaymentConfig',
'oscar.apps.offer.apps.OfferConfig',
'oscar.apps.order.apps.OrderConfig',
'oscar.apps.customer.apps.CustomerConfig',
'oscar.apps.search.apps.SearchConfig',
'oscar.apps.voucher.apps.VoucherConfig',
'oscar.apps.wishlists.apps.WishlistsConfig',
'oscar.apps.dashboard.apps.DashboardConfig',
'oscar.apps.dashboard.reports.apps.ReportsDashboardConfig',
'oscar.apps.dashboard.users.apps.UsersDashboardConfig',
'oscar.apps.dashboard.orders.apps.OrdersDashboardConfig',
'oscar.apps.dashboard.catalogue.apps.CatalogueDashboardConfig',
'oscar.apps.dashboard.offers.apps.OffersDashboardConfig',
'oscar.apps.dashboard.partners.apps.PartnersDashboardConfig',
'oscar.apps.dashboard.pages.apps.PagesDashboardConfig',
'oscar.apps.dashboard.ranges.apps.RangesDashboardConfig',
'oscar.apps.dashboard.reviews.apps.ReviewsDashboardConfig',
'oscar.apps.dashboard.vouchers.apps.VouchersDashboardConfig',
'oscar.apps.dashboard.communications.apps.CommunicationsDashboardConfig',
'oscar.apps.dashboard.shipping.apps.ShippingDashboardConfig',

# 3rd-party apps that oscar depends on
'widget_tweaks',
'haystack',
'treebeard',
'sorl.thumbnail', # Default thumbnail backend, can be replaced
'django_tables2',
]

SITE_ID = 1

```

Note that Oscar requires `django.contrib.flatpages` which isn't included by default. `flatpages` also requires `django.contrib.sites`. More info about installing `flatpages` is in the [Django docs](#).

**Tip:** Oscar's default templates use `django-widget-tweaks` but it's optional really. You may decide to use your own templates that don't use either.

Next, add `oscar.apps.basket.middleware.BasketMiddleware` and `django.contrib.flatpages.middleware.FlatpageFallbackMiddleware` to your `MIDDLEWARE` setting.

```
MIDDLEWARE = (
    ...
    'oscar.apps.basket.middleware.BasketMiddleware',
    'django.contrib.flatpages.middleware.FlatpageFallbackMiddleware',
)
```

Set your authentication backends to:

```
AUTHENTICATION_BACKENDS = (
    'oscar.apps.customer.auth_backends.EmailBackend',
    'django.contrib.auth.backends.ModelBackend',
)
```

to allow customers to sign in using an email address rather than a username.

Ensure that your media and static files are [configured correctly](#). This means at the least setting `MEDIA_URL` and `STATIC_URL`. If you're serving files locally, you'll also need to set `MEDIA_ROOT` and `STATIC_ROOT`. Check out the [sandbox settings](#) for a working example. If you're serving files from a remote storage (e.g. Amazon S3), you must manually copy a *"Image not found" image* into `MEDIA_ROOT`.

## Search backend

If you're happy with basic search for now, you can just add Haystack's simple backend to the `HAYSTACK_CONNECTIONS` option in your Django settings:

```
HAYSTACK_CONNECTIONS = {
    'default': {
        'ENGINE': 'haystack.backends.simple_backend.SimpleEngine',
    },
}
```

Oscar uses Haystack to abstract away from different search backends. Unfortunately, writing backend-agnostic code is nonetheless hard and Apache Solr is currently the only supported production-grade backend. Your Haystack config could look something like this:

```
HAYSTACK_CONNECTIONS = {
    'default': {
        'ENGINE': 'haystack.backends.solr_backend.SolrEngine',
        'URL': 'http://127.0.0.1:8983/solr',
        'INCLUDE_SPELLING': True,
    },
}
```

Oscar includes a sample schema to get started with Solr. More information can be found in the [recipe on getting Solr up and running](#).

## Database

Check your database settings. A quick way to get started is to use SQLite:

```
DATABASES = {
    'default': {
        'ENGINE': 'django.db.backends.sqlite3',
        'NAME': 'db.sqlite3',
        'USER': '',
        'PASSWORD': '',
        'HOST': '',
        'PORT': '',
        'ATOMIC_REQUESTS': True,
    }
}
```

Note that we recommend using `ATOMIC_REQUESTS` to tie transactions to requests.

## URLs

Alter your `frobshop/urls.py` to include Oscar's URLs. You can also include the Django admin for debugging purposes. But please note that Oscar makes no attempts at having that be a workable interface; admin integration exists to ease the life of developers.

If you have more than one language set your Django settings for `LANGUAGES`, you will also need to include Django's `i18n` URLs:

```
from django.apps import apps
from django.urls import include, path
from django.contrib import admin

urlpatterns = [
    path('i18n/', include('django.conf.urls.i18n')),

    # The Django admin is not officially supported; expect breakage.
    # Nonetheless, it's often useful for debugging.

    path('admin/', admin.site.urls),

    path('', include(apps.get_app_config('oscar').urls[0])),
]
```

## Create database

Oscar ships with migrations. Django's migration framework will detect them automatically and will do the right thing. Create the database and the shop should be browsable:

```
$ python manage.py migrate
$ python manage.py runserver
```

You should now have an empty, but running Oscar install that you can browse at <http://localhost:8000>.

### Initial data

The default checkout process requires a shipping address with a country. Oscar uses a model for countries with flags that indicate which are valid shipping countries and so the `country` database table must be populated before a customer can check out.

The easiest way to achieve this is to use country data from the `pycountry` package. Oscar ships with a management command to parse that data:

```
$ pip install pycountry
[...]
$ python manage.py oscar_populate_countries
```

By default, this command will mark all countries as a shipping country. Call it with the `--no-shipping` option to prevent that. You then need to manually mark at least one country as a shipping country.

### Creating product classes and fulfilment partners

Every Oscar deployment needs at least one *product class* and one *fulfilment partner*. These aren't created automatically as they're highly specific to the shop you want to build.

When managing your catalogue you should always use the Oscar dashboard, which provides the necessary functionality. Use your Django superuser email and password to login to: <http://127.0.0.1:8000/dashboard/> and create instances of both there.

It is important to note that the Django admin site is not supported. It may or may not work and is only included in the sandbox for developer's convenience.

For a deployment setup, we recommend creating product classes as [data migration](#).

### Defining the order pipeline

The order management in Oscar relies on the order pipeline that defines all the statuses an order can have and the possible transitions for any given status. Statuses in Oscar are not just used for an order but are handled on the line level as well to be able to handle partial shipping of an order.

The order status pipeline is different for every shop which means that changing it is fairly straightforward in Oscar. The pipeline is defined in your `settings.py` file using the `OSCAR_ORDER_STATUS_PIPELINE` setting. You also need to specify the initial status for an order and a line item in `OSCAR_INITIAL_ORDER_STATUS` and `OSCAR_INITIAL_LINE_STATUS` respectively.

To give you an idea of what an order pipeline might look like take a look at the Oscar sandbox settings:

```
OSCAR_INITIAL_ORDER_STATUS = 'Pending'
OSCAR_INITIAL_LINE_STATUS = 'Pending'
OSCAR_ORDER_STATUS_PIPELINE = {
    'Pending': ('Being processed', 'Cancelled',),
    'Being processed': ('Processed', 'Cancelled',),
    'Cancelled': (),
}
```

Defining the order status pipeline is simply a dictionary of where each status is given as a key. Possible transitions into other statuses can be specified as an iterable of status names. An empty iterable defines an end point in the pipeline.

With these three settings defined in your project you'll be able to see the different statuses in the order management dashboard.

## Next steps

The next step is to implement the business logic of your domain on top of Oscar. The fun part.

### 1.1.3 Building an e-commerce site: the key questions

When building an e-commerce site, there are several components whose implementation is strongly domain-specific. That is, every site will have different requirements for how such a component should operate. As such, these components cannot easily be modelled using a generic system - no configurable system will be able to accurately capture all the domain-specific behaviour required.

The design philosophy of Oscar is to not make a decision for you here, but to provide the foundations upon which any domain logic can be implemented, no matter how complex.

This document lists the components which will require implementation according to the domain at hand. These are the key questions to answer when building your application. Much of Oscar's documentation is in the form of "recipes" that explain how to solve the questions listed here - each question links to the relevant recipes.

## Catalogue

### What are your product types?

Are you selling books, DVDs, clothing, downloads, or fruit and vegetables? You will need to capture the attributes of your product types within your models. Oscar divides products into 'product classes' which each have their own set of attributes. Modelling the catalogue on the backend is explained in [Modelling your catalogue](#).

### How is your catalogue organised?

How are products organised on the front end? A common pattern is to have a single category tree where each product belongs to one category which sits within a tree structure of other categories. However, there are lots of other options such as having several separate taxonomy trees (e.g., split by brand, by theme, by product type). Other questions to consider:

- Can a product belong to more than one category?
- Can a category sit in more than one place within the tree? (e.g., a "children's fiction" category might sit beneath "children's books" and "fiction").

### How are products managed?

Is the catalogue managed by an admin using a dashboard, or through an automated process, such as processing feeds from a fulfilment system? Where are your product images going to be served from?

- [How to disable an app or feature](#)

## Pricing, stock and availability

### How is tax calculated?

Taxes vary widely between countries. Even the way that prices are displayed varies between countries. For instance, in the UK and Europe prices are shown inclusive of VAT whereas in the US, taxes are often not shown until the final stage of checkout.

Furthermore, the amount of tax charged can vary depending on a number of factors, including:

- The products being bought (e.g., in the UK, certain products have pay no VAT).
- Who the customer is. For instance, sales reps will often not pay tax whereas regular customers will.
- The shipping address of the order.
- The payment method used.

Recipes: \* [\*How to handle US taxes\*](#)

### What availability messages are shown to customers?

Based on the stock information from a fulfilment partner, what messaging should be displayed on the site?

- [\*How to configure stock messaging\*](#)

### Do you allow pre-orders and back-orders

A pre-order is where you allow a product to be bought before it has been published, while a back-order is where you allow a product to be bought that is currently out of stock.

## Shipping

### How are shipping charges calculated?

There are lots of options and variations here. Shipping methods and their associated charges can take a variety of forms, including:

- A charge based on the weight of the basket
- Charging a pre-order and pre-item charge
- Having free shipping for orders above a given threshold

Recipes:

- [\*How to configure shipping\*](#)

## Which shipping methods are available?

There's often also an issue of which shipping methods are available, as this can depend on:

- The shipping address (e.g., overseas orders have higher charges)
- The contents of the basket (e.g., free shipping for downloadable products)
- Who the user is (e.g., sales reps get free shipping)

Oscar provides classes for free shipping, fixed charge shipping, pre-order and per-product item charges and weight-based charges. It provides a mechanism for determining which shipping methods are available to the user.

Recipes:

- [\*How to configure shipping\*](#)

## Payment

### How are customers going to pay for orders?

Often a shop will have a single mechanism for taking payment, such as integrating with a payment gateway or using PayPal. However more complicated projects will allow users to combine several different payment sources such as bankcards, business accounts and gift cards.

Possible payment sources include:

- Bankcard
- Google checkout
- PayPal
- Business account
- Managed budget
- Gift card
- No upfront payment but send invoices later

The checkout app within django-oscar is suitably flexible that all of these methods (and in any combination) is supported. However, you will need to implement the logic for your domain by subclassing the relevant `view/util` classes.

Domain logic is often required to:

- Determine which payment methods are available to an order;
- Determine if payment can be split across sources and in which combinations;
- Determine the order in which to take payment;
- Determine how to handle failing payments (this can get complicated when using multiple payment sources to pay for an order).

## **When will payment be taken?**

A common pattern is to pre-authorise a bankcard at the point of checkout then ‘settle’ for the appropriate amounts when the items actually ship. However, sometimes payment is taken up front. Often you won’t have a choice due to limitations of the payment partner you need to integrate with, or legal restrictions of the country you are operating in.

- Will the customer be debited at point of checkout, or when the items are dispatched?
- If charging after checkout, when are shipping charges collected?
- What happens if an order is cancelled after partial payment?

## **Order processing**

### **How will orders be processed?**

Orders can be processed in many ways, including:

- Manual process. For instance, a worker in a warehouse may download a picking slip from the dashboard and mark products as shipped when they have been put in the van.
- Fully automated process, where files are transferred between the merchant and the fulfilment partner to indicate shipping statuses.

Recipes:

- *[How to set up order processing](#)*

## **1.1.4 Modelling your catalogue**

Oscar gives you several layers of modelling your products.

Note that this document is merely concerned with how to model products in your database. How you display them in your front-end, e.g. in a category tree, is out of scope.

### **Product classes**

Typical examples for product classes would be: T-shirts, Books, Downloadable products.

Each product is assigned to exactly one product class.

Settings on a product class decide whether stock levels are *tracked* for the associated products, and whether they *require shipping*.

Furthermore, they govern what kind of product attributes can be stored on the products. We’ll get to attributes in a bit, but think T-shirt sizes, colour, number of pages, etc.

Typically stores will have between 1 and maybe 5 product classes.

## Product attributes

Product attributes let you set additional data on a product without having to customise the underlying Django models. There's different types of attributes, e.g. ones for just associating text (type `text` or `richtext`), for related images and files (type `image` and `file`), etc.

Storing data in structured attributes also makes it easy to search and filter products based on specific attributes.

The available product attributes for a product are set when creating the product's class. The sandbox comes with a product class for T-shirts, and they have a `size` attribute:

```
> shirt = Product.objects.filter(product_class__slug='t-shirt').first()
> shirt.attr.size
<AttributeOption: Large>
```

You can assign options to your product. For example you want a `Language` attribute to your product, and a couple of options to choose from, for example `English` and `Croatian`. You'd first create an `AttributeOptionGroup` that would contain all the `AttributeOption`s you want to have available:

```
> language = AttributeOptionGroup.objects.create(name='Language')
```

Assign a couple of options to the `Language` options group:

```
> AttributeOption.objects.create(
>     group=language,
>     option='English'
> )
> AttributeOption.objects.create(
>     group=language,
>     option='Croatian'
> )
```

Finally assign the `Language` options group to your product as an attribute:

```
> klass = ProductClass.objects.create(name='foo', slug='bar')
> ProductAttribute.objects.create(
>     product_class=klass,
>     name='Language',
>     code='language',
>     type='option',
>     option_group=language
> )
```

You can go as far as associating arbitrary models with it. Use the `entity` type:

```
> klass = ProductClass.objects.create(name='foo', slug='bar')
> ProductAttribute.objects.create(
>     product_class=klass, name='admin user', code='admin_user', type='entity')
<ProductAttribute: admin user>
> p = Product(product_class=klass)

> p.attr.admin_user = User.objects.first()
> p.save()
> p.attr.admin_user
<User: superuser>
```

You can also use the `multi_option` attribute type if your options are not mutually exclusive:

```
> klass = ProductClass.objects.create(name='foo', slug='bar')
> ProductAttribute.objects.create(
>     product_class=klass,
>     name='Size',
>     code='size',
>     type='multi_option',
>     option_group=language
> )
```

This will let you assign multiple values (size in the example above) to the attribute.

You can also query for attributes using a special method on the manager:

```
> first_large_shirt = Product.objects.filter_by_attributes(size="Large").first()
> first_large_shirt.attr.size
<AttributeOption: Large>
```

All attribute types apart from `entity` can be edited in the product dashboard. The latter is too dependent on your use case and you will need to decide yourself how you want to set and display it.

## Variants (Parent and child products)

Often there's an overarching product, which groups other products. In that case, you can create a parent product, and then set the `parent` field on the child products. By default, only parent products (or products without children) get their own URL. Child products inherit their product class from the parent, and only child products can have stock records (read: pricing information) on them.

## Product attributes vs. variants

When to use variants, and when to use attributes?

- Variants are tied to stock records, and hence, pricing. Use variants if your product variations have different pricing or availability.
- Use attributes when you are storing structured data for a product (i.e. colour, size) that you can use for search/filtering/display purposes.

## Going further

Oscar's modelling options don't stop there. If the existing framework does not suit your need, you can always *customise* any involved models. E.g. the `Product` model is often customised!

### 1.1.5 Getting help

If you're stuck with a problem, try checking the [Google Groups archive](#) to see if someone has encountered it before. If not, then try asking on the mailing list [django-oscar@googlegroups.com](mailto:django-oscar@googlegroups.com). If it's a common question, then we'll write up the solution as a recipe.

If you think you found a bug, please read [Reporting bugs](#) and report it in the [GitHub issue tracker](#).

### 1.1.6 Glossary

This is a work-in-progress list of commonly used terms when discussing Oscar.

#### Partner

**Fulfilment partner** An individual or company who can fulfil products. E.g. for physical goods, somebody with a warehouse and means of delivery.

#### See also:

Related model: `oscar.apps.partner.abstract_models.AbstractPartner`

**Product Category** Categories and subcategories are used to semantically organise your catalogue. They're merely used for navigational purposes; no business logic in Oscar considers a product's category. For instance, if you're a book shop, you could have categories such as fiction, romance, and children's books. If you'd sell both books and e-books, they could be of a different *Product Class*, but in the same category.

**Product Class** Product classes are an important concept in Oscar. Each product is assigned to exactly one product class. For instance, product classes could be Books, DVDs, and Toys.

Settings on a product class decide whether stock levels are *tracked* for the associated products, and whether they *require shipping*. So if you have products that require shipping and ones which don't, you'll need at least two product classes.

Used for defining *options* and *attributes* for a subset of products.

**Product Options** Options are values that can be associated with a item when it is added to a customer's basket. This could be something like a personalised message to be printed on a T-shirt, or a colour choice.

Product Options are different from Product Attributes in that they are used to specify a specific purchase choice by the customer, whereas Attributes exist to store and display the features of a product in a structured way.

**Product Range** A range is a subset of the product catalogue. It's another way of defining groups of products other than categories and product classes.

An example would be a book shop which might define a range of "Booker Prize winners". Each product will belong to different categories within the site so ranges allow them to be grouped together.

Ranges can then be used in offers (e.g. 10% off all Booker prize winners). At some point, ranges will be expanded to have their own detail pages within Oscar too.

#### SKU

**Stock-keeping unit.** A *partner's* way of tracking her products. Uniquely identifies a product in the partner's warehouse. Can be identical to the products *UPC*. It's stored as an attribute of *StockRecord*

#### See also:

[Wikipedia: Stock-keeping unit](#)

#### UPC

**Universal Product Code** A code uniquely identifying a product worldwide.

**See also:**

[Wikipedia: Universal Product Code](#)

## 1.2 Using Oscar

All you need to start developing an Oscar project.

### 1.2.1 Platform and database support

#### Operating system

Oscar does not support for Microsoft Windows. Some of Oscar's dependencies don't support Windows and/or are tricky to install properly in that environment, and therefore you might encounter some errors that prevent a successful installation. Contributions to improve support for Windows are welcome.

#### Databases

Oscar officially supports PostgreSQL. Oscar is likely to work with the following databases, but official support is not provided for them:

- MariaDB
- Oracle
- SQLite (this is suitable only for use in development)

Oscar does not support MySQL. Developers are likely to encounter issues related to Unicode handling and update queries for certain query types. Both issues are caused by limitations in MySQL itself, or in Django's ORM support for MySQL. Relevant discussions on Django project are:

- [Make MySQL backend default to utf8mb4 encoding.](#)
- [QuerySet.update\(\) fails on MySQL if a subquery references the base table.](#)

### 1.2.2 Customising Oscar

Many parts of Oscar can be adapted to your needs like any other Django application:

- Many *settings* control Oscar's behaviour
- The looks can be controlled by extending or overriding the *templates*

But as Oscar is built as a highly customisable and extendable framework, it doesn't stop there. The behaviour of all Oscar apps can heavily be altered by injecting your own code.

To extend the behaviour of an Oscar core app, it needs to be forked, which is achieved with a simple management command. Afterwards, you should generally be able to override any class/model/view by just dropping it in the right place and giving it the same name.

In some cases, customising is slightly more involved. The following guides give plenty of examples for specific use cases:

- [How to customise models](#)

- [How to add views or change URLs or permissions](#)
- [How to customise an existing view](#)

For a deeper understanding of customising Oscar, the following documents are recommended:

- [Oscar design decisions](#)
- [Dynamic class loading](#)
- [Forking an app](#)

## Fork the Oscar app

If this is the first time you're forking an Oscar app, you'll need to create a root module under which all your forked apps will live:

```
$ mkdir yourappsfolder
$ touch yourappsfolder/__init__.py
```

Now you call the helper management command which creates some basic files for you. It is explained in detail in [Forking an app](#). Run it like this:

```
$ ./manage.py oscar_fork_app order yourappsfolder
Creating package yourappsfolder/order
Creating admin.py
Creating app config
Creating models.py
Creating migrations folder
Replace the entry 'oscar.apps.order.apps.OrderConfig' with 'yourappsfolder.order.apps.
↳OrderConfig' in INSTALLED_APPS
```

`oscar_fork_app` has an optional third argument, which allows specifying the sub-package name of the new app. For example, calling `./manage.py oscar_fork_app order yourproject/ yoursubpackage.order` places the order app in the `project_root/yourproject/yoursubpackage/order` directory.

## Replace Oscar's app with your own in `INSTALLED_APPS`

You will need to let Django know that you replaced one of Oscar's core apps. You can do that by replacing its entry in the `INSTALLED_APPS` setting, with that for your own app.

**Note:** Overrides of dashboard applications should follow overrides of core applications (basket, catalogue etc), since they depend on models, declared in the core applications. Otherwise, it could cause issues with Oscar's dynamic model loading.

If you want to customise one of the dashboard applications, for instance `yourappsfolder.dashboard.catalogue`, you also need to fork the core dashboard application `yourappsfolder.dashboard`.

Example:

```
INSTALLED_APPS = [
    # all your non-Oscar apps
    ...
    # core applications
    'yourappsfolder.catalogue.apps.CatalogueConfig',
```

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```
'yourappsfolder.order.apps.OrderConfig',
# dashboard applications
'yourappsfolder.dashboard.apps.DashboardConfig',
'yourappsfolder.dashboard.orders.apps.OrdersDashboardConfig',
'yourappsfolder.dashboard.reports.apps.ReportsDashboardConfig',
]
```

---

**Note:** It is recommended to use the dotted Python path to the app config class, rather than to the app package (e.g. `yourappsfolder.order.apps.OrderConfig` instead of `yourappsfolder.order`).

This is to work around a [problem](#) in the way Django’s automatic AppConfig discovery (introduced in version 3.2) scans for AppConfig subclasses in an app’s `apps.py` module (in short, it finds all AppConfig subclasses in the `apps.py`, including ones imported to be subclassed). Specifying the path to the app config class ensures that automatic AppConfig discovery is not used at all.

---

## Start customising!

You can now override every class (that is *dynamically loaded*, which is almost every class) in the app you’ve replaced. That means forms, views, strategies, etc. All you usually need to do is give it the same name and place it in a module with the same name.

Suppose you want to alter the way order numbers are generated. By default, the class `oscar.apps.order.utils.OrderNumberGenerator` is used. So just create a class within your `order` app which matches the module path from oscar: `order.utils.OrderNumberGenerator`. This could subclass the class from Oscar or not:

```
# yourproject/order/utils.py

from oscar.apps.order.utils import OrderNumberGenerator as CoreOrderNumberGenerator

class OrderNumberGenerator(CoreOrderNumberGenerator):

    def order_number(self, basket=None):
        num = super().order_number(basket)
        return "SHOP-%s" % num
```

To obtain an Oscar app’s app config instance, look it up in the Django app registry.

### 1.2.3 Dynamic class loading explained

Dynamic class loading is the foundation for making Oscar extensively customisable. It is hence worth understanding how it works, because most customisation depends on it.

It is achieved by `oscar.core.loading.get_classes()` and its single-class cousin `get_class()`. Wherever feasible, Oscar uses `get_classes` instead of a regular import statement:

```
from oscar.apps.shipping.repository import Repository
```

is replaced by:

```
from oscar.core.loading import get_class

Repository = get_class('shipping.repository', 'Repository')
```

**Note:** This is done for almost all classes: views, models, etc. Every class imported by `get_class` can be overridden.

## Why?

This structure enables a project to create a local `shipping.repository` module, and optionally subclass the class from `oscar.apps.shipping.repository`. When Oscar tries to load the `Repository` class, it will load the one from your local project.

This way, most classes can be overridden with minimal duplication, as only the to-be-changed classes have to be altered. They can optionally inherit from Oscar's implementation, which often amounts to little more than a few lines of custom code for changes to core behaviour.

Seen on a bigger scale, this structure enables Oscar to ship with classes with minimal assumptions about the domain, and make it easy to modify behaviour as needed.

## How it works

The `get_class` function looks through your `INSTALLED_APPS` for a matching app and will attempt to load the custom class from the specified module. If the app isn't overridden or the custom module doesn't define the class, it will fall back to the default Oscar class.

## In practice

For `get_class` to pick up the customised class, the Oscar apps need to be forked. The process is detailed and illustrated with examples in *Customising Oscar*. It is usually enough to call `oscar_fork_app` and replace the app in `INSTALLED_APPS`.

## Using `get_class` in your own code

Generally, there is no need for `get_class` in your own code as the location of the module for the class is known. Some Oscar developers nonetheless use `get_class` when importing classes from Oscar. This means that if someday the class is overridden, it will not require code changes. Care should be taken when doing this, as this is a tricky trade-off between maintainability and added complexity. Please note that we cannot recommend ever using `get_model` in your own code. Model initialisation is a tricky process and it's easy to run into circular import issues.

## Overriding dynamic class loading behaviour

In some cases it may be necessary to customise the logic used by Oscar to dynamically load classes. You can do this by supplying your own class loader function to the `OSCAR_DYNAMIC_CLASS_LOADER` setting:

```
OSCAR_DYNAMIC_CLASS_LOADER = 'myproject.custom_class_loader'
```

Supply a dotted Python path to a callable that takes the same arguments as `default_class_loader()`.

## Testing

You can test whether your overriding worked by trying to get a class from your module:

```
>>> from oscar.core.loading import get_class
>>> get_class('shipping.repository', 'Repository')
yourproject.shipping.repository.Repository # it worked!
```

## 1.2.4 Prices and availability

This page explains how prices and availability are determined in Oscar. In short, it seems quite complicated at first as there are several parts to it, but what this buys is flexibility: buckets of it.

### Overview

Simpler e-commerce frameworks often tie prices to the product model directly:

```
>>> product = Product.objects.get(id=1)
>>> product.price
Decimal('17.99')
```

Oscar, on the other hand, distinguishes products from stockrecords and provides a swappable ‘strategy’ component for selecting the appropriate stockrecord, calculating prices and availability information.

```
>>> from oscar.apps.partner.strategy import Selector
>>> product = Product.objects.get(id=1)
>>> strategy = Selector().strategy()
>>> info = strategy.fetch_for_product(product)

# Availability information
>>> info.availability.is_available_to_buy
True
>>> msg = info.availability.message
>>> str(msg)
"In stock (58 available)"
>>> info.availability.is_purchase_permitted(59)
(False, "A maximum of 58 can be bought")

# Price information
>>> info.price.excl_tax
Decimal('17.99')
>>> info.price.is_tax_known
True
>>> info.price.incl_tax
Decimal('21.59')
>>> info.price.tax
Decimal('3.60')
>>> info.price.currency
'GBP'
```

The *Product* model captures the core data about the product (title, description, images) while the *StockRecord* model represents fulfilment information for one particular partner (number in stock, base price). A product can have multiple stockrecords although only one is selected by the strategy to determine pricing and availability.

By using your own custom strategy class, a wide range of pricing, tax and availability problems can be easily solved.

## The strategy class

Oscar uses a ‘strategy’ object to determine product availability and pricing. A new strategy instance is assigned to the request by the basket middleware. A *Selector* class determines the appropriate strategy for the request. By modifying the *Selector* class, it’s possible to return different strategies for different customers.

Given a product, the strategy class is responsible for:

- Selecting a “pricing policy”, an object detailing the prices of the product and whether tax is known.
- Selecting an “availability policy”, an object responsible for availability logic (i.e. is the product available to buy) and customer messaging.
- Selecting the appropriate stockrecord to use for fulfilment. If a product can be fulfilled by several fulfilment partners, then each will have their own stockrecord.

These three entities are wrapped up in a *PurchaseInfo* object, which is a simple named tuple. The strategy class provides `fetch_for_product` and `fetch_for_parent` methods which takes a product and returns a *PurchaseInfo* instance:

The strategy class is used in several places in Oscar, for example, the `purchase_info_for_product` template tag which is used to load the price and availability information into the template context:

```
{% load purchase_info_tags %}
{% load currency_filters %}

{% purchase_info_for_product request product as session %}

<p>
{% if session.price.is_tax_known %}
    Price is {{ session.price.incl_tax|currency:session.price.currency }}
{% else %}
    Price is {{ session.price.excl_tax|currency:session.price.currency }} +
    tax
{% endif %}
</p>
```

Note that the `currency` template tag accepts a currency parameter from the pricing policy.

Also, basket instances have a strategy instance assigned so they can calculate prices including taxes. This is done automatically in the basket middleware.

## This seems quite complicated...

While this probably seems like quite an involved way of looking up a product’s price, it gives the developer an immense amount of flexibility. Here’s a few examples of things you can do with a strategy class:

- Transact in multiple currencies. The strategy class can use the customer’s location to select a stockrecord from a local distribution partner which will be in the local currency of the customer.
- Elegantly handle different tax models. A strategy can return prices including tax for a UK or European visitor, but without tax for US visitors where tax is only determined once shipping details are confirmed.
- Charge different prices to different customers. A strategy can return a different pricing policy depending on the user/session.

- Use a chain of preferred partners for fulfilment. A site could have many stockrecords for the same product, each from a different fulfilment partner. The strategy class could select the partner with the best margin and stock available. When stock runs out with that partner, the strategy could seamlessly switch to the next best partner.

These are the kinds of problems that other e-commerce frameworks would struggle with.

## API

All strategies subclass a common `Base` class:

```
class oscar.apps.partner.strategy.Base(request=None)
```

The base strategy class

Given a product, strategies are responsible for returning a `PurchaseInfo` instance which contains:

- The appropriate stockrecord for this customer
- A pricing policy instance
- An availability policy instance

```
fetch_for_line(line, stockrecord=None)
```

Given a basket line instance, fetch a `PurchaseInfo` instance.

This method is provided to allow purchase info to be determined using a basket line's attributes. For instance, "bundle" products often use basket line attributes to store SKUs of contained products. For such products, we need to look at the availability of each contained product to determine overall availability.

```
fetch_for_parent(product)
```

Given a parent product, fetch a `StockInfo` instance

```
fetch_for_product(product, stockrecord=None)
```

Given a product, return a `PurchaseInfo` instance.

The `PurchaseInfo` class is a named tuple with attributes:

- `price`: a pricing policy object.
- `availability`: an availability policy object.
- `stockrecord`: the stockrecord that is being used

If a stockrecord is passed, return the appropriate `PurchaseInfo` instance for that product and stockrecord is returned.

Oscar also provides a "structured" strategy class which provides overridable methods for selecting the stockrecord, and determining pricing and availability policies:

```
class oscar.apps.partner.strategy.Structured(request=None)
```

A strategy class which provides separate, overridable methods for determining the 3 things that a `PurchaseInfo` instance requires:

- 1) A stockrecord
- 2) A pricing policy
- 3) An availability policy

```
availability_policy(product, stockrecord)
```

Return the appropriate availability policy

```
fetch_for_parent(product)
```

Given a parent product, fetch a `StockInfo` instance

**fetch\_for\_product**(*product*, *stockrecord=None*)  
Return the appropriate `PurchaseInfo` instance.

This method is not intended to be overridden.

**pricing\_policy**(*product*, *stockrecord*)  
Return the appropriate pricing policy

**select\_children\_stockrecords**(*product*)  
Select appropriate stock record for all children of a product

**select\_stockrecord**(*product*)  
Select the appropriate stockrecord

For most projects, subclassing and overriding the `Structured` base class should be sufficient. However, Oscar also provides mixins to easily compose the appropriate strategy class for your domain.

## Currency

Oscar allows you to define a currency code for each stock - a text field that defaults to `settings.OSCAR_DEFAULT_CURRENCY`.

By default, Oscar expects all products added to a single basket to have the same currency. It does not however do any logic to select the appropriate stock record to achieve this - you must implement this yourself in the `select_stockrecord()` method. Oscar does not determine or store user currency and uses it only for formatting product price. More complex logic, like currency switch or conversion can be implemented additionally.

More about currency formatting configuration - [OSCAR\\_CURRENCY\\_FORMAT](#).

## Loading a strategy

Strategy instances are determined by the `Selector` class:

**class** `oscar.apps.partner.strategy.Selector`  
Responsible for returning the appropriate strategy class for a given user/session.

This can be called in three ways:

- 1) Passing a request and user. This is for determining prices/availability for a normal user browsing the site.
- 2) Passing just the user. This is for offline processes that don't have a request instance but do know which user to determine prices for.
- 3) Passing nothing. This is for offline processes that don't correspond to a specific user, e.g., determining a price to store in a search index.

**strategy**(*request=None*, *user=None*, *\*\*kwargs*)  
Return an instantiated strategy instance

It's common to override this class so a custom strategy class can be returned.

## Pricing policies

A pricing policy is a simple class with several properties. Its job is to contain all price and tax information about a product.

There is a base class that defines the interface a pricing policy should have:

```
class oscar.apps.partner.prices.Base
    The interface that any pricing policy must support

    currency = None
        Price currency (3 char code)

    excl_tax = None
        Price excluding tax

    exists = False
        Whether any prices exist

    incl_tax = None
        Price including tax

    is_tax_known = False
        Whether tax is known

    retail = None
        Retail price

    tax = None
        Price tax
```

There are also several policies that accommodate common scenarios:

```
class oscar.apps.partner.prices.FixedPrice(currency, excl_tax, tax=None)
    This should be used for when the price of a product is known in advance.
```

It can work for when tax isn't known (like in the US).

Note that this price class uses the tax-exclusive price for offers, even if the tax is known. This may not be what you want. Use the `TaxInclusiveFixedPrice` class if you want offers to use tax-inclusive prices.

```
property is_tax_known: bool
    Test whether the tax is known or not
```

```
class oscar.apps.partner.prices.Unavailable
    This should be used as a pricing policy when a product is unavailable and no prices are known.
```

## Availability policies

Like pricing policies, availability policies are simple classes with several properties and methods. The job of an availability policy is to provide availability messaging to show to the customer as well as methods to determine if the product is available to buy.

The base class defines the interface:

```
class oscar.apps.partner.availability.Base
    Base availability policy.

    code = ''
        Availability code. This is used for HTML classes

    dispatch_date = None
        When this item should be dispatched
```

**property is\_available\_to\_buy**

Test if this product is available to be bought. This is used for validation when a product is added to a user's basket.

**is\_purchase\_permitted(*quantity*)**

Test whether a proposed purchase is allowed

Should return a boolean and a reason

**message = ''**

A description of the availability of a product. This is shown on the product detail page, e.g., "In stock", "Out of stock" etc

**property short\_message**

A shorter version of the availability message, suitable for showing on browsing pages.

There are also several predefined availability policies:

**class oscar.apps.partner.availability.Available**

For when a product is always available, irrespective of stock level.

This might be appropriate for digital products where stock doesn't need to be tracked and the product is always available to buy.

**is\_purchase\_permitted(*quantity*)**

Test whether a proposed purchase is allowed

Should return a boolean and a reason

**class oscar.apps.partner.availability.StockRequired(*num\_available*)**

Allow a product to be bought while there is stock. This policy is instantiated with a stock number (*num\_available*). It ensures that the product is only available to buy while there is stock available.

This is suitable for physical products where back orders (e.g. allowing purchases when there isn't stock available) are not permitted.

**property code**

Code indicating availability status.

**is\_purchase\_permitted(*quantity*)**

Test whether a proposed purchase is allowed

Should return a boolean and a reason

**property message: str**

Full availability text, suitable for detail pages.

**property short\_message**

A shorter version of the availability message, suitable for showing on browsing pages.

**class oscar.apps.partner.availability.Unavailable**

Policy for when a product is unavailable

## Strategy mixins

Oscar also ships with several mixins which implement one method of the `Structured` strategy. These allow strategies to be easily composed from re-usable parts:

**class** `oscar.apps.partner.strategy.DeferredTax`

Pricing policy mixin for use with the `Structured` base strategy. This mixin does not specify the product tax and is suitable to territories where tax isn't known until late in the checkout process.

**class** `oscar.apps.partner.strategy.FixedRateTax`

Pricing policy mixin for use with the `Structured` base strategy. This mixin applies a fixed rate tax to the base price from the product's stockrecord. The `price_incl_tax` is quantized to two decimal places. Rounding behaviour is `Decimal`'s default

**get\_exponent**(*stockrecord*)

This method serves as hook to be able to plug in support for a varying exponent based on the currency.

TODO: Needs tests.

**get\_rate**(*product*, *stockrecord*)

This method serves as hook to be able to plug in support for varying tax rates based on the product.

TODO: Needs tests.

**class** `oscar.apps.partner.strategy.NoTax`

Pricing policy mixin for use with the `Structured` base strategy. This mixin specifies zero tax and uses the price from the stockrecord.

**class** `oscar.apps.partner.strategy.StockRequired`

Availability policy mixin for use with the `Structured` base strategy. This mixin ensures that a product can only be bought if it has stock available (if stock is being tracked).

**class** `oscar.apps.partner.strategy.UseFirstStockRecord`

Stockrecord selection mixin for use with the `Structured` base strategy. This mixin picks the first (normally only) stockrecord to fulfil a product.

## Default strategy

Oscar's default Selector class returns a `Default` strategy built from the strategy mixins:

```
class Default(UseFirstStockRecord, StockRequired, NoTax, Structured):  
    pass
```

The behaviour of this strategy is:

- Always picks the first stockrecord (this is backwards compatible with Oscar<0.6 where a product could only have one stockrecord).
- Charge no tax.
- Only allow purchases where there is appropriate stock (e.g. no back-orders).

## How to use

There's lots of ways to use strategies, pricing and availability policies to handle your domain's requirements.

The normal first step is provide your own `Selector` class which returns a custom strategy class. Your custom strategy class can be composed of the above mixins or your own custom logic.

### Example 1: UK VAT

Here's an example `strategy.py` module which is used to charge VAT on prices.

```
# myproject/partner/strategy.py
from decimal import Decimal as D
from oscar.apps.partner import strategy, prices

class Selector(object):
    """
    Custom selector to return a UK-specific strategy that charges VAT
    """

    def strategy(self, request=None, user=None, **kwargs):
        return UKStrategy()

class IncludingVAT(strategy.FixedRateTax):
    """
    Price policy to charge VAT on the base price
    """
    # We can simply override the tax rate on the core FixedRateTax. Note
    # this is a simplification: in reality, you might want to store tax
    # rates and the date ranges they apply in a database table. Your
    # pricing policy could simply look up the appropriate rate.
    rate = D('0.20')

class UKStrategy(strategy.UseFirstStockRecord, IncludingVAT,
                  strategy.StockRequired, strategy.Structured):
    """
    Typical UK strategy for physical goods.

    - There's only one warehouse/partner so we use the first and only stockrecord
    - Enforce stock level. Don't allow purchases when we don't have stock.
    - Charge UK VAT on prices. Assume everything is standard-rated.
    """
```

### Example 2: US sales tax

Here's an example `strategy.py` module which is suitable for use in the US where taxes can't be calculated until the shipping address is known. You normally need to use a 3rd party service to determine taxes - details omitted here.

```
from oscar.apps.partner import strategy, prices

class Selector(object):
    """
    Custom selector class to returns a US strategy
    """

    def strategy(self, request=None, user=None, **kwargs):
        return USStrategy()

class USStrategy(strategy.UseFirstStockRecord, strategy.DeferredTax,
                 strategy.StockRequired, strategy.Structured):
    """
    Typical US strategy for physical goods. Note we use the ``DeferredTax``
    mixin to ensure prices are returned without tax.

    - Use first stockrecord
    - Enforce stock level
    - Taxes aren't known for prices at this stage
    """
```

## 1.2.5 Deploying Oscar

Oscar is a just a set of Django apps - it doesn't have any special deployment requirements. That means the excellent Django docs for [deployment](#) should be your first stop. This page adds some additional tips based on experience gained from running Oscar projects.

### Performance

Setting up caching is crucial for a good performance. Oscar's templates are split into many partials, hence it is recommended to use the [cached template loader](#). Sorl also will hit your database hard if you run it without a cache backend.

If your memory constraints are tight and you can only run one Python worker, LocMemCache will usually outperform external cache backends due to the lower overhead. But once you can scale beyond one worker, it might make good sense to switch to something like Memcached or Redis.

Blocking in views should be avoided if possible. That is especially true for external API calls and sending emails. Django's supports different email backends to allow for switching out the blocking SMTP backend to a custom non-blocking solution. Possible options are storing emails in a database or cache for later consumption or triggering an external worker, e.g. via [django-celery](#). [django\\_post-office](#) works nicely.

For backwards-compatibility reasons, Django doesn't enable database connection pooling by default. Performance is likely to improve when enabled.

## Security

Oscar relies on the Django framework for security measures and therefore no Oscar specific configurations with regard to security are in place. See [Django's guidelines for security](#) for more information.

[django-secure](#) is a nice app that comes with a few sanity checks for deployments behind SSL.

## Search Engine Optimisation

A basic example of what a sitemap for Oscar could look like has been added to the sandbox site. Have a look at [sandbox/urls.py](#) for inspiration.

### 1.2.6 Translation

All Oscar translation work is done on [Transifex](#). If you'd like to contribute, just apply for a language and go ahead! The source strings in Transifex are updated after every commit on Oscar's master branch on GitHub. We only pull the translation strings back into Oscar's repository when preparing for a release. That means your most recent translations will always be on Transifex, not in the repository!

### Translating Oscar within your project

If Oscar does not provide translations for your language, or if you want to provide your own, do the following.

Within your project, create a locale folder and a symlink to Oscar so that `./manage.py makemessages` finds Oscar's translatable strings:

```
mkdir locale i18n
ln -s $PATH_TO_OSCAR i18n/oscar
./manage.py makemessages --symlinks --locale=de
```

This will create the message files that you can now translate.

### 1.2.7 Upgrading

This document explains some of the issues that can be encountered whilst upgrading Oscar.

## Migrations

Oscar provides migrations for its apps. But since Oscar allows an app to be overridden and its models extended, handling migrations can be tricky when upgrading.

Suppose a new version of Oscar changes the models of the 'shipping' app and includes the corresponding migrations. There are two scenarios to be aware of:

## Migrating apps

Apps that you aren't customising will upgrade trivially as your project will pick up the new migrations from Oscar directly.

For instance, if you have `oscar.apps.core.shipping` in your `INSTALLED_APPS` then you can simply run:

```
./manage.py makemigrations shipping
```

to migrate your shipping app.

## Migrating customised apps (models unchanged)

If you have customised an app, but have not touched the models nor migrations, you're best off copying the migrations from Oscar. This approach has the advantage of pulling in any data migrations. Find the updated(!) Oscar in your virtualenv or clone the Oscar repository at the correct version tag. Then find the migrations, copy them across, and migrate as usual. You will have to adapt paths, but something akin to this will work:

```
$ cd sitepackages oscar/apps/shipping/migrations
$ copy *.py <your_project>/myshop/shipping/migrations/
```

## Migrating customised apps (models changed)

At this point, you have essentially forked away from Oscar's migrations. You will need to review all migrations that the Oscar release ships. Please also carefully read the release notes; tricky migrations will usually be mentioned.

If there are data migrations, you will need to look into what they do, and likely will have to imitate what they're doing. You can copy across the *RunPython* part of data migration, but you have to mind the migration dependencies to ensure your data migration is executed in the right order.

For schema migrations, it can sometimes be as easy as:

```
./manage.py makemigrations shipping
```

to mirror the changes Oscar did.

But other times, you will get dependency errors because new Oscar migrations reference a migration you don't have. One can get around this by creating an empty migration with the same name. See [this thread](#) on the mailing list.

Feel free to get in touch on the mailing list if you run into any problems.

## 1.2.8 Forking an app

This guide explains how to fork an app in Oscar.

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**Note:** The following steps are now automated by the `oscar_fork_app` management command. They're explained in detail so you get an idea of what's going on. But there's no need to do this manually anymore! More information is available in *Fork the Oscar app*.

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**Note:** Because of the way dynamic class loading works, when forking dashboard apps, the `oscar.apps.dashboard` app also needs to be forked; and the forked dashboard app's code must live inside the forked `oscar.apps.dashboard` app's directory.

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Similarly, when forking `oscar.apps.catalogue.reviews`, `oscar.apps.catalogue` needs to be forked as well; and the forked `oscar.apps.catalogue.reviews` app's code must live inside the forked `oscar.apps.catalogue` app's directory.

### Create Python module with same label

You need to create a Python module with the same “app label” as the Oscar app you want to extend. E.g., to create a local version of `oscar.apps.order`, do the following:

```
$ mkdir yourproject/order
$ touch yourproject/order/__init__.py
```

### Reference Oscar's models

If the original Oscar app has a `models.py`, you'll need to create a `models.py` file in your local app. It should import all models from the Oscar app being overridden:

```
# yourproject/order/models.py

# your custom models go here

from oscar.apps.order.models import *
```

If two models with the same name are declared within an app, Django will only use the first one. That means that if you wish to customise Oscar's models, you must declare your custom ones before importing Oscar's models for that app.

You have to copy the `migrations` directory from `oscar/apps/order` and put it into your `order` app. Detailed instructions are available in [How to customise models](#).

### Get the Django admin working

When you replace one of Oscar's apps with a local one, Django admin integration is lost. If you'd like to use it, you need to create an `admin.py` and import the core app's `admin.py` (which will run the register code):

```
# yourproject/order/admin.py
import oscar.apps.order.admin
```

This isn't great but we haven't found a better way as of yet.

### Use supplied app config

Oscar ships with an app config for each app, which sets app labels and runs startup code. You need to make sure that happens.

Reference:

## 1.2.9 Core functionality

This page details the core classes and functions that Oscar uses. These aren't specific to one particular app, but are used throughout Oscar.

### Dynamic class loading

The key to Oscar's flexibility is dynamically loading classes. This allows projects to provide their own versions of classes that extend and override the core functionality.

`oscar.core.loading.get_class(module_label, classname, module_prefix='oscar.apps')`

Dynamically import a single class from the given module.

This is a simple wrapper around `get_classes` for the case of loading a single class.

#### Parameters

- **module\_label** (*str*) – Module label comprising the app label and the module name, separated by a dot. For example, 'catalogue.forms'.
- **classname** (*str*) – Name of the class to be imported.

**Returns** The requested class object or *None* if it can't be found

### URL patterns and views

Oscar's apps organise their URLs and associated views using a "OscarConfig" class instance. This works in a similar way to Django's admin app, and allows Oscar projects to subclass and customise URLs and views.

**class** `oscar.core.application.OscarConfig`(*app\_name, app\_module, namespace=None, \*\*kwargs*)

Base Oscar app configuration.

This is subclassed by each app to provide a customisable container for its configuration, URL configurations, and permissions.

**class** `oscar.core.application.OscarConfigMixin`(*app\_name, app\_module, namespace=None, \*\*kwargs*)

Base Oscar app configuration mixin, used to extend `django.apps.AppConfig` to also provide URL configurations and permissions.

**default\_permissions** = *None*

Default permission for any view not in `permissions_map`

**get\_permissions**(*url*)

Return a list of permissions for a given URL name

**Parameters** *url* (*str*) – A URL name (e.g., `basket.basket`)

**Returns** A list of permission strings.

**Return type** list

**get\_url\_decorator**(*pattern*)

Return the appropriate decorator for the view function with the passed URL name. Mainly used for access-protecting views.

It's possible to specify:

- no permissions necessary: use *None*
- a set of permissions: use a list
- two set of permissions (*or*): use a two-tuple of lists

See `permissions_required` decorator for details

**get\_urls()**

Return the URL patterns for this app.

**hidable\_feature\_name = None**

A name that allows the functionality within this app to be disabled

**permissions\_map = {}**

Maps view names to lists of permissions. We expect tuples of lists as dictionary values. A list is a set of permissions that all need to be fulfilled (AND). Only one set of permissions has to be fulfilled (OR). If there's only one set of permissions, as a shortcut, you can also just define one list.

**post\_process\_urls(urlpatterns)**

Customise URL patterns.

This method allows decorators to be wrapped around an apps URL patterns.

By default, this only allows custom decorators to be specified, but you could override this method to do anything you want.

**Parameters** `urlpatterns` (*list*) – A list of URL patterns

```
class oscar.core.application.OscarDashboardConfig(app_name, app_module, namespace=None,
                                                **kwargs)
```

## Prices

Oscar uses a custom price object for easier tax handling.

```
class oscar.core.prices.Price(currency, excl_tax, incl_tax=None, tax=None)
```

Simple price class that encapsulates a price and its tax information

**incl\_tax**

Price including taxes

**Type** Decimal

**excl\_tax**

Price excluding taxes

**Type** Decimal

**tax**

Tax amount

**Type** Decimal

**is\_tax\_known**

Whether tax is known

**Type** bool

**currency**

3 character currency code

**Type** str

## Custom model fields

Oscar uses a few custom model fields.

**class** oscar.models.fields.**Creator**(*field*)

A placeholder class that provides a way to set the attribute on the model.

**class** oscar.models.fields.**ExtendedURLField**(\*args, \*\*kwargs)

**class** oscar.models.fields.**NullCharField**(\*args, \*\*kwargs)

CharField that stores '' as None and returns None as '' Useful when using unique=True and forms. Implies null==blank==True.

Django's CharField stores '' as None, but does not return None as ''.

**class** oscar.models.fields.**PositiveDecimalField**(verbose\_name=None, name=None, max\_digits=None, decimal\_places=None, \*\*kwargs)

A simple subclass of django.db.models.fields.DecimalField that restricts values to be non-negative.

**class** oscar.models.fields.**UppercaseCharField**(\*args, db\_collation=None, \*\*kwargs)

A simple subclass of django.db.models.fields.CharField that restricts all text to be uppercase.

## Form helpers

**class** oscar.forms.mixins.**PhoneNumberMixin**(\*args, \*\*kwargs)

Validation mixin for forms with a phone numbers, and optionally a country.

It tries to validate the phone numbers, and on failure tries to validate them using a hint (the country provided), and treating it as a local number.

Specify which fields to treat as phone numbers by specifying them in *phone\_number\_fields*, a dictionary of fields names and default kwargs for instantiation of the field.

## 1.2.10 Oscar Core Apps explained

Oscar is split up in multiple, mostly independent apps.

### Address

The address app provides core address models - it doesn't provide any views or other functionality. Of the 5 abstract models, only 2 have a non-abstract version in `oscar.apps.address.models` - the others are used by the order app to provide shipping and billing address models.

### Abstract models

**class** oscar.apps.address.abstract\_models.**AbstractAddress**(\*args, \*\*kwargs)

Bases: django.db.models.base.Model

Superclass address object

This is subclassed and extended to provide models for user, shipping and billing addresses.

**active\_address\_fields**()

Returns the non-empty components of the address, but merging the title, first\_name and last\_name into a single line. It uses fields listed out in *base\_fields* property.

**clean()**

Hook for doing any extra model-wide validation after `clean()` has been called on every field by `self.clean_fields`. Any `ValidationError` raised by this method will not be associated with a particular field; it will have a special-case association with the field defined by `NON_FIELD_ERRORS`.

**ensure\_postcode\_is\_valid\_for\_country()**

Validate postcode given the country

**generate\_hash()**

Returns a hash of the address, based on standard set of fields, listed out in `hash_fields` property.

**get\_address\_field\_values(fields)**

Returns set of field values within the salutation and country.

**join\_fields(fields, separator=', ')**

Join a sequence of fields using the specified separator

**populate\_alternative\_model(address\_model)**

For populating an address model using the matching fields from this one.

This is used to convert a user address to a shipping address as part of the checkout process.

**property salutation**

Name (including title)

**save(\*args, \*\*kwargs)**

Save the current instance. Override this in a subclass if you want to control the saving process.

The `'force_insert'` and `'force_update'` parameters can be used to insist that the “save” must be an SQL insert or update (or equivalent for non-SQL backends), respectively. Normally, they should not be set.

**property summary**

Returns a single string summary of the address, separating fields using commas.

**class** `oscar.apps.address.abstract_models.AbstractBillingAddress(*args, **kwargs)`

Bases: `oscar.apps.address.abstract_models.AbstractAddress`

**property order**

Return the order linked to this shipping address

**class** `oscar.apps.address.abstract_models.AbstractCountry(*args, **kwargs)`

Bases: `django.db.models.base.Model`

**ISO 3166 Country Codes**

The field names are a bit awkward, but kept for backwards compatibility. `pycountry`’s syntax of `alpha2`, `alpha3`, `name` and `official_name` seems sane.

**property code**

Shorthand for the ISO 3166 Alpha-2 code

**name**

The full official name of a country e.g. ‘United Kingdom of Great Britain and Northern Ireland’

**property numeric\_code**

Shorthand for the ISO 3166 numeric code.

`iso_3166_1_numeric` used to wrongly be a integer field, but has to be padded with leading zeroes. It’s since been converted to a char field, but the database might still contain non-padded strings. That’s why the padding is kept.

**printable\_name**

The commonly used name; e.g. ‘United Kingdom’

**class** oscar.apps.address.abstract\_models.**AbstractPartnerAddress**(\*args, \*\*kwargs)

Bases: [oscar.apps.address.abstract\\_models.AbstractAddress](#)

A partner can have one or more addresses. This can be useful e.g. when determining US tax which depends on the origin of the shipment.

**class** oscar.apps.address.abstract\_models.**AbstractShippingAddress**(\*args, \*\*kwargs)

Bases: [oscar.apps.address.abstract\\_models.AbstractAddress](#)

A shipping address.

A shipping address should not be edited once the order has been placed - it should be read-only after that.

NOTE: ShippingAddress is a model of the order app. But moving it there is tricky due to circular import issues that are amplified by get\_model/get\_class calls pre-Django 1.7 to register receivers. So... TODO: Once Django 1.6 support is dropped, move AbstractBillingAddress and AbstractShippingAddress to the order app, and move PartnerAddress to the partner app.

**property order**

Return the order linked to this shipping address

**class** oscar.apps.address.abstract\_models.**AbstractUserAddress**(\*args, \*\*kwargs)

Bases: [oscar.apps.address.abstract\\_models.AbstractShippingAddress](#)

A user's address. A user can have many of these and together they form an 'address book' of sorts for the user.

We use a separate model for shipping and billing (even though there will be some data duplication) because we don't want shipping/billing addresses changed or deleted once an order has been placed. By having a separate model, we allow users the ability to add/edit/delete from their address book without affecting orders already placed.

**hash**

A hash is kept to try and avoid duplicate addresses being added to the address book.

**is\_default\_for\_billing**

Whether this address should be the default for billing.

**is\_default\_for\_shipping**

Whether this address is the default for shipping

**num\_orders\_as\_billing\_address**

Same as previous, but for billing address.

**num\_orders\_as\_shipping\_address**

We keep track of the number of times an address has been used as a shipping address so we can show the most popular ones first at the checkout.

**save(\*args, \*\*kwargs)**

Save a hash of the address fields

**validate\_unique(exclude=None)**

Check unique constraints on the model and raise ValidationError if any failed.

## Views

None.

## Analytics

The `oscar.analytics` module provides a few simple models for gathering analytics data on products and users. It listens for signals from other apps, and creates/updates simple models which aggregate this data.

Such data is useful for auto-merchandising, calculating product scores for search and for personalised marketing for customers.

### Abstract models

**class** `oscar.apps.analytics.abstract_models.AbstractProductRecord(*args, **kwargs)`

A record of a how popular a product is.

This used be auto-merchandising to display the most popular products.

**class** `oscar.apps.analytics.abstract_models.AbstractUserRecord(*args, **kwargs)`

A record of a user's activity.

## Views

None.

## Basket

The basket app handles shopping baskets, which essentially are a collection of products that hopefully end up being ordered.

### Abstract models

**class** `oscar.apps.basket.abstract_models.AbstractBasket(*args, **kwargs)`

Basket object

**add**(*product, quantity=1, options=None*)

Add a product to the basket

The 'options' list should contains dicts with keys 'option' and 'value' which link the relevant product.Option model and string value respectively.

**Returns (line, created).** line: the matching basket line created: whether the line was created or updated

**add\_product**(*product, quantity=1, options=None*)

Add a product to the basket

The 'options' list should contains dicts with keys 'option' and 'value' which link the relevant product.Option model and string value respectively.

**Returns (line, created).** line: the matching basket line created: whether the line was created or updated

**all\_lines()**

Return a cached set of basket lines.

This is important for offers as they alter the line models and you don't want to reload them from the DB as that information would be lost.

**applied\_offers()**

Return a dict of offers successfully applied to the basket.

This is used to compare offers before and after a basket change to see if there is a difference.

**property can\_be\_edited**

Test if a basket can be edited

**contains\_voucher(*code*)**

Test whether the basket contains a voucher with a given code

**flush()**

Remove all lines from basket.

**freeze()**

Freezes the basket so it cannot be modified.

**get\_stock\_info(*product, options*)**

Hook for implementing strategies that depend on product options

**property grouped\_voucher\_discounts**

Return discounts from vouchers but grouped so that a voucher which links to multiple offers is aggregated into one object.

**property is\_empty**

Test if this basket is empty

**is\_quantity\_allowed(*qty*)**

Test whether the passed quantity of items can be added to the basket

**is\_shipping\_required()**

Test whether the basket contains physical products that require shipping.

**property is\_tax\_known**

Test if tax values are known for this basket

**line\_quantity(*product, stockrecord, options=None*)**

Return the current quantity of a specific product and options

**max\_allowed\_quantity()**

Returns maximum product quantity, that can be added to the basket with the respect to basket quantity threshold.

**merge(*basket, add\_quantities=True*)**

Merges another basket with this one.

**Basket** The basket to merge into this one.

**Add\_quantities** Whether to add line quantities when they are merged.

**merge\_line(*line, add\_quantities=True*)**

For transferring a line from another basket to this one.

This is used with the "Saved" basket functionality.

**property num\_items**

Return number of items

**property num\_lines**

Return number of lines

**property offer\_discounts**

Return basket discounts from non-voucher sources. Does not include shipping discounts.

**property post\_order\_actions**

Return discounts from vouchers

**product\_quantity(*product*)**

Return the quantity of a product in the basket

The basket can contain multiple lines with the same product, but different options and stockrecords. Those quantities are summed up.

**reset\_offer\_applications()**

Remove any discounts so they get recalculated

**set\_as\_submitted()**

Mark this basket as submitted

**property shipping\_discounts**

Return discounts from vouchers

**submit()**

Mark this basket as submitted

**thaw()**

Unfreezes a basket so it can be modified again

**property total\_excl\_tax**

Return total line price excluding tax

**property total\_excl\_tax\_excl\_discounts**

Return total price excluding tax and discounts

**property total\_incl\_tax**

Return total price inclusive of tax and discounts

**property total\_incl\_tax\_excl\_discounts**

Return total price inclusive of tax but exclusive discounts

**property total\_tax**

Return total tax for a line

**property voucher\_discounts**

Return discounts from vouchers

**class** oscar.apps.basket.abstract\_models.**AbstractLine**(\*args, \*\*kwargs)

A line of a basket (product and a quantity)

Common approaches on ordering basket lines:

- a) First added at top. That's the history-like approach; new items are added to the bottom of the list. Changing quantities doesn't impact position. Oscar does this by default. It just sorts by Line.pk, which is guaranteed to increment after each creation.
- b) Last modified at top. That means items move to the top when you add another one, and new items are added to the top as well. Amazon mostly does this, but doesn't change the position when you update the quantity in the basket view. To get this behaviour, change Meta.ordering and optionally do something similar on wishlist lines. Order lines should already be created in the order of the basket lines, and are sorted by their primary key, so no changes should be necessary there.

**clear\_discount()**

Remove any discounts from this line.

**consume**(*quantity*, *offer=None*)

Mark all or part of the line as ‘consumed’

Consumed items are no longer available to be used in offers.

**discount**(*discount\_value*, *affected\_quantity*, *incl\_tax=True*, *offer=None*)

Apply a discount to this line

**get\_price\_breakdown()**

Return a breakdown of line prices after discounts have been applied.

Returns a list of (unit\_price\_incl\_tax, unit\_price\_excl\_tax, quantity) tuples.

**get\_warning()**

Return a warning message about this basket line if one is applicable

This could be things like the price has changed

**property purchase\_info**

Return the stock/price info

**save**(\*args, \*\*kwargs)

Save the current instance. Override this in a subclass if you want to control the saving process.

The ‘force\_insert’ and ‘force\_update’ parameters can be used to insist that the “save” must be an SQL insert or update (or equivalent for non-SQL backends), respectively. Normally, they should not be set.

**property unit\_effective\_price**

The price to use for offer calculations

**class** oscar.apps.basket.abstract\_models.**AbstractLineAttribute**(\*args, \*\*kwargs)

An attribute of a basket line

## Views

**class** oscar.apps.basket.views.**BasketAddView**(\*\*kwargs)

Handles the add-to-basket submissions, which are triggered from various parts of the site. The add-to-basket form is loaded into templates using a templatetag from oscar.templatetags.basket\_tags.

**form\_class**

alias of oscar.apps.basket.forms.AddToBasketForm

**form\_invalid**(*form*)

If the form is invalid, render the invalid form.

**form\_valid**(*form*)

If the form is valid, redirect to the supplied URL.

**get\_form\_kwargs**()

Return the keyword arguments for instantiating the form.

**get\_success\_url**()

Return the URL to redirect to after processing a valid form.

**post**(*request*, \*args, \*\*kwargs)

Handle POST requests: instantiate a form instance with the passed POST variables and then check if it’s valid.

---

**product\_model**  
alias of `oscar.apps.catalogue.models.Product`

**class oscar.apps.basket.views.BasketView(\*\*kwargs)**

**basket\_model**  
alias of `oscar.apps.basket.models.Basket`

**form\_class**  
alias of `oscar.apps.basket.forms.BasketLineForm`

**formset\_class**  
alias of `django.forms.formsets.LineFormFormSet`

**formset\_invalid(formset)**  
If the formset is invalid, re-render the context data with the data-filled formset and errors.

**formset\_valid(formset)**  
If the formset is valid, save the associated models.

**get\_basket\_voucher\_form()**  
This is a separate method so that it's easy to e.g. not return a form if there are no vouchers available.

**get\_basket\_warnings(basket)**  
Return a list of warnings that apply to this basket

**get\_context\_data(\*\*kwargs)**  
Get the context for this view.

**get\_formset\_kwargs()**  
Returns the keyword arguments for instantiating the formset.

**get\_queryset()**  
Return list of [Line](#) instances associated with the current basket.

**get\_success\_url()**  
Returns the supplied URL.

**model**  
alias of `oscar.apps.basket.models.Line`

**remove\_deleted\_forms(formset)**  
Removes forms marked for deletion, from the formset, as well as deletes their model instance objects; and modifies the formset's request data, to match the state of the data in the database, for the remaining forms.

This is useful for redisplaying a formset containing other invalid forms, after deleting one of the forms from it.

**class oscar.apps.basket.views.SavedView(\*\*kwargs)**

**basket\_model**  
alias of `oscar.apps.basket.models.Basket`

**form\_class**  
alias of `oscar.apps.basket.forms.SavedLineForm`

**formset\_class**  
alias of `django.forms.formsets.LineFormFormSet`

**formset\_invalid(formset)**  
If the formset is invalid, re-render the context data with the data-filled formset and errors.

**formset\_valid**(*formset*)

If the formset is valid, save the associated models.

**get**(*request*, \**args*, \*\**kwargs*)

Handles GET requests and instantiates a blank version of the formset.

**get\_formset\_kwargs**()

Returns the keyword arguments for instantiating the formset.

**get\_queryset**()

Return list of [Line](#) instances associated with the saved basket associated with the currently authenticated user.

**get\_success\_url**()

Returns the supplied URL.

**model**

alias of `oscar.apps.basket.models.Line`

**class** `oscar.apps.basket.views.VoucherAddView`(\**kwargs*)

**form\_class**

alias of `oscar.apps.basket.forms.BasketVoucherForm`

**form\_invalid**(*form*)

If the form is invalid, render the invalid form.

**form\_valid**(*form*)

If the form is valid, redirect to the supplied URL.

**get**(*request*, \**args*, \*\**kwargs*)

Handle GET requests: instantiate a blank version of the form.

**voucher\_model**

alias of `oscar.apps.voucher.models.Voucher`

**class** `oscar.apps.basket.views.VoucherRemoveView`(\**kwargs*)

**voucher\_model**

alias of `oscar.apps.voucher.models.Voucher`

## Catalogue

This is an essential Oscar app which exposes functionality to manage your product catalogue. `oscar.apps.catalogue.abstract_models.AbstractProduct` is its main model. The catalogue app also includes views specific to viewing a list or individual products.

### Abstract models

**class** `oscar.apps.catalogue.abstract_models.AbstractAttributeOption`(\**args*, \*\**kwargs*)

Provides an option within an option group for an attribute type Examples: In a Language group, English, Greek, French

**class** `oscar.apps.catalogue.abstract_models.AbstractAttributeOptionGroup`(\**args*, \*\**kwargs*)

Defines a group of options that collectively may be used as an attribute type

For example, Language

**class** oscar.apps.catalogue.abstract\_models.**AbstractCategory**(\*args, \*\*kwargs)

A product category. Merely used for navigational purposes; has no effects on business logic.

Uses django-treebeard.

**COMPARISON\_FIELDS** = ('pk', 'path', 'depth')

Allow comparison of categories on a limited number of fields by ranges. When the Category model is overwritten to provide CMS content, defining this avoids fetching a lot of unneeded extra data from the database.

**class** Meta

**property** full\_name

Returns a string representation of the category and it's ancestors, e.g. 'Books > Non-fiction > Essential programming'.

It's rarely used in Oscar, but used to be stored as a CharField and is hence kept for backwards compatibility. It's also sufficiently useful to keep around.

**property** full\_slug

Returns a string of this category's slug concatenated with the slugs of it's ancestors, e.g. 'books/non-fiction/essential-programming'.

Oscar used to store this as in the 'slug' model field, but this field has been re-purposed to only store this category's slug and to not include it's ancestors' slugs.

**generate\_slug()**

Generates a slug for a category. This makes no attempt at generating a unique slug.

**get\_ancestors\_and\_self()**

Gets ancestors and includes itself. Use treebeard's get\_ancestors if you don't want to include the category itself. It's a separate function as it's commonly used in templates.

**get\_descendants\_and\_self()**

Gets descendants and includes itself. Use treebeard's get\_descendants if you don't want to include the category itself. It's a separate function as it's commonly used in templates.

**save**(\*args, \*\*kwargs)

Oscar traditionally auto-generated slugs from names. As that is often convenient, we still do so if a slug is not supplied through other means. If you want to control slug creation, just create instances with a slug already set, or expose a field on the appropriate forms.

**class** oscar.apps.catalogue.abstract\_models.**AbstractOption**(\*args, \*\*kwargs)

An option that can be selected for a particular item when the product is added to the basket.

For example, a list ID for an SMS message send, or a personalised message to print on a T-shirt.

This is not the same as an 'attribute' as options do not have a fixed value for a particular item. Instead, option need to be specified by a customer when they add the item to their basket.

The *type* of the option determines the form input that will be used to collect the information from the customer, and the *required* attribute determines whether a value must be supplied in order to add the item to the basket.

**clean()**

Hook for doing any extra model-wide validation after clean() has been called on every field by self.clean\_fields. Any ValidationError raised by this method will not be associated with a particular field; it will have a special-case association with the field defined by NON\_FIELD\_ERRORS.

**class** oscar.apps.catalogue.abstract\_models.**AbstractProduct**(\*args, \*\*kwargs)

The base product object

There's three kinds of products; they're distinguished by the structure field.

- A stand alone product. Regular product that lives by itself.
- A child product. All child products have a parent product. They're a specific version of the parent.
- A parent product. It essentially represents a set of products.

An example could be a yoga course, which is a parent product. The different times/locations of the courses would be associated with the child products.

**property attribute\_summary**

Return a string of all of a product's attributes

**calculate\_rating()**

Calculate rating value

**can\_be\_parent(*give\_reason=False*)**

Helps decide if a the product can be turned into a parent product.

**clean()**

Validate a product. Those are the rules:

	stand alone	parent	child
title	required	required	optional
product class	required	required	must be None
parent	forbidden	forbidden	required
stockrecords	0 or more	forbidden	0 or more
categories	1 or more	1 or more	forbidden
attributes	optional	optional	optional
rec. products	optional	optional	unsupported
options	optional	optional	forbidden

Because the validation logic is quite complex, validation is delegated to the sub method appropriate for the product's structure.

**get\_absolute\_url()**

Return a product's absolute URL

**get\_categories()**

Return a product's public categories or parent's if there is a parent product.

**get\_is\_discountable()**

At the moment, *is\_discountable* can't be set individually for child products; they inherit it from their parent.

**get\_missing\_image()**

Returns a missing image object.

**get\_product\_class()**

Return a product's item class. Child products inherit their parent's.

**get\_title()**

Return a product's title or it's parent's title if it has no title

**property has\_stockrecords**

Test if this product has any stockrecords

**is\_discountable**

Determines if a product may be used in an offer. It is illegal to discount some types of product (e.g. ebooks) and this field helps merchants from avoiding discounting such products Note that this flag is ignored for child products; they inherit from the parent product.

**is\_review\_permitted(*user*)**

Determines whether a user may add a review on this product.

Default implementation respects `OSCAR_ALLOW_ANON_REVIEWS` and only allows leaving one review per user and product.

Override this if you want to alter the default behaviour; e.g. enforce that a user purchased the product to be allowed to leave a review.

**property options**

Returns a set of all valid options for this product. It's possible to have options product class-wide, and per product.

**primary\_image()**

Returns the primary image for a product. Usually used when one can only display one product image, e.g. in a list of products.

**product\_class**

"Kind" of product, e.g. T-Shirt, Book, etc. None for child products, they inherit their parent's product class

**product\_options**

It's possible to have options product class-wide, and per product.

**save(\*args, \*\*kwargs)**

Save the current instance. Override this in a subclass if you want to control the saving process.

The 'force\_insert' and 'force\_update' parameters can be used to insist that the "save" must be an SQL insert or update (or equivalent for non-SQL backends), respectively. Normally, they should not be set.

**property sorted\_recommended\_products**

Keeping order by recommendation ranking.

**update\_rating()**

Recalculate rating field

**class** oscar.apps.catalogue.abstract\_models.**AbstractProductAttribute**(\*args, \*\*kwargs)

Defines an attribute for a product class. (For example, `number_of_pages` for a 'book' class)

**clean()**

Hook for doing any extra model-wide validation after `clean()` has been called on every field by `self.clean_fields`. Any `ValidationError` raised by this method will not be associated with a particular field; it will have a special-case association with the field defined by `NON_FIELD_ERRORS`.

**class** oscar.apps.catalogue.abstract\_models.**AbstractProductAttributeValue**(\*args, \*\*kwargs)

The "through" model for the m2m relationship between [Product](#) and [ProductAttribute](#). This specifies the value of the attribute for a particular product

For example: `number_of_pages = 295`

**summary()**

Gets a string representation of both the attribute and its value, used e.g. in product summaries.

**property value\_as\_html**

Returns a HTML representation of the attribute's value. To customise e.g. image attribute values, declare a `_image_as_html` property and return e.g. an `<img>` tag. Defaults to the `_as_text` representation.

**property value\_as\_text**

Returns a string representation of the attribute's value. To customise e.g. image attribute values, declare a `_image_as_text` property and return something appropriate.

**class** oscar.apps.catalogue.abstract\_models.**AbstractProductCategory**(\*args, \*\*kwargs)

Joining model between products and categories. Exists to allow customising.

**class** oscar.apps.catalogue.abstract\_models.**AbstractProductClass**(\*args, \*\*kwargs)

Used for defining options and attributes for a subset of products. E.g. Books, DVDs and Toys. A product can only belong to one product class.

At least one product class must be created when setting up a new Oscar deployment.

Not necessarily equivalent to top-level categories but usually will be.

#### options

These are the options (set by the user when they add to basket) for this item class. For instance, a product class of “SMS message” would always require a message to be specified before it could be bought. Note that you can also set options on a per-product level.

#### requires\_shipping

Some product type don’t require shipping (e.g. digital products) - we use this field to take some shortcuts in the checkout.

#### track\_stock

Digital products generally don’t require their stock levels to be tracked.

**class** oscar.apps.catalogue.abstract\_models.**AbstractProductImage**(\*args, \*\*kwargs)

An image of a product

**delete**(\*args, \*\*kwargs)

Always keep the display\_order as consecutive integers. This avoids issue #855.

#### display\_order

Use display\_order to determine which is the “primary” image

#### is\_primary()

Return bool if image display order is 0

**class** oscar.apps.catalogue.abstract\_models.**AbstractProductRecommendation**(\*args, \*\*kwargs)

‘Through’ model for product recommendations

**class** oscar.apps.catalogue.abstract\_models.**MissingProductImage**(name=None)

Mimics a Django file field by having a name property.

sorl-thumbnail requires all it’s images to be in MEDIA\_ROOT. This class tries symlinking the default “missing image” image in STATIC\_ROOT into MEDIA\_ROOT for convenience, as that is necessary every time an Oscar project is setup. This avoids the less helpful NotFound IOError that would be raised when sorl-thumbnail tries to access it.

**class** oscar.apps.catalogue.abstract\_models.**ReverseStartsWith**(lhs, rhs)

Adds a new lookup method to the django query language, that allows the following syntax:

```
henk__startswith="koe"
```

The regular version of startswith:

```
henk__startswith="koe"
```

Would be about the same as the python statement::

```
henk.startswith("koe")
```

ReverseStartsWith will flip the right and left hand side of the expression, effectively making this the same query as:

```
"koe".startswith(henk)
```

## Views

```
class oscar.apps.catalogue.views.CatalogueView(**kwargs)
    Browse all products in the catalogue

class oscar.apps.catalogue.views.ProductCategoryView(**kwargs)
    Browse products in a given category

    get_categories()
        Return a list of the current category and its ancestors

class oscar.apps.catalogue.views.ProductDetailView(**kwargs)

    get(request, **kwargs)
        Ensures that the correct URL is used before rendering a response

    get_context_data(**kwargs)
        Insert the single object into the context dict.

    get_object(queryset=None)
        Return the object the view is displaying.

        Require self.queryset and a pk or slug argument in the URLconf. Subclasses can override this to return any
        object.

    get_template_names()
        Return a list of possible templates.

        If an overriding class sets a template name, we use that. Otherwise, we try 2 options before defaulting to
        catalogue/detail.html:

        1. detail-for-upc-upc.html
        2. detail-for-class-classname.html

        This allows alternative templates to be provided for a per-product and a per-item-class basis.

    model
        alias of oscar.apps.catalogue.models.Product
```

## Checkout

### Flow

The checkout process comprises the following steps:

1. **Gateway** - Anonymous users are offered the choice of logging in, registering, or checking out anonymously. Signed in users will be automatically redirected to the next step.
2. **Shipping address** - Enter or choose a shipping address.
3. **Shipping method** - Choose a shipping method. If only one shipping method is available then it is automatically chosen and the user is redirected onto the next step.
4. **Payment method** - Choose the method of payment plus any allocations if payment is to be split across multiple sources. If only one method is available, then the user is redirected onto the next step.
5. **Preview** - The prospective order can be previewed.

6. **Payment details** - If any sensitive payment details are required (e.g., bankcard number), then a form is presented within this step. This has to be the last step before submission so that sensitive details don't have to be stored in the session.
7. **Submission** - The order is placed.
8. **Thank you** - A summary of the order with any relevant tracking information.

## Abstract models

None.

## Views and mixins

**class** `oscar.apps.checkout.views.IndexView(**kwargs)`

First page of the checkout. We prompt user to either sign in, or to proceed as a guest (where we still collect their email address).

**form\_class**

alias of `oscar.apps.checkout.forms.GatewayForm`

**form\_valid(form)**

If the form is valid, redirect to the supplied URL.

**get(request, \*args, \*\*kwargs)**

Handle GET requests: instantiate a blank version of the form.

**get\_form\_kwargs()**

Return the keyword arguments for instantiating the form.

**class** `oscar.apps.checkout.views.PaymentDetailsView(**kwargs)`

For taking the details of payment and creating the order.

This view class is used by two separate URLs: 'payment-details' and 'preview'. The *preview* class attribute is used to distinguish which is being used. Chronologically, *payment-details* (*preview=False*) comes before *preview* (*preview=True*).

If sensitive details are required (e.g. a bankcard), then the payment details view should submit to the preview URL and a custom implementation of *validate\_payment\_submission* should be provided.

- If the form data is valid, then the preview template can be rendered with the payment-details forms re-rendered within a hidden div so they can be re-submitted when the 'place order' button is clicked. This avoids having to write sensitive data to disk anywhere during the process. This can be done by calling *render\_preview*, passing in the extra template context vars.
- If the form data is invalid, then the payment details templates needs to be re-rendered with the relevant error messages. This can be done by calling *render\_payment\_details*, passing in the form instances to pass to the templates.

The class is deliberately split into fine-grained methods, responsible for only one thing. This is to make it easier to subclass and override just one component of functionality.

All projects will need to subclass and customise this class as no payment is taken by default.

**get\_default\_billing\_address()**

Return default billing address for user

This is useful when the payment details view includes a billing address form - you can use this helper method to prepopulate the form.

Note, this isn't used in core oscar as there is no billing address form by default.

**get\_pre\_conditions**(*request*)

Return the pre-condition method names to run for this view

**get\_skip\_conditions**(*request*)

Return the skip-condition method names to run for this view

**get\_template\_names**()

Return a list of template names to be used for the request. Must return a list. May not be called if `render_to_response()` is overridden.

**handle\_payment\_details\_submission**(*request*)

Handle a request to submit payment details.

This method will need to be overridden by projects that require forms to be submitted on the payment details view. The new version of this method should validate the submitted form data and:

- If the form data is valid, show the preview view with the forms re-rendered in the page
- If the form data is invalid, show the payment details view with the form errors showing.

**handle\_place\_order\_submission**(*request*)

Handle a request to place an order.

This method is normally called after the customer has clicked “place order” on the preview page. It's responsible for (re-)validating any form information then building the submission dict to pass to the *submit* method.

If forms are submitted on your payment details view, you should override this method to ensure they are valid before extracting their data into the submission dict and passing it onto *submit*.

**render\_payment\_details**(*request*, *\*\*kwargs*)

Show the payment details page

This method is useful if the submission from the payment details view is invalid and needs to be re-rendered with form errors showing.

**render\_preview**(*request*, *\*\*kwargs*)

Show a preview of the order.

If sensitive data was submitted on the payment details page, you will need to pass it back to the view here so it can be stored in hidden form inputs. This avoids ever writing the sensitive data to disk.

**submit**(*user*, *basket*, *shipping\_address*, *shipping\_method*, *shipping\_charge*, *billing\_address*, *order\_total*, *payment\_kwargs=None*, *order\_kwargs=None*, *surcharges=None*)

Submit a basket for order placement.

The process runs as follows:

- Generate an order number
- Freeze the basket so it cannot be modified any more (important when redirecting the user to another site for payment as it prevents the basket being manipulated during the payment process).
- Attempt to take payment for the order - If payment is successful, place the order - If a redirect is required (e.g. PayPal, 3D Secure), redirect - If payment is unsuccessful, show an appropriate error message

**Basket** The basket to submit.

**Payment\_kwargs** Additional kwargs to pass to the `handle_payment` method. It normally makes sense to pass form instances (rather than model instances) so that the forms can be re-rendered correctly if payment fails.

**Order\_kwargs** Additional kwargs to pass to the place\_order method

**class** `oscar.apps.checkout.views.PaymentMethodView(**kwargs)`

View for a user to choose which payment method(s) they want to use.

This would include setting allocations if payment is to be split between multiple sources. It's not the place for entering sensitive details like bankcard numbers though - that belongs on the payment details view.

**class** `oscar.apps.checkout.views.ShippingAddressView(**kwargs)`

Determine the shipping address for the order.

The default behaviour is to display a list of addresses from the users's address book, from which the user can choose one to be their shipping address. They can add/edit/delete these USER addresses. This address will be automatically converted into a SHIPPING address when the user checks out.

Alternatively, the user can enter a SHIPPING address directly which will be saved in the session and later saved as ShippingAddress model when the order is successfully submitted.

**form\_class**

alias of `oscar.apps.checkout.forms.ShippingAddressForm`

**form\_valid(form)**

If the form is valid, redirect to the supplied URL.

**get\_context\_data(\*\*kwargs)**

Insert the form into the context dict.

**get\_initial()**

Return the initial data to use for forms on this view.

**post(request, \*args, \*\*kwargs)**

Handle POST requests: instantiate a form instance with the passed POST variables and then check if it's valid.

**class** `oscar.apps.checkout.views.ShippingMethodView(**kwargs)`

View for allowing a user to choose a shipping method.

Shipping methods are largely domain-specific and so this view will commonly need to be subclassed and customised.

The default behaviour is to load all the available shipping methods using the shipping Repository. If there is only 1, then it is automatically selected. Otherwise, a page is rendered where the user can choose the appropriate one.

**form\_class**

alias of `oscar.apps.checkout.forms.ShippingMethodForm`

**form\_invalid(form)**

If the form is invalid, render the invalid form.

**form\_valid(form)**

If the form is valid, redirect to the supplied URL.

**get(request, \*args, \*\*kwargs)**

Handle GET requests: instantiate a blank version of the form.

**get\_available\_shipping\_methods()**

Returns all applicable shipping method objects for a given basket.

**get\_context\_data(\*\*kwargs)**

Insert the form into the context dict.

```

get_form_kwargs()
    Return the keyword arguments for instantiating the form.

post(request, *args, **kwargs)
    Handle POST requests: instantiate a form instance with the passed POST variables and then check if it's
    valid.

class oscar.apps.checkout.views.ThankYouView(**kwargs)
    Displays the 'thank you' page which summarises the order just submitted.

get_context_data(*args, **kwargs)
    Insert the single object into the context dict.

get_object(queryset=None)
    Return the object the view is displaying.

    Require self.queryset and a pk or slug argument in the URLconf. Subclasses can override this to return any
    object.

class oscar.apps.checkout.views.UserAddressDeleteView(**kwargs)
    Delete an address from a user's address book.

get_queryset()
    Return the QuerySet that will be used to look up the object.

    This method is called by the default implementation of get_object() and may not be called if get_object()
    is overridden.

class oscar.apps.checkout.views.UserAddressUpdateView(**kwargs)
    Update a user address

form_class
    alias of oscar.apps.address.forms.UserAddressForm

get_form_kwargs()
    Return the keyword arguments for instantiating the form.

get_queryset()
    Return the QuerySet that will be used to look up the object.

    This method is called by the default implementation of get_object() and may not be called if get_object()
    is overridden.

get_success_url()
    Return the URL to redirect to after processing a valid form.

class oscar.apps.checkout.mixins.OrderPlacementMixin
    Mixin which provides functionality for placing orders.

    Any view class which needs to place an order should use this mixin.

add_payment_event(event_type_name, amount, reference="")
    Record a payment event for creation once the order is placed

add_payment_source(source)
    Record a payment source for this order

create_billing_address(user, billing_address=None, shipping_address=None, **kwargs)
    Saves any relevant billing data (e.g. a billing address).

create_shipping_address(user, shipping_address)
    Create and return the shipping address for the current order.

```

Compared to `self.get_shipping_address()`, `ShippingAddress` is saved and makes sure that appropriate `UserAddress` exists.

**freeze\_basket**(*basket*)

Freeze the basket so it can no longer be modified

**generate\_order\_number**(*basket*)

Return a new order number

**handle\_order\_placement**(*order\_number, user, basket, shipping\_address, shipping\_method, shipping\_charge, billing\_address, order\_total, surcharges=None, \*\*kwargs*)

Write out the order models and return the appropriate HTTP response

We deliberately pass the basket in here as the one tied to the request isn't necessarily the correct one to use in placing the order. This can happen when a basket gets frozen.

**handle\_payment**(*order\_number, total, \*\*kwargs*)

Handle any payment processing and record payment sources and events.

This method is designed to be overridden within your project. The default is to do nothing as payment is domain-specific.

This method is responsible for handling payment and recording the payment sources (using the `add_payment_source` method) and payment events (using `add_payment_event`) so they can be linked to the order when it is saved later on.

**handle\_successful\_order**(*order*)

Handle the various steps required after an order has been successfully placed.

Override this view if you want to perform custom actions when an order is submitted.

**place\_order**(*order\_number, user, basket, shipping\_address, shipping\_method, shipping\_charge, order\_total, billing\_address=None, surcharges=None, \*\*kwargs*)

Writes the order out to the DB including the payment models

**restore\_frozen\_basket**()

Restores a frozen basket as the sole OPEN basket. Note that this also merges in any new products that have been added to a basket that has been created while payment.

**save\_payment\_details**(*order*)

Saves all payment-related details. This could include a billing address, payment sources and any order payment events.

**save\_payment\_events**(*order*)

Saves any relevant payment events for this order

**save\_payment\_sources**(*order*)

Saves any payment sources used in this order.

When the payment sources are created, the order model does not exist and so they need to have it set before saving.

**update\_address\_book**(*user, addr*)

Update the user's address book based on the new shipping address

**class** `oscar.apps.checkout.session.CheckoutSessionMixin`

Mixin to provide common functionality shared between checkout views.

All checkout views subclass this mixin. It ensures that all relevant checkout information is available in the template context.

**build\_submission(\*\*kwargs)**

Return a dict of data that contains everything required for an order submission. This includes payment details (if any).

This can be the right place to perform tax lookups and apply them to the basket.

**check\_basket\_is\_valid(request)**

Check that the basket is permitted to be submitted as an order. That is, all the basket lines are available to buy - nothing has gone out of stock since it was added to the basket.

**get\_billing\_address(shipping\_address)**

Return an unsaved instance of the billing address (if one exists)

This method only returns a billing address if the session has been used to store billing address information. It's also possible to capture billing address information as part of the payment details forms, which never get stored in the session. In that circumstance, the billing address can be set directly in the build\_submission dict.

**get\_order\_totals(basket, shipping\_charge, surcharges=None, \*\*kwargs)**

Returns the total for the order with and without tax

**get\_pre\_conditions(request)**

Return the pre-condition method names to run for this view

**get\_shipping\_address(basket)**

Return the (unsaved) shipping address for this checkout session.

If the shipping address was entered manually, then we instantiate a `ShippingAddress` model with the appropriate form data (which is saved in the session).

If the shipping address was selected from the user's address book, then we convert the `UserAddress` to a `ShippingAddress`.

The `ShippingAddress` instance is not saved as sometimes you need a shipping address instance before the order is placed. For example, if you are submitting fraud information as part of a payment request.

The `OrderPlacementMixin.create_shipping_address` method is responsible for saving a shipping address when an order is placed.

**get\_shipping\_method(basket, shipping\_address=None, \*\*kwargs)**

Return the selected shipping method instance from this checkout session

The shipping address is passed as we need to check that the method stored in the session is still valid for the shipping address.

**get\_skip\_conditions(request)**

Return the skip-condition method names to run for this view

## Forms

```
class oscar.apps.checkout.forms.GatewayForm(request=None, *args, **kwargs)
```

**clean()**

Hook for doing any extra form-wide cleaning after `Field.clean()` has been called on every field. Any `ValidationError` raised by this method will not be associated with a particular field; it will have a special-case association with the field named `'__all__'`.

**property media**

Return all media required to render the widgets on this form.

```
class oscar.apps.checkout.forms.ShippingAddressForm(*args, **kwargs)
```

**property media**

Return all media required to render the widgets on this form.

```
class oscar.apps.checkout.forms.ShippingMethodForm(*args, **kwargs)
```

**property media**

Return all media required to render the widgets on this form.

## Utils

```
class oscar.apps.checkout.calculators.OrderTotalCalculator(request=None)
```

Calculator class for calculating the order total.

```
class oscar.apps.checkout.utils.CheckoutSessionData(request)
```

Responsible for marshalling all the checkout session data

Multi-stage checkouts often require several forms to be submitted and their data persisted until the final order is placed. This class helps store and organise checkout form data until it is required to write out the final order.

**bill\_to\_new\_address**(*address\_fields*)

Store address fields for a billing address.

**bill\_to\_shipping\_address**()

Record fact that the billing address is to be the same as the shipping address.

**bill\_to\_user\_address**(*address*)

Set an address from a user's address book as the billing address

**Address** The address object

**billing\_address\_same\_as\_shipping**()

Record fact that the billing address is to be the same as the shipping address.

**billing\_user\_address\_id**()

Return the ID of the user address being used for billing

**flush**()

Flush all session data

**is\_billing\_address\_set**()

Test whether a billing address has been stored in the session.

This can be from a new address or re-using an existing address.

**is\_shipping\_address\_set**()

Test whether a shipping address has been stored in the session.

This can be from a new address or re-using an existing address.

**is\_shipping\_method\_set**(*basket*)

Test if a valid shipping method is stored in the session

**new\_billing\_address\_fields**()

Return fields for a billing address

**new\_shipping\_address\_fields**()

Return shipping address fields

**ship\_to\_new\_address**(*address\_fields*)  
 Use a manually entered address as the shipping address

**ship\_to\_user\_address**(*address*)  
 Use an user address (from an address book) as the shipping address.

**shipping\_method\_code**(*basket*)  
 Return the shipping method code

**shipping\_user\_address\_id**()  
 Return user address id

**use\_free\_shipping**()  
 Set “free shipping” code to session

**use\_shipping\_method**(*code*)  
 Set shipping method code to session

**user\_address\_id**()  
 Return user address id

## Communication

The Communication app is used to manage emails and notifications to users. If `OSCAR_SAVE_SENT_EMAILS_TO_DB` is `True`, then all sent emails are saved to the database as instances of `oscar.apps.communication.models.Email`

The `Dispatcher` class from `oscar.apps.communication.utils` is used to send emails and notifications.

## Abstract models

```
class oscar.apps.communication.abstract_models.AbstractCommunicationEventType(*args,
                                                                              **kwargs)
```

A ‘type’ of communication. Like an order confirmation email.

**get\_messages**(*ctx=None*)

Return a dict of templates with the context merged in

We look first at the field templates but fail over to a set of file templates that follow a conventional path.

**name**

Name is the friendly description of an event for use in the admin

```
class oscar.apps.communication.abstract_models.AbstractEmail(*args, **kwargs)
```

This is a record of an email sent to a customer.

## Utils

## Customer

The customer app includes models to record product alerts and sent emails. It also contains the views that allow a customer to manage their data (profile information, shipping addresses, etc.)

## Abstract models

**class** oscar.apps.customer.abstract\_models.**AbstractProductAlert**(\*args, \*\*kwargs)

An alert for when a product comes back in stock

**save**(\*args, \*\*kwargs)

Save the current instance. Override this in a subclass if you want to control the saving process.

The 'force\_insert' and 'force\_update' parameters can be used to insist that the "save" must be an SQL insert or update (or equivalent for non-SQL backends), respectively. Normally, they should not be set.

**class** oscar.apps.customer.abstract\_models.**AbstractUser**(\*args, \*\*kwargs)

An abstract base user suitable for use in Oscar projects.

This is basically a copy of the core AbstractUser model but without a username field

**clean**()

Hook for doing any extra model-wide validation after clean() has been called on every field by self.clean\_fields. Any ValidationError raised by this method will not be associated with a particular field; it will have a special-case association with the field defined by NON\_FIELD\_ERRORS.

**email\_user**(subject, message, from\_email=None, \*\*kwargs)

Send an email to this user.

**get\_full\_name**()

Return the first\_name plus the last\_name, with a space in between.

**get\_short\_name**()

Return the short name for the user.

**save**(\*args, \*\*kwargs)

Save the current instance. Override this in a subclass if you want to control the saving process.

The 'force\_insert' and 'force\_update' parameters can be used to insist that the "save" must be an SQL insert or update (or equivalent for non-SQL backends), respectively. Normally, they should not be set.

## Forms

**class** oscar.apps.customer.forms.**ConfirmPasswordForm**(user, \*args, \*\*kwargs)

Extends the standard django AuthenticationForm, to support 75 character usernames. 75 character usernames are needed to support the EmailOrUsername authentication backend.

**property media**

Return all media required to render the widgets on this form.

**class** oscar.apps.customer.forms.**EmailAuthenticationForm**(host, \*args, \*\*kwargs)

Extends the standard django AuthenticationForm, to support 75 character usernames. 75 character usernames are needed to support the EmailOrUsername authentication backend.

**property media**

Return all media required to render the widgets on this form.

**class** oscar.apps.customer.forms.**EmailUserCreationForm**(host=None, \*args, \*\*kwargs)

**clean\_email**()

Checks for existing users with the supplied email address.

**property media**

Return all media required to render the widgets on this form.

**save**(*commit=True*)

Save this form's self.instance object if *commit=True*. Otherwise, add a `save_m2m()` method to the form which can be called after the instance is saved manually at a later time. Return the model instance.

```
class oscar.apps.customer.forms.OrderSearchForm(data=None, files=None, auto_id='id_%s',
                                                prefix=None, initial=None, error_class=<class
                                                'django.forms.utils.ErrorList'>, label_suffix=None,
                                                empty_permitted=False, field_order=None,
                                                use_required_attribute=None, renderer=None)
```

**clean()**

Hook for doing any extra form-wide cleaning after `Field.clean()` has been called on every field. Any `ValidationError` raised by this method will not be associated with a particular field; it will have a special-case association with the field named `'__all__'`.

**description()**

Uses the form's data to build a useful description of what orders are listed.

**property media**

Return all media required to render the widgets on this form.

```
class oscar.apps.customer.forms.PasswordResetForm(data=None, files=None, auto_id='id_%s',
                                                  prefix=None, initial=None, error_class=<class
                                                  'django.forms.utils.ErrorList'>, label_suffix=None,
                                                  empty_permitted=False, field_order=None,
                                                  use_required_attribute=None, renderer=None)
```

This form takes the same structure as its parent from `django.contrib.auth`

**property media**

Return all media required to render the widgets on this form.

**save**(*domain\_override=None, request=None, \*\*kwargs*)

Generates a one-use only link for resetting password and sends to the user.

```
class oscar.apps.customer.forms.ProductAlertForm(user, product, *args, **kwargs)
```

**clean()**

Hook for doing any extra form-wide cleaning after `Field.clean()` has been called on every field. Any `ValidationError` raised by this method will not be associated with a particular field; it will have a special-case association with the field named `'__all__'`.

**property media**

Return all media required to render the widgets on this form.

**save**(*commit=True*)

Save this form's self.instance object if *commit=True*. Otherwise, add a `save_m2m()` method to the form which can be called after the instance is saved manually at a later time. Return the model instance.

```
oscar.apps.customer.forms.ProfileForm
```

alias of `oscar.apps.customer.forms.UserForm`

```
class oscar.apps.customer.forms.UserForm(user, *args, **kwargs)
```

**clean\_email()**

Make sure that the email address is always unique as it is used instead of the username. This is necessary because the uniqueness of email addresses is *not* enforced on the model level in `django.contrib.auth.models.User`.

**property media**

Return all media required to render the widgets on this form.

**Views**

**class** oscar.apps.customer.views.**AccountAuthView**(\*\*kwargs)

This is actually a slightly odd double form view that allows a customer to either login or register.

**login\_form\_class**

alias of *oscar.apps.customer.forms.EmailAuthenticationForm*

**registration\_form\_class**

alias of *oscar.apps.customer.forms.EmailUserCreationForm*

**class** oscar.apps.customer.views.**AccountRegistrationView**(\*\*kwargs)

**form\_class**

alias of *oscar.apps.customer.forms.EmailUserCreationForm*

**form\_valid(form)**

If the form is valid, redirect to the supplied URL.

**get(request, \*args, \*\*kwargs)**

Handle GET requests: instantiate a blank version of the form.

**get\_context\_data(\*args, \*\*kwargs)**

Insert the form into the context dict.

**get\_form\_kwargs()**

Return the keyword arguments for instantiating the form.

**class** oscar.apps.customer.views.**AccountSummaryView**(\*\*kwargs)

View that exists for legacy reasons and customisability. It commonly gets called when the user clicks on “Account” in the navbar.

Oscar defaults to just redirecting to the profile summary page (and that redirect can be configured via `OSCAR_ACCOUNT_REDIRECT_URL`), but it’s also likely you want to display an ‘account overview’ page or such like. The presence of this view allows just that, without having to change a lot of templates.

**class** oscar.apps.customer.views.**AddressChangeStatusView**(\*\*kwargs)

Sets an address as default\_for\_(billing|shipping)

**class** oscar.apps.customer.views.**AddressCreateView**(\*\*kwargs)

**form\_class**

alias of *oscar.apps.address.forms.UserAddressForm*

**get\_context\_data(\*\*kwargs)**

Insert the form into the context dict.

**get\_form\_kwargs()**

Return the keyword arguments for instantiating the form.

**get\_success\_url()**

Return the URL to redirect to after processing a valid form.

**model**

alias of *oscar.apps.address.models.UserAddress*

```

class oscar.apps.customer.views.AddressDeleteView(**kwargs)

    get_queryset()
        Return the QuerySet that will be used to look up the object.

        This method is called by the default implementation of get_object() and may not be called if get_object() is overridden.

    model
        alias of oscar.apps.address.models.UserAddress

class oscar.apps.customer.views.AddressListView(**kwargs)
    Customer address book

    get_queryset()
        Return customer's addresses

class oscar.apps.customer.views.AddressUpdateView(**kwargs)

    form_class
        alias of oscar.apps.address.forms.UserAddressForm

    get_context_data(**kwargs)
        Insert the form into the context dict.

    get_form_kwargs()
        Return the keyword arguments for instantiating the form.

    get_queryset()
        Return the QuerySet that will be used to look up the object.

        This method is called by the default implementation of get_object() and may not be called if get_object() is overridden.

    get_success_url()
        Return the URL to redirect to after processing a valid form.

    model
        alias of oscar.apps.address.models.UserAddress

class oscar.apps.customer.views.AnonymousOrderDetailView(**kwargs)

    get_object(queryset=None)
        Return the object the view is displaying.

        Require self.queryset and a pk or slug argument in the URLconf. Subclasses can override this to return any object.

    model
        alias of oscar.apps.order.models.Order

class oscar.apps.customer.views.ChangePasswordView(**kwargs)

    form_class
        alias of django.contrib.auth.forms.PasswordChangeForm

    form_valid(form)
        If the form is valid, redirect to the supplied URL.

```

**get\_form\_kwargs()**

Return the keyword arguments for instantiating the form.

**class** oscar.apps.customer.views.**EmailDetailView**(\*\*kwargs)

Customer email

**get\_object**(queryset=None)

Return the object the view is displaying.

Require *self.queryset* and a *pk* or *slug* argument in the URLconf. Subclasses can override this to return any object.

**get\_page\_title()**

Append email subject to page title

**class** oscar.apps.customer.views.**EmailHistoryView**(\*\*kwargs)

**get\_queryset()**

Return Queryset of Email instances, that has been sent to the currently authenticated user.

**class** oscar.apps.customer.views.**LogoutView**(\*\*kwargs)

**class** oscar.apps.customer.views.**OrderDetailView**(\*\*kwargs)

**do\_reorder**(order)

'Re-order' a previous order.

This puts the contents of the previous order into your basket

**get\_object**(queryset=None)

Return the object the view is displaying.

Require *self.queryset* and a *pk* or *slug* argument in the URLconf. Subclasses can override this to return any object.

**get\_page\_title()**

Order number as page title

**get\_template\_names()**

Return a list of template names to be used for the request. May not be called if *render\_to\_response()* is overridden. Return the following list:

- the value of *template\_name* on the view (if provided)
- the contents of the *template\_name\_field* field on the object instance that the view is operating upon (if available)
- <app\_label>/<model\_name><template\_name\_suffix>.html

**model**

alias of oscar.apps.order.models.Order

**class** oscar.apps.customer.views.**OrderHistoryView**(\*\*kwargs)

Customer order history

**form\_class**

alias of *oscar.apps.customer.forms.OrderSearchForm*

**get\_context\_data**(\*args, \*\*kwargs)

Get the context for this view.

**get\_queryset()**

Return Queryset of Order instances for the currently authenticated user.

```

model
    alias of oscar.apps.order.models.Order

class oscar.apps.customer.views.OrderLineView(**kwargs)
    Customer order line

    get_object(queryset=None)
        Return the object the view is displaying.

        Require self.queryset and a pk or slug argument in the URLconf. Subclasses can override this to return any
        object.

class oscar.apps.customer.views.ProfileDeleteView(**kwargs)

    form_class
        alias of oscar.apps.customer.forms.ConfirmPasswordForm

    form_valid(form)
        If the form is valid, redirect to the supplied URL.

    get_form_kwargs()
        Return the keyword arguments for instantiating the form.

class oscar.apps.customer.views.ProfileUpdateView(**kwargs)

    form_class
        alias of oscar.apps.customer.forms.UserForm

    form_valid(form)
        If the form is valid, redirect to the supplied URL.

    get_form_kwargs()
        Return the keyword arguments for instantiating the form.

class oscar.apps.customer.views.ProfileView(**kwargs)

    get_model_field_data(model_class, field_name)
        Extract the verbose name and value for a model's field value

```

## Alerts

The alerts module provides functionality that allows customers to sign up for email alerts when out-of-stock products come back in stock. A form for signing up is displayed on product detail pages when a product is not in stock.

If the `OSCAR_EAGER_ALERTS` setting is `True`, then alerts are sent as soon as affected stock records are updated. Alternatively, the management command `oscar_send_alerts` can be used to send alerts periodically.

The context for the alert email body contains a `hurry` variable that is set to `True` if the number of active alerts for a product is greater than the quantity of the product available in stock.

### CustomerDispatcher

`oscar.apps.customer.utils.CustomerDispatcher` is used to send customer emails (e.g., registration, password reset, order confirmations).

### AlertsDispatcher

`oscar.apps.customer.alerts.utils.AlertsDispatcher` is used to send product alerts.

### Dashboard

The dashboard is the backend interface for managing the store. That includes the product catalogue, orders and stock, offers etc. It is intended as a complete replacement of the Django admin interface. The app itself only contains a view that serves as a kind of homepage, and some logic for managing the navigation (in `nav.py`). There's several sub-apps that are responsible for managing the different parts of the Oscar store.

### Permission-based dashboard

Staff users (users with `is_staff==True`) get access to all views in the dashboard. To better support Oscar's use for marketplace scenarios, the permission-based dashboard has been introduced. If a non-staff user has the `partner.dashboard_access` permission set, they are given access to a subset of views, and their access to products and orders is limited.

[\*AbstractPartner\*](#) instances have a [\*users\*](#) field. Prior to Oscar 0.6, this field was not used. Since Oscar 0.6, it is used solely for modelling dashboard access.

If a non-staff user with the `partner.dashboard_access` permission is in [\*users\*](#), they can:

- Create products. It is enforced that at least one stock record's partner has the current user in [\*users\*](#).
- Update products. At least one stock record must have the user in the stock record's partner's [\*users\*](#).
- Delete and list products. Limited to products the user is allowed to update.
- Managing orders. Similar to products, a user get access if one of an order's lines is associated with a matching partner. By default, user will get access to all lines of the order, even though supplies only one of them. If you need user to see only own lines or apply additional filtering - you can customise `get_order_lines()` method.

For many marketplace scenarios, it will make sense to ensure at checkout that a basket only contains lines from one partner. Please note that the dashboard currently ignores any other permissions, including [Django's default permissions](#).

---

**Note:** The permission-based dashboard currently does not support parent or child products. Supporting this requires a modelling change. If you require this, please get in touch so we can first learn about your use case.

---

## Abstract models

None.

## Views

**class** `oscar.apps.dashboard.views.IndexView(**kwargs)`

An overview view which displays several reports about the shop.

Supports the permission-based dashboard. It is recommended to add a `oscar/dashboard/index_nonstaff.html` template because Oscar's default template will display potentially sensitive store information.

**get\_active\_vouchers()**

Get all active vouchers. The returned `Queryset` of vouchers is filtered by end date greater then the current date.

**get\_hourly\_report**(*orders*, *hours*=24, *segments*=10)

Get report of order revenue split up in hourly chunks. A report is generated for the last *hours* (default=24) from the current time. The report provides `max_revenue` of the hourly order revenue sum, `y-range` as the labelling for the y-axis in a template and `order_total_hourly`, a list of properties for hourly chunks. *segments* defines the number of labelling segments used for the y-axis when generating the y-axis labels (default=10).

**get\_template\_names()**

Return a list of template names to be used for the request. Must return a list. May not be called if `render_to_response()` is overridden.

**class** `oscar.apps.dashboard.views.LoginView(**kwargs)`

**authentication\_form**

alias of `django.contrib.auth.forms.AuthenticationForm`

**get\_success\_url()**

Return the URL to redirect to after processing a valid form.

## Offers

Oscar ships with a powerful and flexible offers engine which is contained in the offers app. It is based around the concept of 'conditional offers' - that is, a basket must satisfy some condition in order to qualify for a benefit.

Oscar's dashboard can be used to administer offers.

## Structure

A conditional offer is composed of several components:

- Customer-facing information - this is the name, description and type of an offer. These will be visible on offer-browsing pages as well as within the basket and checkout pages.
- Availability - this determines when an offer is available.
- Condition - this determines when a customer qualifies for the offer (e.g. spend £20 on DVDs). There are various condition types available.
- Benefit - this determines the discount a customer receives. The discount can be against the basket cost or the shipping for an order.

### Availability

An offer's availability can be controlled by several settings which can be used in isolation or combination:

- Date range - a date can be set, outside of which the offer is unavailable.
- Max global applications - the number of times an offer can be used can be capped. Note that an offer can be used multiple times within the same order so this isn't the same as limiting the number of orders that can use an offer.
- Max user applications - the number of times a particular user can use an offer. This makes most sense to use in sites that don't allow anonymous checkout as it could be circumvented by submitting multiple anonymous orders.
- Max basket applications - the number of times an offer can be used for a single basket/order.
- Max discount - the maximum amount of discount an offer can give across all orders. For instance, you might have a marketing budget of £10000 and so you could set the max discount to this value to ensure that once £10000 worth of benefit had been awarded, the offer would no longer be available. Note that the total discount would exceed £10000 as it would have to cross this threshold to disable the offer.

### Conditions

There are 3 built-in condition types that can be created via the dashboard. Each needs to be linked with a range object, which is subset of the product catalogue. Ranges are created independently in the dashboard.

- Count-based - i.e. a customer must buy X products from the condition range
- Coverage-based - i.e. a customer must buy X DISTINCT products from the condition range. This can be used to create "bundle" offers.
- Value-based - i.e. a customer must spend X on products from the condition range

It is also possible to create custom conditions in Python and register these so they are available to be selected within the dashboard. For instance, you could create a condition that specifies that the user must have been registered for over a year to qualify for the offer.

Under the hood, conditions are defined by 3 attributes: a range, a type and a value.

### Benefits

There are several types of built-in benefit, which fall into one of two categories: benefits that give a basket discount, and those that give a shipping discount.

Basket benefits:

- Fixed discount - i.e. get £5 off DVDs
- Percentage discount - i.e. get 25% off books
- Fixed price - i.e. get any DVD for £8
- Multi-buy - i.e. get the cheapest product that meets the condition for free

Shipping benefits (these largely mirror the basket benefits):

- Fixed discount - i.e. £5 off shipping
- Percentage discount - i.e. get 25% off shipping
- Fixed price - i.e. get shipping for £8

Like conditions, it is possible to create a custom benefit. An example might be to allow customers to earn extra credits/points when they qualify for some offer. For example, spend £100 on perfume, get 500 credits (note credits don't exist in core Oscar but can be implemented using the 'accounts' plugin).

Under the hood, benefits are modelled by 4 attributes: a range, a type, a value and a setting for the maximum number of basket items that can be affected by a benefit. This last settings is useful for limiting the scope of an offer. For instance, you can create a benefit that gives 40% off ONE products from a given range by setting the max affected items to 1. Without this setting, the benefit would give 40% off ALL products from the range.

Benefits are slightly tricky in that some types don't require a range and ignore the value of the max items setting.

## Examples

Here's some example offers:

### *3 for 2 on books*

1. Create a range for all books.
2. Use a **count-based** condition that links to this range with a value of 3.
3. Use a **multibuy** benefit with no value (the value is implicitly 1)

### *Spend £20 on DVDs, get 25% off*

1. Create a range for all DVDs.
2. Use a **value-based** condition that links to this range with a value of 20.
3. Use a **percentage discount** benefit that links to this range and has a value of 25.

### *Buy 2 Lonely Planet books, get £5 off a Lonely Planet DVD*

1. Create a range for Lonely Planet books and another for Lonely Planet DVDs
2. Use a **count-based** condition linking to the book range with a value of 2
3. Use a **fixed discount** benefit that links to the DVD range and has a value of 5.

More to come...

## Abstract models

**class** oscar.apps.offer.abstract\_models.**AbstractCondition**(\*args, \*\*kwargs)

A condition for an offer to be applied. You can either specify a custom proxy class, or need to specify a type, range and value.

**can\_apply\_condition**(line)

Determines whether the condition can be applied to a given basket line

**clean**()

Hook for doing any extra model-wide validation after `clean()` has been called on every field by `self.clean_fields`. Any `ValidationError` raised by this method will not be associated with a particular field; it will have a special-case association with the field defined by `NON_FIELD_ERRORS`.

**get\_applicable\_lines**(offer, basket, most\_expensive\_first=True)

Return line data for the lines that can be consumed by this condition

**is\_partially\_satisfied**(offer, basket)

Determine if the basket partially meets the condition. This is useful for up-selling messages to entice customers to buy something more in order to qualify for an offer.

**is\_satisfied**(*offer, basket*)

Determines whether a given basket meets this condition. This is stubbed in this top-class object. The subclassing proxies are responsible for implementing it correctly.

**class** oscar.apps.offer.abstract\_models.**AbstractConditionalOffer**(\*args, \*\*kwargs)

A conditional offer (e.g. buy 1, get 10% off)

**apply\_benefit**(*basket*)

Applies the benefit to the given basket and returns the discount.

**apply\_deferred\_benefit**(*basket, order, application*)

Applies any deferred benefits. These are things like adding loyalty points to someone's account.

**availability\_description**()

Return a description of when this offer is available

**clean**()

Hook for doing any extra model-wide validation after clean() has been called on every field by self.clean\_fields. Any ValidationError raised by this method will not be associated with a particular field; it will have a special-case association with the field defined by NON\_FIELD\_ERRORS.

**get\_max\_applications**(*user=None*)

Return the number of times this offer can be applied to a basket for a given user.

**is\_available**(*user=None, test\_date=None*)

Test whether this offer is available to be used

**products**()

Return a queryset of products in this offer

**save**(\*args, \*\*kwargs)

Save the current instance. Override this in a subclass if you want to control the saving process.

The 'force\_insert' and 'force\_update' parameters can be used to insist that the "save" must be an SQL insert or update (or equivalent for non-SQL backends), respectively. Normally, they should not be set.

**class** oscar.apps.offer.abstract\_models.**AbstractRange**(\*args, \*\*kwargs)

Represents a range of products that can be used within an offer.

Ranges only support adding parent or stand-alone products. Offers will consider child products automatically.

**add\_product**(*product, display\_order=None*)

Add product to the range

When adding product that is already in the range, prevent re-adding it. If display\_order is specified, update it.

Default display\_order for a new product in the range is 0; this puts the product at the top of the list.

**all\_products**()

Return a queryset containing all the products in the range

This includes included\_products plus the products contained in the included classes and categories, minus the products in excluded\_products.

**property is\_editable**

Test whether this range can be edited in the dashboard.

**property is\_reorderable**

Test whether products for the range can be re-ordered.

**product\_queryset**

cached queryset of all the products in the Range

**remove\_product**(*product*)

Remove product from range. To save on queries, this function does not check if the product is in fact in the range.

**class** oscar.apps.offer.abstract\_models.**AbstractRangeProduct**(\*args, \*\*kwargs)

Allow ordering products inside ranges Exists to allow customising.

## Models

**class** oscar.apps.offer.models.**AbsoluteDiscountBenefit**(\*args, \*\*kwargs)

An offer benefit that gives an absolute discount

**exception** DoesNotExist

**exception** MultipleObjectsReturned

**property** description

A description of the benefit/condition. Defaults to the name. May contain HTML.

**property** name

A text description of the benefit/condition. Every proxy class has to implement it.

This is used in the dropdowns within the offer dashboard.

**class** oscar.apps.offer.models.**BasketDiscount**(*amount*)

For when an offer application leads to a simple discount off the basket's total

**property** is\_successful

Returns True if the discount is greater than zero

**class** oscar.apps.offer.models.**Benefit**(*id, range, type, value, max\_affected\_items, proxy\_class*)

**exception** DoesNotExist

**exception** MultipleObjectsReturned

**class** oscar.apps.offer.models.**Condition**(*id, range, type, value, proxy\_class*)

**exception** DoesNotExist

**exception** MultipleObjectsReturned

**class** oscar.apps.offer.models.**ConditionalOffer**(*id, name, slug, description, offer\_type, exclusive, status, condition, benefit, priority, start\_datetime, end\_datetime, max\_global\_applications, max\_user\_applications, max\_basket\_applications, max\_discount, total\_discount, num\_applications, num\_orders, redirect\_url, date\_created*)

**exception** DoesNotExist

**exception** MultipleObjectsReturned

**class** oscar.apps.offer.models.**CountCondition**(\*args, \*\*kwargs)

An offer condition dependent on the NUMBER of matching items from the basket.

**exception** DoesNotExist

**exception** MultipleObjectsReturned

**consume\_items**(*offer, basket, affected\_lines*)

Marks items within the basket lines as consumed so they can't be reused in other offers.

**Basket** The basket

**Affected\_lines** The lines that have been affected by the discount. This should be list of tuples (line, discount, qty)

**property description**

A description of the benefit/condition. Defaults to the name. May contain HTML.

**is\_partially\_satisfied**(*offer, basket*)

Determine if the basket partially meets the condition. This is useful for up-selling messages to entice customers to buy something more in order to qualify for an offer.

**is\_satisfied**(*offer, basket*)

Determines whether a given basket meets this condition

**property name**

A text description of the benefit/condition. Every proxy class has to implement it.

This is used in the dropdowns within the offer dashboard.

**class** oscar.apps.offer.models.**CoverageCondition**(\*args, \*\*kwargs)

An offer condition dependent on the number of DISTINCT matching items from the basket.

**exception DoesNotExist**

**exception MultipleObjectsReturned**

**consume\_items**(*offer, basket, affected\_lines*)

Marks items within the basket lines as consumed so they can't be reused in other offers.

**property description**

A description of the benefit/condition. Defaults to the name. May contain HTML.

**is\_partially\_satisfied**(*offer, basket*)

Determine if the basket partially meets the condition. This is useful for up-selling messages to entice customers to buy something more in order to qualify for an offer.

**is\_satisfied**(*offer, basket*)

Determines whether a given basket meets this condition

**property name**

A text description of the benefit/condition. Every proxy class has to implement it.

This is used in the dropdowns within the offer dashboard.

**class** oscar.apps.offer.models.**FixedPriceBenefit**(\*args, \*\*kwargs)

An offer benefit that gives the items in the condition for a fixed price. This is useful for “bundle” offers.

Note that we ignore the benefit range here and only give a fixed price for the products in the condition range. The condition cannot be a value condition.

We also ignore the max\_affected\_items setting.

**exception DoesNotExist**

**exception MultipleObjectsReturned**

**property name**

A text description of the benefit/condition. Every proxy class has to implement it.

This is used in the dropdowns within the offer dashboard.

```
class oscar.apps.offer.models.MultibuyDiscountBenefit(id, range, type, value, max_affected_items,
                                                    proxy_class)

    exception DoesNotExist
    exception MultipleObjectsReturned
    property description
        A description of the benefit/condition. Defaults to the name. May contain HTML.
    property name
        A text description of the benefit/condition. Every proxy class has to implement it.

        This is used in the dropdowns within the offer dashboard.

class oscar.apps.offer.models.PercentageDiscountBenefit(*args, **kwargs)
    An offer benefit that gives a percentage discount

    exception DoesNotExist
    exception MultipleObjectsReturned
    property description
        A description of the benefit/condition. Defaults to the name. May contain HTML.
    property name
        A text description of the benefit/condition. Every proxy class has to implement it.

        This is used in the dropdowns within the offer dashboard.

class oscar.apps.offer.models.PostOrderAction(description)
    For when an offer condition is met but the benefit is deferred until after the order has been placed. E.g. buy 2
    books and get 100 loyalty points.

class oscar.apps.offer.models.Range(id, name, slug, description, is_public, includes_all_products,
                                    proxy_class, date_created)

    exception DoesNotExist
    exception MultipleObjectsReturned

class oscar.apps.offer.models.RangeProduct(id, range, product, display_order)

    exception DoesNotExist
    exception MultipleObjectsReturned

class oscar.apps.offer.models.RangeProductFileUpload(id, range, filepath, size, uploaded_by,
                                                       date_uploaded, status, error_message,
                                                       date_processed, num_new_skus,
                                                       num_unknown_skus, num_duplicate_skus)

    exception DoesNotExist
    exception MultipleObjectsReturned

class oscar.apps.offer.models.ShippingAbsoluteDiscountBenefit(id, range, type, value,
                                                                max_affected_items, proxy_class)

    exception DoesNotExist
```

**exception MultipleObjectsReturned**

**property name**

A text description of the benefit/condition. Every proxy class has to implement it.

This is used in the dropdowns within the offer dashboard.

**class** oscar.apps.offer.models.**ShippingBenefit**(*id, range, type, value, max\_affected\_items, proxy\_class*)

**exception DoesNotExist**

**exception MultipleObjectsReturned**

**class** oscar.apps.offer.models.**ShippingDiscount**

For when an offer application leads to a discount from the shipping cost

**class** oscar.apps.offer.models.**ShippingFixedPriceBenefit**(*id, range, type, value, max\_affected\_items, proxy\_class*)

**exception DoesNotExist**

**exception MultipleObjectsReturned**

**property name**

A text description of the benefit/condition. Every proxy class has to implement it.

This is used in the dropdowns within the offer dashboard.

**class** oscar.apps.offer.models.**ShippingPercentageDiscountBenefit**(*id, range, type, value, max\_affected\_items, proxy\_class*)

**exception DoesNotExist**

**exception MultipleObjectsReturned**

**property name**

A text description of the benefit/condition. Every proxy class has to implement it.

This is used in the dropdowns within the offer dashboard.

**class** oscar.apps.offer.models.**ValueCondition**(\*args, \*\*kwargs)

An offer condition dependent on the VALUE of matching items from the basket.

**exception DoesNotExist**

**exception MultipleObjectsReturned**

**consume\_items**(*offer, basket, affected\_lines*)

Marks items within the basket lines as consumed so they can't be reused in other offers.

We allow lines to be passed in as sometimes we want them sorted in a specific order.

**property description**

A description of the benefit/condition. Defaults to the name. May contain HTML.

**is\_partially\_satisfied**(*offer, basket*)

Determine if the basket partially meets the condition. This is useful for up-selling messages to entice customers to buy something more in order to qualify for an offer.

**is\_satisfied**(*offer, basket*)

Determine whether a given basket meets this condition

**property name**

A text description of the benefit/condition. Every proxy class has to implement it.

This is used in the dropdowns within the offer dashboard.

**Views**

```
class oscar.apps.offer.views.OfferDetailView(**kwargs)
```

```
    get_context_data(**kwargs)
```

Get the context for this view.

```
    get_queryset()
```

Return a queryset of all *Product* instances related to the *ConditionalOffer*.

```
class oscar.apps.offer.views.OfferListView(**kwargs)
```

```
    get_queryset()
```

Return a queryset of active *ConditionalOffer* instances with an offer\_type of ConditionalOffer.SITE.

```
    model
```

alias of *oscar.apps.offer.models.ConditionalOffer*

```
class oscar.apps.offer.views.RangeDetailView(**kwargs)
```

```
    get_context_data(**kwargs)
```

Get the context for this view.

```
    get_queryset()
```

Return a queryset of all *Product* instances related to the *Range*.

**Order**

The order app handles processing of orders.

**Abstract models**

```
class oscar.apps.order.abstract_models.AbstractCommunicationEvent(*args, **kwargs)
```

An order-level event involving a communication to the customer, such as an confirmation email being sent.

```
class oscar.apps.order.abstract_models.AbstractLine(*args, **kwargs)
```

An order line

```
    classmethod all_statuses()
```

Return all possible statuses for an order line

```
    available_statuses()
```

Return all possible statuses that this order line can move to

```
    property description
```

Returns a description of this line including details of any line attributes.

**get\_event\_quantity**(*event*)

Fetches the ShippingEventQuantity instance for this line

Exists as a separate method so it can be overridden to avoid the DB query that's caused by get().

**has\_shipping\_event\_occurred**(*event\_type*, *quantity=None*)

Test whether this line has passed a given shipping event

**is\_available\_to\_reorder**(*basket*, *strategy*)

Test if this line can be re-ordered using the passed strategy and basket

**is\_payment\_event\_permitted**(*event\_type*, *quantity*)

Test whether a payment event with the given quantity is permitted.

Allow each payment event type to occur only once per quantity.

**is\_shipping\_event\_permitted**(*event\_type*, *quantity*)

Test whether a shipping event with the given quantity is permitted

This method should normally be overridden to ensure that the prerequisite shipping events have been passed for this line.

**payment\_event\_quantity**(*event\_type*)

Return the quantity of this line that has been involved in a payment event of the passed type.

**pipeline** = {}

Order status pipeline. This should be a dict where each (key, value) corresponds to a status and the possible statuses that can follow that one.

**set\_status**(*new\_status*)

Set a new status for this line

If the requested status is not valid, then InvalidLineStatus is raised.

**property shipping\_event\_breakdown**

Returns a dict of shipping events that this line has been through

**shipping\_event\_quantity**(*event\_type*)

Return the quantity of this line that has been involved in a shipping event of the passed type.

**property shipping\_status**

Returns a string summary of the shipping status of this line

**class** oscar.apps.order.abstract\_models.**AbstractLineAttribute**(\*args, \*\*kwargs)

An attribute of a line

**class** oscar.apps.order.abstract\_models.**AbstractLinePrice**(\*args, \*\*kwargs)

For tracking the prices paid for each unit within a line.

This is necessary as offers can lead to units within a line having different prices. For example, one product may be sold at 50% off as it's part of an offer while the remainder are full price.

**class** oscar.apps.order.abstract\_models.**AbstractOrder**(\*args, \*\*kwargs)

The main order model

**classmethod all\_statuses**()

Return all possible statuses for an order

**available\_statuses**()

Return all possible statuses that this order can move to

**property basket\_total\_before\_discounts\_excl\_tax**

Return basket total excluding tax but before discounts are applied

**property basket\_total\_before\_discounts\_incl\_tax**

Return basket total including tax but before discounts are applied

**property basket\_total\_excl\_tax**

Return basket total excluding tax

**property basket\_total\_incl\_tax**

Return basket total including tax

**cascade = {'Being processed': 'Being processed', 'Cancelled': 'Cancelled', 'Complete': 'Shipped'}**

Order status cascade pipeline. This should be a dict where each (key, value) pair corresponds to an *order* status and the corresponding *line* status that needs to be set when the order is set to the new status

**check\_verification\_hash(hash\_to\_check)**

Checks the received verification hash against this order number. Returns False if the verification failed, True otherwise.

**property num\_items**

Returns the number of items in this order.

**pipeline = {'Being processed': ('Complete', 'Cancelled'), 'Cancelled': (), 'Complete': (), 'Pending': ('Being processed', 'Cancelled')}**

Order status pipeline. This should be a dict where each (key, value) #: corresponds to a status and a list of possible statuses that can follow that one.

**save(\*args, \*\*kwargs)**

Save the current instance. Override this in a subclass if you want to control the saving process.

The ‘force\_insert’ and ‘force\_update’ parameters can be used to insist that the “save” must be an SQL insert or update (or equivalent for non-SQL backends), respectively. Normally, they should not be set.

**set\_status(new\_status)**

Set a new status for this order.

If the requested status is not valid, then `InvalidOrderStatus` is raised.

**property shipping\_status**

Return the last complete shipping event for this order.

**property total\_discount\_incl\_tax**

The amount of discount this order received

**class oscar.apps.order.abstract\_models.AbstractOrderDiscount(\*args, \*\*kwargs)**

A discount against an order.

Normally only used for display purposes so an order can be listed with discounts displayed separately even though in reality, the discounts are applied at the line level.

This has evolved to be a slightly misleading class name as this really track benefit applications which aren’t necessarily discounts.

**save(\*\*kwargs)**

Save the current instance. Override this in a subclass if you want to control the saving process.

The ‘force\_insert’ and ‘force\_update’ parameters can be used to insist that the “save” must be an SQL insert or update (or equivalent for non-SQL backends), respectively. Normally, they should not be set.

**class oscar.apps.order.abstract\_models.AbstractOrderNote(\*args, \*\*kwargs)**

A note against an order.

This are often used for audit purposes too. IE, whenever an admin makes a change to an order, we create a note to record what happened.

**class** oscar.apps.order.abstract\_models.**AbstractPaymentEvent**(\*args, \*\*kwargs)

A payment event for an order

For example:

- All lines have been paid for
- 2 lines have been refunded

**class** oscar.apps.order.abstract\_models.**AbstractPaymentEventType**(\*args, \*\*kwargs)

Payment event types are things like 'Paid', 'Failed', 'Refunded'.

These are effectively the transaction types.

**class** oscar.apps.order.abstract\_models.**AbstractShippingEvent**(\*args, \*\*kwargs)

An event is something which happens to a group of lines such as 1 item being dispatched.

**class** oscar.apps.order.abstract\_models.**AbstractShippingEventType**(\*args, \*\*kwargs)

A type of shipping/fulfilment event

E.g.: 'Shipped', 'Cancelled', 'Returned'

**class** oscar.apps.order.abstract\_models.**PaymentEventQuantity**(\*args, \*\*kwargs)

A “through” model linking lines to payment events

**exception** DoesNotExist

**exception** MultipleObjectsReturned

**class** oscar.apps.order.abstract\_models.**ShippingEventQuantity**(\*args, \*\*kwargs)

A “through” model linking lines to shipping events.

This exists to track the quantity of a line that is involved in a particular shipping event.

**exception** DoesNotExist

**exception** MultipleObjectsReturned

**save**(\*args, \*\*kwargs)

Save the current instance. Override this in a subclass if you want to control the saving process.

The 'force\_insert' and 'force\_update' parameters can be used to insist that the “save” must be an SQL insert or update (or equivalent for non-SQL backends), respectively. Normally, they should not be set.

## Order processing

**class** oscar.apps.order.processing.**EventHandler**(user=None, \*\*kwargs)

Handle requested order events.

This is an important class: it houses the core logic of your shop's order processing pipeline.

**are\_stock\_allocations\_available**(lines, line\_quantities)

Check whether stock records still have enough stock to honour the requested allocations.

Lines whose product doesn't track stock are disregarded, which means this method will return True if only non-stock-tracking-lines are passed. This means you can just throw all order lines to this method, without checking whether stock tracking is enabled or not. This is okay, as calling `consume_stock_allocations()` has no effect for non-stock-tracking lines.

**calculate\_payment\_event\_subtotal**(event\_type, lines, line\_quantities)

Calculate the total charge for the passed event type, lines and line quantities.

This takes into account the previous prices that have been charged for this event.

Note that shipping is not including in this subtotal. You need to subclass and extend this method if you want to include shipping costs.

**cancel\_stock\_allocations**(*order*, *lines=None*, *line\_quantities=None*)

Cancel the stock allocations for the passed lines.

If no lines/quantities are passed, do it for all lines.

**consume\_stock\_allocations**(*order*, *lines=None*, *line\_quantities=None*)

Consume the stock allocations for the passed lines.

If no lines/quantities are passed, do it for all lines.

**handle\_order\_status\_change**(*order*, *new\_status*, *note\_msg=None*)

Handle a requested order status change

This method is not normally called directly by client code. The main use-case is when an order is cancelled, which in some ways could be viewed as a shipping event affecting all lines.

**handle\_payment\_event**(*order*, *event\_type*, *amount*, *lines=None*, *line\_quantities=None*, *\*\*kwargs*)

Handle a payment event for a given order.

These should normally be called as part of handling a shipping event. It is rare to call to this method directly. It does make sense for refunds though where the payment event may be unrelated to a particular shipping event and doesn't directly correspond to a set of lines.

**handle\_shipping\_event**(*order*, *event\_type*, *lines*, *line\_quantities*, *\*\*kwargs*)

Handle a shipping event for a given order.

This is most common entry point to this class - most of your order processing should be modelled around shipping events. Shipping events can be used to trigger payment and communication events.

You will generally want to override this method to implement the specifics of you order processing pipeline.

**have\_lines\_passed\_shipping\_event**(*order*, *lines*, *line\_quantities*, *event\_type*)

Test whether the passed lines and quantities have been through the specified shipping event.

This is useful for validating if certain shipping events are allowed (i.e. you can't return something before it has shipped).

**validate\_shipping\_event**(*order*, *event\_type*, *lines*, *line\_quantities*, *\*\*kwargs*)

Test if the requested shipping event is permitted.

If not, raise InvalidShippingEvent

## Utils

**class** oscar.apps.order.utils.**OrderCreator**

Places the order by writing out the various models

**create\_additional\_line\_models**(*order*, *order\_line*, *basket\_line*)

Empty method designed to be overridden.

Some applications require additional information about lines, this method provides a clean place to create additional models that relate to a given line.

**create\_discount\_model**(*order*, *discount*)

Create an order discount model for each offer application attached to the basket.

**create\_line\_attributes**(*order*, *order\_line*, *basket\_line*)

Creates the batch line attributes.

**create\_line\_models**(*order, basket\_line, extra\_line\_fields=None*)

Create the batch line model.

You can set extra fields by passing a dictionary as the *extra\_line\_fields* value

**create\_line\_price\_models**(*order, order\_line, basket\_line*)

Creates the batch line price models

**create\_order\_model**(*user, basket, shipping\_address, shipping\_method, shipping\_charge, billing\_address, total, order\_number, status, request=None, surcharges=None, \*\*extra\_order\_fields*)

Create an order model.

**place\_order**(*basket, total, shipping\_method, shipping\_charge, user=None, shipping\_address=None, billing\_address=None, order\_number=None, status=None, request=None, surcharges=None, \*\*kwargs*)

Placing an order involves creating all the relevant models based on the basket and session data.

**record\_voucher\_usage**(*order, voucher, user*)

Updates the models that care about this voucher.

**update\_stock\_records**(*line*)

Update any relevant stock records for this order line

**class** `oscar.apps.order.utils.OrderDispatcher`(*logger=None, mail\_connection=None*)

Dispatcher to send concrete order related emails.

**create\_communication\_event**(*order, event\_type, dispatched\_messages*)

Create order communications event for audit.

**dispatch\_order\_messages**(*order, messages, event\_code, attachments=None, \*\*kwargs*)

Dispatch order-related messages to the customer.

**class** `oscar.apps.order.utils.OrderNumberGenerator`

Simple object for generating order numbers.

We need this as the order number is often required for payment which takes place before the order model has been created.

**order\_number**(*basket*)

Return an order number for a given basket

## Partner

The partner app mostly provides three abstract models. `oscar.apps.partner.abstract_models.AbstractPartner` and `oscar.apps.partner.abstract_models.AbstractStockRecord` are essential parts of Oscar's catalogue management.

## Abstract models

**class** `oscar.apps.partner.abstract_models.AbstractPartner`(\*args, \*\*kwargs)

A fulfilment partner. An individual or company who can fulfil products. E.g. for physical goods, somebody with a warehouse and means of delivery.

Creating one or more instances of the Partner model is a required step in setting up an Oscar deployment. Many Oscar deployments will only have one fulfilment partner.

**get\_address\_for\_stockrecord**(*stockrecord*)

Stock might be coming from different warehouses. Overriding this function allows selecting the correct PartnerAddress for the record. That can be useful when determining tax.

**property primary\_address**

Returns a partners primary address. Usually that will be the headquarters or similar.

This is a rudimentary implementation that raises an error if there's more than one address. If you actually want to support multiple addresses, you will likely need to extend `PartnerAddress` to have some field or flag to base your decision on.

**users**

A partner can have users assigned to it. This is used for access modelling in the permission-based dashboard

**class** `oscar.apps.partner.abstract_models.AbstractStockAlert(*args, **kwargs)`

A stock alert. E.g. used to notify users when a product is 'back in stock'.

**class** `oscar.apps.partner.abstract_models.AbstractStockRecord(*args, **kwargs)`

A stock record.

This records information about a product from a fulfilment partner, such as their SKU, the number they have in stock and price information.

Stockrecords are used by 'strategies' to determine availability and pricing information for the customer.

**allocate(*quantity*)**

Record a stock allocation.

This normally happens when a product is bought at checkout. When the product is actually shipped, then we 'consume' the allocation.

**can\_track\_allocations**

Return True if the Product is set for stock tracking.

**consume\_allocation(*quantity*)**

Consume a previous allocation

This is used when an item is shipped. We remove the original allocation and adjust the number in stock accordingly

**is\_allocation\_consumption\_possible(*quantity*)**

Test if a proposed stock consumption is permitted

**low\_stock\_threshold**

Threshold for low-stock alerts. When stock goes beneath this threshold, an alert is triggered so warehouse managers can order more.

**property net\_stock\_level**

The effective number in stock (e.g. available to buy).

This is correct property to show the customer, not the `num_in_stock` field as that doesn't account for allocations. This can be negative in some unusual circumstances

**num\_allocated**

The amount of stock allocated to orders but not fed back to the master stock system. A typical stock update process will set the `num_in_stock` variable to a new value and reset `num_allocated` to zero.

**num\_in\_stock**

Number of items in stock

**partner\_sku**

The fulfilment partner will often have their own SKU for a product, which we store here. This will sometimes be the same the product's UPC but not always. It should be unique per partner. See also [http://en.wikipedia.org/wiki/Stock-keeping\\_unit](http://en.wikipedia.org/wiki/Stock-keeping_unit)

## Strategy classes

**class** oscar.apps.partner.strategy.Base(*request=None*)

The base strategy class

Given a product, strategies are responsible for returning a `PurchaseInfo` instance which contains:

- The appropriate stockrecord for this customer
- A pricing policy instance
- An availability policy instance

**fetch\_for\_line**(*line, stockrecord=None*)

Given a basket line instance, fetch a `PurchaseInfo` instance.

This method is provided to allow purchase info to be determined using a basket line's attributes. For instance, "bundle" products often use basket line attributes to store SKUs of contained products. For such products, we need to look at the availability of each contained product to determine overall availability.

**fetch\_for\_parent**(*product*)

Given a parent product, fetch a `StockInfo` instance

**fetch\_for\_product**(*product, stockrecord=None*)

Given a product, return a `PurchaseInfo` instance.

The `PurchaseInfo` class is a named tuple with attributes:

- `price`: a pricing policy object.
- `availability`: an availability policy object.
- `stockrecord`: the stockrecord that is being used

If a stockrecord is passed, return the appropriate `PurchaseInfo` instance for that product and stockrecord is returned.

**class** oscar.apps.partner.strategy.Default(*request=None*)

Default stock/price strategy that uses the first found stockrecord for a product, ensures that stock is available (unless the product class indicates that we don't need to track stock) and charges zero tax.

**class** oscar.apps.partner.strategy.DeferredTax

Pricing policy mixin for use with the `Structured` base strategy. This mixin does not specify the product tax and is suitable to territories where tax isn't known until late in the checkout process.

**class** oscar.apps.partner.strategy.FixedRateTax

Pricing policy mixin for use with the `Structured` base strategy. This mixin applies a fixed rate tax to the base price from the product's stockrecord. The `price_incl_tax` is quantized to two decimal places. Rounding behaviour is `Decimal`'s default

**get\_exponent**(*stockrecord*)

This method serves as hook to be able to plug in support for a varying exponent based on the currency.

TODO: Needs tests.

**get\_rate**(*product, stockrecord*)

This method serves as hook to be able to plug in support for varying tax rates based on the product.

TODO: Needs tests.

**class** oscar.apps.partner.strategy.NoTax

Pricing policy mixin for use with the `Structured` base strategy. This mixin specifies zero tax and uses the price from the stockrecord.

**class** oscar.apps.partner.strategy.**PurchaseInfo**(*price, availability, stockrecord*)

**property availability**

Alias for field number 1

**property price**

Alias for field number 0

**property stockrecord**

Alias for field number 2

**class** oscar.apps.partner.strategy.**Selector**

Responsible for returning the appropriate strategy class for a given user/session.

This can be called in three ways:

- 1) Passing a request and user. This is for determining prices/availability for a normal user browsing the site.
- 2) Passing just the user. This is for offline processes that don't have a request instance but do know which user to determine prices for.
- 3) Passing nothing. This is for offline processes that don't correspond to a specific user, e.g., determining a price to store in a search index.

**strategy**(*request=None, user=None, \*\*kwargs*)

Return an instantiated strategy instance

**class** oscar.apps.partner.strategy.**StockRequired**

Availability policy mixin for use with the **Structured** base strategy. This mixin ensures that a product can only be bought if it has stock available (if stock is being tracked).

**class** oscar.apps.partner.strategy.**Structured**(*request=None*)

A strategy class which provides separate, overridable methods for determining the 3 things that a **PurchaseInfo** instance requires:

- 1) A stockrecord
- 2) A pricing policy
- 3) An availability policy

**availability\_policy**(*product, stockrecord*)

Return the appropriate availability policy

**fetch\_for\_parent**(*product*)

Given a parent product, fetch a **StockInfo** instance

**fetch\_for\_product**(*product, stockrecord=None*)

Return the appropriate **PurchaseInfo** instance.

This method is not intended to be overridden.

**pricing\_policy**(*product, stockrecord*)

Return the appropriate pricing policy

**select\_children\_stockrecords**(*product*)

Select appropriate stock record for all children of a product

**select\_stockrecord**(*product*)

Select the appropriate stockrecord

**class** oscar.apps.partner.strategy.**UK**(*request=None*)

Sample strategy for the UK that:

- **uses the first stockrecord for each product (effectively assuming** there is only one).
- requires that a product has stock available to be bought
- applies a fixed rate of tax on all products

This is just a sample strategy used for internal development. It is not recommended to be used in production, especially as the tax rate is hard-coded.

```
class oscar.apps.partner.strategy.US(request=None)
```

Sample strategy for the US.

- uses the first stockrecord for each product (effectively assuming there is only one).
- requires that a product has stock available to be bought
- doesn't apply a tax to product prices (normally this will be done after the shipping address is entered).

This is just a sample one used for internal development. It is not recommended to be used in production.

```
class oscar.apps.partner.strategy.UseFirstStockRecord
```

Stockrecord selection mixin for use with the Structured base strategy. This mixin picks the first (normally only) stockrecord to fulfil a product.

## Pricing policies

```
class oscar.apps.partner.prices.Base
```

The interface that any pricing policy must support

```
currency = None
```

Price currency (3 char code)

```
excl_tax = None
```

Price excluding tax

```
exists = False
```

Whether any prices exist

```
incl_tax = None
```

Price including tax

```
is_tax_known = False
```

Whether tax is known

```
retail = None
```

Retail price

```
tax = None
```

Price tax

```
class oscar.apps.partner.prices.FixedPrice(currency, excl_tax, tax=None)
```

This should be used for when the price of a product is known in advance.

It can work for when tax isn't known (like in the US).

Note that this price class uses the tax-exclusive price for offers, even if the tax is known. This may not be what you want. Use the TaxInclusiveFixedPrice class if you want offers to use tax-inclusive prices.

```
property is_tax_known: bool
```

Test whether the tax is known or not

**class** oscar.apps.partner.prices.**TaxInclusiveFixedPrice**(*currency, excl\_tax, tax*)  
 Specialised version of FixedPrice that must have tax passed. It also specifies that offers should use the tax-inclusive price (which is the norm in the UK).

**class** oscar.apps.partner.prices.**Unavailable**  
 This should be used as a pricing policy when a product is unavailable and no prices are known.

## Availability policies

**class** oscar.apps.partner.availability.**Available**  
 For when a product is always available, irrespective of stock level.

This might be appropriate for digital products where stock doesn't need to be tracked and the product is always available to buy.

**is\_purchase\_permitted**(*quantity*)  
 Test whether a proposed purchase is allowed  
 Should return a boolean and a reason

**class** oscar.apps.partner.availability.**Base**  
 Base availability policy.

**code** = ''  
 Availability code. This is used for HTML classes

**dispatch\_date** = None  
 When this item should be dispatched

**property is\_available\_to\_buy**  
 Test if this product is available to be bought. This is used for validation when a product is added to a user's basket.

**is\_purchase\_permitted**(*quantity*)  
 Test whether a proposed purchase is allowed  
 Should return a boolean and a reason

**message** = ''  
 A description of the availability of a product. This is shown on the product detail page, e.g., "In stock", "Out of stock" etc

**property short\_message**  
 A shorter version of the availability message, suitable for showing on browsing pages.

**class** oscar.apps.partner.availability.**StockRequired**(*num\_available*)  
 Allow a product to be bought while there is stock. This policy is instantiated with a stock number (*num\_available*). It ensures that the product is only available to buy while there is stock available.

This is suitable for physical products where back orders (e.g. allowing purchases when there isn't stock available) are not permitted.

**property code**  
 Code indicating availability status.

**is\_purchase\_permitted**(*quantity*)  
 Test whether a proposed purchase is allowed  
 Should return a boolean and a reason

**property message: str**  
 Full availability text, suitable for detail pages.

**property short\_message**

A shorter version of the availability message, suitable for showing on browsing pages.

**class** oscar.apps.partner.availability.Unavailable

Policy for when a product is unavailable

## Payment

The payment app contains models that capture how orders are paid for. It does not have any views.

### Abstract models

**class** oscar.apps.payment.abstract\_models.AbstractBankcard(\*args, \*\*kwargs)

Model representing a user's bankcard. This is used for two purposes:

1. The bankcard form will return an instance of this model that can be used with payment gateways. In this scenario, the instance will have additional attributes (start\_date, issue\_number, ccv (Card Code Verification)) that payment gateways need but that we don't save.
2. To keep a record of a user's bankcards and allow them to be re-used. This is normally done using the 'partner reference'.

**Warning:** Some of the fields of this model (name, expiry\_date) are considered "cardholder data" under PCI DSS v2. Hence, if you use this model and store those fields then the requirements for PCI compliance will be more stringent.

**save**(\*args, \*\*kwargs)

Save the current instance. Override this in a subclass if you want to control the saving process.

The 'force\_insert' and 'force\_update' parameters can be used to insist that the "save" must be an SQL insert or update (or equivalent for non-SQL backends), respectively. Normally, they should not be set.

**class** oscar.apps.payment.abstract\_models.AbstractSource(\*args, \*\*kwargs)

A source of payment for an order.

This is normally a credit card which has been pre-authorised for the order amount, but some applications will allow orders to be paid for using multiple sources such as cheque, credit accounts, gift cards. Each payment source will have its own entry.

This source object tracks how much money has been authorised, debited and refunded, which is useful when payment takes place in multiple stages.

**allocate**(amount, reference="", status="")

Convenience method for ring-fencing money against this source

**property amount\_available\_for\_refund**

Return the amount available to be refunded

**property balance**

Return the balance of this source

**create\_deferred\_transaction**(txn\_type, amount, reference=None, status=None)

Register the data for a transaction that can't be created yet due to FK constraints. This happens at checkout where create an payment source and a transaction but can't save them until the order model exists.

**debit**(amount=None, reference="", status="")

Convenience method for recording debits against this source

**refund**(*amount*, *reference=""*, *status=""*)

Convenience method for recording refunds against this source

**save**(\*args, \*\*kwargs)

Save the current instance. Override this in a subclass if you want to control the saving process.

The ‘force\_insert’ and ‘force\_update’ parameters can be used to insist that the “save” must be an SQL insert or update (or equivalent for non-SQL backends), respectively. Normally, they should not be set.

**class** oscar.apps.payment.abstract\_models.**AbstractSourceType**(\*args, \*\*kwargs)

A type of payment source.

This could be an external partner like PayPal or DataCash, or an internal source such as a managed account.

**class** oscar.apps.payment.abstract\_models.**AbstractTransaction**(\*args, \*\*kwargs)

A transaction for a particular payment source.

These are similar to the payment events within the order app but model a slightly different aspect of payment. Crucially, payment sources and transactions have nothing to do with the lines of the order while payment events do.

For example: \* A `pre-auth` with a bankcard gateway \* A `settle` with a credit provider (see `django-oscar-accounts`)

## Search

Oscar provides a search view that extends Haystack’s `FacetedSearchView` to provide better support for faceting.

- Facets are configured using the `OSCAR_SEARCH_FACETS` setting, which is used to configure the `SearchQuerySet` instance within the search application class.
- A simple search form is injected into each template context using a context processor `oscar.apps.search.context_processors.search_form`.

## Views

**class** oscar.apps.search.views.**FacetedSearchView**(\*args, \*\*kwargs)

A modified version of Haystack’s `FacetedSearchView`

Note that facets are configured when the `SearchQuerySet` is initialised. This takes place in the search application class.

See [https://django-haystack.readthedocs.io/en/v2.1.0/views\\_and\\_forms.html#facetedsearchform](https://django-haystack.readthedocs.io/en/v2.1.0/views_and_forms.html#facetedsearchform)

**extra\_context**()

Allows the addition of more context variables as needed.

Must return a dictionary.

**get\_results**()

Fetches the results via the form.

Returns an empty list if there’s no query to search with.

## Forms

**class** oscar.apps.search.forms.**BrowseCategoryForm**(\*args, \*\*kwargs)

Variant of SearchForm that returns all products (instead of none) if no query is specified.

**property** media

Return all media required to render the widgets on this form.

**no\_query\_found**()

Return Queryset of all the results.

**class** oscar.apps.search.forms.**SearchForm**(\*args, \*\*kwargs)

In Haystack, the search form is used for interpreting and sub-filtering the SQS.

**property** media

Return all media required to render the widgets on this form.

**property** selected\_multi\_facets

Validate and return the selected facets

**class** oscar.apps.search.forms.**SearchInput**(attrs=None)

Defining a search type widget

This is an HTML5 thing and works nicely with Safari, other browsers default back to using the default “text” type

## Utils

oscar.apps.search.facets.**base\_sqs**()

Return the base SearchQuerySet for Haystack searches.

## Shipping

See *How to configure shipping* for details on how shipping works in Oscar.

## Methods

**class** oscar.apps.shipping.methods.**Base**

Shipping method interface class

This is the superclass to the classes in this module. This allows using all shipping methods interchangeably (aka polymorphism).

The interface is all properties.

**calculate**(basket)

Return the shipping charge for the given basket

**code** = '\_\_default\_\_'

Used to store this method in the session. Each shipping method should have a unique code.

**description** = ''

A more detailed description of the shipping method shown to the customer during checkout. Can contain HTML.

**discount**(basket)

Return the discount on the standard shipping charge

```

is_discounted = False
    Whether the charge includes a discount

name = 'Default shipping'
    The name of the shipping method, shown to the customer during checkout

class oscar.apps.shipping.methods.FixedPrice(charge_excl_tax=None, charge_incl_tax=None)
    This shipping method indicates that shipping costs a fixed price and requires no special calculation.

    calculate(basket)
        Return the shipping charge for the given basket

class oscar.apps.shipping.methods.Free
    This shipping method specifies that shipping is free.

    calculate(basket)
        Return the shipping charge for the given basket

class oscar.apps.shipping.methods.NoShippingRequired
    This is a special shipping method that indicates that no shipping is actually required (e.g. for digital goods).

class oscar.apps.shipping.methods.OfferDiscount(method, offer)
    Wrapper class that applies a discount to an existing shipping method's charges.

    calculate_excl_discount(basket)
        Returns the shipping charge for the given basket without discount applied.

    property code
        Returns the code of the wrapped shipping method.

    property description
        Returns the description of the wrapped shipping method.

    property discount_name
        Returns the name of the applied Offer.

    property name
        Returns the name of the wrapped shipping method.

class oscar.apps.shipping.methods.TaxExclusiveOfferDiscount(method, offer)
    Wrapper class which extends OfferDiscount to be exclusive of tax.

    calculate(basket)
        Return the shipping charge for the given basket

    discount(basket)
        Return the discount on the standard shipping charge

class oscar.apps.shipping.methods.TaxInclusiveOfferDiscount(method, offer)
    Wrapper class which extends OfferDiscount to be inclusive of tax.

    calculate(basket)
        Return the shipping charge for the given basket

    calculate_excl_tax(base_charge, incl_tax)
        Return the charge excluding tax (but including discount).

    discount(basket)
        Return the discount on the standard shipping charge

```

## Models

```
class oscar.apps.shipping.models.OrderAndItemCharges(id, code, name, description, price_per_order,  
                                                    price_per_item, free_shipping_threshold)
```

```
    exception DoesNotExist
```

```
    exception MultipleObjectsReturned
```

```
class oscar.apps.shipping.models.WeightBand(id, method, upper_limit, charge)
```

```
    exception DoesNotExist
```

```
    exception MultipleObjectsReturned
```

```
class oscar.apps.shipping.models.WeightBased(id, code, name, description, default_weight)
```

```
    exception DoesNotExist
```

```
    exception MultipleObjectsReturned
```

## Repository

```
class oscar.apps.shipping.repository.Repository
```

Repository class responsible for returning ShippingMethod objects for a given user, basket etc

```
    apply_shipping_offer(basket, method, offer)
```

Wrap a shipping method with an offer discount wrapper (as long as the shipping charge is non-zero).

```
    apply_shipping_offers(basket, methods)
```

Apply shipping offers to the passed set of methods

```
    get_available_shipping_methods(basket, shipping_addr=None, **kwargs)
```

Return a list of all applicable shipping method instances for a given basket, address etc. This method is intended to be overridden.

```
    get_default_shipping_method(basket, shipping_addr=None, **kwargs)
```

Return a 'default' shipping method to show on the basket page to give the customer an indication of what their order will cost.

```
    get_shipping_methods(basket, shipping_addr=None, **kwargs)
```

Return a list of all applicable shipping method instances for a given basket, address etc.

## Voucher

Oscar ships with broad support for vouchers, which are handled by this app.

In addition to individual vouchers, vouchers can also be managed as sets.

VoucherSets can typically be used for automatically generated vouchers based on loyalty criteria. They can also be used to quickly create a large set of vouchers with a shared condition and benefit. They also allow shared management of such sets, so you can easily extend, restrict, enable or disable them at once.

## Abstract models

**class** `oscar.apps.voucher.abstract_models.AbstractVoucher(*args, **kwargs)`

A voucher. This is simply a link to a collection of offers.

Note that there are three possible “usage” modes: (a) Single use (b) Multi-use (c) Once per customer

Oscar enforces those modes by creating `VoucherApplication` instances when a voucher is used for an order.

**clean()**

Hook for doing any extra model-wide validation after `clean()` has been called on every field by `self.clean_fields`. Any `ValidationError` raised by this method will not be associated with a particular field; it will have a special-case association with the field defined by `NON_FIELD_ERRORS`.

**is\_active**(*test\_datetime=None*)

Test whether this voucher is currently active.

**is\_available\_for\_basket**(*basket*)

Tests whether this voucher is available to the passed basket.

Returns a tuple of a boolean for whether it is successful, and a availability message.

**is\_available\_to\_user**(*user=None*)

Test whether this voucher is available to the passed user.

Returns a tuple of a boolean for whether it is successful, and a availability message.

**is\_expired()**

Test whether this voucher has passed its expiration date

**record\_discount**(*discount*)

Record a discount that this offer has given

**record\_usage**(*order, user*)

Records a usage of this voucher in an order.

**save**(*\*args, \*\*kwargs*)

Save the current instance. Override this in a subclass if you want to control the saving process.

The ‘`force_insert`’ and ‘`force_update`’ parameters can be used to insist that the “save” must be an SQL insert or update (or equivalent for non-SQL backends), respectively. Normally, they should not be set.

**class** `oscar.apps.voucher.abstract_models.AbstractVoucherApplication(*args, **kwargs)`

For tracking how often a voucher has been used in an order.

This is used to enforce the voucher usage mode in `Voucher.is_available_to_user`, and created in `Voucher.record_usage`.

**class** `oscar.apps.voucher.abstract_models.AbstractVoucherSet(*args, **kwargs)`

A collection of vouchers (potentially auto-generated)

a `VoucherSet` is a group of voucher that are generated automatically.

- `count`: the number of vouchers in the set. If this is kept at

zero, vouchers are created when and as needed.

- `code_length`: the length of the voucher code. Codes are by default created

with groups of 4 characters: XXXX-XXXX-XXXX. The dashes (-) do not count for the `code_length`.

- `start_datetime` and `end_datetime` together define the validity range for all vouchers in the set.

### **clean()**

Hook for doing any extra model-wide validation after `clean()` has been called on every field by `self.clean_fields`. Any `ValidationError` raised by this method will not be associated with a particular field; it will have a special-case association with the field defined by `NON_FIELD_ERRORS`.

### **is\_active(*test\_datetime=None*)**

Test whether this voucher set is currently active.

## **Views**

None.

## **Wishlists**

The wishlists app allows signed-in users to create one or more wishlists. A user can add a product to their wishlist from the product detail page and manage their lists in the account section.

A wishlist can be private, public or shared. Private wishlist can only be seen by the owner of the wishlist, where public wishlists can be seen by anyone with the link. Shared wishlists have extra configuration, the owner of the wishlist can give access to multiple email addresses. The shared addresses will need an account on the webshop and need to be logged in in order to access the wishlist.

The wishlists app is wired up as a subapp of *Customer* for the customer wish list related views.

## **Abstract models**

**class** `oscar.apps.wishlists.abstract_models.AbstractLine(*args, **kwargs)`

One entry in a wish list. Similar to order lines or basket lines.

### **title**

Store the title in case product gets deleted

**class** `oscar.apps.wishlists.abstract_models.AbstractWishList(*args, **kwargs)`

Represents a user's wish lists of products.

A user can have multiple wish lists, move products between them, etc.

### **add(*product*)**

Add a product to this wishlist

### **key**

This key acts as primary key and is used instead of an int to make it harder to guess

**classmethod** `random_key(length=6)`

Get a unique random generated key

**save(\*args, \*\*kwargs)**

Save the current instance. Override this in a subclass if you want to control the saving process.

The 'force\_insert' and 'force\_update' parameters can be used to insist that the "save" must be an SQL insert or update (or equivalent for non-SQL backends), respectively. Normally, they should not be set.

**class** `oscar.apps.wishlists.abstract_models.AbstractWishListSharedEmail(*args, **kwargs)`

An email which is allowed to view and possibly edit the wishlist, if shared. The user will have to login/create an account with this email in order to view it.

## Views

**class** oscar.apps.customer.wishlists.views.**LineMixin**

Handles fetching both a wish list and a product Views using this mixin must be passed two keyword arguments:

- `key`: The key of a wish list
- `line_pk`: The primary key of the wish list line

or

- `product_pk`: The primary key of the product

**class** oscar.apps.customer.wishlists.views.**WishListAddProduct**(\*\*kwargs)

Adds a product to a wish list.

- If the user doesn't already have a wishlist then it will be created for them.
- If the product is already in the wish list, its quantity is increased.

**class** oscar.apps.customer.wishlists.views.**WishListCreateUpdateViewMixin**

The wishlist create and update view have the same approach on saving the wishlist and shared email forms. This mixin handles that in the post view, where it will call `process_wishlist_forms` if both forms are valid. If one of the forms is not valid, the user will be redirected to the original view with form errors.

**post**(request, \*args, \*\*kwargs)

This post method will handle both the create and update view post request.

**class** oscar.apps.customer.wishlists.views.**WishListCreateView**(\*\*kwargs)

Create a new wishlist

If a product ID is passed as a kwargs, then this product will be added to the wishlist.

**form\_class**

alias of oscar.apps.wishlists.forms.WishListForm

**form\_valid**(form)

The form argument is actually the wishlist instance because we already saved this in the post method below. This is also why we do not call `form.save()` here.

**get\_context\_data**(\*\*kwargs)

Insert the form into the context dict.

**get\_form\_kwargs**()

Return the keyword arguments for instantiating the form.

**model**

alias of oscar.apps.wishlists.models.WishList

**class** oscar.apps.customer.wishlists.views.**WishListCreateWithProductView**(\*\*kwargs)

Create a wish list and immediately add a product to it

**class** oscar.apps.customer.wishlists.views.**WishListDeleteView**(\*\*kwargs)

**get\_object**(queryset=None)

Return the object the view is displaying.

Require `self.queryset` and a `pk` or `slug` argument in the URLconf. Subclasses can override this to return any object.

**model**

alias of oscar.apps.wishlists.models.WishList

**class** oscar.apps.customer.wishlists.views.**WishListDetailView**(\*\*kwargs)

This view acts as a DetailView for a wish list and allows updating the quantities of products.

It is implemented as FormView because it's easier to adapt a FormView to display a product then adapt a DetailView to handle form validation.

**form\_class**

alias of django.forms.formsets.LineFormFormSet

**form\_valid**(form)

If the form is valid, redirect to the supplied URL.

**get\_context\_data**(\*\*kwargs)

Insert the form into the context dict.

**get\_form\_kwargs**()

Return the keyword arguments for instantiating the form.

**class** oscar.apps.customer.wishlists.views.**WishListListView**(\*\*kwargs)

**get\_queryset**()

Return a list of all the wishlists for the currently authenticated user.

**class** oscar.apps.customer.wishlists.views.**WishListMoveProductToAnotherWishList**(\*\*kwargs)

**class** oscar.apps.customer.wishlists.views.**WishListRemoveProduct**(\*\*kwargs)

**get\_context\_data**(\*\*kwargs)

Insert the single object into the context dict.

**get\_object**(queryset=None)

Return the object the view is displaying.

Require *self.queryset* and a *pk* or *slug* argument in the URLconf. Subclasses can override this to return any object.

**class** oscar.apps.customer.wishlists.views.**WishListUpdateView**(\*\*kwargs)

**form\_class**

alias of oscar.apps.wishlists.forms.WishListForm

**form\_valid**(form)

If the form is valid, save the associated model.

**get\_context\_data**(\*\*kwargs)

Insert the form into the context dict.

**get\_form\_kwargs**()

Return the keyword arguments for instantiating the form.

**get\_object**(queryset=None)

Return the object the view is displaying.

Require *self.queryset* and a *pk* or *slug* argument in the URLconf. Subclasses can override this to return any object.

**get\_success\_url**()

Return the URL to redirect to after processing a valid form.

**model**

alias of oscar.apps.wishlists.models.WishList

### 1.2.11 Recipes

Recipes are simple guides to solving common problems that occur when creating e-commerce projects.

#### Customisation

##### How to customise models

This How-to describes how to replace Oscar models with your own. This allows you to add fields and custom methods. It builds upon the steps described in *Customising Oscar*. Please read it first and ensure that you’ve:

- Created a Python module with the the same app label
- Added it as Django app to `INSTALLED_APPS`
- Added a `models.py` and `admin.py`

#### Example

Suppose you want to add a `video_url` field to the core product model. This means that you want your application to use a subclass of `oscar.apps.catalogue.abstract_models.AbstractProduct` which has an additional field.

The first step is to create a local version of the “catalogue” app. At a minimum, this involves creating `catalogue/models.py` within your project and changing `INSTALLED_APPS` to point to your local version rather than Oscar’s.

Next, you can modify the `Product` model through subclassing:

```
# yourproject/catalogue/models.py

from django.db import models

from oscar.apps.catalogue.abstract_models import AbstractProduct

class Product(AbstractProduct):
    video_url = models.URLField()

from oscar.apps.catalogue.models import *
```

Make sure to import the remaining Oscar models at the bottom of your file.

---

**Tip:** Using `from ... import *` is strange isn’t it? Yes it is, but it needs to be done at the bottom of the module due to the way Django registers models. The order that model classes are imported makes a difference, with only the first one for a given class name being registered.

---

The last thing you need to do now is make Django update the database schema and create a new column in the product table. We recommend using migrations for this (internally Oscar already does this) so all you need to do is create a new schema migration.

It is possible to simply create a new catalogue migration (using `./manage.py makemigrations catalogue`) but this isn’t recommended as any dependencies between migrations will need to be applied manually (by adding a `dependencies` attribute to the migration class).

The recommended way to handle migrations is to copy the `migrations` directory from `oscar/apps/catalogue` into your new catalogue app. Then you can create a new (additional) migration using the `makemigrations` management command:

```
./manage.py makemigrations catalogue
```

which will pick up any customisations to the product model.

To apply the migration you just created, all you have to do is run `./manage.py migrate catalogue` and the new column is added to the product table in the database.

## Customising Products

You should inherit from `AbstractProduct` as above to alter behaviour for all your products. Further subclassing is not recommended, because using methods and attributes of concrete subclasses of `Product` are not available unless you explicitly cast them onto that class. To model different classes of products, use `ProductClass` and `ProductAttribute` instead.

### Model customisations are not picked up

It's a common problem that you're trying to customise one of Oscar's models, but your new fields don't seem to get picked up. That is usually caused by Oscar's models being imported before your customised ones. Django's model registration disregards all further model declarations.

In your overriding `models.py`, ensure that you import Oscar's models *after* your custom ones have been defined. If that doesn't help, you have an import from `oscar.apps.*.models` somewhere that is being executed before your models are parsed. One trick for finding that import: put `assert False` in the relevant Oscar's `models.py`, and the stack trace will show you the importing module.

If other modules need to import your models, then import from your local module, not from Oscar directly.

### Customising dashboard forms

For example, we have customised Product model and have added several fields. And we want to show it in the form for editing. You can customise dashboard forms by creating your own form that subclasses Oscar's dashboard form for any model. For example, you can customise the Product form in `apps/dashboard/catalogue/forms.py` as follows:

```
from oscar.apps.dashboard.catalogue import forms as base_forms

class ProductForm(base_forms.ProductForm):

    class Meta(base_forms.ProductForm.Meta):

        fields = (
            'title', 'upc', 'on_sale',
            'short_description', 'description',
            'out_of_stock', 'bestseller',
            'is_new', 'is_discountable', 'structure',
            'markdown', 'markdown_reason')
```

Finally, make sure that you have overridden the dashboard app in your settings: replace `'oscar.apps.dashboard.catalogue'` with `'apps.dashboard.catalogue'` in the `INSTALLED_APPS` setting.

## How to customise templates

Assuming you want to use Oscar's templates in your project, there are two options. You don't have to though - you could write all your own templates if you like. If you do this, it's probably best to start with a straight copy of all of Oscar's templates so you know all the files that you need to re-implement.

Anyway - here are the two options for customising.

### Method 1 - Forking

One option is always just to fork the template into your local project so that it comes first in the include path.

Say you want to customise `base.html`. First you need a project-specific templates directory that comes first in the include path. You can set this up as so:

```
import os
location = lambda x: os.path.join(os.path.dirname(os.path.realpath(__file__)), '..', x)

TEMPLATES = [
    {
        'BACKEND': 'django.template.backends.django.DjangoTemplates',
        'DIRS': [
            location('templates'), # templates directory of the project
        ],
        'APP_DIRS': True,
        'OPTIONS': {
            'context_processors': [
                'django.template.context_processors.debug',
                ...
                'oscar.core.context_processors.metadata',
            ],
        },
    ],
]
```

Next copy Oscar's `base.html` into your templates directory and customise it to suit your needs.

The downsides of this method are that it involves duplicating the file from Oscar in a way that breaks the link with upstream. Hence, changes to Oscar's `base.html` won't be picked up by your project as you will have your own version.

### Method 2 - Subclass parent but use same template path

There is a trick you can perform whereby Oscar's templates can be accessed via two paths. This is outlined in the [Django wiki](#).

This basically means you can have a `base.html` in your local templates folder that extends Oscar's `base.html` but only customises the blocks that it needs to.

Hence to customise `base.html`, you can have an implementation like:

```
# base.html
{% extends 'oscar/base.html' %}

...
```

No real downsides to this one other than getting your front-end people to understand it.

### Overriding individual products partials

Apart from overriding `catalogue/partial/product.html` to change the look for all products, you can also override it for individual product by placing templates in `catalogue/detail-for-upc-%s.html` or `catalogue/detail-for-class-%s.html` to customise look on product detail page and `catalogue/partial/product/upc-%s.html` or `catalogue/partial/product/class-%s.html` to tweak product rendering by `{% render_product %}` template tag, where `%s` is the product's UPC or class's slug, respectively.

### Example: Changing the analytics package

Suppose you want to use an alternative analytics package to Google analytics. We can achieve this by overriding templates where the analytics urchin is loaded and called.

The main template `base.html` has a 'tracking' block which includes a Google Analytics partial. We want to replace this with our own code. To do this, create a new `base.html` in your project that subclasses the original:

```
# yourproject/templates/oscar/base.html
{% extends 'oscar/base.html' %}

{% block tracking %}
<script type="javascript">
    ... [custom analytics here] ...
</script>
{% endblock %}
```

Doing this will mean all templates that inherit from `base.html` will include your custom tracking.

### How to disable an app or feature

#### How to disable an app's URLs

Suppose you don't want to use Oscar's dashboard but use your own. The way to do this is to modify the URLs config to exclude the URLs from the app in question.

You need to use your own root app config, which gives you control over the URLs structure. So your root `urls.py` should have:

```
# urls.py
from django.apps import apps

urlpatterns = [
    ...
    path('', include(apps.get_app_config('myproject').urls[0])),
]
```

where `myproject` is a Django/Oscar app with an app config class that is a subclass of `oscar.config.Shop` which excludes the URL configuration for the dashboard app:

```
# myproject/config.py
from oscar.config import Shop
from oscar.core.application import OscarConfig

class MyShop(Shop):

    # Override the get_urls method to remove the URL configuration for the
    # dashboard app
    def get_urls(self):
        urls = super().get_urls()
        for urlpattern in urls[:]:
            if hasattr(urlpattern, 'app_name') and (urlpattern.app_name == 'dashboard'):
                urls.remove(urlpattern)
        return self.post_process_urls(urls)

# myproject/__init__.py
default_app_config = 'myproject.config.MyShop'
```

The only remaining task is to ensure your templates don't reference any dashboard URLs.

### How to disable Oscar feature

You can add feature name to the setting `OSCAR_HIDDEN_FEATURES` and its app config URLs would be excluded from the URLconf. Template code, wrapped with the `{% iffeature %}{% endiffeature %}` block template tag, will not be rendered:

```
{% iffeature "reviews" %}
    {% include "catalogue/reviews/partials/review_stars.html" %}
{% endiffeature %}
```

Currently supported “reviews” and “wishlists” features. You can make your custom feature hidable by setting `hidable_feature_name` property of the `OscarConfig` class:

```
# myproject/apps/lottery/apps.py
from oscar.core.application import OscarConfig

class LotterConfig(OscarConfig):
    hidable_feature_name = 'lottery'
```

Then, it needs to be added to the corresponding setting: `OSCAR_HIDDEN_FEATURES = ['lottery']`. Finally, you can wrap necessary template code with the `{% iffeature "lottery" %}{% endiffeature %}` tag as in the example above.

## How to add views or change URLs or permissions

Oscar has many views and associated URLs. Often you want to customise these URLs for your domain, or add additional views to an app.

This how-to describes how to do just that. It builds upon the steps described in *Customising Oscar*. Please read it first and ensure that you've:

- Created a Python module with the the same label
- Added it as Django app to `INSTALLED_APPS`
- Added a `models.py` and `admin.py`

## The app config class

Each Oscar app comes with an app config class which inherits from `oscar.core.application.OscarConfig` or `oscar.core.application.OscarDashboardConfig`. They're mainly used to gather URLs (with the correct permissions) for each Oscar app. This structure makes Oscar apps more modular as each app is responsible for its own URLs. And as it is a class, it can be overridden like any other Oscar class; hence making it straightforward to change URLs or add new views. Each app config instance exposes a `urls` property, which is used to access the list of URLs of an app, together with their application and instance namespace.

## The app config tree

Oscar's app config instances are organised in a tree structure. The root app config class illustrates this nicely:

```
# oscar/config.py
from django.apps import apps
from oscar.core.application import OscarConfig

class Shop(OscarConfig):
    name = 'oscar'

    def ready(self):
        self.catalogue_app = apps.get_app_config('catalogue')
        self.basket_app = apps.get_app_config('basket')
        # ...

    def get_urls(self):
        urls = [
            path('catalogue/', self.catalogue_app.urls),
            path('basket/', self.basket_app.urls),
            # ...
        ]
```

The root app config pulls in the URLs from its children. That means to add all Oscar URLs to your Django project, you only need to include the list of URLs (the first element of the `urls` property's value) from the root app config:

```
# urls.py
from django.apps import apps

urlpatterns = [
```

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(continued from previous page)

```

# Your other URLs
path('', include(apps.get_app_config('oscar').urls[0])),
]

```

## Changing sub apps

AppConfig of sub apps such as the catalogue app are dynamically obtained by looking them up in the Django app registry:

```

# oscar/config.py
from django.apps import apps
from oscar.core.application import OscarConfig

class Shop(OscarConfig):
    name = 'oscar'

    def ready(self):
        self.catalogue_app = apps.get_app_config('catalogue')
        self.customer_app = apps.get_app_config('customer')
        # ...

```

That means you just need to create another app config class. It will usually inherit from Oscar's version. Say you'd want to add another view to the offer app. You only need to create a class called OfferConfig (and usually inherit from Oscar's version) and add your view and its URL configuration:

```

# yourproject/offer/apps.py

from oscar.apps.offer.apps import OfferConfig as CoreOfferConfig
from .views import MyExtraView

class OfferConfig(CoreOfferConfig):
    def ready(self):
        super().ready()
        self.extra_view = MyExtraView

    def get_urls(self):
        urls = super().get_urls()
        urls += [
            path('extra/', self.extra_view.as_view(), name='extra'),
        ]
        return self.post_process_urls(urls)

```

## Changing the root app

If you want to e.g. change the URL for the catalogue app from /catalogue to /catalog, you need to use a custom root app config class, instead of Oscar's default class. Hence, create a subclass of Oscar's main `OscarConfig` class and override the `get_urls` method:

```
# myproject/apps.py
from oscar import config

class MyShop(config.Shop):
    # Override get_urls method
    def get_urls(self):
        urlpatterns = [
            path('catalog/', self.catalogue_app.urls),
            # all the remaining URLs, removed for simplicity
            # ...
        ]
        return urlpatterns

# myproject/__init__.py
default_app_config = 'myproject.apps.MyShop'
```

Then change `urls.py` to use your new `AppConfig` instead of Oscar's default:

```
# urls.py
from django.apps import apps

urlpatterns = [
    # Your other URLs
    path('', include(apps.get_app_config('myproject').urls[0])),
]
```

All URLs containing /catalogue/ previously are now displayed as /catalog/.

## How to customise an existing view

Oscar has many views. This How-to describes how to customise one of them for your project. It builds upon the steps described in [Customising Oscar](#). Please read it first and ensure that you've:

- Created a Python module with the the same label
- Added it as Django app to `INSTALLED_APPS`
- Added a `models.py` and `admin.py`

## Example

Create a new homepage view class in `myproject.offer.views` - you can subclass Oscar's view if you like:

```
from oscar.apps.offer.views import OfferListView as CoreOfferListView

class OfferListView(CoreOfferListView):
    template_name = 'offer/new_list.html'
```

In this example, we set a new template location but it's possible to customise the view in any imaginable way. As long as the view has the same name as the view you're replacing, and is in an app with the same name, it will get picked up automatically by Oscar.

If you want to change the template, create the alternative template `new_list.html`. This could either be in a project-level `templates` folder that is added to your `TEMPLATE_DIRS` settings, or a app-level `templates` folder within your 'offer' app.

## How to configure the dashboard navigation

Oscar comes with a pre-configured dashboard navigation that gives you access to its individual pages. If you have your own dashboard app that you would like to show up in the dashboard navigation or want to arrange it differently, that's very easy. All you have to do is override the `OSCAR_DASHBOARD_NAVIGATION` setting in you settings file.

### Add your own dashboard menu item

Assuming that you just want to append a new menu item to the dashboard, all you have to do is open up your settings file and somewhere below the import of the Oscar default settings:

```
from oscar.defaults import *
```

add your custom dashboard configuration. Let's assume you would like to add a new item "Store Manager" with a submenu item "Stores". The way you would do that is:

```
OSCAR_DASHBOARD_NAVIGATION += [
    {
        'label': _('Store manager'),
        'children': [
            {
                'label': _('Stores'),
                'url_name': 'your-reverse-url-lookup-name',
            },
        ],
    },
]
```

That's it. You should now have *Store manager* > *Stores* in you dashboard menu. If you add to the navigation non-dashboard URLconf, you need to set `access_fn` parameter for the current node, so that Oscar is able to resolve permissions to the current node:

```
OSCAR_DASHBOARD_NAVIGATION += [
    {
        'label': _('Admin site'),
```

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```
'icon': 'fas fa-list',
'url_name': 'admin:index',
'access_fn': lambda user, url_name, url_args, url_kwargs: user.is_staff,
}
]
```

## Add an icon to your dashboard menu

Although you have your menu in the dashboard now, it doesn't look as nice as the other menu items that have icons displayed next to them. So you probably want to add an icon to your heading.

Oscar uses [Font Awesome](#) for its icons which makes it very simple to add an icon to your dashboard menu. All you need to do is find the right icon for your menu item. Check out [the icon list](#) to find one.

Now that you have decided for an icon to use, all you need to do add the icon class for the icon to your menu heading:

```
OSCAR_DASHBOARD_NAVIGATION += [
    {
        'label': _('Store manager'),
        'icon': 'fas fa-map-marker',
        'children': [
            {
                'label': _('Stores'),
                'url_name': 'your-reverse-url-lookup-name',
            },
        ]
    },
]
```

You are not restricted to use [Font Awesome](#) icons for you menu heading. Other web fonts will work as well as long as they support the same markup:

```
<i class="icon-map-marker"></i>
```

The class of the `<i>` is defined by the `icon` setting in the configuration of your dashboard navigation above.

## Controlling visibility per user

By setting 'access\_fn' for a node, you can specify a function that will get called with the current user. The node will only be displayed if that function returns True. If no 'access\_fn' is specified, OSCAR\_DASHBOARD\_DEFAULT\_ACCESS\_FUNCTION is used.

## Customising Oscar's communications

Oscar provides the ability to customise the emails sent out to customers.

There are two main ways this can be achieved, either in code (via template files) or in the database (via Dashboard > Content > Email templates).

## Communications API

First, it's important to understand a little about how the Communications API works.

Oscar has a model called a `CommunicationEventType`. When preparing an email to send out to a customer, the client code will do something like this:

```
commtype_code = 'SOME_EVENT'
context = {'customer': customer, 'something_else': 'Some more context.'}

try:
    event_type = CommunicationEventType.objects.get(code=commtype_code)
except CommunicationEventType.DoesNotExist:
    messages = CommunicationEventType.objects.get_and_render(commtype_code, ctx)
else:
    messages = event_type.get_messages(ctx)
```

What's happening here is:

- The code defines an arbitrary communication type code to be treated as the reference for this particular type of communication. For example, the communication type code used when sending an order email confirmation is 'ORDER\_PLACED'.
- The database is checked for a `CommunicationEventType` with this communication type code. If it does, it renders the messages using that model instance, passing in some context.
- Otherwise, it uses the `get_and_render()` method to render the messages, which uses templates instead.

So, your first step when customising the emails sent out is to work out what communication type code is being used to send out the email. The easiest way to work this out is usually to look through the email templates in `templates/oscar/communication/emails`: if the email template is called, say, `commtype_order_placed_body.html`, then the code will be 'ORDER\_PLACED'. See 'Customising through code' below.

### Customising through code

Customising emails through code uses Django's standard template inheritance.

The first step is to locate the template for the particular email, which is usually in `templates/oscar/communication/emails`. Then, in a template directory that takes precedence over the oscar templates directory, copy the file and customise it. For example, to override the `templates/oscar/communication/emails/commtype_order_placed_body.html` template, create `oscar/communication/emails/commtype_order_placed_body.html` in your template directory.

Note that usually emails have three template files associated with them: the email subject line (`commtype_CODE_subject.txt`), the html version (`commtype_CODE_body.html`) and the text version (`commtype_CODE_body.txt`). Usually you will want to make sure you override BOTH the html and the text version.

Customising through code will not work if there is a template defined in the database instead (see below).

### Customising through the database

Oscar provides a dashboard interface to allow admins to customise the emails.

To enable this for a particular communication event type, log in to the admin site and create a new `CommunicationEventType`. The code you use is the important thing: it needs to match the communication event code used when rendering the messages. For example, to override the order confirmation email, you need to create a `CommunicationEventType` with a code `'ORDER_PLACED'`.

Once you have created the `CommunicationEventType`, you can edit it using the (much better) dashboard interface at `Dashboard > Content > Email templates`.

If you have an email template defined in the database it will override any template files.

### Customers

#### How to use a custom user model

You can specify a custom user model in the `AUTH_USER_MODEL` setting. Oscar will dynamically adjust the account profile summary view and profile editing form to use the fields from your custom model.

Before Django 1.5, the recommended technique for adding fields to users was to use a one-to-one “profile” model specified in the `AUTH_PROFILE_MODULE`. While this setting was removed from Django in Django 1.7, Oscar continues to support it and will add relevant fields to the profile form. Hence profiles can be used in combination with custom user models. That doesn't mean it's a good idea.

### Restrictions

Oscar does have some requirements on what fields a user model has. For instance, the authentication backend requires a user to have an ‘email’ and ‘password’ field. Oscar also assumes that the email field is unique, as this is used to identify users.

Oscar ships with its own abstract user model that supports the minimum fields and methods required for Oscar to work correctly. New Oscar projects are encouraged to subclass this User model.

## Migrations

It has previously been suggested to set `db_table` of the model to `auth_user` to avoid the migrations from breaking. This issue has been fixed and migrations are now using `AUTH_USER_MODEL` and `AUTH_USER_MODEL_NAME` which will use `db_table` name of the user model provided by `get_user_model()`.

This works in the instances where you are using the default `auth.User` model or when you use a custom user model from the start. Switching over from `auth.User` to a custom model after having applied previous migration of Oscar will most likely require renaming the `auth_user` table to the new user table in a manual migration.

## Example

If you want to use `oscar.apps.customer.abstract_model.AbstractUser` which has `email` as an index, and want to customise some of the methods on `User` model, say, `get_full_name` for Asian names, a simple approach is to create your own user module:

```
# file: your-project/apps/user/models.py
from django.db import models

from oscar.apps.customer.abstract_models import AbstractUser

class User(AbstractUser):

    def get_full_name(self):
        full_name = '%s %s' % (self.last_name.upper(), self.first_name)
        return full_name.strip()
```

Then add this user app to the `INSTALLED_APPS` list. Beside that we need to tell django to use our customised user model instead of the default one as the authentication model<sup>1</sup>:

```
# use our own user model
AUTH_USER_MODEL = "user.User"
```

After the migration, a database table called `user_user` will be created based on the schema defined inside of `oscar.apps.customer.abstract_models.AbstractUser`.

## Catalogue

### How to create categories

The simplest way is to use a string which represents the breadcrumbs:

```
from oscar.apps.catalogue.categories import create_from_breadcrumbs

categories = (
    'Food > Cheese',
    'Food > Meat',
    'Clothes > Man > Jackets',
```

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<sup>1</sup> <https://docs.djangoproject.com/en/stable/ref/settings/#auth-user-model>

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```
'Clothes > Woman > Skirts',
)
for breadcrumbs in categories:
    create_from_breadcrumbs(breadcrumbs)
```

## Importing a catalogue

**Warning:** Handling imports works in Oscar, but the code quality of the importer is low as it is only used to populate the sandbox site, and not meant for general usage. So proceed at your own risk!

Importing a catalogue is pretty straightforward, and can be done in two easy steps:

- Reading the catalogue CSV file, line by line, using `csv.reader`.
- Using the info of each line, start by creating a `Product` object using the standard Django ORM, set the product attributes, save it, and finally set its `ProductCategory`, `Partner`, and `StockRecord`.

## Example

An example of that is the `CatalogueImporter` used to import catalogues for the sandbox site. The class is available under `oscar.apps.partner.importers`.

Let's take a closer look at `CatalogueImporter`:

```
class CatalogueImporter(object):
    def __init__(self, logger):
        self.logger = logger

    @atomic
    def _import(self, file_path=None):
        ....

    def _import_row(self, row_number, row, stats):
        ....
```

The two steps procedure we talked about are obvious in this example, and are implemented in `_import` and `_import_row` functions, respectively.

You can find an example of the CSV data that the `CatalogueImporter` expects [in the repository](#).

## Pricing, stock and availability

### How to enforce stock rules

You can enforce stock validation rules using signals. You just need to register a listener to the `BasketLine` `pre_save` signal that checks the line is valid. For example:

```
@receiver(pre_save, sender=Line)
def handle_line_save(sender, **kwargs):
    if 'instance' in kwargs:
        quantity = int(kwargs['instance'].quantity)
        if quantity > 4:
            raise InvalidBasketLineError("You are only allowed to purchase a maximum of 4 of these")
```

## How to configure stock messaging

Stock messaging is controlled by an *availability policy* which is loaded by the *strategy class*.

To set custom availability messaging, use your own strategy class to return the appropriate availability policy. It's possible to return different availability policies depending on the user, request and product in question.

## Payment

### How to integrate payment

Oscar is designed to be very flexible around payment. It supports paying for an order with multiple payment sources and settling these sources at different times.

## Models

The payment app provides several models to track payments:

- **SourceType** - This is the type of payment source used (e.g. PayPal, DataCash). As part of setting up a new Oscar site you would create a SourceType for each of the payment gateways you are using.
- **Source** - A source of payment for a single order. This tracks how an order was paid for. The source object distinguishes between allocations, debits and refunds to allow for two-phase payment model. When an order is paid for by multiple methods, you create multiple sources for the order.
- **Transaction** - A transaction against a source. These models provide better audit for all the individual transactions associated with an order.

## Example

Consider a simple situation where all orders are paid for by PayPal using their 'SALE' mode where the money is settled immediately (one-phase payment model). The project would have a 'PayPal' SourceType and, for each order, create a new Source instance where the `amount_debited` would be the order total. A Transaction model with `txn_type=Transaction.DEBIT` would normally also be created (although this is optional).

This situation is implemented within the sandbox site for the [django-oscar-paypal](#) extension. Please use that as a reference.

See also the sandbox for [django-oscar-datacash](#) which follows a similar pattern.

## Integration into checkout

By default, Oscar's checkout does not provide any payment integration as it is domain-specific. However, the core checkout classes provide methods for communicating with payment gateways and creating the appropriate payment models.

Payment logic is normally implemented by using a customised version of `PaymentDetailsView`, where the `handle_payment` method is overridden. This method will be given the order number and order total plus any custom keyword arguments initially passed to `submit` (as `payment_kwargs`). If payment is successful, then nothing needs to be returned. However, Oscar defines a few common exceptions which can occur:

- `oscar.apps.payment.exceptions.RedirectRequired` For payment integrations that require redirecting the user to a 3rd-party site. This exception class has a `url` attribute that needs to be set.
- `oscar.apps.payment.exceptions.UnableToTakePayment` For *anticipated* payment problems such as invalid bankcard number, not enough funds in account - that kind of thing.
- `oscar.apps.payment.exceptions.UserCancelled` During many payment flows, the user is able to cancel the process. This should often be treated differently from a payment error, e.g. it might not be appropriate to offer to retry the payment.
- `oscar.apps.payment.exceptions.PaymentError` For *unanticipated* payment errors such as the payment gateway not responding or being badly configured.

When payment has completed, there's a few things to do:

- Create the appropriate `oscar.apps.payment.models.Source` instance and pass it to `add_payment_source`. The instance is passed unsaved as it requires a valid order instance to foreign key to. Once the order is placed (and an order instance is created), the payment source instances will be saved.
- Record a 'payment event' so your application can track which lines have been paid for. The `add_payment_event` method assumes all lines are paid for by the passed event type, as this is the normal situation when placing an order. Note that payment events don't distinguish between different sources.

For example:

```
from oscar.apps.checkout import views
from oscar.apps.payment import models

# Subclass the core Oscar view so we can customise
class PaymentDetailsView(views.PaymentDetailsView):

    def handle_payment(self, order_number, total, **kwargs):
        # Talk to payment gateway. If unsuccessful/error, raise a
        # PaymentError exception which we allow to percolate up to be caught
        # and handled by the core PaymentDetailsView.
        reference = gateway.pre_auth(order_number, total.incl_tax, kwargs['bankcard'])

        # Payment successful! Record payment source
        source_type, __ = models.SourceType.objects.get_or_create(
            name="SomeGateway")
        source = models.Source(
            source_type=source_type,
            amount_allocated=total.incl_tax,
            reference=reference)
        self.add_payment_source(source)
```

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```
# Record payment event
self.add_payment_event('pre-auth', total.incl_tax)
```

## How to handle US taxes

When trading in the US, taxes aren't known until the customer's shipping address has been entered. This scenario requires two changes from core Oscar.

### Ensure your site strategy returns prices without taxes applied

First, the site strategy should return all prices without tax when the customer is based in the US. Oscar provides a *US* strategy class that uses the *DeferredTax* mixin to indicate that prices don't include taxes.

See *the documentation on strategies* for further guidance on how to replace strategies.

### Adjust checkout views to apply taxes once they are known

Second, the *CheckoutSessionMixin* should be overridden within your project to apply taxes to the submission.

```
from oscar.apps.checkout import session

from . import tax

class CheckoutSessionMixin(session.CheckoutSessionMixin):

    def build_submission(self, **kwargs):
        submission = super().build_submission(
            **kwargs)

        if submission['shipping_address'] and submission['shipping_method']:
            tax.apply_to(submission)

            # Recalculate order total to ensure we have a tax-inclusive total
            submission['order_total'] = self.get_order_totals(
                submission['basket'],
                submission['shipping_charge'])

        return submission
```

An example implementation of the `tax.py` module is:

```
from decimal import Decimal as D

def apply_to(submission):
    # Assume 7% sales tax on sales to New Jersey You could instead use an
    # external service like Avalara to look up the appropriate taxes.
    STATE_TAX_RATES = {
        'NJ': D('0.07')
```

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```
}
shipping_address = submission['shipping_address']
rate = STATE_TAX_RATES.get(
    shipping_address.state, D('0.00'))
for line in submission['basket'].all_lines():
    line_tax = calculate_tax(
        line.line_price_excl_tax_incl_discounts, rate)
    unit_tax = (line_tax / line.quantity).quantize(D('0.01'))
    line.purchase_info.price.tax = unit_tax

# Note, we change the submission in place - we don't need to
# return anything from this function
shipping_charge = submission['shipping_charge']
if shipping_charge is not None:
    shipping_charge.tax = calculate_tax(
        shipping_charge.excl_tax, rate)

def calculate_tax(price, rate):
    tax = price * rate
    return tax.quantize(D('0.01'))
```

## Shipping

### How to configure shipping

Shipping can be very complicated. Depending on the domain, a wide variety of shipping scenarios are found in the wild. For instance, calculation of shipping costs can depend on:

- Shipping method (e.g., standard, courier)
- Shipping address
- Time of day of order (e.g., if requesting next-day delivery)
- Weight of items in basket
- Customer type (e.g., business accounts get discounted shipping rates)
- Offers and vouchers that give free or discounted shipping

Further complications can arise such as:

- Only making certain shipping methods available to certain customers
- Tax is only applicable in certain situations

Oscar can handle all of these shipping scenarios.

## Shipping in Oscar

Configuring shipping charges requires overriding Oscar’s core ‘shipping’ app and providing your own `Repository` class (see [Customising Oscar](#)) that returns your chosen shipping method instances.

The primary responsibility of the `Repository` class is to provide the available shipping methods for a particular scenario. This is done via the `get_shipping_methods()` method, which returns the shipping methods available to the customer.

This method is called in several places:

- To look up a “default” shipping method so that sample shipping charges can be shown on the basket detail page.
- To list the available shipping methods on the checkout shipping method page.
- To check the selected shipping method is still available when an order is submitted.

The `get_shipping_methods` method takes the basket, user, shipping address and request as parameters. These can be used to provide different sets of shipping methods depending on the circumstances. For instance, you could use the shipping address to provide international shipping rates if the address is overseas.

The `get_default_shipping_method` method takes the same parameters and returns default shipping method for the current basket. Used for shipping cost indication on the basket page. Defaults to free shipping method.

**Note:** Oscar’s checkout process includes a page for choosing your shipping method. If there is only one method available for your basket (as is the default) then it will be chosen automatically and the user immediately redirected to the next step.

## Custom repositories

If the available shipping methods are the same for all customers and shipping addresses, then override the `methods` property of the repository:

```
from oscar.apps.shipping import repository
from . import methods

class Repository(repository.Repository):
    methods = (methods.Standard(), methods.Express())
```

For more complex logic, override the `get_available_shipping_methods` method:

```
from oscar.apps.shipping import repository
from . import methods

class Repository(repository.Repository):

    def get_available_shipping_methods(self, basket, user=None, shipping_addr=None,
    ↪ request=None, **kwargs):
        methods = (methods.Standard(),)
        if shipping_addr and shipping_addr.country.code == 'GB':
            # Express is only available in the UK
            methods = (methods.Standard(), methods.Express())
        return methods
```

Note that the `get_shipping_methods` method wraps `get_available_shipping_methods` in order to handle baskets that don't require shipping and to apply shipping discounts.

## Shipping methods

Shipping methods need to implement a certain API. They need to have the following properties which define the metadata about the shipping method:

- `code` - This is used as an identifier for the shipping method and so should be unique amongst the shipping methods available in your shop.
- `name` - The name of the shipping method. This will be visible to the customer during checkout.
- `description` - An optional description of the shipping method. This can contain HTML.

Further, each method must implement a `calculate` method which accepts the basket instance as a parameter and returns a `Price` instance. Most shipping methods subclass `Base`, which stubs this API.

Here's an example:

```
from oscar.apps.shipping import methods
from oscar.core import prices

class Standard(methods.Base):
    code = 'standard'
    name = 'Standard shipping (free)'

    def calculate(self, basket):
        return prices.Price(
            currency=basket.currency,
            excl_tax=D('0.00'), incl_tax=D('0.00'))
```

## Core shipping methods

Oscar ships with several re-usable shipping methods which can be used as-is, or subclassed and customised:

- *Free* - no shipping charges
- *FixedPrice* - fixed-price shipping charges. Example usage:

```
from oscar.apps.shipping import methods
from oscar.core import prices

class Standard(methods.FixedPrice):
    code = 'standard'
    name = 'Standard shipping'
    charge_excl_tax = D('5.00')

class Express(methods.FixedPrice):
    code = 'express'
    name = 'Express shipping'
    charge_excl_tax = D('10.00')
```

There is also a weight-based shipping method, `AbstractWeightBased` which determines a shipping charge by calculating the weight of a basket's contents and looking this up in a model-based set of weight bands.

## Surcharges

### How to configure surcharges

A surcharge, also known as checkout fee, is an extra fee charged by a merchant when receiving a payment by cheque, credit card, charge card or debit card (but not cash) which at least covers the cost to the merchant of accepting that means of payment, such as the merchant service fee imposed by a credit card company.

### Surcharges in Oscar

Configuring surcharges requires overriding Oscar's core 'checkout' app and providing your own `SurchargeApplicator` class (see [Customising Oscar](#)) that returns your chosen surcharge instances.

The primary responsibility of the `SurchargeApplicator` class is to provide the available surcharge methods for a particular scenario. This is done via the `get_applicable_surcharges()` method, which returns the surcharges available to the customer.

This method is called in several places:

- To look up the "default" surcharges so that sample surcharges can be shown on the basket detail page.
- To give the applicable surcharges to the order total calculator so we can show the correct price breakdown.

The `get_applicable_surcharges` method takes the basket and any other kwargs. These kwargs can later be determined when setting up your own surcharges.

Note that you can also implement surcharges as models just like shipping methods.

### Custom applicators

If the available surcharges are the same for all customers and payment methods, then override the `get_surcharges` method of the repository:

```
from decimal import Decimal as D
from oscar.apps.checkout import applicator
from . import surcharges

class SurchargeApplicator(applicator.SurchargeApplicator):
    def get_surcharges(self, basket, **kwargs):
        return (
            surcharges.PercentageCharge(percentage=D("2.00")),
        )
```

For more complex logic, override the `is_applicable` method:

```
from oscar.apps.checkout import applicator

class SurchargeApplicator(applicator.SurchargeApplicator):

    def is_applicable(self, surcharge, basket, **kwargs):
        payment_method_code = kwargs.get("payment_method_code", None)
        if payment_method is not None and payment_method_code == "paypal":
            return True
        else:
            return False
```

## Surcharges

Surcharges need to implement a certain API. They need to have the following properties which define the metadata about the surcharge:

- **name** - The name of the surcharges. This will be visible to the customer during checkout and is translatable
- **code** - The code of the surcharge. This could be the slugified name or anything else. The code is used as a non-translatable identifier for a charge.

Further, each surcharge must implement a `calculate` method which accepts the basket instance as a parameter and returns a `Price` instance. Most surcharges subclass `BaseSurcharge`, which stubs this API.

## Core surcharges

Oscar ships with several re-usable surcharges which can be used as-is, or subclassed and customised:

- `PercentageCharge` - percentage based charge
- `FlatCharge` - flat surcharge

Example usage:

```
from decimal import Decimal as D
from oscar.apps.checkout import surcharges

percentage_charge = surcharges.PercentageCharge(percentage=D("2.00"))
flat_charge = surcharges.FlatCharge(excl_tax=D("10.00"), incl_tax=D("12.10"))
```

## Order processing

### How to set up order processing

How orders are processed differs for every shop. Some shops will process orders manually, using the dashboard to print picking slips and update orders once items have shipped. Others will use automated processes to send order details to fulfilment partners and pick up shipment and cancellation messages.

Oscar provides only a skeleton for building your order processing pipeline on top of. This page details how it works and how to build your order processing pipeline.

## Structure

There are two relevant Oscar apps to order processing.

- The checkout app is responsible for collecting the required shipping and payment information, taking payment in some sense and placing the order. It is not normally used to process the order in any sense. If your orders can be fulfilled immediately after being placed (e.g. digital products), it's better to use a separate process (like a cronjob or celery task). That way, if the fulfilment work fails for some reason, it can be retried easily later. It's also a neater decoupling of responsibilities.
- The order app has a `processing.py` module which is intended to handle order processing tasks, such as items being cancelled, shipped or returned. More details below.

## Modelling

Oscar models order processing through events. There are three types to be aware of:

- Shipping events. These correspond to some change in the location or fulfilment status of the order items. For instance, when items are shipped, returned or cancelled. For digital goods, this would cover when items are downloaded.
- Payment events. These model each transaction that relates to an order. The payment model allows order lines to be linked to the payment event.
- Communication events. These capture emails and other messages sent to the customer about a particular order. These aren't a core part of order processing and are used more for audit and to ensure, for example, that only one order confirmation email is sent to a customer.

## Event handling

Most Oscar shops will want to customise the `EventHandler` class from the order app. This class is intended to handle all events and perform the appropriate actions. The main public API is

```
class oscar.apps.order.processing.EventHandler(user=None, **kwargs)
    Handle requested order events.
```

This is an important class: it houses the core logic of your shop's order processing pipeline.

```
handle_order_status_change(order, new_status, note_msg=None)
    Handle a requested order status change
```

This method is not normally called directly by client code. The main use-case is when an order is cancelled, which in some ways could be viewed as a shipping event affecting all lines.

```
handle_payment_event(order, event_type, amount, lines=None, line_quantities=None, **kwargs)
    Handle a payment event for a given order.
```

These should normally be called as part of handling a shipping event. It is rare to call to this method directly. It does make sense for refunds though where the payment event may be unrelated to a particular shipping event and doesn't directly correspond to a set of lines.

```
handle_shipping_event(order, event_type, lines, line_quantities, **kwargs)
    Handle a shipping event for a given order.
```

This is most common entry point to this class - most of your order processing should be modelled around shipping events. Shipping events can be used to trigger payment and communication events.

You will generally want to override this method to implement the specifics of you order processing pipeline.

Many helper methods are also provided:

```
class oscar.apps.order.processing.EventHandler(user=None, **kwargs)
    Handle requested order events.
```

This is an important class: it houses the core logic of your shop's order processing pipeline.

```
are_stock_allocations_available(lines, line_quantities)
    Check whether stock records still have enough stock to honour the requested allocations.
```

Lines whose product doesn't track stock are disregarded, which means this method will return True if only non-stock-tracking-lines are passed. This means you can just throw all order lines to this method, without checking whether stock tracking is enabled or not. This is okay, as calling `consume_stock_allocations()` has no effect for non-stock-tracking lines.

**calculate\_payment\_event\_subtotal**(*event\_type, lines, line\_quantities*)

Calculate the total charge for the passed event type, lines and line quantities.

This takes into account the previous prices that have been charged for this event.

Note that shipping is not including in this subtotal. You need to subclass and extend this method if you want to include shipping costs.

**cancel\_stock\_allocations**(*order, lines=None, line\_quantities=None*)

Cancel the stock allocations for the passed lines.

If no lines/quantities are passed, do it for all lines.

**consume\_stock\_allocations**(*order, lines=None, line\_quantities=None*)

Consume the stock allocations for the passed lines.

If no lines/quantities are passed, do it for all lines.

**have\_lines\_passed\_shipping\_event**(*order, lines, line\_quantities, event\_type*)

Test whether the passed lines and quantities have been through the specified shipping event.

This is useful for validating if certain shipping events are allowed (i.e. you can't return something before it has shipped).

**validate\_shipping\_event**(*order, event\_type, lines, line\_quantities, \*\*kwargs*)

Test if the requested shipping event is permitted.

If not, raise InvalidShippingEvent

Most shops can handle all their order processing through shipping events, which may indirectly create payment events.

## Customisation

Assuming your order processing involves an admin using the dashboard, then the normal customisation steps are as follows:

- 1) Ensure your orders are created with the right default status.
- 2) Override the order dashboard's views and templates to provide the right interface for admins to update orders.
- 3) Extend the `EventHandler` class to correctly handle shipping and payment events that are called from the dashboard order detail view.

It can be useful to use order and line statuses too. Oscar provides some helper methods to make this easier.

**class** `oscar.apps.order.abstract_models.AbstractOrder`(\*args, \*\*kwargs)

The main order model

**classmethod** `all_statuses()`

Return all possible statuses for an order

**available\_statuses()**

Return all possible statuses that this order can move to

**pipeline** = {'Being processed': ('Complete', 'Cancelled'), 'Cancelled': (),  
'Complete': (), 'Pending': ('Being processed', 'Cancelled')}

Order status pipeline. This should be a dict where each (key, value) #: corresponds to a status and a list of possible statuses that can follow that one.

**set\_status**(*new\_status*)

Set a new status for this order.

If the requested status is not valid, then InvalidOrderStatus is raised.

```
class oscar.apps.order.abstract_models.AbstractLine(*args, **kwargs)
    An order line

    classmethod all_statuses()
        Return all possible statuses for an order line

    available_statuses()
        Return all possible statuses that this order line can move to

    pipeline = {}
        Order status pipeline. This should be a dict where each (key, value) corresponds to a status and the possible
        statuses that can follow that one.

    set_status(new_status)
        Set a new status for this line

        If the requested status is not valid, then InvalidLineStatus is raised.
```

## Example

Here is a reasonably common scenario for order processing. Note that some of the functionality described here is not in Oscar. However, Oscar provides the hook points to make implementing this workflow easy.

- An order is placed and the customer's bankcard is pre-authorised for the order total. The new order has status 'Pending'
- An admin logs into the dashboard and views all new orders. They select the new order, retrieve the goods from the warehouse and get them ready to ship.
- When all items are retrieved, they select all the lines from the order and hit a button saying 'take payment'. This calls the `handle_payment_event` method of the `EventHandler` class which performs the settle transaction with the payment gateway and, if successful, creates a payment event against the order.
- If payment is successful, the admin ships the goods and gets a tracking number from the courier service. They then select the shipped lines for the order and hit a button saying "mark as shipped". This will show a form requesting a shipping number for the event. When this is entered, the `handle_shipping_event` method of the `EventHandler` class is called, which will update stock allocations and create a shipping event.

## Offers

### How to create a custom range

Oscar ships with a range model that represents a set of products from your catalogue. Using the dashboard, this can be configured to be:

1. The whole catalogue
2. A subset of products selected by ID/SKU (CSV uploads can be used to do this)
3. A subset of product categories

Often though, a shop may need merchant-specific ranges such as:

- All products subject to reduced-rate VAT
- All books by a Welsh author
- DVDs that have an exclamation mark in the title

These are contrived but you get the picture.

## Custom range interface

A custom range must:

- have a `name` attribute
- have a `contains_product` method that takes a product instance and return a boolean
- have a `num_products` method that returns the number of products in the range or `None` if such a query would be too expensive.
- have an `all_products` method that returns a queryset of all products in the range.

Example:

```
class ExclamatoryProducts(object):
    name = "Products including a '!'"

    def contains_product(self, product):
        return "!" in product.title

    def num_products(self):
        return self.all_products().count()

    def all_products(self):
        return Product.objects.filter(title__icontains="!")
```

## Create range instance

To make this range available to be used in offers, do the following:

```
from oscar.apps.offer.custom import create_range

create_range(ExclamatoryProducts)
```

Now you should see this range in the dashboard for ranges and offers. Custom ranges are not editable in the dashboard but can be deleted.

## Deploying custom ranges

To avoid manual steps in each of your test/stage/production environments, use Django's [data migrations](#) to create ranges.

## How to create a custom offer condition

Oscar ships with several condition models that can be used to build offers. However, occasionally a custom condition can be useful. Oscar lets you build a custom condition class and register it so that it is available for building offers.

## Custom condition interface

Custom condition classes must be proxy models, subclassing Oscar's main *Condition* class.

At a minimum, a custom condition must:

- have a `name` attribute which with the condition name.
- have a `description` attribute which describes what needs to happen to satisfy the condition (e.g. "basket must have 4 items").
- have an `is_satisfied` method that takes a basket instance and an offer instance and returns a boolean indicating if the condition is satisfied

It can also implement:

- a `can_apply_condition` method that takes a product instance and returns a boolean depending on whether the condition is applicable to the product.
- a `consume_items` method that marks basket items as consumed once the condition has been met.
- a `get_upsell_message` method that returns a message for the customer, letting them know what they would need to do to qualify for this offer.
- a `is_partially_satisfied` method that tests to see if the customer's basket partially satisfies the condition (i.e. when you might want to show them an upsell message)

Silly example:

```
from oscar.apps.offer import models

class BasketOwnerCalledBarry(models.Condition):
    name = "User must be called barry"

    class Meta:
        proxy = True

    def is_satisfied(self, offer, basket):
        if not basket.owner:
            return False
        return basket.owner.first_name.lower() == 'barry'
```

## Create condition instance

To make this condition available to be used in offers, do the following:

```
from oscar.apps.offer.custom import create_condition

create_condition(BasketOwnerCalledBarry)
```

Now you should see this condition in the dashboard when creating/updating an offer.

## Deploying custom conditions

To avoid manual steps in each of your test/stage/production environments, use Django [data migrations](#) to create conditions.

## How to create a custom benefit

Oscar ships with several offer benefits for building offers. There are three types:

- Basket discounts. These lead to a discount off the price of items in your basket.
- Shipping discounts.
- Post-order actions. These are benefits that don't affect your order total but trigger some action once the order is placed. For instance, if your site supports loyalty points, you might create an offer that gives 200 points when a certain product is bought.

Oscar also lets you create your own benefits for use in offers.

## Custom benefits

A custom benefit can be used by creating a benefit class and registering it so it is available to be used.

A benefit class must be a proxy class and have the following methods:

```
from oscar.apps.offer import models

class MyCustomBenefit(models.Benefit):

    class Meta:
        proxy = True

    @property
    def name(self):
        return "My Custom Benefit"

    @property
    def description(self):
        """
        Describe what the benefit does.

        This is used in the dashboard when selecting benefits for offers.
        """

    def apply(self, basket, condition, offer):
        """
        Apply the benefit to the passed basket and mark the appropriate
        items as consumed.

        The condition and offer are passed as these are sometimes required
        to implement the correct consumption behaviour.
```

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```

    Should return an instance of
    ``oscar.apps.offer.models.ApplicationResult``
    """

    def apply_deferred(self, basket, order, application):
        """
        Perform a 'post-order action' if one is defined for this benefit

        Should return a message indicating what has happened. This will be
        stored with the order to provide audit of post-order benefits.
        """

```

As noted in the docstring, the apply method must return an instance of `oscar.apps.offer.models.ApplicationResult`. There are three subclasses provided:

- `oscar.apps.offer.models.BasketDiscount`. This takes an amount as it's constructor parameter.
- `oscar.apps.offer.models.ShippingDiscount`. This indicates that the benefit affects the shipping charge.
- `oscar.apps.offer.models.PostOrderAction`. This indicates that the benefit does nothing to the order total, but does fire an action once the order has been placed. It takes a single description parameter to its constructor which is a message that describes what action will be taken once the order is placed.

Here's an example of a post-order action benefit:

```

from oscar.apps.offer import models

class ChangesCustomersName(models.Benefit):

    class Meta:
        proxy = True

    name = description = "Changes customer's name"

    def apply(self, basket, condition, offer):
        # We need to mark all items from the matched condition as 'consumed'
        # so that they are unavailable to be used with other offers.
        condition.consume_items(basket, ())
        return models.PostOrderAction(
            "You will have your name changed to Barry!")

    def apply_deferred(self, basket, order, application):
        if basket.owner:
            basket.owner.first_name = "Barry"
            basket.owner.save()
            return "Your name has been changed to Barry!"
        return "We were unable to change your name as you are not signed in"

```

### Create benefit instance

To make this benefit available to be used in offers, do the following:

```
from oscar.apps.offer.custom import create_benefit

create_benefit(ChangesCustomersName)
```

Now you should see this benefit in the dashboard when creating/updating an offer.

### Deploying custom benefits

To avoid manual steps in each of your test/stage/production environments, use Django [data migrations](#) to create benefits.

### Appearance

#### How to change Oscar's appearance

This is a guide for Front-End Developers (FEDs) working on Oscar projects, not on Oscar itself. It is written with Tangent's FED team in mind but should be more generally useful for anyone trying to customise Oscar and looking for the right approach.

### Overview

Oscar ships with a set of HTML templates and a collection of static files (e.g. images and Javascript). Oscar's default CSS is generated from SASS files.

### Templates

Oscar's default templates use the mark-up conventions from the Bootstrap project. Classes for styling should be separate from classes used for Javascript. The latter must be prefixed with `js-`, and using data attributes is often preferable.

### Frontend vs. Dashboard

The frontend and dashboard are intentionally kept separate. They incidentally both use Bootstrap and Font Awesome, but may be updated individually.

For the frontend, `styles.scss` imports Bootstrap and Font Awesome SASS stylesheets, and ties them together with Oscar-specific styling.

For the dashboard, `dashboard.scss` also imports Bootstrap and Font Awesome SASS stylesheets, and adds Oscar-specific customisations.

## SCSS/CSS

CSS files served to the browser are compiled from their SASS sources. For local development, `npm run watch` will watch for local changes to SASS files and automatically rebuild the compiled CSS.

Use the command `make assets` to compile assets manually.

## Javascript

Oscar uses Javascript for progressive enhancements. This guide used to document exact versions, but quickly became outdated. It is recommended to inspect `layout.html` and `dashboard/layout.html` for what is currently included.

## Customisation

### Customising templates

Oscar ships with a complete set of templates (in `oscar/templates`). These will be available to an Oscar project but can be overridden or modified.

The templates use Bootstrap conventions for class names and mark-up.

There is a separate recipe on how to do this.

### Customising statics

Oscar's static files are stored in `oscar/static`. When a Django site is deployed, the `collectstatic` command is run which collects static files from all installed apps and puts them in a single location (called the `STATIC_ROOT`). It is common for a separate HTTP server (like NGINX) to be used to serve these files, setting its document root to `STATIC_ROOT`.

For an individual project, you may want to override Oscar's static files. The best way to do this is to have a statics folder within your project and to add it to the `STATICFILES_DIRS` setting. Then, any files which match the same path as files in Oscar will be served from your local statics folder instead. For instance, if you want to use a local version of `oscar/css/styles.css`, you could create a file:

```
yourproject/
  static/
    oscar/
      css/
        styles.css
```

and this would override Oscar's equivalent file.

To make things easier, Oscar ships with a management command for creating a copy of all of its static files. This breaks the link with Oscar's static files and means everything is within the control of the project. Run it as follows:

```
# with default "target_path" of "static"
./manage.py oscar_fork_statics
```

or

```
# with custom "target_path" ./manage.py oscar_fork_statics /path/to/static/directory/
```

This is the recommended approach for non-trivial projects.

Another option is simply to ignore all of Oscar's CSS and write your own from scratch. To do this, you simply need to adjust the layout templates to include your own CSS instead of Oscar's. For instance, you might override `oscar/layout.html` and replace the styles block:

```
# project/oscar/layout.html
{% extends "oscar/layout.html" %}
{% load static %}

{% block styles %}
    <link rel="stylesheet" type="text/css" href="{% static 'myproject/styles.css' %}" />
{% endblock %}
```

## Deployment and setup

### How to setup Solr with Oscar

[Apache Solr](#) is Oscar's recommended production-grade search backend. This how-to describes how to get Solr running, and integrated with Oscar. The instructions below are tested on an Debian/Ubuntu machine, but should be applicable for similar environments. A working Java or OpenJDK version 8 installation are necessary.

### Python Package

You will need to install the `pysolr` Python package. Or add it to your `requirements.txt`:

```
$ pip install pysolr
```

### Installing Solr

You first need to fetch and extract Solr. The schema included with Oscar is tested with Solr 6.6.6:

```
$ wget -O ${HOME}/solr-6.6.6.tgz https://archive.apache.org/dist/lucene/solr/6.6.6/solr-
→6.6.6.tgz
$ tar xzf ${HOME}/solr-6.6.6.tgz --directory=${HOME}
$ ln -s ${HOME}/solr-6.6.6 ${HOME}/solr
```

---

**Note:** For development this will presume the solr directory is in the users HOME directory. (For an actual deployment this may be better placed in `/opt`).

---

## Start Solr and Create a Core

Next start up Solr and create a core named `sandbox` this name will be used through out this howto, change `sandbox` to something that suits your installation. This step also sets up the directory structure and a basic configuration.

```
$ cd ${HOME}/solr
$ ./bin/solr start
$ ./bin/solr create -c sandbox -n basic_config
```

## Integrating with Haystack

Haystack provides an abstraction layer on top of different search backends and integrates with Django. The Haystack connection settings in your `settings.py` for the config above will look like this:

```
# Solr 6.x
HAYSTACK_CONNECTIONS = {
    'default': {
        'ENGINE': 'haystack.backends.solr_backend.SolrEngine',
        'URL': 'http://127.0.0.1:8983/solr/sandbox',
        'ADMIN_URL': 'http://127.0.0.1:8983/solr/admin/cores',
        'INCLUDE_SPELLING': True,
    },
}
```

To use Solr with the Sandbox locally comment out the `HAYSTACK_CONNECTIONS` section using the `WhooshEngine` and uncomment the `Solr 6.x` section like this one.

## Build Solr schema

Next, get Oscar to generate the `schema.xml` and `solrconfig.xml` for Solr.

```
$ ./manage.py build_solr_schema --configure-directory=${HOME}/solr/server/solr/sandbox/
↪ conf
$ ./manage.py build_solr_schema --reload-core sandbox
```

**Note:** If using this Solr install with the Sandbox locally ensure the steps up to this point have been done prior to running `make sandbox` in the [Run the sandbox locally](#) instructions.

## Rebuild search index

If all is well, you should now be able to rebuild the search index.

```
$ ./manage.py rebuild_index --noinput
Removing all documents from your index because you said so.
All documents removed.
Indexing 201 Products
```

If the indexing succeeded, search in Oscar will be working. Search for any term in the search box on your Oscar site, and you should get results.

## 1.2.12 Oscar settings

This is a comprehensive list of all the settings Oscar provides. All settings are optional.

### Display settings

#### OSCAR\_SHOP\_NAME

Default: 'Oscar'

The name of your e-commerce shop site. This is shown as the main logo within the default templates.

#### OSCAR\_SHOP\_TAGLINE

Default: ''

The tagline that is displayed next to the shop name and in the browser title.

#### OSCAR\_HOMEPAGE

Default: `reverse_lazy('catalogue:index')`

URL of home page of your site. This value is used for *Home* link in navigation and redirection page after logout. Useful if you use a different app to serve your homepage.

#### OSCAR\_ACCOUNTS\_REDIRECT\_URL

Default: 'customer:profile-view'

Oscar has a view that gets called any time the user clicks on 'My account' or similar. By default it's a dumb redirect to the view configured with this setting. But you could also override the view to display a more useful account summary page or such like.

#### OSCAR\_RECENTLY\_VIEWED\_PRODUCTS

Default: 20

The number of recently viewed products to store.

#### OSCAR\_RECENTLY\_VIEWED\_COOKIE\_LIFETIME

Default: 604800 (1 week in seconds)

The time to live for the cookie in seconds.

## OSCAR\_RECENTLY\_VIEWED\_COOKIE\_NAME

Default: 'oscar\_history'

The name of the cookie for showing recently viewed products.

## OSCAR\_HIDDEN\_FEATURES

Defaults: []

Allows to disable particular Oscar feature in application and templates. More information in the [How to disable an app or feature](#) document.

## Pagination

There are a number of settings that control pagination in Oscar's views. They all default to 20.

- OSCAR\_PRODUCTS\_PER\_PAGE
- OSCAR\_OFFERS\_PER\_PAGE
- OSCAR\_REVIEWS\_PER\_PAGE
- OSCAR\_NOTIFICATIONS\_PER\_PAGE
- OSCAR\_EMAILS\_PER\_PAGE
- OSCAR\_ORDERS\_PER\_PAGE
- OSCAR\_ADDRESSES\_PER\_PAGE
- OSCAR\_STOCK\_ALERTS\_PER\_PAGE
- OSCAR\_DASHBOARD\_ITEMS\_PER\_PAGE

## OSCAR\_SEARCH\_FACETS

A dictionary that specifies the facets to use with the search backend. It needs to be a dict with keys `fields` and `queries` for field- and query-type facets. Field-type facets can get an 'options' element with parameters like facet sorting, filtering, etc. The default is:

```
OSCAR_SEARCH_FACETS = {
    'fields': {
        'product_class': {'name': _('Type'), 'field': 'product_class'},
        'rating': {'name': _('Rating'), 'field': 'rating'},
    },
    'queries': {
        'price_range': {
            'name': _('Price range'),
            'field': 'price',
            'queries': [
                # This is a list of (name, query) tuples where the name will
                # be displayed on the front-end.
                (_('0 to 20'), '[0 TO 20]'),
                (_('20 to 40'), '[20 TO 40]'),
            ]
        }
    }
}
```

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```

                (_('40 to 60'), '[40 TO 60]'),
                (_('60+'), '[60 TO *]'),
            ]
        },
    },
}

```

### OSCAR\_PRODUCT\_SEARCH\_HANDLER

The search handler to be used in the product list views. If None, Oscar tries to guess the correct handler based on your Haystack settings.

Default:: None

### OSCAR\_DASHBOARD\_NAVIGATION

Default: see `oscar.defaults` (too long to include here).

A list of dashboard navigation elements. Usage is explained in [How to configure the dashboard navigation](#).

### OSCAR\_DASHBOARD\_DEFAULT\_ACCESS\_FUNCTION

Default: `'oscar.apps.dashboard.nav.default_access_fn'`

OSCAR\_DASHBOARD\_NAVIGATION allows passing an access function for each node which is used to determine whether to show the node for a specific user or not. If no access function is defined, the function specified here is used. The default function integrates with the permission-based dashboard and shows the node if the user will be able to access it. That should be sufficient for most cases.

## Order settings

### OSCAR\_INITIAL\_ORDER\_STATUS

The initial status used when a new order is submitted. This has to be a status that is defined in the OSCAR\_ORDER\_STATUS\_PIPELINE.

### OSCAR\_INITIAL\_LINE\_STATUS

The status assigned to a line item when it is created as part of an new order. It has to be a status defined in OSCAR\_LINE\_STATUS\_PIPELINE.

## OSCAR\_ORDER\_STATUS\_PIPELINE

Default: {}

The pipeline defines the statuses that an order or line item can have and what transitions are allowed in any given status. The pipeline is defined as a dictionary where the keys are the available statuses. Allowed transitions are defined as iterable values for the corresponding status.

A sample pipeline (as used in the Oscar sandbox) might look like this:

```

OSCAR_INITIAL_ORDER_STATUS = 'Pending'
OSCAR_INITIAL_LINE_STATUS = 'Pending'
OSCAR_ORDER_STATUS_PIPELINE = {
    'Pending': ('Being processed', 'Cancelled',),
    'Being processed': ('Processed', 'Cancelled',),
    'Cancelled': (),
}

```

## OSCAR\_ORDER\_STATUS\_CASCADE

This defines a mapping of status changes for order lines which ‘cascade’ down from an order status change.

For example:

```

OSCAR_ORDER_STATUS_CASCADE = {
    'Being processed': 'In progress'
}

```

With this mapping, when an order has it’s status set to ‘Being processed’, all lines within it have their status set to ‘In progress’. In a sense, the status change cascades down to the related objects.

Note that this cascade ignores restrictions from the OSCAR\_LINE\_STATUS\_PIPELINE.

## OSCAR\_LINE\_STATUS\_PIPELINE

Default: {}

Same as OSCAR\_ORDER\_STATUS\_PIPELINE but for lines.

## Checkout settings

### OSCAR\_ALLOW\_ANON\_CHECKOUT

Default: False

Specifies if an anonymous user can buy products without creating an account first. If set to False users are required to authenticate before they can checkout (using Oscar’s default checkout views).

#### **OSCAR\_REQUIRED\_ADDRESS\_FIELDS**

Default: ('first\_name', 'last\_name', 'line1', 'line4', 'postcode', 'country')

List of form fields that a user has to fill out to validate an address field.

### **Review settings**

#### **OSCAR\_ALLOW\_ANON\_REVIEWS**

Default: True

This setting defines whether an anonymous user can create a review for a product without registering first. If it is set to `True` anonymous users can create product reviews.

#### **OSCAR\_MODERATE\_REVIEWS**

Default: False

This defines whether reviews have to be moderated before they are publicly available. If set to `False` a review created by a customer is immediately visible on the product page.

### **Communication settings**

#### **OSCAR\_EAGER\_ALERTS**

Default: True

This enables sending alert notifications/emails instantly when products get back in stock by listening to stock record update signals this might impact performance for large numbers stock record updates. Alternatively, the management command `oscar_send_alerts` can be used to run periodically, e.g. as a cronjob. In this case instant alerts should be disabled.

#### **OSCAR\_SEND\_REGISTRATION\_EMAIL**

Default: True

Sending out *welcome* messages to a user after they have registered on the site can be enabled or disabled using this setting. Setting it to `True` will send out emails on registration.

#### **OSCAR\_FROM\_EMAIL**

Default: `oscar@example.com`

The email address used as the sender for all communication events and emails handled by Oscar.

#### OSCAR\_STATIC\_BASE\_URL

Default: None

A URL which is passed into the templates for communication events. It is not used in Oscar's default templates but could be used to include static assets (e.g. images) in a HTML email template.

#### OSCAR\_SAVE\_SENT\_EMAILS\_TO\_DB

Default: True

Indicates if sent emails will be saved to database as instances of `oscar.apps.communication.models.Email`.

### Offer settings

#### OSCAR\_OFFER\_ROUNDING\_FUNCTION

Default: Round down to the nearest hundredth of a unit using `decimal.Decimal.quantize`

A dotted path to a function responsible for rounding decimal amounts when offer discount calculations don't lead to legitimate currency values.

#### OSCAR\_OFFERS\_INCL\_TAX

Default: False

If `True`, offers will be applied to prices including taxes instead of on prices excluding tax. Oscar used to always calculate offers on prices excluding tax so the default is `False`. This setting also affects the meaning of absolute prices in offers. So a flat discount of 10 pounds in an offer will be treated as 10 pounds before taxes if `OSCAR_OFFERS_INCL_TAX` remains `False` and 10 pounds after taxes if `OSCAR_OFFERS_INCL_TAX` is set to `True`.

#### OSCAR\_OFFERS\_IMPLEMENTED\_TYPES

Default:

```
[
    'SITE',
    'VOUCHER',
]
```

A list of values from among those in the `offer.ConditionalOffer.TYPE_CHOICES` model attribute. The names of the model constants are used, instead of the values themselves. This setting is used to restrict the selectable offer types in the dashboard offers forms (`MetaDataForm` and `OfferSearchForm`), to ones that Oscar currently implements.

## Basket settings

### OSCAR\_BASKET\_COOKIE\_LIFETIME

Default: 604800 (1 week in seconds)

The time to live for the basket cookie in seconds.

### OSCAR\_MAX\_BASKET\_QUANTITY\_THRESHOLD

Default: 10000

The maximum number of products that can be added to a basket at once. Set to `None` to disable the basket threshold limitation.

### OSCAR\_BASKET\_COOKIE\_OPEN

Default: 'oscar\_open\_basket'

The name of the cookie for the open basket.

## Currency settings

### OSCAR\_DEFAULT\_CURRENCY

Default: GBP

This should be the symbol of the currency you wish Oscar to use by default. This will be used by the currency templatetag.

### OSCAR\_CURRENCY\_FORMAT

Default: None

Dictionary with arguments for the `format_currency` function from the [Babel library](#). Contains next options: *format*, *format\_type*, *currency\_digits*. For example:

```
OSCAR_CURRENCY_FORMAT = {
    'USD': {
        'currency_digits': False,
        'format_type': "accounting",
    },
    'EUR': {
        'format': '#,##0\xa0',
    }
}
```

## Upload/media settings

### OSCAR\_IMAGE\_FOLDER

Default: `images/products/%Y/%m/`

The location within the `MEDIA_ROOT` folder that is used to store product images. The folder name can contain date format strings as described in the [Django Docs](#).

### OSCAR\_DELETE\_IMAGE\_FILES

Default: `True`

If enabled, a `post_delete` hook will attempt to delete any image files and created thumbnails when a model with an `ImageField` is deleted. This is usually desired, but might not be what you want when using a remote storage.

### OSCAR\_MISSING\_IMAGE\_URL

Default: `image_not_found.jpg`

Copy this image from `oscar/static/img` to your `MEDIA_ROOT` folder. It needs to be there so the thumbnailer can resize it.

### OSCAR\_THUMBNAILER

Default: `'oscar.core.thumbnails.SorlThumbnail'`

Thumbnailer class that will be used to generate thumbnails. Available options: `SorlThumbnail` and `EasyThumbnails`. To use them `sorl-thumbnail` or `easy-thumbnails` must be installed manually or with `pip install django-oscar[sorl-thumbnail]` or `pip install django-oscar[easy-thumbnails]`. Custom thumbnailer class (based on `oscar.core.thumbnails.AbstractThumbnailer`) can be used as well.

### OSCAR\_THUMBNAIL\_DEBUG

Default: Same as `DEBUG`

When set to `True` the `ThumbnailNode.render` method can raise errors. Django recommends that tags never raise errors in the `Node.render` method in production.

## Slug settings

### OSCAR\_SLUG\_FUNCTION

Default: `'oscar.core.utils.default_slugifier'`

A dotted path to the `slugify` function to use.

Example:

```
# in myproject.utils
def some_slugify(value, allow_unicode=False):
    return value

# in settings.py
OSCAR_SLUG_FUNCTION = 'myproject.utils.some_slugify'
```

## OSCAR\_SLUG\_MAP

Default: {}

A dictionary to target:replacement strings that the `slugify` function will apply before slugifying the value. This is useful when names contain characters which would normally be stripped. For instance:

```
OSCAR_SLUG_MAP = {
    'c++': 'cpp',
    'f#': 'fsharp',
}
```

## OSCAR\_SLUG\_BLACKLIST

Default: []

An iterable of words the `slugify` function will try to remove after the value has been slugified. Note, a word will not be removed from the slug if it would result in an empty slug.

Example:

```
# With OSCAR_SLUG_BLACKLIST = ['the']
slugify('The cat')
> 'cat'

# With OSCAR_SLUG_BLACKLIST = ['the', 'cat']
slugify('The cat')
> 'cat'
```

## OSCAR\_SLUG\_ALLOW\_UNICODE

Default: False

Allows Unicode characters in slugs generated by `AutoSlugField`, which is supported by the underlying `SlugField` in Django >=1.9.

## Dynamic importer settings

### OSCAR\_DYNAMIC\_CLASS\_LOADER

Default: `oscar.core.loading.default_class_loader`

A dotted path to the callable used to dynamically import classes.

## Misc settings

### OSCAR\_COOKIES\_DELETE\_ON\_LOGOUT

Default: `['oscar_recently_viewed_products',]`

Which cookies to delete automatically when the user logs out.

### OSCAR\_GOOGLE\_ANALYTICS\_ID

Tracking ID for Google Analytics tracking code, available as *google\_analytics\_id* in the template context. If setting is set, enables Universal Analytics tracking code for page views and transactions.

### OSCAR\_CSV\_INCLUDE\_BOM

Default: `False`

A flag to control whether Oscar's CSV writer should prepend a byte order mark (BOM) to CSV files that are encoded in UTF-8. Useful for compatibility with some CSV readers, Microsoft Excel in particular.

### OSCAR\_URL\_SCHEMA

Default: `http`

The schema that will be used to build absolute url in `absolute_url` template tag.

## 1.2.13 Signals

Oscar implements a number of custom [signals](#) that provide useful hook-points for adding functionality.

### `product_viewed`

**class** `oscar.apps.catalogue.signals.product_viewed`

Raised when a product detail page is viewed.

Arguments sent with this signal:

**product**

The product being viewed

**user**

The user in question

**request**

The request instance

**response**

The response instance

**product\_search**

**class** oscar.apps.catalogue.signals.**product\_search**

Raised when a search is performed.

Arguments sent with this signal:

**query**

The search term

**user**

The user in question

**user\_registered**

**class** oscar.apps.customer.signals.**user\_registered**

Raised when a user registers

Arguments sent with this signal:

**request**

The request instance

**user**

The user in question

**basket\_addition**

**class** oscar.apps.basket.signals.**basket\_addition**

Raised when a product is added to a basket

Arguments sent with this signal:

**request**

The request instance

**product**

The product being added

**user**

The user in question

### `voucher_addition`

**class** `oscar.apps.basket.signals.voucher_addition`

Raised when a valid voucher is added to a basket

Arguments sent with this signal:

**basket**

The basket in question

**voucher**

The voucher in question

### `start_checkout`

**class** `oscar.apps.checkout.signals.start_checkout`

Raised when the customer begins the checkout process

Arguments sent with this signal:

**request**

The request instance

### `pre_payment`

**class** `oscar.apps.checkout.signals.pre_payment`

Raised immediately before attempting to take payment in the checkout.

Arguments sent with this signal:

**view**

The view class instance

### `post_payment`

**class** `oscar.apps.checkout.signals.post_payment`

Raised immediately after payment has been taken.

Arguments sent with this signal:

**view**

The view class instance

### `order_placed`

**class** `oscar.apps.order.signals.order_placed`

Raised by the `oscar.apps.order.utils.OrderCreator` class when creating an order.

Arguments sent with this signal:

**order**

The order created

**user**

The user creating the order (not necessarily the user linked to the order instance!)

### post\_checkout

**class** oscar.apps.checkout.signals.post\_checkout

Raised by the *oscar.apps.checkout.mixins.OrderPlacementMixin* class when a customer completes the checkout process

**order**

The order created

**user**

The user who completed the checkout

**request**

The request instance

**response**

The response instance

### review\_created

**class** oscar.apps.catalogue.reviews.signals.review\_added

Raised when a review is added.

Arguments sent with this signal:

**review**

The review that was created

**user**

The user performing the action

**request**

The request instance

**response**

The response instance

## 1.2.14 Template tags

### Category tags

Load these tags using `{% load category_tags %}`.

### category\_tree

Generates an annotated list of categories in a structure indented for easy rendering of a nested tree in a single loop:

```
{% category_tree as tree_categories %}
<ul>
{% for category, info in tree_categories %}
  <li>
    <a href="{{ category.get_absolute_url }}">{{ category.name }}</a>
    {% if info.has_children %}
      <ul>
    {% else %}
```

(continues on next page)

(continued from previous page)

```

        </li>
        {% endif %}
    {% for n in info.num_to_close %}
        <ul></li>
        {% endfor %}
    {% endfor %}
</ul>

```

Each item in the list is a tuple of the form:

```

(
    category,
    {
        'has_children': True,    # Whether this node has children in the tree
        'level': 1,             # The depth of this node
        'num_to_close',         # A list indicating the number of leaf branches that
                                # this category terminates.
    }
)

```

The arguments are:

Argument	Description
depth	The depth to which to fetch child categories
parent	The parent category for which to get a list of children

## Shipping tags

Load these tags using `{% load shipping_tags %}`.

### shipping\_charge

Injects the shipping charge into the template context:

Usage:

```

{% shipping_charge shipping_method basket as name %}
Shipping charge is {{ name }}.

```

The arguments are:

Argument	Description
shipping_method	The shipping method instance
basket	The basket instance to calculate shipping charges for
name	The variable name to assign the charge to

## shipping\_charge\_discount

Injects the shipping discount into the template context:

Usage:

```
{% shipping_discount shipping_method basket as name %}
Shipping discount is {{ charge }}.
```

The arguments are:

Argument	Description
shipping_method	The shipping method instance
basket	The basket instance to calculate shipping charges for
name	The variable name to assign the charge to

## shipping\_charge\_excl\_discount

Injects the shipping charges with no discounts applied into the template context:

Usage:

```
{% shipping_charge_excl_discount shipping_method basket as name %}
Shipping discount is {{ name }}.
```

The arguments are:

Argument	Description
shipping_method	The shipping method instance
basket	The basket instance to calculate shipping charges for
name	The variable name to assign the charge to

## Image tags

Load these tags using `{% load image_tags %}`.

### oscar\_thumbnail

Returns the thumbnail URL for a source file.

```

```

or places thumbnail object in the context, providing access to the properties of the thumbnail such as the height and width.

```
{% oscar_thumbnail image.original "70x70" upscale=False as thumb %}

```

Usage:

```
{% oscar_thumbnail [source] [size] [options] %}
```

or

```
{% oscar_thumbnail [source] [size] [options] as [variable] %}
```

When the `OSCAR_THUMBNAIL_DEBUG` setting is set to `True`, this template tag will fail with an error if an exception is raised while generating the thumbnail. If set to `False`, an empty string is returned.

The arguments are:

Argument	Description
<code>source</code>	Can be an <code>ImageField</code> , <code>FileField</code> , a file name (assuming <code>default_storage</code> ), a URL.
<code>size</code>	Specified as <code>widthxheight</code> , <code>widthx</code> or <code>xheight</code> . Width and height are in pixels. E.g. “70x120”, “50x”, “x155”.
<code>options</code>	Space separated list of options which are used when processing the image to a thumbnail. E.g. option <code>upscale=False</code> .

## Datetime filters

Load these tags using `{% load datetime_filters %}`.

### timedelta

Returns a human-readable string representation of a time delta, in the current locale:

```
Time since creation: {{ basket.time_since_creation|timedelta }}
```

This renders something like:

```
Time since creation: 2 days
```

## URL tags

Load these tags using `{% load url_tags %}`.

### absolute\_url

Returns an absolute URL for the provided domain and path.

```
<a href="{% absolute_url site.domain reset_url %}" class="btn-primary">Reset password</a>
```

This tag can be used with `blocktrans` as follows:

```
{% absolute_url site.domain reset_url as absolute_reset_url %}
{% blocktrans with url=absolute_reset_url %}
    You can reset your password here - {{ url }}
{% endblocktrans %}
```

The schema for absolute url can be set through `OSCAR_URL_SCHEMA` setting (`http` by default).

## 1.3 The Oscar open-source project

Learn about the ideas behind Oscar and how you can contribute.

### 1.3.1 Oscar design decisions

The central aim of Oscar is to provide a solid core of an e-commerce project that can be extended and customised to suit the domain at hand. This is achieved in several ways:

#### Core models are abstract

Online shops can vary wildly, selling everything from turnips to concert tickets. Trying to define a set of Django models capable for modelling all such scenarios is impossible - customisation is what matters.

One way to model your domain is to have enormous models that have fields for every possible variation; however, this is unwieldy and ugly.

Another is to use the Entity-Attribute-Value pattern to use add meta-data for each of your models. However this is again ugly and mixes meta-data and data in your database (it's an SQL anti-pattern).

Oscar's approach to this problem is to have minimal but abstract models where all the fields are meaningful within any e-commerce domain. Oscar then provides a mechanism for subclassing these models within your application so domain-specific fields can be added.

Specifically, in many of Oscar's apps, there is an `abstract_models.py` module which defines these abstract classes. There is also an accompanying `models.py` which provides an empty but concrete implementation of each abstract model.

#### Classes are loaded dynamically

The complexity of scenarios doesn't stop with Django models; core parts of Oscar need to be as customisable as possible. Hence almost all classes (including views) are *dynamically loaded*, which results in a maintainable approach to customising behaviour.

#### URLs and permissions for apps are handled by app config instances

The `oscar.core.application.OscarConfig` class handles mapping URLs to views and permissions at an per-app level. This makes Oscar's apps more modular, and makes it easy to customise this mapping as they can be overridden just like any other class in Oscar.

#### Templates can be overridden

This is a common technique relying on the fact that the template loader can be configured to look in your project first for templates, before it uses the defaults from Oscar.

### 1.3.2 Release notes

Release notes for each version of Oscar published to PyPI.

3.2 release branch

#### Oscar 3.2 release notes

**release** TBD

- *Compatibility*
- *What's new in Oscar 3.2?*
- *Backwards incompatible changes*
- *Removal of deprecated features*
- *Minor changes*
- *Dependency changes*
- *Deprecated features*

#### Compatibility

Oscar 3.2 is compatible with Django 3.1 and Django 3.2 and Python versions 3.7 to 3.9.

Support for Django 2.2 has been dropped. Support for Python 3.6 has been dropped.

#### What's new in Oscar 3.2?

- `oscar.order.mixins.EventHandlerMixin` was created for easily using the `EventHandler` without manually create the handler every time.
- **Added more product option types:**
  - Select
  - Radio
  - Multi select
  - Checkbox
- Wishlists are now shareable, inside your account you can make your wishlist private(default), public or shared. Public wishlists are available for everyone, shared wishlists only for the emails the user allowed access to.

## Backwards incompatible changes

- The interface for the `OPTION_FIELD_FACTORIES` has changed and now receives the form, the product and the option. Update your overrides as required.
- The `value` field on the `BasketLineAttribute` and `OrderLineAttribute` models is a `JSONField` now. If you have overridden the `description` property on the `BasketLine` and `OrderLine` models, you'll need to change this to make sure options/multi options are displayed normally in the basket and order.
- The wishlist create and update view now inherits from a new mixin that shares functionality. If you've overrides on those views, you should check to see if everything works as intended.

## Removal of deprecated features

- `url_has_allowed_host_and_scheme` is no longer present in `oscar.core.compat` and should be directly imported as `django.utils.http.url_has_allowed_host_and_scheme`

## Minor changes

- Added a new helper `core.utils.is_ajax` which replicates the logic of Django's `HttpRequest.is_ajax` method that was deprecated in Django 3.1.
- Persisted `OrderFactory.date_placed` to the database when set, instead of just setting it on the object without saving it.
- Fixed getting non public categories with `get_categories` by only returning browsable categories.
- Reviews can now only be viewed and placed when the product is public.
- The title has been removed by default from all address forms in Oscar. The database field is still present, and projects that wish to retain this field in their forms should add it back by overriding the `fields` property of the `Meta` class for applicable forms.
- Changed `PartnerProductFilterMixin` queryset to also include child products for the partner user.
- Changed `RangeDetailView` to respect the `OSCAR_PRODUCTS_PER_PAGE` setting for pagination.
- Fixed the output of the `OfferReportGenerator` and generated it's data more efficiently.
- Avoid `KeyError` in `BulkEditMixin` if objects matching filters no longer exist.
- Changed the order of `check_skip_conditions` and `check_pre_conditions`.
- Made it easier to pass custom arguments to order processing `EventHandler`.
- Fixed the handling of `InvalidPage` exceptions in `CatalogueView`.
- Added `search_fields` to `AbstractAddress` model.
- Added a uniqueness constraint across `code` and `product_class` for the `ProductAttribute` model to prevent duplicate attribute codes. This comes with a migration that will remove duplicate codes before applying the unique constraint migration.
- Implemented a more efficient approach for range queries. This will make (for example) multiple offers in your site a lot faster.
- Made the attribute codes unique per product class
- Changed the review form to `as_stars` filter instead of `if` statements
- Prevent unnecessary database query in `UseFirstStockRecord` strategy

- Fix the issue where html5 validation errors were not shown in the dashboard.
- Changed the stock to be consumed and allocated in an atomic state.
- Fixed not requiring a range when choosing a custom condition
- Changed the basket to be readonly in the django-admin
- The request is now passed to all the communication event type messages, so emails can be sent from the correct site in case of a multisite project.
- Added basket post data back to the form when invalid

## Dependency changes

Python package dependencies:

- Upgraded `django-treebeard` to version `>=4.3.0`
- Upgraded `django-phonenumber-field` to version `>=4.0.0,<7.0.0`
- Upgraded `django-extra-views` to version `>=0.13,<0.15`

Javascript and CSS dependencies:

- Upgraded `@fortawesome/fontawesome-free` to version 6.1.1.
- Upgraded `bootstrap` to version 4.6.1.
- Upgraded `inputmask` to version 5.0.7.
- Upgraded `tinymce` to version 6.0.3.
- Upgraded `eslint` to version 8.16.0.
- Upgraded `nan` to version 2.16.0.
- Upgraded `sass` to version 1.52.1.
- Upgraded `tempusdominus-bootstrap-4` to version 5.39.2.

## Deprecated features

- The `annotate_form_field` template tag is deprecated. It's functionality of annotating form fields with their widget type is now built in to Django.
- In the `ORDER_PLACED` email templates, the variable `status_url` should not be used anymore. Please use `status_path` in conjunction with the `absolute_url` template tag instead. It will be removed in a future version of Oscar.

3.1 release branch

## Oscar 3.1 release notes

release 2021-07-16

- *Compatibility*
- *What's new in Oscar 3.1?*
- *Changes to `dashboard.offers` and `dashboard.vouchers` apps*
- *Removal of deprecated features*
- *Minor changes*
- *Dependency changes*

### Compatibility

Oscar 3.1 is compatible with Django 2.2, Django 3.1 and Django 3.2 and Python versions 3.6 to 3.9.

Support for Django 3.0 has been dropped.

### What's new in Oscar 3.1?

Improvements have been made to the dashboard interface for creating and editing offers, vouchers, and voucher sets.

These better expose the flexible implementation of offer and voucher functionality, allowing:

- creation of offers of all types
- creation of vouchers with multiple offers
- creation of voucher sets of all usages, and with multiple offers

Details of these changes can be found in the *Changes to “`dashboard.offers`” and “`dashboard.vouchers`” apps* section below.

### Changes to `dashboard.offers` and `dashboard.vouchers` apps

The `dashboard.offers` and `dashboard.vouchers` apps have been reworked significantly. There have also been changes to the related models, signals, and utility functions in the `offer` and `voucher` apps.

You should review [these changes](#), especially if you have made customisations that depends on these apps, as some are backwards incompatible. The functional changes are summarised below.

- The dashboard offer list view now displays all types of offer (previously voucher offers were hidden), with the ability to filter the list based on type.
- The dashboard offer creation and update views now allow creation of offers of all types (previously only site-wide offers could be created). This exposes the full flexibility of Oscar's offer types in the dashboard. Note that a new setting (`OSCAR_OFFERS_IMPLEMENTED_TYPES`) has been added, which restricts the selectable types to ones that Oscar currently implements.
- The dashboard voucher creation and edit views have been significantly refactored. Previously, a conditional offer (and associated benefit/condition) was created automatically when creating a new voucher. This is no longer the case and instead the offers must be created separately in advance of assigning them to a voucher. These views now allow assigning multiple offers to a voucher, exposing the full flexibility of this app.

- The create view for voucher sets has been changed to no longer create a conditional offer on the fly. As with vouchers, the offer has to be created separately before being assigned to the voucher set.
- The logic for generating vouchers for voucher sets has been moved from the `save` method of the `VoucherSet` into the form logic for the dashboard form. This removes a potentially unsafe and unexpected generation of new vouchers when a voucher set is saved from outside the dashboard.
- `offer.signals` has been renamed to `offer.receivers` for consistency with other apps.
- `voucher.signals.delete_unused_related_conditional_offer` has been removed.
- `voucher.utils.get_offer_name` has been removed, as voucher-type offers are no longer automatically created, updated, and deleted.

## Removal of deprecated features

- The `catalogue.Option.is_required` property is removed. Check `Option.required` instead.
- The `oscar.apps.dashboard.catalogue.views.filter_products` utility function has been removed. Use the methods provided by `PartnerProductFilterMixin` instead.
- The `basket.AbstractLine.is_available_for_discount` property is removed. Use `is_available_for_offer_discount()` instead.

## Minor changes

- `AbstractProductAttributeValue.value_boolean` has changed from a deprecated `NullBooleanField` to a `BooleanField`. This requires a database migration.
- A `refresh()` method was added to `ProductAttributesContainer` to allow refreshing attribute information from the database without reinitialising the `Product` object.
- The deprecated `providing_args` argument has been removed from all of Oscar's signals.
- `oscar.apps.customer.alerts.utils.AlertsDispatcher` is now imported dynamically to allow overriding.
- The utility functions in `oscar.apps.customer.history` for reading to and writing from Oscar's recently viewed products cookie have been refactored into a dynamically loaded `CustomerHistoryManager` class that projects can override.
- The dashboard catalogue search results now include products whose children match the searched parameters.

## Dependency changes

Python package dependencies:

- Upgraded `django-phonenumber-field` to version 3.0.
- Upgraded `factory-boy` to version 3.0.

Javascript and CSS dependencies:

- Upgraded `bootstrap` to version 4.6.0.
- Upgraded `jquery` to version 3.6.0.
- Upgraded `tinymce` to version 5.7.

3.0 release branch

### Oscar 3.0 release notes

**release** 2021-01-27

Welcome to Oscar 3.0!

This is a significant release, in which all of Oscar’s core templates and styles have been ported to Bootstrap 4. Support for Bootstrap 3 has been dropped, and projects that upgrade to Oscar 3 will also need to upgrade their frontend and dashboard templates to use Bootstrap 4.

- *Compatibility*
- *What’s new in Oscar 3.0?*
- *Backwards incompatible changes*
- *Bug fixes*
- *Removal of deprecated features*
- *Minor changes*
- *Dependency changes*
- *Deprecated features*

### Compatibility

Oscar 3.0 is compatible with Django 2.2, Django 3.0 and Django 3.1 as well as Python 3.6, 3.7 and 3.8.

Support for Django 1.11 and Django 2.1 has been dropped. Support for Python 3.5 has been dropped.

### What’s new in Oscar 3.0?

- Oscar 3.0 features a major upgrade of Oscar’s default templates and styles to use Bootstrap version 4.5. Both the front-end and dashboard templates have been refactored to work with Bootstrap 4. This is a major, non-backward compatible change for projects that rely on or extend the default Oscar templates.

The Bootstrap 4 [migration guide](#) is a helpful resource for migration from version 3.

- As with Bootstrap 4 itself, Oscar’s default styles are now defined using SASS instead of LESS.
- To replace Bootstrap 3’s Glyphicons, Oscar’s default templates now rely on [Font Awesome](#).
- Support was added to the `catalogue.Option` model to define the type of option. This is used by the `AddToBasketForm` to determine the appropriate form field to display for that option in the add-to-cart form. Currently supported types are: text, integer, float, boolean, and date.

The `type` field on the `Option` model (previously used to denote whether the option is required) has been repurposed to store the type of the option, and a new `required` field has been added to denote whether the option is required. Projects that have forked the catalogue app will need to generate custom migrations for these model field changes. Projects should pay close attention to the data migration provided in `catalogue/migrations/0019_option_required.py` for this change.

- Added support for restricted combinations of offers. When creating an offer in the dashboard, administrators can now define a restricted set of other offers that offer can be used in combination with. This changes introduces a new `combinations` field on the `Offer` model which requires a database migration.

- The base `ReportGenerator` class has been refactored to make it easier to use. Subclasses must now define either a `model_class` or `queryset` to indicate which model/queryset the report generator should use, or alternatively override the `get_queryset()` method. Failure to do one of these will result in an exception.
- Filtering by date range is now properly applied during CSV export of reports.
- New fields `meta_title` and `meta_description` have been added to both the `Product` and `Category` models, which can be used to override the HTML title and meta description content for product and category pages. These are editable from the search engine optimisation tab in the dashboard edit views for products and categories respectively. A database migration is required for this change.

### Backwards incompatible changes

- The `StockRecord.price_excl_tax` field has been renamed to `StockRecord.price`. Projects that have forked the `partner` app will need to generate their own migration to rename this field.
- The `annotate_form_field` template tag will now set the `widget_type` in [the format used by Django 3.1](#): so no longer `CheckboxInput`, but just `checkbox`.
- The signature of the `shipping_discount` methods on `Offer` and `Benefit` has changed to accept an optional `currency` argument, which is now supplied when calling those methods. This allows currency-aware determination of shipping discounts.
- The signature of the `Benefit.round` method has changed to accept an optional `currency` argument, which is now supplied when calling those methods. The currency is also passed to any custom rounding function that is defined using `OSCAR_OFFER_ROUNDING_FUNCTION`. This allows currency-aware rounding.

### Bug fixes

- `catalogue.product_attributes.ProductAttributesContainer` was refactored to ensure that attributes inside the container are always properly loaded at initialisation. The container is now wrapped in a `SimpleLazyObject` when assigned to `Product.attr`. `ProductAttributesContainer.initiate_attributes()` was removed as the database query now happens on instantiation.
- Fixed the handling of multiple non-exclusive offers with a count condition ([#3162](#)).

### Removal of deprecated features

- Several deprecated model fields have been removed in Oscar 3.0:

- `order.Line.est_dispatch_date`
- `order.Line.unit_cost_price`
- `order.Line.unit_retail_price`
- `partner.StockRecord.cost_price`
- `partner.StockRecord.price_retail`

Oscar ships with migrations that remove these fields. If you want to continue using them, please make sure you add the fields back to your forked app before migrating. Projects that have forked the `order` and `partner` apps will need to generate their own migrations to remove these fields.

- `customer.notifications.services.notify_user` and `customer.notifications.services.notify_users` have been removed. Use `communication.utils.Dispatcher.notify_user` and `communication.utils.Dispatcher.notify_users` respectively instead.

- `customer.alerts.utils.send_alerts`, `customer.alerts.utils.send_alert_confirmation` and `customer.alerts.utils.send_product_alerts` have been removed. Use `customer.alerts.utils.AlertsDispatcher.send_alerts`, `customer.alerts.utils.AlertsDispatcher.send_product_alert_confirmation_email_for_user` and `customer.alerts.utils.AlertsDispatcher.send_product_alert_email_for_user` respectively instead.
- The `CommunicationEventType`, `Email` and `Notification` models that moved from the `customer` app to the `communication` app in Oscar 2.1 can no longer be dynamically loaded from their old paths.

## Minor changes

- Several models were updated to define a default ordering, to avoid issues with inconsistent ordering of items in the dashboard and elsewhere. Database migrations are required for these changes. Models affected are:
  - `analytics.UserProductView`
  - `analytics.UserSearch`
  - `catalogue.Option`
  - `communication.CommunicationEventType`
  - `communication.Email`
  - `customer.ProductAlert`
  - `offer.Range`
  - `order.OrderDiscount`
  - `order.OrderNote`
  - `payment.Source`
  - `payment.SourceType`
  - `voucher.VoucherSet`
  - `voucher.Voucher`
  - `voucher.VoucherApplication`
- Database indexes were added to several model fields to improve query efficiency. Affected fields are:
  - `catalogue.Option.name`
  - `communication.CommunicationEventType.name`
  - `customer.ProductAlert.date_created`
  - `payment.SourceType.name`
  - `voucher.VoucherSet.date_created`
  - `voucher.Voucher.date_created`
  - `voucher.VoucherApplication.date_created`
- Category slugs can now be edited via the dashboard.
- A new method `get_attribute_values()` was added to the `Product` model which returns a merged set of attribute values for child and parent products.
- The behaviour of `checkout.views.ThankYouView` when no order is found in the session has changed, to redirect the user to the URL defined by `settings.OSCAR_HOME PAGE` instead of returning a page not found error.

## Dependency changes

Python package dependencies:

- Upgraded `django-tables2` to version 2.3.

Javascript and CSS dependencies:

- Upgraded `bootstrap` to version 4.5.3.
- Added `tempusdominus-bootstrap-4` version 5.1, use for Bootstrap 4 datepicker inputs.
- Upgraded `tinymce` to version 5.6.

## Deprecated features

- The `catalogue.Option.is_required` is deprecated. Check `Option.required` instead.

## Oscar 3.0.1 release notes

**release** 2021-02-22

This is Oscar 3.0.1, a bugfix release.

### Bug fixes

- Pinned the dependency of `django-treebeard` to version 4.4.x, because of a breaking change introduced in version 4.5 that requires database migrations. It is likely
- Fix static imports of `AlertsDispatcher` that should be dynamic, and move alert queryset generation into an overridable class.
- Add a method to `ProductAttributesContainer` to allow refresh of product attribute values from the database without reloading the whole product instance.

## Oscar 3.0.2 release notes

**release** 2021-02-22

This is Oscar 3.0.2, a bugfix release.

### Bug fixes

- Fix static assets missing from PyPi package.

2.2 release branch

## Oscar 2.2 release notes

**release** 2021-11-02

Welcome to Oscar 2.1! This is a compatibility release which adds support to Oscar version 2.x for Django 3.2 LTS.

- *Compatibility*
- *Backwards incompatible changes*

### Compatibility

Oscar 2.1 is compatible with Django versions 2.2 and 3.2, and Python versions 3.6, 3.7 and 3.8.

### Backwards incompatible changes

- The `annotate_form_field` template tag will now set the `widget_type` in [the format used by Django 3.1](#): so no longer `CheckboxInput`, but just `checkbox`.

2.1 release branch

## Oscar 2.1 release notes

**release** 2020-07-10

Welcome to Oscar 2.1! This is a significant release which includes a number of new features and performance improvements.

- *Compatibility*
- *What's new in Oscar 2.1?*
- *Backwards incompatible changes in Oscar 2.1*
- *Bug fixes*
- *Removal of deprecated features*
- *Minor changes*
- *Dependency changes*
- *Deprecated features*

## Compatibility

Oscar 2.1 is compatible with Django versions 2.2 and 3.0, and Python versions 3.5, 3.6, 3.7 and 3.8.

Support for Django versions 1.11 and 2.0 has been dropped.

## What's new in Oscar 2.1?

- The ability to add arbitrary surcharges to orders (e.g., a processing fee for a particular payment method) was introduced. See [How to configure surcharges](#) for details on how to configure this. This change requires a database migration.
- The database performance of `offer.Range.all_products()` was substantially improved. The internals of that method have changed and specifically `Range.invalidate_cached_ids()` has been removed and replaced with `Range.invalidate_cached_queryset()`.
- The `upload_to` argument of image fields in Oscar's `ProductImage` and `ProductAttributeValue` models was changed to use a callable, so that Django doesn't generate migrations if a project modifies the `OSCAR_IMAGE_FOLDER` to specify a custom directory structure for uploaded images. This change requires a database migration.
- `catalogue.Category` now has an `is_public` boolean field that serves a similar purpose to `catalogue.Product.is_public` - i.e., to hide categories public views. The `Category` model also now has a custom manager that provides a `browsable()` queryset method that excludes non-public categories. This change requires a database migration.

Category hierarchy implies that the children of any non-public category are also non-public. This is enforced through an `ancestors_are_public` field on the `Category` model.

- A `date_updated` field was added to the `basket.Line` model, which is updated every time a line is saved. This change requires a database migration.

## Communications app

A new `communication` app was introduced to provide a single point of entry for all communications sent by Oscar. This is a significant change with implications as follows:

- Projects will need to add `oscar.apps.communication.apps.CommunicationConfig` to `INSTALLED_APPS`.  
The `CommunicationEventType`, `Email` and `Notification` models have moved from the `customer` app to the `communication` app. In order to preserve existing data, the table names for these models are unchanged.  
This change requires a database migration.
- The `Dispatcher` class moved from `customer.utils` to `communication.utils`. `Dispatcher` is now responsible for sending all notifications, and not just emails.
- A `CustomerDispatcher` utility class that wraps the core `Dispatcher` has been introduced to the `customer` app for sending communications to customers.
- An `AlertsDispatcher` utility class that wraps the core `Dispatcher` has been introduced to the `customer.alerts` module for sending product alerts.
- An `OrderDispatcher` utility class that wraps the core `Dispatcher` has been introduced to the `order` app for sending order related communications.
- A new setting, `OSCAR_SAVE_SENT_EMAILS_TO_DB` controls whether emails sent through the `Dispatcher` are saved to the database. This defaults to `True`.

- The ability to send multipart emails with attachments was added to the new dispatcher.
- All communication email templates (`commtype_*`) have moved from `customer/emails` to `communication/emails`.
- Templates in `customer/email/` and `customer/notification/` have moved to `communication/email/` and `communication/notification/`.
- An `absolute_url` template tag was introduced to facilitate generating absolute URLs in templates for a given domain and path. The schema for generated URLs is configured via the `OSCAR_URL_SCHEMA` setting, which defaults to `http`.

### Backwards incompatible changes in Oscar 2.1

- The `category` field has been removed from the `communication.Notification` model. This change requires database migration.
- The `checkout.mixins.OrderPlacementMixin.send_confirmation_message` method has been replaced with a new `send_order_placed_email` method.
- `customer.notifications.context_processors.notifications` has moved to `communication.notifications.context_processors.notifications`.

### Bug fixes

- Fixed a bug in the handling of requests to save an item in the basket for later([#3215](#)).
- Fixed an error when deleting an offer whose related conditions/benefits have been deleted.
- Fixed handling of count conditions in `MultibuyDiscountBenefit`. Previously, when a count condition was used with this benefit it would result in a discount being applied for all items in the basket rather than the cheapest one.
- Fixed a bug where a line could not be deleted from the basket, if the basket had another line with a validation error - i.e. its product was out of stock (see [#2791](#) and [#1654](#)).
- Fixed a bug where non-public child products were not excluded from parent product forms and detail views.

### Removal of deprecated features

- Support for verifying order hashes using an insecure MD5 algorithm generated by Oscar 1.5 and below has been dropped. The `OSCAR_DEPRECATED_ORDER_VERIFY_KEY` setting is no longer used. Order verification hashes generated by Oscar 1.5 and lower will no longer validate.
- `offer.Range.contains()` has been removed. Use `contains_product()` instead.
- `catalogue.managers.ProductManager` has been removed. Use `catalogue.managers.ProductQuerySet.as_manager()` instead.
- `catalogue.managers.BrowsableProductManager` has been removed. Use `Product.objects.browsable()` instead.
- `catalogue.Product.browsable` has been removed. Use `Product.objects.browsable()` instead.
- Invalid URLs supplied to `OSCAR_DASHBOARD_NAVIGATION` are no longer ignored. URLs that cannot be resolved will now result in a `NoReverseMatch` exception. URLs that are not provided by a subclass of `oscar.core.application.OscarDashboardConfig` will result in a `KeyError`.

- `customer.forms.PasswordResetForm.get_reset_url` has been removed.
- The internal and undocumented class `oscar.core.compat.UnicodeCSVReader` has been removed. Use `csv.reader` instead.

## Minor changes

- `OrderPlacementMixin.place_order` now ignores inactive vouchers when placing an order (instead of raising an exception), for consistency with how the basket flows handle inactive vouchers.
- Fixed the logic of `StockRequired.parent_availability_policy` to use child products to determine availability of children, rather than the parent.
- `customer.forms.PasswordResetForm` now uses the parent class' `get_users()` method to determine the list of users to send an email to. `get_users()` filters out users who do not currently have a usable password - which did not happen previously.

This change was made in response to changes in Django to address CVE-2019-19844. Oscar's `PasswordResetForm` was not vulnerable to the issue in Django's form, but it was possible to send a password reset email to unintended recipients because of unicode character collision.

- `catalogue.Product.is_public` is now an indexed field. This change requires a database migration.
- When a voucher that was created through the Oscar dashboard is deleted, the auto-generated offer that was created with the voucher is also deleted.
- Fixed the `brand_title` block in `partials/brand.html` so that it doesn't span unclosed HTML tags.
- `customer.views.ProfileUpdateView.form_valid` was modified to use a new `send_email_changed_email` method.
- `customer.views.ChangePasswordView.form_valid` was modified to use a new `send_password_changed_email` method.
- A public method was added to the `ProductQuerySet`, which filters on products with `is_public=True`.

## Dependency changes

Python package dependencies:

- Upgraded `pillow` to version 6.0.0 or higher.
- Upgraded `django-extra-views` to version 0.13.
- Upgraded `django-haystack` to version 3.0 or higher.
- Upgraded `django-phonenumbers-field` to version 3.0.
- Upgraded `django-tables2` to version 2.2.
- Upgraded `sorl-thumbnail` (optional requirement) to version 12.6.
- Upgraded `easy-thumbnails` (optional requirement) to version 2.7.

Javascript dependencies:

- Upgraded `jquery` to version 3.5.
- Upgraded `inputmask` to version 5.0.
- Upgraded `select2` to version 4.0.
- Upgraded `tinymce` to version 5.3.

## Deprecated features

- `customer.alerts.utils.send_alerts` is deprecated. Use `AlertsDispatcher.send_alerts` instead.
- `customer.alerts.utils.send_alert_confirmation` is deprecated. Use `AlertsDispatcher.send_product_alert_confirmation_email_for_user` instead.
- `customer.alerts.utils.send_product_alerts` is deprecated. Use `AlertsDispatcher.send_product_alert_email_for_user` instead.
- `customer.notifications.services.notify_user` is deprecated. Use `Dispatcher.notify_user``.
- `customer.notifications.services.notify_users` is deprecated. Use `Dispatcher.notify_users` instead.

## Oscar 2.1.1 release notes

**release** 2021-02-22

This is Oscar 2.1.1, a bugfix release.

## Bug fixes

- Pinned the dependency of `django-treebeard` to version 4.4.x, because of a breaking change introduced in version 4.5 that requires database migrations. It is likely

2.0 release branch

## Oscar 2.0 release notes

**release** 2019-07-04

Welcome to Oscar 2.0. This is a significant release which includes a number of new features and backwards incompatible changes. In particular the way Oscar configures apps has been refactored and projects that have forked apps will need to follow the section on *Migrating forked apps*.

- *Compatibility*
- *What's new in Oscar 2.0?*
- *Backwards incompatible changes in Oscar 2.0*
- *Dependency changes*
- *Deprecated features*

## Compatibility

Oscar 2.0 is compatible with Django 1.11, Django 2.1 and Django 2.2 as well as Python 3.5, 3.6 and 3.7.

Support for Python 2.7 and Python 3.4 has been dropped.

## What's new in Oscar 2.0?

- Added an `is_public` field to the `Product` model that is used to exclude products from the browsable queryset. A `browsable_dashboard` queryset is provided for use in the dashboard, which includes non-public products. This is a model change, so you will need to run the supplied migrations.
- Added an `order.OrderStatusChange` model that is used to log order status changes applied by `Order.set_status()`. This is a new model, so you will need to run the supplied migrations.
- Added an `OSCAR_OFFERS_INCL_TAX` setting which can be used to configure whether offer discounts are applied on the tax-inclusive amount. This defaults to `False`, to preserve the original behaviour of discount application.
- Added database index definitions for commonly queried fields in a range of models. See [#2875](#). This will require projects that have forked Oscar apps to generate corresponding migrations.
- Added a `filter_by_attributes` method on the `ProductQuerySet`, to allow database-level filtering of products by attribute.
- Added support for re-ordering product images in the dashboard, and for adding an arbitrary number of additional images into the formset.
- Added an `OSCAR_THUMBNAILER` setting can be used to customise thumbnail generation. Support is included for `Sorl` and `Easy Thumbnails`. The default is `'oscar.core.thumbnails.SorlThumbnail'`.
- Added `oscar_thumbnail` template tag (to `image_tags`) to generate thumbnails in templates. All uses of `Sorl's thumbnail` template tag in the shipped templates have been replaced with `oscar_thumbnail`.
- `sorl-thumbnail` has been dropped as a dependency. Use `pip install django-oscar[sorl-thumbnail]` or `pip install django-oscar[easy-thumbnails]` to explicitly install the dependencies for either of the two supported thumbnailers.
- Added the ability to manage `catalogue.Option` objects from the dashboard.

## Removal of deprecated features

- Product alert emails are now sent as `Communication Events` and the deprecated product alert email templates have been removed. The templates for these emails have been replaced as follows:
 

– <code>customer/alerts/emails/confirmation_subject.txt</code>	to	<code>customer/emails/commtype_product_alert_confirmation_subject.txt</code>
– <code>customer/alerts/emails/confirmation_body.txt</code>	to	<code>customer/emails/commtype_product_alert_confirmation_body.txt</code>
– <code>customer/alerts/emails/alert_subject.txt</code>	to	<code>customer/emails/commtype_product_alert_subject.txt</code>
– <code>customer/alerts/emails/alert_body.txt</code>	to	<code>customer/emails/commtype_product_alert_body.txt</code>
- Support for category URLs without a primary key has been removed.

Enforcement of unique slugs for categories has also been removed, as enforcing this was inefficient and not thread safe. Since a primary key is now required for category URLs, there is no need for slugs to be unique.

- `customer.forms.SetPasswordForm` and `customer.forms.PasswordChangeForm` have been removed. Use `django.contrib.auth.forms.SetPasswordForm` and `django.contrib.auth.forms.PasswordChangeForm` instead.
- The `views.decorators.staff_member_required` decorator has been removed. Use `permissions_required(['is_staff'])` instead.
- The `UserAddress.num_orders` property has been removed. Use `num_orders_as_shipping_address` and `num_orders_as_billing_address` instead.
- Support has been removed for the dynamic loading of formset classes that were moved in previous releases. Projects must update their `get_class` calls to use the new paths. The paths that have changed are as follows:

Old path	New path	Affected classes
<code>basket.forms</code>	<code>basket.formsets</code>	<code>BaseBasketLineFormSet</code> <code>BasketLineFormSet</code> <code>BaseSavedLineFormSet</code> <code>SavedLineFormSet</code>
<code>dashboard.catalogue.forms</code>	<code>dashboard.catalogue.formsets</code>	<code>BaseStockRecordFormSet</code> <code>StockRecordFormSet</code> <code>BaseProductCategoryFormSet</code> <code>ProductCategoryFormSet</code> <code>BaseProductImageFormSet</code> <code>ProductImageFormSet</code> <code>BaseProductRecommendationFormSet</code> <code>ProductRecommendationFormSet</code> <code>ProductAttributesFormSet</code>
<code>wishlists.forms</code>	<code>wishlists.formsets</code>	<code>LineFormset</code>

## Minor changes

- Dropped `action=""` and `action="."` attributes, following the lead of Django and as per the HTML5 specification.
- Replaced use of Django's procedural authentication views with the corresponding class-based views.
- `OrderPlacementMixin.get_message_context()` is now passed a `code` argument specifying the communication event type code for the message being sent.
- We've dropped the dependency on `Unidecode` due to license incompatibilities, `oscar.core.utils.default_slugifier` now uses `oscar.core.utils.cautious_slugify` to handle Unicode characters in slugs when `OSCAR_SLUG_ALLOW_UNICODE` is `False`.
- Fixed input validation for `dashboard.offers.forms.BenefitForm` when a range was specified but other fields were empty.
- Fixed calculation of weight-based shipping charges in cases where the basket weight is an exact multiple of a weight band's upper limit.
- The `sort_by` field on `catalogue.reviews.SortReviewsForm` was made optional and the logic in `ProductReviewList` adjusted so that the form fields don't have to be rendered manually because of form errors.
- Added a `datetime_filters` tag library that provides a `timedelta` template filter for rendering time deltas in human readable format.
- `OSCAR_OFFER_ROUNDING_FUNCTION` previously accepted a function as its value. It now only accepts a dotted path to a function as its value

- Fixed the logic of `offers.Range.all_products()` to make it consistent with `Range.contains_product()` in excluding products specified in `excluded_product_ids`.
- Added a `COMPARISON_FIELDS` constant to `catalogue.Category` to restrict which fields are fetched from the database when performing category comparison queries.
- Significantly improved the database efficiency of the `category_tree` template tag.
- Order confirmation emails now include an order status link for authenticated users, as well as guest users, and order status is displayed consistently in both logged-in and anonymous order detail views.
- Fixed display of styled HTML emails in account email detail views, wrapping them in an `iframe` to avoid leakage of styles into the page.
- Bootstrap datetime picker JS/CSS assets removed from base layout, see [#2584](#).
- Oscar's 500 error template no longer inherits other templates and does not use any template tags and styling to avoid potential errors caused by the template itself (see [#2971](#)).
- Line discounts are now capped to a minimum of zero - i.e., negative discounts will not be reported.

### Backwards incompatible changes in Oscar 2.0

- Redirection to the parent detail view for child products is disabled by default. Child products now have their own detail view, which allows displaying their price and images independently from the parent product. To revert to the previous behaviour of redirecting to the parent product, set `oscar.apps.catalogue.views.ProductDetailView.enforce_parent` to `False`.
- Renamed the modules containing the Django app config classes for Oscar apps (apart from the oscar app), from `config` to `apps`.
- Removed the app modules of Oscar apps, moving the configuration (related to permissions, URLconfs, and feature hiding) they contained into the apps' Django app config classes. They include the following attributes: `name` (since renamed `namespace`), `login_url`, `hidable_feature_name`, `permissions_map`, and `default_permissions`; methods: `:meth:get_urls`, `:meth:post_process_urls`, `:meth:get_permissions`, `:meth:get_url_decorator`, and `:meth:urls`; and their respective view classes. The composite config classes for normal Oscar apps are subclasses of `oscar.core.application.OscarConfig` (previously `oscar.core.application.Application`), and for Oscar Dashboard apps `oscar.core.application.OscarDashboardConfig` (previously `oscar.core.application.DashboardApplication`).
- Removed the `application` variable, which previously held an Oscar app config instance, from the Oscar app config module. A single Django/Oscar app config instance is now registered in the Django app registry, for each app label. It should be obtained by looking it up in the Django app registry.
- Changed the values returned by the Oscar app config `urls` property. It now returns a tuple containing the list of URL patterns, the app namespace (which could previously be `None`, but not any more), and the instance namespace (which would previously be overridden by the app namespace, if left blank, but must now be explicitly set). To include URLs with an instance namespace, use the form `app_config.urls`, and to include URLs without an instance namespace, use the form `django.conf.urls.include(app_config.urls[0])`.
- Removed `oscar.get_core_apps`. Overriding apps is now done by replacing the Oscar app entry in the `INSTALLED_APPS` setting with that of the forked app.
- Changed the calling signature for the `oscar_fork_app` management command. The `app_label` argument is the Django app label of the app to be forked. `target_path` is the directory into which the new app shall be copied. `new_app_subpackage` is the optional dotted path to the package of the new app, from which, together with the `target_path`, the full Python path to the app will be derived. If `new_app_subpackage` is omitted, then the package of the app being forked will be used instead.
- Removed the `promotions` app. The app is now available in a separate package - [django-oscar-promotions](#).

- OSCAR\_MAIN\_TEMPLATE\_DIR setting has been removed and existing templates updated with the full path. See [#1378](#), [#2250](#). Please update your templates accordingly.
- OSCAR\_SLUG\_FUNCTION previously accepted a function as its value. It now only accepts a dotted path to a function as its value. Such functions must also now take a `allow_unicode` kwarg.

### Migrating forked apps

In release 2.0 the way apps are configured has been substantially refactored to merge Oscar's `Application` class with Django's `AppConfig` class. For each app that you have forked, you will need to:

- Rename the `config.py` module to `apps.py`.
- Change the `default_app_config` variable in `__init__.py` to point to `apps` instead of `config`.
- Update your `AppConfig` subclass in the `apps.py` module to either inherit from the parent app's `AppConfig` or use either `oscar.core.application.OscarConfig` or `oscar.core.application.OscarDashboardConfig`.
- Move any changes you've made to the Oscar `Application` subclass in the `app.py` module, to the `AppConfig` subclass in the `apps.py` module. When moving the `name` attribute over, rename it to `namespace`. Your merged app config class should end up having a `namespace` (for declaring the URL application namespace) as well as `name` (for configuring the `django.apps.config.AppConfig.name`) attribute.
- In your project `URLconf` and in `get_urls` methods replace the `application` import by finding the app in the Django app registry.

```
from django.apps import apps
application = apps.get_app_config('your_app_name')
```

- If the urls you're including don't define an instance namespace then use `include(application.urls[0])`, which only passes in the list of URL patterns.

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**Note:** Because of the way dynamic class loading now works, when forking dashboard apps, the `oscar.apps.dashboard` app also needs to be forked; and the forked dashboard app's code must live inside the forked `oscar.apps.dashboard` app's directory.

Similarly, when forking `oscar.apps.catalogue.reviews`, `oscar.apps.catalogue` needs to be forked as well; and the forked `oscar.apps.catalogue.reviews` app's code must live inside the forked `oscar.apps.catalogue` app's directory.

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### Dependency changes

- Dropped `mock` as a dependency in favour of `unittests.mock`.
- Upgraded `bootstrap` to version 3.4.1.
- Upgraded `jquery` to 3.4.1.
- Dropped `jquery.inputmask` in favour of `inputmask` and upgraded to 4.0.2.
- Upgraded `less` to 3.8.1.
- Upgraded `tinymce` to version 4.8.3.

## Deprecated features

- `offer.Range.contains()` is deprecated. Use `contains_product()` instead.
- `catalogue.managers.ProductManager` is deprecated. Use `catalogue.managers.ProductQuerySet.as_manager()` instead.
- `catalogue.managers.BrowsableProductManager` is deprecated. Use `Product.objects.browsable()` instead.
- `catalogue.Product.browsable` is deprecated. Use `Product.objects.browsable()` instead.

## Oscar 2.0.1 release notes

**release** 2019-08-09

This is Oscar 2.0.1, a bugfix release.

### Bug fixes

- Fixed `oscar.dashboard.nav.default_access_fn` to properly check permissions configured on forked dashboard apps.
- Refactored `ProductQuerySet.base_queryset()` to avoid making an expensive database query when checking for product options. Queryset items are no longer annotated with `num_product_class_options` and `num_product_options` (counts of the number of options associated with a product and product class, respectively). Instead are annotated with `has_product_class_options` and `has_product_options`.
- Fixed display of start and end dates in the dashboard offer list template.

## Oscar 2.0.2 release notes

**release** 2019-09-20

This is Oscar 2.0.2, a bugfix release.

### Bug fixes

- Fixed location of `flatpages/default.html` template.
- Fixed determination of availability for offers where `max_affected_items` is set.
- Added an `email_user` method to the `AbstractUser` base model, which Django expects to be present.
- Fixed incomplete fallback to `OSCAR_DEFAULT_CURRENCY` in the currency template filter.

### Oscar 2.0.3 release notes

**release** 2019-10-08

This is Oscar 2.0.3, a bugfix release.

#### Bug fixes

- Added an `OSCAR_THUMBNAIL_DEBUG` setting to control whether the `oscar_thumbnail` template tag raises exceptions. This fixes a regression in Oscar 2 where thumbnailing errors resulted in exceptions being propagated, contrary to Django's recommendations that template tags should never raise exceptions.

### Oscar 2.0.4 release notes

**release** 2019-12-05

This is Oscar 2.0.4, a security release.

#### Security fixes

The file handling behaviour of uploaded CSV files for ranges (handled by `RangeProductListView`) has been modified to address a potential security risk when invalid files are uploaded, as these would previously be left on disk if parsing of the uploaded file failed.

Uploaded files are no longer written to disk by Oscar, but processed directly from the temporary uploaded file.

This means that `RangeProductFileUpload.filepath` no longer stores a reference to the stored path of an uploaded file, but only its file name for reporting purposes. The `filename` property of `RangeProductFileUpload` has been removed.

The `RangeProductListView.create_upload_object`, `RangeProductFileUpload.process` and `RangeProductFileUpload.extract_ids` methods now both expect a file object as a positional argument. Projects that have overridden any of these methods will need to make corresponding changes.

The `OSCAR_UPLOAD_ROOT` setting which was used exclusively by this feature has been removed.

Thanks to Mina Mohsen Edwar for reporting this issue.

1.6 release branch

### Oscar 1.6 release notes

**release** 2018-05-23

Welcome to Oscar 1.6

Table of contents:

- *Compatibility*
- *What's new in Oscar 1.6?*
- *Backwards incompatible changes in Oscar 1.6*
- *Dependency changes*

## Compatibility

Oscar 1.6 is compatible with Django 1.11 and Django 2.0 as well as Python 2.7, 3.4, 3.5 and 3.6.

Official support for Django 1.8, 1.9 and 1.10 has been dropped.

## What's new in Oscar 1.6?

- Added support for managing large amounts of vouchers grouped in sets.

## Removal of deprecated features

- `oscar.core.phonenumber.PhoneNumber` is removed. Use `phonenumber_field.phonenumber.PhoneNumber` instead.
- Removed the redundant `OSCAR_PROMOTION_MERCHANDISING_BLOCK_TYPES` setting.

## Minor changes

- The majority of the Oscar class imports now use dynamic loading, instead of direct imports, for better extensibility and customisability.
- Added the ability to specify a custom class loader through the `OSCAR_DYNAMIC_CLASS_LOADER` setting.
- Customer transaction emails were reworked to use Mailgun templates, so that they have a more modern appearance.
- `SearchHandler.get_search_form` method now accepts additional keyword arguments, which will be passed on search form class instance.
- Added `get_stock_info` hook to `oscar.apps.basket.models.Basket` for implementing strategies that depend on product options.
- Fixed the page create/update views in the dashboard to correctly validate URLs. Invalid characters in URLs will raise a validation error, as will URLs longer than 100 characters.
- The default shipping method (`oscar.apps.basket.views.BasketView.get_default_shipping_address`) on the basket summary page now uses the user's default shipping address to calculate an indicative shipping cost.
- Fixed `ExtendedURLValidator` for locale-prefixed URLs for locales, different from current (see [#1481](#)). Previously, validation did not pass when if the current locale was `en-gb` and, the a visited URL was `/de/catalogue/` and visa versa due to Django's default behaviour.
- **Product attribute value save is now handled by separate methods, to make it easier to override this behaviour.**
- Address hash generation is now separated from the summary in order to preserve same behaviour when summary property customised (see [#1537](#)). They can use different field names, listed out in `base_fields` and `hash_fields` respectively. Also hash generation now became platform-independent and generates the same for Python 2 and 3. Corresponding data migration will update hashes automatically. Take it into account that it will take time to run if you have large user base.
- Compact basket form is no longer displayed for the products with options on product list pages since it caused form elements to impose inside the product box (see [:issues:`1976`](#)).

- Added `has_options` property to the `oscar.apps.catalogue.models.Product` model to indicate whether an instance or its product class has product options.
- `oscar.core.validators.validate_password` was removed. Use `django.contrib.auth.password_validation.validate_password` instead.
- `oscar.core.validators.CommonPasswordValidator` was removed. Use `django.contrib.auth.password_validation.CommonPasswordValidator` instead.
- User notifications are marked as read only when viewed in detail, instead of being marked as read in bulk when the notification list was viewed.
- Oscar's `ImageInput`, `TimePickerInput`, `DatePickerInput` and `DateTimePickerInput` all use templates for rendering.
- It is now possible to manage images for variant products and their parents.
- For variant products we now display their own images on product detail page and fallback to parent product images if they don't have any.
- Basket line form quantity field now has "max" attribute with the maximum allowed quantity in it based on product availability and basket threshold (see #1412).
- An unused setting `OSCAR_SETTINGS` was removed from `oscar.core.defaults`.
- Fixed `PhoneNumberMixin`'s handling of empty phone number fields in forms.

### Backwards incompatible changes in Oscar 1.6

- Fixed a regression introduced in Oscar 1.5 (see #2664) where `StockRequired.availability_policy` was dependent on the product having a price. Price and availability are now decoupled, and it is possible to defer determination of a price until a product is added to the basket.
- `oscar.apps.customer.auth_backends.EmailBackend` now rejects inactive users (where `User.is_active` is `False`).
- `EmailBackend` no longer enforces its own password strength validation, and relies instead on the `AUTH_PASSWORD_VALIDATORS` setting used by Django.
- `oscar.apps.basket.middleware.BasketMiddleware` was rewritten as new-style middleware for Django 1.11.
- `oscar.apps.offer.models.ConditionalOffer` now has a new flag `exclusive` to denote that the offer involved can not be combined on the same item on the same basket line with another offer. This flag is used by `oscar.apps.basket.utils.LineOfferConsumer`, a facade that supersedes the old `oscar.apps.basket.models.Line._affected_items` counter, and replaces it with a more fine-grained approach. This makes it possible to apply two distinct non-exclusive offers on the same line items, for example multiple distinct vouchers. A couple of methods on the `Line` model have been extended with an optional `offer` argument, i.e. `discount` and `consume`, so if you are using a customised `Line` model, you have to update your methods' signatures.
- Invalid URL names supplied to the `OSCAR_DASHBOARD_NAVIGATION` setting are now logged as an exception (previously they were silently ignored). The offending menu item will be skipped during menu rendering. In Oscar 1.8 the exception will be raised without being intercepted.
- All signals are now loaded directly rather than using dynamic imports.
- Stock manipulation (allocation/consumption/cancellation) now only happens if the `track_stock` property of the product's class is set to `true`.
- `oscar.forms.widgets.RemoteSelect` was updated to work with version 4 of `select2`. Instead of rendering a hidden input it now renders a normal `select` element.

- The `django-extra-views` dependency was upgraded to version 0.11, and the basket views that rely on `extra_views.ModelFormSetView` updated to use the new `factory_kwargs` attribute.
- jQuery UI was removed from Oscar's static files. Projects that require it should install it at the project level.
- Compatibility for Internet Explorer version 9 and lower was dropped from Oscar's templates and styles.
- The Google Analytics tracking code provided by Oscar now uses `gtag.js` API instead of the deprecated `analytics.js`. Analytics are also disabled by default in Oscar's dashboard.

## Dependency changes

- Upgraded `jquery` to version 3.3.1.
- Upgraded `bootstrap` to version 3.3.7.
- Upgraded `bootstrap-datetimepicker` to v2.4.4.
- Upgraded `jquery-mousewheel` to v3.1.13.
- Upgraded `inputmask` to v3.2.7.
- Upgraded `jquery-sortable` to v0.9.13.
- Upgraded `select2` to v4.0.5.

## Deprecated features

The following features have been deprecated in this release:

- `StockRecord.price_excl_tax` will be renamed into `StockRecord.price` in Oscar 2.0. Please see [#1962](#) for more details.
- The `StockRecord.price_retail` and `StockRecord.cost_price` fields are deprecated and will be removed in Oscar 2.0.
- The `order.Line.est_dispatch_date`, `order.Line.line_price_incl_tax`, `order.Line.unit_retail_price`, `order.Line.unit_cost_price` and `order.Line.line_price_excl_tax` fields are deprecated and will be removed in Oscar 2.0.
- `oscar.views.decorators.staff_member_required` is deprecated. Use `oscar.views.decorators.permissions_required(['is_staff'])` instead.
- Support for Django 1.8, 1.9 and 1.10 has been dropped in line with the Django project recommendation for third party apps.

## Oscar 1.6.1 release notes

**release** 2018-05-29

This is Oscar 1.6.1, a security release.

## Bug fixes

- Updated several methods that generate random strings to use Django’s random string generator instead of `random()`. The methods affected are `customer.ProductAlert.get_random_key`, `customer.forms.generate_username`, `voucher.utils.generate_code` and `wishlists.Wishlist.random_key`.

## Oscar 1.6.2 release notes

**release** 2018-06-14

This is Oscar 1.6.2, a bugfix release.

## Bug fixes

- Fixed kwarg handling in dashboard voucher set detail view.
- Fixed “Number of Orders” column heading in dashboard customer list view.

## Oscar 1.6.3 release notes

**release** 2018-08-03

This is Oscar 1.6.3, a compatibility release adding support for Django 2.1.

## Minor changes

- Replaced use of Django’s procedural authentication views with the corresponding class-based views.

## Oscar 1.6.4 release notes

**release** 2018-08-09

This is Oscar 1.6.4, a bugfix release that fixes the `setup.py` requirements for Oscar to make it compatible with Django 2.1.

## Oscar 1.6.5 release notes

**release** 2018-01-18

This is Oscar 1.6.5, a security release that upgrades Bootstrap to version 3.4.0 to fix various cross-site scripting vulnerabilities present in version 3.3.7.

### Oscar 1.6.6 release notes

**release** 2018-01-18

This is Oscar 1.6.6, a bugfix release that adds updated CSS assets that should have been included in Oscar 1.6.5.

### Oscar 1.6.7 release notes

**release** 2018-01-31

This is Oscar 1.6.7, a bugfix release that adds updated dashboard CSS assets that should have been included in Oscar 1.6.5.

### Oscar 1.6.8 release notes

**release** 2020-06-20

This is Oscar 1.6.8, a Django 2.2 compatibility release.

It also updates Bootstrap to 3.4.1 and explicitly specifies extend in the npm dependencies to fix CVE-2019-8331 and CVE-2018-16492 vulnerabilities.

1.5 release branch

### Oscar 1.5 release notes

**release** 2017-08-10

Welcome to Oscar 1.5

Table of contents:

- *Compatibility*
- *What's new in Oscar 1.5?*
- *Backwards incompatible changes in Oscar 1.5*
- *Dependency changes*

### Compatibility

Oscar 1.5 is compatible with Django 1.8, 1.10 and 1.11 as well as Python 2.7, 3.3, 3.4, 3.5 and 3.6. Support for Django 1.9 is no longer officially supported since it is no longer supported by Django (end of life).

## What's new in Oscar 1.5?

- Support for Django 1.11 (#2221)
- Google Analytics tracking code has been migrated to Universal Analytics.
- Passwords are validated using the validators defined in `AUTH_PASSWORD_VALIDATORS` for Django 1.9 and above.
- The custom `PhoneNumberField` implementation has been replaced with the [django-phonenumbers-field](#) package (#2227)

## Removal of deprecated features

These methods/modules have been removed:

- Profiling middleware. See [silk](#) or [django-cprofile-middleware](#) for alternatives.
- `Product.min_child_price_incl_tax` and `Product.min_child_price_excl_tax`.
- `oscar.core.logging.handlers.EnvFileHandler()`
- The `ellipses_page_range` templatetag. See [django-rangepaginator](#) for an alternative.
- `oscar.test.decorators` module.
- `oscar.core.utils.compose` function.
- `oscar.apps.customer.auth_backends.EmailBackend`. Use `oscar.apps.customer.auth_backends.EmailBackend` instead.
- `oscar.apps.catalogue.search_handlers.ProductSearchHandler`. Use
- `oscar.apps.catalogue.search_handlers.SolrProductSearchHandler` instead.

## Minor changes

- Added billing address to user's address book during checkout (#1532). Number of usages for billing and shipping addresses tracked separately: billing address in `UserAddress.num_orders_as_billing_address` field and shipping address in `UserAddress.num_order_as_shipping_address` accordingly.
- Fixed logic for determining "hurry mode" on stock alerts. Hurry mode is now set if the number of alerts for a product exceeds the quantity in stock, rather than the other way around.
- Updated search to use the haystack `CharField` instead of the `EdgeNgramField` to fix irrelevant results (#2128)
- Updated `customer.utils.Dispatcher` to improve the ability to customise the implementation (#2303)
- Fixed logic for determining "hurry mode" on stock alerts. Hurry mode is now set if the number of alerts for a product exceeds the quantity in stock, rather than the other way around.
- `Voucher.date_created` and `VoucherApplication.date_created` model fields changed from `DateField` to `DateTimeField`. If you use SQLite database, please make sure to backup data before running migrations, since due to limited support of column altering, Django re-creates new SQLite database with new columns and copies into it original data - <https://docs.djangoproject.com/en/1.11/topics/migrations/#sqlite>
- Allowed the communication event dispatcher to accept an optional `mail_connection` to use when sending email messages.
- Changed product alerts to be sent using the Communication Event framework. The old email templates will continue to be supported until Oscar 2.0.

## Backwards incompatible changes in Oscar 1.5

- Product reviews are now deleted if the associated product is deleted.
- Formset classes moved to the separate modules, if you import them directly - please update location or use `oscar.core.loading.get_classes()` for loading classes ([#1957](#)).

Next classes have new locations:

- `BaseBasketLineFormSet`, `BasketLineFormSet`, `BaseSavedLineFormSet`, `SavedLineFormSet` moved to `oscar.apps.basket.formsets` module;
- `BaseStockRecordFormSet`, `StockRecordFormSet`, `BaseProductCategoryFormSet`, `ProductCategoryFormSet`, `BaseProductImageFormSet`, `ProductImageFormSet`, `BaseProductRecommendationFormSet`, `ProductRecommendationFormSet`, `ProductAttributesFormSet` moved to `oscar.apps.dashboard.catalogue.formsets`;
- `OrderedProductFormSet` moved to `oscar.apps.dashboard.promotions.formsets`; - `LineFormset` moved to `oscar.apps.wishlists.formsets`.
- `SimpleAddToBasketForm` doesn't override the quantity field any more. Instead, it just hides the field declared by `AddToBasketForm` and sets the quantity to one. This means `SimpleAddToBasketForm` doesn't need to be overridden for most cases, but please check things still work as expected for you if you have customised it.
- `OSCAR_CURRENCY_FORMAT` setting changed to dictionary form in order to support multi-currency for currency formatting. You can set `format`, `format_type` and `currency_digits` in it. Please refer to documentation for an example.
- Dashboard order list doesn't have shortcut filters any more, pass `status` parameter instead of `order_status` for the relevant filtering.
- `GOOGLE_ANALYTICS_ID` and `USE_LESS` settings were renamed into `OSCAR_GOOGLE_ANALYTICS_ID` and `OSCAR_USE_LESS` respectively in order to keep all Oscar settings under common namespace.
- Removed `display_version` and `version` variables from templates and template context.
- Offer `Applicator` is now loaded from the `offer.applicator` module, instead of `offer.utils`. Old path is deprecated and won't be supported in the next Oscar versions.
- `oscar.forms.fields.ExtendedURLField` no longer accepts a `verify_exists` argument.

## Dependency changes

The following packages are updated:

- `django>=1.8.8,<1.12`
- `django-phonenumbers-field>=1.0.0,<2.0.0`
- `django-haystack>=2.5.0,<2.7.0`

### Oscar 1.5.1 release notes

**release** 2017-11-29

This is Oscar 1.5.1, a bug fix release.

#### Bug fixes

- Fixed `django-haystack` dependency to allow using the latest version of Django Haystack.

### Oscar 1.5.2 release notes

**release** 2018-02-12

This is Oscar 1.5.2, a bug fix release.

#### Bug fixes

- Fixed `oscar.core.widgets.AdvancedSelect` widget behaviour with Django 1.11 and above.
- Use a local copy of TinyMCE instead of a CDN, because of recent bugs in the CDN.

### Oscar 1.5.3 release notes

**release** 2018-04-11

This is Oscar 1.5.3, a security release.

A security vulnerability existed in the mechanism used to generate verification hashes for anonymous orders. This has been fixed in this release.

`oscar.apps.order.Order.verification_hash()` now uses `django.core.signing` instead of generating its own MD5 hash for tracking URLs for anonymous orders.

Projects that allow anonymous checkout are **strongly recommended** to generate a new `SECRET_KEY`, as the vulnerability exposed the `SECRET_KEY` to potential exposure due to weaknesses in the hash generation algorithm.

As a result of this change, order verification hashes generated previously will no longer validate by default, and URLs generated with the old hash will not be accessible.

Projects that wish to allow validation of old hashes must specify a `OSCAR_DEPRECATED_ORDER_VERIFY_KEY` setting that is equal to the `SECRET_KEY` that was in use prior to applying this change.

### Oscar 1.5.4 release notes

**release** 2018-04-30

This is Oscar 1.5.4, a bugfix release.

## Bug fixes

- Pinned the version of `django-extra-views` to `<0.11`, to avoid exceptions raised in newer versions of the package.

## Dependency changes

- Upgraded TinyMCE to version 4.7.11.

1.4 release branch

## Oscar 1.4 release notes

**release** 2017-02-10

Welcome to Oscar 1.4, a relative minor release which finally brings compatibility with Django 1.10.

Table of contents:

- *Compatibility*
- *What's new in Oscar 1.4?*
- *Dependency changes*

## Compatibility

Oscar 1.4 is compatible with Django 1.8, 1.9 and 1.10 as well as Python 2.7, 3.3, 3.4, 3.5 and 3.6.

## What's new in Oscar 1.4?

- Django 1.10 compatibility (#2055)
- If a product variant has no primary image then the primary image of the parent is now served. (#1998)

## Minor changes

- The tracking pixel in the dashboard is removed since the domain didn't exist anymore (#2144).
- Fix sending direct messages to users (#2138)
- Remove unique constraint for proxy class field of offer condition model. (#2166)
- Change the default argument of `ProductReview.status` to a callable
- Use `get_class` for imports to `partner.prices` and `partner.availability` (#2035)
- Fix an `IntegrityError` when a product is moved between wishlists (#2133)
- Fix issue when update product attributes in the dashboard when the product has a related entity (#2015)
- Fix the offers report in the dashboard on Python 3 (#2223)
- It is no longer needed to pass `Application.urls` to the `include()` function when creating the `urlpatterns`. You can pass it directly to the `url()` function instead. (#2222)

- Oscar now set's the `on_delete` kwarg on all `ForeignKey`'s since leaving it out is deprecated in Django 1.10+
- `oscar.core.compat.user_is_authenticated()` is now used instead of `user.is_authenticated()`, since this resulted in Deprecation warnings for Django 1.10+. ([#2222](#))

### Dependency changes

#### The following packages are updated:

- *treebeard* `>= 4.1.0` (Django 1.10 support)
- *Pillow* `>= 3.4.2` (Security issue)
- *phonenumbers* `>=6.3.0,<9.0.0` (Allow version 8.x)
- *django-tables2* `>= 1.2.0,<2.0.0`

1.3 release branch

### Oscar 1.3 release notes

**release** 2016-08-13

Welcome to Oscar 1.3, a minor release which finally brings compatibility with Django 1.9.

Table of contents:

- *Compatibility*
- *What's new in Oscar 1.3?*
- *Dependency changes*

### Compatibility

Oscar 1.3 is compatible with Django 1.8 and 1.9 as well as Python 2.7, 3.3, 3.4 and 3.5.

### What's new in Oscar 1.3?

- Django 1.9 compatibility
- Update the queryset for *ProductReview* to include an *approved* method which filters the queryset on approved reviews ([#1920](#))
- Make more use of the date-picker in the dashboard ([#1983](#))
- Add *site* kwarg to the *OrderCreator* class ([#2014](#))
- Update Oscar's *get\_class()* method to work with non oscar modules ([#2039](#))
- The *ProductAttributesContainer* is now moved to *catalogue.product\_attribute* and can now be replaced more easily.

## Dependency changes

**Warning:** Oscar depends on `sorl-thumbnail` version 12.4a1. Unfortunately you have to fake the initial migration of this application since older versions didn't include migrations. This can be done via:

```
python manage.py migrate thumbnail --fake
```

The following packages are updated:

- `sorl-thumbnail` == 12.4a1 (Django 1.9 support)
- `django-haystack` >= 2.5.0 (Django 1.9 support)
- `mock` < 3.0
- `factory-boy` > 2.4.1, < 3.0

1.2 release branch

## Oscar 1.2 release notes

**release** 2016-03-18

Welcome to Oscar 1.2.

Table of contents:

- [\*Compatibility\*](#)
- [\*What's new in Oscar 1.2?\*](#)
- [\*Backwards incompatible changes in Oscar 1.2\*](#)
- [\*Dependency changes\*](#)

## Compatibility

Oscar 1.2 is compatible with Django 1.7 and 1.8 as well as Python 2.7, 3.3, 3.4 and 3.5.

## What's new in Oscar 1.2?

- `django-compressor` has been removed as a dependency, and as a way of building `less` files for development. Removing or disabling it was commonly required as it didn't work well with deploying on PaaS (Platform as a Service) providers, and many current projects understandably prefer to use Javascript build chains (`gulp`, `grunt`, etc.) for all their statics. But `django-compressor` was hard to remove on a per-project basis, so the decision was made to remove it altogether.

For development, `USE_LESS` now enables the browser-based on-the-fly pre-processor. `make css` continues to run a locally installed LESS binary.

## Minor changes

- Fix missing `page_url` field in the promotions form (#1816)
- The order of basket, order and wishlist lines is now guaranteed to be in the order of creation. Previously, this wasn't guaranteed, but still almost always the case.
- *Partner* instances got a default ordering by name.
- If a child product has no weight, we check if a parent's product weight is set before falling back to the default weight (#1965).
- *Address.active\_address\_fields* now uses the saner common name of a country instead of the official name (#1964).
- Custom benefits now don't enforce uniqueness on the `proxy_class` field, making them more useful (#685).
- Move logic to create basket messages to its own utility class *basket.utils.BasketMessageGenerator()*. (#1930)
- Fix a caching issue in *Product.get\_absolute\_url()* (#1925)
- Update the *recently\_viewed\_products* templatetag to accept a *current\_product* attribute. (#1948)

## Backwards incompatible changes in Oscar 1.2

- The *mainstyles* template block was removed. It served as a wrapper for the *styles* content block and was needed to be extensible while still being able to compress CSS. As *django-compressor* has been removed, it's not needed any more. Just use *styles* instead if you happened to use it.
- The *keywords* block is removed from the main template (#1799)
- The US and Demo sites were both removed from the repository as they were not up-to-date anymore. These might return in the future as separate repositories.
- The *RecentReviewsManager*, *TopScoredReviewsManager* and *TopVotedReviewsManager* managers are removed from the reviews app since they were broken and unused.
- A new unique index is added to *catalogue.AbstractAttributeOption* to make sure that the *group*, *option* combination is unique (#1935)

## Dependency changes

- **The following packages are updated:**
  - *django-treebeard* `>= 4.0` (Django 1.9 support)
  - *sorl.thumbnail* `>= 12.4a1` (Django 1.9 support)
- jQuery UI is no longer included in the dashboard (#1792)

## Oscar 1.2.1 release notes

**release** 2016-03-23

This is Oscar 1.2.1, a bug fix release.

### Minor changes

Change the babel requirement in `setup.py` to allow versions up to 3.0

### Bug fixes

- [#2019](#): Optimise ORM query on the offer detail page in the dashboard.

## Oscar 1.2.2 release notes

**release** 2016-07-11

This is Oscar 1.2.2, a bug fix release.

### Bug fixes

- [#2030](#): Fix migration issues on Python 3.

1.1 release branch

## Oscar 1.1 release notes

**release** 2015-06-20

Welcome to Oscar 1.1, or the “Bootstrap 3” release. We also squashed many bugs that were reported in the last seven months, and managed to shed a lot of compatibility helpers when Django 1.6 support was removed.

Table of contents:

- *Compatibility*
- *What’s new in Oscar 1.1?*
- *Backwards incompatible changes in 1.1*
- *Dependency changes*

## Compatibility

Oscar 1.1 is compatible with Django 1.7 and 1.8 as well as Python 2.7, 3.3 and 3.4. Support for Django 1.6, and hence South for migrations, has been removed.

## What's new in Oscar 1.1?

- The frontend and backend templates have been updated to use Bootstrap 3 instead of version 2 (#1576). The frontend and backend templates are now also independent of each other.
- Category slug, name and URL handling has been refactored to make it easier to translate categories, and to be able to edit slugs independent of names.
- The icon and caption of *django-tables2* tables can be set directly on the *Table* object, if it derives from *DashboardTable*. The caption can be localised in singular and plural. (#1482)
- Oscar now ships with basic ElasticSearch support. `OSCAR_PRODUCT_SEARCH_HANDLER` has been introduced to more easily set the search backend.
- The offer models can now also be customised the same way as was already possible for the other apps.
- The test suite is now run with the glorious `pytest`.

## Minor changes

- The *Order.date\_placed* field can now be set explicitly rather than using the *auto\_now\_add* behaviour (#1558).
- The settings `OSCAR_BASKET_COOKIE_SECURE` and `OSCAR_RECENTLY_VIEWED_COOKIE_SECURE` are introduced to set the `secure` flag on the relevant cookies.
- Previously, all views handled in Oscar's *Application* class were decorated with the `permissions_required` decorator. That decorator would not do anything if used with an empty set of permissions. But it was raised as an issue, and now views not requiring permissions are not decorated at all.
- Properly redirect users to the checkout page after a guest user created an account.
- `OSCAR_SEARCH_FACETS` now accepts `collections.OrderedDict`.
- Oscar now supports varying the tax rate per product.
- Product class options and attributes can now be edited in the dashboard.
- All *ModelForm* subclasses now specify the *fields* meta attribute instead of the *excludes* list.

## Backwards incompatible changes in 1.1

### Categories refactor

The *Category* model contained two denormalisations to improve performance: it stored the name of the category and its ancestors in `full_name`, and the `slug` field did not just contain the category's slug, but also the ones of its ancestors.

This came with several drawbacks: it was fiddly to move and update categories, as one had to ensure to update parts of the entire category tree. It also made it trickier to add model-level translation to categories.

A refactoring removed the denormalisations leading to much simpler logic, and a light sprinkle of caching for the URLs hopefully leads to a performance net positive. But unfortunately it did come with some changes:

- Category slug handling is changed. Historically, Oscar always updated the slug when the name changed. Now a slug is only created if no slug is given, and an existing slug is never overridden. This means that you can freely change the slugs, and a name change will not change the category's URL.
- The `full_name` field has been *removed* and been replaced by a `full_name` property. Accessing that property incurs one database query to fetch the ancestors.
- `Category.get_absolute_url` is now naively cached, as it's more costly to generate the URL than before. But as `ProductCategoryView`, the view returned in `get_absolute_url` only considers the primary key and not the slug, even a stale cache should lead to the correct category page. But if you have altered that logic, please be sure to investigate.

Those changes unfortunately do mean a data migration to update the slugs which *must* be run. Please see the section on migrations below. Please also ensure that, if you load your categories via fixtures, you update them accordingly: remove the `full_name` field and remove the ancestor's slugs from the `slug` field.

## Misc

- The `AbstractWeightBased` shipping method now allows zero-weight baskets to have a non-zero shipping cost (#1565). This means that sites that rely on zero-weight baskets having no change will need to introduce a new weight band that covers this edge case.
- The methods `:method:`~oscar.apps.offer.utils.Applicator.apply`` and `:method:`~oscar.apps.offer.utils.Applicator.get_offers`` changed their arguments to `(basket, user=None, request=None)`. (#1677)

## Migrations

Migrations will get picked up automatically for apps you haven't customised. If you have customised any app, please consult the [detailed instructions](#) on how to handle migrations.

**Warning:** This release contains a data migration for category slugs. If you have forked it, it is critical you run a copy of that migration when upgrading.

**Warning:** This release doesn't include any South migrations, as support for Django 1.6 has been dropped.

Note, the catalogue app contains a data migration `0003_data_migration_slugs`. If you have a forked catalogue app, copy this migration into your project so it can be applied (or create a data migration that applies the same transformation).

## Dependency changes

- Oscar now requires *django-treebeard* 3.0.

### Deprecated features

The following features have been deprecated in this release:

- For backwards compatibility, one can access the `ProductCategoryView` without specifying a category PK in the URL. Oscar itself does not use this any more, and it will be removed with the next version of Oscar.
- `ProductSearchHandler` has been renamed to `SolrProductSearchHandler`. The old name will be removed in the next version of Oscar.

### Removal of deprecated features

These methods have been removed:

- `oscar.core.compat.atomic_compat`: Use `django.db.transaction.atomic` instead.
- `oscar.core.loading.import_string`: Use `django.utils.module_loading.import_string` instead.
- `Product.variants`: Use `Product.children`
- `Product.is_top_level`: Use `Product.is_standalone` or `self.is_parent`
- `Product.is_group`: Use `Product.is_parent`
- `Product.is_variant`: Use `Product.is_child`
- `Product.min_variant_price_incl_tax`: Refactor or use the deprecated `Product.min_child_price_incl_tax`.
- `Product.min_variant_price_excl_tax`: Refactor or use the deprecated `Product.min_child_price_excl_tax`.
- `Strategy.fetch_for_group`: Use `Strategy.fetch_for_parent`.
- `Strategy.select_variant_stockrecords`: Use `Strategy.select_children_stockrecords`.
- `Strategy.group_pricing_policy`: Use `Strategy.parent_pricing_policy`.
- `Strategy.group_availability_policy`: Use `Strategy.parent_availability_policy`.

These instances have been removed:

- `oscar.app.shop`: Use `oscar.app.application` instead.

### Oscar 1.1.1 release notes

**release** 2015-08-05

This is Oscar 1.1.1, a bug fix release.

## Bug fixes

- [#1802](#): The glyphicons fonts were missing from the release. This could cause Django’s `collectstatic` command to fail.

1.0 release branch

## Oscar 1.0 release notes

release 2014-11-07

Welcome to Oscar 1.0! It’s been 7 months and some 800 commits since 0.7 and lots of work has gone into 1.0. This release makes quite a few changes, especially around supporting Django 1.7 with its app refactor and new migrations support.

Also, [as you might have seen](#), the repositories for Oscar and most of its extensions have moved to a new [Github organisation](#). This marks a change for Oscar from being a Tangent-sponsored project to a more community-driven one, similar to Django itself. The core team is growing too to accommodate new contributors from outside Tangent. This is an exciting change and we’re hopeful that Oscar can continue to grow and prosper. To mark this departure, this release has been renamed from 0.8 (under which we released three beta versions) to 1.0.

Table of contents:

- [Compatibility](#)
- [What’s new in Oscar 1.0?](#)
- [Backwards incompatible changes in 1.0](#)
- [Known issues](#)

## Compatibility

This release adds support for Django 1.7. Per our policy of always supporting two versions of Django, support for Django 1.5 has been dropped.

This release also adds full Python 3.3 and 3.4 support.

If you’re using `pyso1r` for search, you’ll need to upgrade to version 3.2 or later.

## What’s new in Oscar 1.0?

### Explicit differentiation of child, parent and stand-alone products

In some edge cases, it was difficult to determine the ‘type’ of a product. For example, whether a product is a parent (or “group”) product without children or stand-alone product (which never has children). To make that distinction easier, a `structure` field has been introduced on the `AbstractProduct` class. In that process, naming for the three different product structures has been altered to be:

***stand-alone product*** A regular product (like a book)

***parent product*** A product that represents a set of *child* products (e.g. a T-shirt, where the set is the various colour and size permutations). These were previously referred to as “group” products.

***child product*** All child products have a parent product. They're a specific version of the parent. Previously known as product variant.

Some properties and method names have also been updated to the new naming. The old ones will throw a deprecation warning.

### Better handling of child products in product dashboard

Together with the changes above, the dashboard experience for child products has been improved. The difference between a parent product and a stand-alone product is hidden from the user; a user can now add and remove child products on any suitable product. When the first child product is added, a stand-alone product becomes a parent product; and vice versa.

In the front-end, the old name of “product variants” has been kept.

### Customisation just got easier!

- Oscar's views are now dynamically imported. This means that they can be overridden like most other classes in Oscar; overriding the related Application instance is not necessary any more which simplifies the process of replacing or customising a view.
- A new management command, `oscar_fork_app`, has been introduced to make it easy to fork an Oscar app in order to override one of its classes.

The documentation around *Customising Oscar* has been given an overhaul to incorporate the changes.

### Django 1.7 support

Oscar 1.0 comes with support for Django 1.7 out of the box. The app refactor and the new migration framework are both great improvements to Django. Oscar now ships with sets of migrations both for South and the new native migrations framework.

Unfortunately, the changes in Django required a few breaking changes when upgrading Oscar both for users staying on Django 1.6 and for users upgrading to Django 1.7 at the same time. These are detailed in the section for backwards-incompatible changes.

The changes in Django 1.7 meant quite a bit of effort to support both versions of Django, so it's very probable that Django 1.6 support will be removed in the next release of Oscar. Django 1.7 has notable improvements, so with that in mind, we can only recommend upgrading now.

### Billing addresses explicitly passed around checkout

The `build_submission` method used in checkout now has a `billing_address` key and the signatures for the `submit` and `handle_order_placement` methods have been extended to include it as a keyword argument. While this change should be backwards compatible, it's worth being aware of the method signature changes in case it affects your checkout implementation.

## Dashboard for weight-based shipping methods

There is a new dashboard for weight-based shipping methods. It isn't enabled by default as weight-based shipping methods are themselves not enabled by default. To add it to the dashboard menu, include this snippet in your `OSCAR_DASHBOARD_NAVIGATION` setting:

```
OSCAR_DASHBOARD_NAVIGATION = [
    ...
    {
        'label': _('Shipping charges'),
        'url_name': 'dashboard:shipping-method-list',
    },
    ...
]
```

You'll also need to modify your shipping repository class to return weight-based shipping methods.

## US demo site

To help developers building sites for the US, a new example Oscar site has been included in the repository. This customises core Oscar to treat all prices as excluding tax and then calculate and apply taxes once the shipping address is known.

## Faceting for category browsing

If Oscar is running with a Solr-powered search backend, the category browsing now shows facets (e.g. filter by price range, or product type). This is implemented via a new `SearchHandler` interface, which will eventually replace the tight coupling between Haystack and Oscar. It therefore paves the way for better support for other search engines.

## Reworked shipping app

Several parts of the shipping app have been altered. The most important change is a change to the API of shipping methods to avoid a potential thread safety issue. Any existing Oscar sites with custom shipping methods will need to adjust them to conform to the new API. The new API and the other changes are detailed below.

See the [backwards incompatible changes](#) for the shipping app and the [guide to configuring shipping](#) for more information.

## Basket additions clean-up

The forms and views around adding things to your basket have been vigorously reworked. This cleans up some very old code there and ensures variant products are handled in a consistent way.

The changes do require changing the constructor signature of the `AddToBasketForm` - the details are documented in the [Basket app changes](#).

### Checkout improvements

The checkout process now skips payment if the order total is zero (e.g. when ordering free products or using a voucher). As part of that, checkout views now evaluate *pre-conditions* (as before) and newly introduced *skip conditions*. This should make customising the checkout flow easier.

### Out with the old, in with the new

Lots of methods deprecated in the 0.6 release have now been removed. Specifically, the partner “wrapper” functionality is now gone. All price and availability logic now needs to be handled with strategies.

### Minor changes

- The `OSCAR_CURRENCY_LOCALE` setting has been removed. The locale is now automatically determined from the current language. This ensures prices are always shown in the correct format when switching languages.
- The login and registration view now redirects staff users to the dashboard after logging in. It also employs flash messages to welcome returning and newly registered users.
- The basket middleware now assigns a `basket_hash` attribute to the `request` instance. This provides a hook for basket caching.
- The tracking pixel now also reports the Oscar version in use. This was forgotten when adding tracking of the Python and Django version in 0.7. Total information collected now is the versions of Django, Python and Oscar.
- The tracking pixel is now served by a server run by the new Oscar organisation, rather than by Tangent.
- The `OSCAR_SLUG_FUNCTION` now accepts both string notation and a callable.
- The default templates now allow the order status to be changed on the dashboard order detail page.
- The forms for the order dashboard views are now loaded dynamically so they can be overridden.
- An `OSCAR_DELETE_IMAGE_FILES` setting has been introduced which makes deleting image files and thumbnails after deleting a model with an `ImageField` optional. It usually is desired behaviour, but can slow down an app when using a remote storage.
- Oscar now ships with a `oscar_populate_countries` management command to populate the country databases. It replaces the `countries.json` fixture. The command relies on the `pycountry` library being installed.
- It is now possible to use product attributes to add a relation to arbitrary model instances. There was some (presumably broken) support for it before, but you should now be able to use product attributes of type `entity` as expected. There’s currently no frontend or dashboard support for it, as there is no good default behaviour.
- Payment extensions can now raise a `UserCancelled` payment exception to differentiate between the intended user action and any other errors.
- Oscar has a new dependency, `django-tables2`. It’s a handy library that helps when displaying tabular data, allowing sorting, etc. It also makes it easier to adapt e.g. the product list view in the dashboard to additional fields.
- `jquery-ui-datepicker` has been replaced in the dashboard by `bootstrap-datetimepicker`. We still ship with `jquery-ui-datepicker` and JQuery UI as it’s in use in the frontend.
- ... and dozens of bugs fixed!

## Backwards incompatible changes in 1.0

### Product structure

Generally, backwards compatibility has been preserved. Be aware of the following points though:

- You now need to explicitly set product structure when creating a product; the default is a stand-alone product.
- The `related_name` for child products was altered from `variants` to `children`. A `variants` property has been provided (and will throw a deprecation warning), but if you used the old related name in a query lookup (e.g. `products.filter(variants__title='foo')`), you will have to change it to `children`.
- Template blocks and CSS classes have been renamed.

The following methods and properties have been deprecated:

- `Product.is_parent` - Use `is_group` instead.
- `Product.is_variant` - Use `is_child` instead.
- `Product.is_top_level` - Test for `is_standalone` and/or `is_parent` instead.
- `Strategy.fetch_for_group` - Use `fetch_for_parent` instead.
- `Strategy.group_[pricing|availability]_policy` - Use `parent_[pricing|availability]_policy` instead.
- `Strategy.select_variant_stockrecords` - Use `select_children_stockrecords` instead.

Furthermore, CSS classes and template blocks have been updated. Please follow the following renaming pattern:

- `variant-product` becomes `child-product`
- `product_variants` becomes `child_products`
- `variants` becomes `children`
- `variant` becomes `child`

### Product editing

The dashboard improvements for child products meant slight changes to both `ProductCreateUpdateView` and `ProductForm`. Notably `ProductForm` now gets a `parent` kwarg. Please review your customisations for compatibility with the updated code.

### Shipping

The shipping method API has been altered to avoid potential thread-safety issues. Prior to v1.0, shipping methods had a `set_basket` method which allowed a basket instance to be assigned. This was really a crutch to allow templates to have easy access to shipping charges (as they could be read straight off the shipping method instance). However, it was also a design problem as shipping methods could be instantiated at compile-time leading to a thread safety issue where multiple threads could assign a basket to the same shipping method instance.

In Oscar 1.0, shipping methods are stateless services that have a method `calculate()` that takes a basket and returns a `Price` instance. New *template tags* are provided that allow these shipping charges to be accessed from templates.

This API change does require quite a few changes as both the shipping method and shipping charge now need to be passed around separately:

- Shipping methods no longer have `charge_excl_tax`, `charge_incl_tax` and `is_tax_known` properties.

- The `OrderCreator` class now requires the `shipping_charge` to be passed to `place_order`.
- The signature of the `OrderTotalCalculator` class has changed to accept `shipping_charge` rather than a `shipping_method` instance.
- The signature of the `get_order_totals()` method has changed to accept the `shipping_charge` rather than a `shipping_method` instance.

Another key change is in the shipping repository object. The `get_shipping_methods` method has been split in two to simplify the exercise of providing new shipping methods. The best practice for Oscar 1.0 is to override the `methods` attribute if the same set of shipping methods is available to everyone:

```
from oscar.apps.shipping import repository, methods

class Standard(methods.FixedPrice):
    code = "standard"
    name = "Standard"
    charge_excl_tax = D('10.00')

class Express(methods.FixedPrice):
    code = "express"
    name = "Express"
    charge_excl_tax = D('20.00')

class Repository(repository.Repository):
    methods = [Standard(), Express()]
```

or to override `get_available_shipping_methods` if the available shipping methods if only available conditionally:

```
from oscar.apps.shipping import repository

class Repository(repository.Repository):

    def get_available_shipping_methods(
        self, basket, shipping_addr=None, **kwargs):
        methods = [Standard()]
        if shipping_addr.country.code == 'US':
            # Express only available in the US
            methods.append(Express())
        return methods
```

Note that shipping address should be passed around as instances not classes.

## Email address handling

In theory, the local part of an email is case-sensitive. In practice, many users don't know about this and most email servers don't consider the capitalisation. Because of this, Oscar now disregards capitalisation when looking up emails (e.g. when a user logs in). Storing behaviour is unaltered: When a user's email address is stored (e.g. when registering or checking out), the local part is unaltered and the host portion is lowercased.

**Warning:** Those changes mean you might now have multiple users with email addresses that Oscar considers identical. Please use the new `oscar_find_duplicate_emails` management command to check your database

and deal with any conflicts accordingly.

## Django 1.7 support

If you have any plans to upgrade to Django 1.7, more changes beyond addressing migrations are necessary:

- You should be aware that Django 1.7 now enforces uniqueness of app labels. Oscar dashboard apps now ship with an `AppConfig` that set their app label to `{oldname}_dashboard`.
- If you have forked any Oscar apps, you must add an `AppConfig` to them, and have them inherit from the Oscar one. See the appropriate section in [Forking an app](#) for an example.
- Double-check that you address migrations as detailed below.
- Django now enforces that no calls happen to the model registry during app startup. This mostly means that you should avoid module-level calls to `get_model`, as that only works with a fully initialised model registry.

## Basket line stockrecords

The basket line model got a reference to the stockrecord in Oscar 0.6. The basket middleware since then updated basket lines to have stockrecords if one was missing. If any lines are still missing a stockrecord, we'd expect them to be from from submitted baskets or from old, abandoned baskets. This updating of basket lines has been removed for 1.0 as it incurs additional database queries. Oscar 1.0 now also enforces the stockrecord by making it the `stockrecord` field of basket `Line` model no longer nullable.

There is a migration that makes the appropriate schema change but, before that runs, you may need to clean up your `basket_line` table to ensure that all existing null values are replaced or removed.

Here's a simple script you could run before upgrading which should ensure there are no nulls in your `basket_line` table:

```
from oscar.apps.basket import models
from oscar.apps.partner.strategy import Selector

strategy = Selector().strategy()

lines = models.Line.objects.filter(stockrecord__isnull=True):
for line in lines:
    info = strategy.fetch_for_product(line.product)
    if line.stockrecord:
        line.stockrecord = info.stockrecord
        line.save()
    else:
        line.delete()
```

- The `reload_page_response` method of `OrderDetailView` has been renamed to `reload_page`.

## Basket app changes

- The `basket:add` URL now required the primary key of the “base” product to be included. This allows the same form to be used for both GET and POST requests for variant products.
- The `ProductSelectionForm` is no longer used and has been removed.
- The constructor of the `AddToBasketForm` has been adjusted to take the basket and the purchase info tuple as parameters instead of the request instance ([c74f57bf](#) and [8ba283e8](#)).

## Misc

- The `oscar_calculate_scores` command has been [rewritten](#) to use the ORM instead of raw SQL. That exposed a bug in the previous calculations, where purchases got weighed less than any other event. When you upgrade, your total scores will be change. If you rely on the old behaviour, just extend the `Calculator` class and adjust the weights.
- `Order.order_number` now has `unique=True` set. If order numbers are not unique in your database, you need to remedy that before migrating. By default, Oscar creates unique order numbers.
- `Product.score` was just duplicating `ProductRecord.score` and has been removed. Use `Product.stats.score` instead.
- Oscar has child products to model tightly coupled products, and `Product.recommended_products` to model products that are loosely related (e.g. used for upselling). `Product.related_products` was a third option that sat somewhere in between, and which was not well supported. We fear it adds confusion, and in the spirit of keeping Oscar core lean, has been removed. If you’re using it, switch to `Product.recommended_products` or just add the field back to your custom `Product` instance and `ProductForm` when migrating.
- The `basket_form` template tag code has been greatly simplified. Because of that, the syntax needed to change slightly.  
Before: `{% basket_form request product as basket_form single %}`  
After: `{% basket_form request product 'single' as basket_form %}`
- Product attribute validation has been cleaned up. As part of that, the trivial `ProductAttribute.get_validator` and the unused `ProductAttribute.is_value_valid` methods have been removed.
- The `RangeProductFileUpload` model has been moved from the ranges dashboard app to the offers app. The migrations that have been naively drop and re-create the model; any data is lost! This is probably not an issue, as the model is only used while an range upload is in progress. If you need to keep the data, ensure you migrate it across.
- `oscar.core.loading.get_model` now raises a `LookupError` instead of an `ImportError` if a model can’t be found. That brings it more in line with what Django does since the app refactor.
- `CommunicationEventType.category` was storing a localised string, which breaks when switching locale. It now uses `choices` to map between the value and a localised string. Unfortunately, if you’re using this feature and not running an English locale, you will need to migrate the existing data to the English values.
- Support for the `OSCAR_OFFER_BLACKLIST_PRODUCT` setting has been removed. It was only partially supported: it prevented products from being added to a range, but offers could be applied to the products nonetheless. To prevent an offer being applied to a product, use `is_discountable` or override `get_is_discountable` on your product instances.
- `Category.get_ancestors` used to return a list of ancestors and would default to include itself. For consistency with `get_descendants` and to avoid having to slice the results in templates, it now returns a queryset of the ancestors; use `Category.get_ancestors_and_self` for the old behaviour.

- Weight based shipping methods used to have an `upper_charge` field which was returned if no weight band matched. That doesn't work very well in practice, and has been removed. Instead, charges from bands are now added together to match the weight of the basket.
- The `OrderCreator` class no longer defaults to free shipping: a shipping method and charge have to be explicitly passed in.
- The Base shipping method class now lives in `oscar.apps.shipping.methods`.
- The `find_by_code` method of the shipping `Repository` class has been removed as it is no longer used.
- The parameters for `oscar.apps.shipping.repository.Repository.get_shipping_methods()` have been re-ordered to reflect which are the most important.
- The legacy `ShippingMethod` name of the interface of the shipping app has been removed. Inherit from `shipping.base.Base` for the class instead, and inherit from `shipping.abstract_models.AbstractBase` for model-based shipping methods.
- `oscar.apps.shipping.Scales` has been renamed and moved to `oscar.apps.shipping.scales.Scale`, and is now overridable.
- The models of the shipping app now have abstract base classes, similar to the rest of Oscar.
- The legacy `ShippingMethod` name of the interface of the shipping app has been removed. Inherit from `shipping.base.Base` for the class instead, and inherit from `shipping.abstract_models.AbstractBase` for model-based shipping methods.
- Oscar's `models.py` files now define `__all__`, and it's dynamically set to only expose unregistered models (which should be what you want) to the namespace. This is important to keep the namespace clean while doing star imports like `from oscar.apps.catalogue.models import *`. You will have to check your imports to ensure you're not accidentally relying on e.g. a `datetime` import that's pulled in via the star import. Any such import errors will cause a loud failure and should be easy to spot and fix.

## Migrations

- South is no longer a dependency. This means it won't get installed automatically when you install Oscar. If you are on Django 1.6 and want to use South, you will need to explicitly install it and add it to your requirements.
- Only South `>= 1.0` is supported: South 1.0 is a backwards compatible release explicitly released to help with the upgrade path to Django 1.7. Please make sure you update accordingly if you intend to keep using South. Older versions of South will look in the wrong directories and will break with this Oscar release.
- Rename your South migrations directories. To avoid clashes between Django's and South's migrations, you should rename all your South migrations directories (including those of forked Oscar apps) to `south_migrations`. South 1.0 will check those first before falling back to `migrations`.
- If you're upgrading to Django 1.7, you will need to follow the [instructions to upgrade from South](#) for your own apps. For any forked Oscar apps, you will need to copy Oscar's initial migrations into your emptied `migrations` directory first, because Oscar's set of migrations depend on each other. You can then create migrations for your changes by calling `./manage.py makemigrations`. Django should detect that the database layout already matches the state of migrations; so a call to `migrate` should fake the migrations.

**Warning:** The catalogue app has a data migration to determine the product structure. Please double-check it's outcome and make sure to do something similar if you have forked the catalogue app.

---

**Note:** The migration numbers below refer to the numbers of the South migrations. Oscar 1.0 ships with a set of new initial migrations for Django's new native migrations framework. They include all the changes detailed below.

---

---

**Note:** Be sure to read the detailed instructions for *handling migrations*.

---

- Address:
  - 0011 - `AbstractAddress.search_text` turned into a `TextField`.
  - 0012 - `AbstractCountry`: Removed two unused indexes & turns numeric code into `CharField`
- Catalogue:
  - 0021 - Add `unique_together` to `ProductAttributeValue`, `ProductRecommendation` and `ProductCategory`
  - 0022 - Remove `Product.score` field.
  - 0023 - Drop `Product.related_products`.
  - 0024 - Change `ProductAttributeValue.value_text` to a `TextField` and do entity attribute changes and model deletions.
  - 0025 & 0026 - Schema & data migration to determine and save Product structure.
- Offer:
  - 0033 - Use an `AutoSlug` field for Range models
  - 0034 - Add moved `RangedProductFileUpload` model.
- Order:
  - 0029 - Add `unique_together` to `PaymentEventQuantity` and `ShippingEventQuantity`
  - 0030 - Set `unique=True` for `Order.order_number`
  - 0031 - `AbstractAddress.search_text` turned into a `TextField`.
- Partner:
  - 0014 - `AbstractAddress.search_text` turned into a `TextField`.
- Promotions:
  - 0006 - Add `unique_together` to `OrderedProduct`
- Ranges dashboard:
  - **0003 - Drop `RangeProductFileUpload` from `ranges` app. This is a destructive change!**
- Shipping:
  - 0007 - Change `WeightBand.upper_limit` from `FloatField` to `DecimalField`
  - 0008 - Drop `WeightBased.upper_charge` field.

## Deprecated features

The following features have been deprecated in this release:

- Many attributes concerning product structure. Please see the [product structure changes](#) for details.

## Removal of deprecated features

These methods have been removed:

- `oscar.apps.catalogue.abstract_models.AbstractProduct.has_stockrecord`
- `oscar.apps.catalogue.abstract_models.AbstractProduct.stockrecord`
- `oscar.apps.catalogue.abstract_models.AbstractProduct.is_available_to_buy`
- `oscar.apps.catalogue.abstract_models.AbstractProduct.is_purchase_permitted`
- `oscar.apps.catalogue.views.get_product_base_queryset`
- `oscar.apps.partner.abstract_models.AbstractStockRecord.is_available_to_buy`
- `oscar.apps.partner.abstract_models.AbstractStockRecord.is_purchase_permitted`
- `oscar.apps.partner.abstract_models.AbstractStockRecord.availability_code`
- `oscar.apps.partner.abstract_models.AbstractStockRecord.availability`
- `oscar.apps.partner.abstract_models.AbstractStockRecord.max_purchase_quantity`
- `oscar.apps.partner.abstract_models.AbstractStockRecord.dispatch_date`
- `oscar.apps.partner.abstract_models.AbstractStockRecord.lead_time`
- `oscar.apps.partner.abstract_models.AbstractStockRecord.price_incl_tax`
- `oscar.apps.partner.abstract_models.AbstractStockRecord.price_tax`
- `oscar.apps.payment.abstract_models.AbstractBankcard.card_number`

These classes have been removed:

- `oscar.apps.partner.prices.DelegateToStockRecord`
- `oscar.apps.partner.availability.DelegateToStockRecord`
- `oscar.apps.payment.utils.Bankcard`

## Known issues

- `models.py` dynamically sets `__all__` to control what models are importable through the star import. A bug in the `models.py` for the `partner` app means you'll have to explicitly import them. More info in [#1553](#).

### Oscar 1.0.1 release notes

This is Oscar 1.0.1, a bug fix release.

#### Bug fixes

- [#1553](#): `from oscar.apps.partner.models import *` could lead to the wrong models being imported.
- [#1556](#): Dashboard order table headers shifted
- [#1557](#): Fixed an issue where Oscar wrongly used Django's `is_safe_url`. Hence some redirects might not have worked as expected. This change unfortunately meant updating the notation of `oscar.core.utils.safe_referrer()` and `oscar.core.utils.redirect_to_referrer()` to accept the request instead of `request.META`.
- [#1577](#): The billing address was not being correctly passed through to the `place_order` method.
- [#1592](#): `Product.min_child_price_[excl|incl]_tax` were broken and failing loudly. They are not recommended any more, but to ensure backwards-compatibility, they have been fixed.

### Oscar 1.0.2 release notes

This is Oscar 1.0.2, a bug fix release.

#### Bug fixes

- [#1562](#): Correctly handle the `update_fields` kwarg on `Category.save()`
- [#1672](#): `Order.shipping_status` was not guaranteed to return the correct status.

0.7 release branch

### Oscar 0.7 release notes

**release** 2014-04-29

Welcome to Oscar 0.7!

These release notes cover the *new features* as well as *backwards incompatible changes* that you'll want to be aware of when upgrading from Oscar 0.6 or earlier.

If you encounter any undocumented issues, please let us know on the [mailing list](#).

Table of contents:

- [Overview](#)
- [Compatibility](#)
- [What's new in Oscar 0.7?](#)
- [Backwards incompatible changes in 0.7](#)

## Overview

Oscar 0.7 is largely a maintenance release, fixing minor issues, merging long-standing pull requests and other house-keeping.

As part of the clean-up, we have removed a few unused models and model fields, as well as removing `null=True` from a load of `CharFields` - so please read the release notes carefully when upgrading as some schema migrations may need some care.

Further, ensure you test your checkout implementation carefully after upgrading as the core Oscar checkout view classes have been reorganised slightly. Any upgrading work should be minor but be diligent.

## Compatibility

Oscar 0.7 has experimental support for Python 3.

Support for Django 1.4 has been dropped, and support for Django 1.6 is now considered stable.

## What's new in Oscar 0.7?

### Search improvements

Several improvements have been made to Oscar's default search functionality:

- Search results can now be sorted.
- If your search backend supports it, spelling suggestions will be shown if the original search term doesn't lead to any results.
- Only products are returned by the core search view. Other content types in your search index are filtered out (#370).

### Extended signals

Oscar's signals have been improved and consolidated, making it easier to hook into user journeys and extract analytics information.

Changes to existing signals include:

- The `basket_addition` signal now passes the `request` as an additional kwarg.
- The `user_registered` signal now passes the `request` as an additional kwarg.

New signals:

- A `start_checkout` signal is now raised when the customer begins the checkout process.

See the [signals docs](#) for more details.

## Checkout reorganisation

The checkout classes have been reworked to clean-up how pre-conditions are enforced. Each view class now has a `pre_conditions` attribute which is an iterable of method names (as strings). Each method is run within the `dispatch` method of the view and will redirect the customer back to the appropriate view if the check fails.

This change makes pre-conditions easier to customise and simplifies the core checkout views. Consequently, the following methods are no longer required and have been removed:

- `PaymentDetails.get_error_response`
- `PaymentDetails.can_basket_be_submitted`

Further, the `PaymentDetailsView` has been re-organised for extensibility. For instance, several new methods have been introduced to allow fine-grained overriding of functionality:

- `handle_payment_details_submission()` - This is responsible for validating any forms submitted from the payment URL
- `handle_place_order_submission()` - This is responsible for placing an order after a submission from the preview URL.
- `render_payment_details()` - Render the payment details template.

The implementation of `submit()` has been improved to handle payment errors in a more customer friendly way. If an exception is raised during payment, the payment details page is now loaded with the original forms passed to the template (so form validation errors can be displayed).

Finally, the `billing_address` kwarg to `submit()` has been removed. If you want to pass a billing address to be saved against the order, then pass it as part of the `order_kwargs` option.

## Minor changes

- Oscar's LESS files now use Bootstrap 2.3.2 (Oscar 0.6 uses 2.1.1).
- The product model now has a `num_approved_reviews` property to avoid unnecessary SQL queries when rendering templates ([#1299](#))
- Customers can delete their profiles from within their account section.
- Customers are prevented from using short or common passwords when changing their password in their account ([#1202](#))
- `permissions_map` now supports more than two lists to evaluate permissions.
- Formset handling in `ProductCreateUpdateView` has been simplified and now easily allows adding further formsets.
- Increased required version of Django Haystack to 2.1
- The dashboard's Bootstrap and the Bootstrap JS has been bumped to 2.3.2, the latest release of version 2.
- The dashboard's category handling now has the ability to directly create child categories.
- Oscar's error messages now have their own CSS class, `error-block` ([ef3ccf08a7](#)).
- It is now possible to disable the redirect that happens when a product or category's slug changed and an old URL is used ([b920f8ba](#)).
- `BankCardNumberField` now allows specifying accepted card types ([32b7249](#)).
- Several slug fields have been turned into the newly introduced `AutoSlugField` to ensure that generated slugs are unique.

- Widget initialisation can now be prevented with adding the `no-widget-init` class. Issues around widget initialisation in the dashboard promotions have been resolved.
- The access function used to determine dashboard’s menu entries’ visibility is now settable via `OSCAR_DASHBOARD_DEFAULT_ACCESS_FUNCTION`.
- Vouchers start and end times now use `datetime` instead of `date`; allowing “lunch-time deals” etc.
- Product classes can now be added from the dashboard. Editing options and attributes is not yet supported though.
- Experimental support for having a language prefix in the URL has been added, and enabled for the sandbox. This can be achieved by using Django’s `i18n_patterns` function in your `urls.py` for the sandbox. See `sandbox/urls.py` for an example.
- A basic example for a multi-language sitemap has been added to the sandbox.
- Reasoning about e.g. when it is feasible to drop Python 2.6 or Django 1.5 support is hard without reliable data, hence the tracker pixel has been extended to submit the Python and Django version in use. Tracking is still easily disabled by setting `OSCAR_TRACKING` to `False`.

### Bug fixes

- Addresses in non-shipping countries can no longer be selected as default shipping address anymore ([be04d46639](#)).
- Suspended and consumed offers are no longer returned by the “active” offer manager. ([#1228](#)).
- Products can now be removed from categories ([#1289](#)).

### Backwards incompatible changes in 0.7

**Warning:** Fields and models have been removed from Oscar. If you used them, you must ensure you create/extend the affected models appropriately.

- Oscar has dropped support for Django 1.4. However, if Oscar continues to support the `AUTH_PROFILE_MODULE` setting so sites that use separate profile models aren’t forced to convert to a single user model in order to use Oscar 0.7.
- `AbstractProduct.status` was an unused `CharField` provided for convenience as it’s a commonly required field. But a different field type was often required, and as changing it is much harder than adding a field with the desired type, the field has been removed.
- `Contributor`, `ContributorRole`, the through-model `ProductContributor` and their abstract versions have been removed as they were unused and too specific to the domain of book shops.
- `ProductCategory.is_canonical` was an unused `BooleanField` and has been removed.
- `Order.basket_id` was a `PositiveIntegerField` containing the primary key of the associated basket. It’s been refactored to be a nullable `ForeignKey` and is now called “basket”.
- [#1123](#) - The URL structure of `ProductCreateRedirectView` has been changed to use the product class’ slug instead of the primary key. It’s necessary to update URLs pointing to that view.
- `ProductListView` has been removed as it wasn’t needed any more after the search improvements. The old URL route still works.
- Accessing categories by just slug instead of primary key and slug had been unofficially deprecated for 0.6, and is removed now.

- [#1251](#) - Form related templates have been refactored. If you've modified them, your templates might need updating.
- `django.conf.urls.i18n` has been removed from Oscar's default URLs. This is because to get `i18n_patterns` working for Oscar, it needs to be defined outside of the scope of it. If you use `i18n`, you need to explicitly add the following line to your `main urls.py`:

```
(r'^i18n/', include('django.conf.urls.i18n')),
```

- `jScrollPane`, which was used to style the dashboard's scroll bars, has been removed.
- The methods `get_error_response` and `can_basket_be_submitted` have been removed from the `PaymentDetailsView` view class in `checkout`

### Removal of features deprecated in 0.6

- Django 1.4 support has been removed.
- In `OrderPlacementMixin`, the following methods have been removed:
  - `create_shipping_address_from_form_fields` - This is removed as checkout now requires an unsaved shipping address instance to be passed in (rather than having it created implicitly).
  - `create_user_address` - This is replaced by `oscar.apps.checkout.mixin.OrderPlacementMixin.update_address_book()`.
  - `create_shipping_address_from_user_address`
- The `oscar.apps.checkout.session.CheckoutSessionData.shipping_method()` has been removed. Instead `oscar.apps.checkout.session.CheckoutSessionMixin.get_shipping_address()` provides the same functionality.

### Migrations

**Warning:** The reviews app has not been under migration control so far. Please ensure you follow South's guidelines on how to [convert an app](#). Essentially, you will have to run: `$ ./manage.py migrate reviews 0001 --fake`

**Warning:** A lot of Oscar apps have data migrations for CharFields before `null=True` is removed in the following schema migration. If you have extended such an app and use your own migrations, then you will need to first convert affected `None`'s to `''` yourself; see the data migrations for our approach.

---

**Note:** Be sure to read the detailed instructions for [handling migrations](#).

---

- Address:
  - 0008 - Forgotten migration for `UserAddress.phone_number`
  - 0009 & 0010 - Data and schema migration for removing `null=True` on CharFields
- Catalogue:
  - 0014 - Drops unused `ProductCategory.is_canonical` field.

- 0015 - Turns a product’s UPC field into a `oscar.models.fields.NullCharField`
- 0016 - AutoSlugField for AbstractProductClass and AbstractOption
- 0017 - Removes Product.status, Contributor, ContributorRole and ProductContributor
- 0018 - Set on\_delete=models.PROTECT on Product.product\_class
- 0019 & 0020 - Data and schema migration for removing null=True on CharFields
- Customer:
  - 0006 - AutoSlugField and unique=True for AbstractCommunicationEventType
  - 0007 & 0008 - Data and schema migration for removing null=True on CharFields
  - 0009 - Migration caused by CommunicationEventType.code separator change
- Offer:
  - 0029 - AutoSlugField for ConditionalOffer
  - 0030 & 0031 - Data and schema migration for removing null=True on CharFields
  - 0032 - Changing proxy\_class fields to NullCharField
- Order:
  - 0025 - AutoSlugField for AbstractPaymentEventType and AbstractShippingEventType`
  - 0026 - Allow null=True and blank=True for Line.partner\_name
  - 0027 & 0028 - Data and schema migration for removing null=True on CharFields
- Partner:
  - 0011 - AutoSlugField for AbstractPartner
  - 0012 & 0013 - Data and schema migration for removing null=True on CharFields
- Payment:
  - 0003 - AutoSlugField and unique=True for AbstractSourceType
- Promotions:
  - 0004 & 0005 - Data and schema migration for removing null=True on CharFields
- Shipping:
  - 0006 - AutoSlugField for ShippingMethod
- Reviews:
  - 0001 - Initial migration for reviews application. Make sure to follow South’s guidelines on how to [convert an app](#).
  - 0002 & 0003 - Data and schema migration for removing null=True on CharFields
- Voucher:
  - 0002 and 0003 - Convert [start|end]\_date to [start|end]\_datetime (includes data migration).

### Oscar 0.7.1 release notes

This is Oscar 0.7.1, a small release to squash one gremlin in 0.7 that affects `django-oscar-paypal`.

#### Bug fixes

This release [makes a change](#) to the checkout session mixin which allows a basket to be explicitly specified by subclasses of the checkout `PaymentDetails` view class. This is required when a different basket to `request.basket` is intended to be used in a preview (this is what `django-oscar-paypal` needs to do).

### Oscar 0.7.2 release notes

This is Oscar 0.7.2, a minor security release. If you rely on the `permissions_required` decorator or the `Application.permissions_map` and `Application.default_permissions` syntax, you must upgrade.

#### Bug fixes

- The `permissions_required` decorator now handles both methods and properties on the User model. Previously, it wasn't supported, but a docstring showed `is_anonymous` as an example, which is a method.
- It fixes a syntax error in `basket.views.BasketView` when rendering an error message. Previously, trying to save an item for later while not being logged in would cause an Internal Server Error.

### Oscar 0.7.3 release notes

This is Oscar 0.7.3, a tiny release to relax the dependency restrictions for South and `django-compressor`:

- South 1.0 can now be used with Oscar 0.7.3. Previously it was capped at 0.9.
- `django-compressor` 1.4 can now be used with Oscar 0.7.3 when running Python 2.7 (Previously 1.3 was specified for Python 2.7, while 1.4a was specified for Python 3).

0.6 release branch

### Oscar 0.6 release notes

**release** 2014-01-08

It took a while but it's finally here: welcome to Oscar 0.6!

These release notes cover the [new features](#) as well as [backwards incompatible changes](#) that you'll want to be aware of when upgrading from Oscar 0.5 or earlier. This release contains some major changes to core APIs which means many old APIs are scheduled to be dropped - see the [deprecation plan](#) to avoid any nasty surprises.

When upgrading your Oscar site, make sure you study both the [backwards incompatible changes](#) and the [deprecated features](#). If you encounter any undocumented issues, please let us know on the [mailing list](#).

Table of contents:

- [Overview](#)
- [What's new in Oscar 0.6?](#)
- [Backwards incompatible changes in 0.6](#)

- *Features deprecated in 0.6*

## Overview

The biggest change in Oscar 0.6 is the reworking of *pricing and availability*, which builds on top of the change to allow *multiple stockrecords per product*. The change is largely backwards compatible with the old system of “partner wrappers” but it is recommended to upgrade to the new system. Support for partner wrappers will be removed for Oscar 0.7.

Oscar 0.6 also introduces better support for marketplace-like functionality with the so-called permission-based dashboard. It is now possible to give non-staff users access to a subset of the dashboard’s views (products and orders) by setting the new `dashboard_access` permission.

*Oscar now supports Django 1.5* and its custom user model. This has been only tested in the context of starting a new Oscar project with a custom model. Switching from a separate “profile” model to the new system is not recommended at this point.

Oscar also supports Django 1.6 although this is considered experimental at this stage. It’s possible there are still some incompatibilities that haven’t been teased out just yet.

Other notable new features include:

- A feature-rich *demo site* that illustrates how Oscar can be customised. It uses several of Oscar’s many extensions such as `django-oscar-paypal`, `django-oscar-datacash` and `django-oscar-stores`. It is intended as a reference site for Oscar.
- *Partners can now have addresses*.
- *Customer wishlists*. Customers can now add products to wishlists and manage them within their account section.
- *New helper methods* in the `EventHandler` class for order processing.
- *Reworked search app* with support for easy faceting.

Also, to help justify Tangent’s sponsorship of Oscar, a simple *tracking mechanism* has been introduced to keep track of which sites use Oscar.

## What’s new in Oscar 0.6?

### Multiple stockrecords per product

Products can now have multiple stockrecords rather than just one. This is a key structural change that paves the way for many advanced features.

If a product can be fulfilled by multiple partners, a different stockrecord can be created for each partner. This is a common requirement for large-scale e-commerce sites selling millions of products that use many different fulfilment partners.

It also allows better support for international sites as stockrecords can be created for partners in different countries, who sell in different currencies.

See the *documentation on pricing and availability* for more details.

**Warning:** This change means several APIs are *deprecated* as they assume there is only one stockrecord per product.

### Pricing and availability

When products can have many stockrecords, a process needs to be in place to choose which one is selected for a given customer and product. To handle this, a new “strategy” class has been introduced, responsible for selecting the appropriate stockrecord for a given customer and product.

This change also paved the way for reworking how prices, taxes and availability are handled. Instead of using “*partner wrappers*”, the strategy class is responsible for returning availability details and prices for a particular product. New classes known as pricing and availability policies are used to cleanly encapsulate this information.

These changes allow Oscar to dynamically determine prices, partner and availability for a given customer and product. This enables several advanced features such as:

- Fulfilling a product from the partner that offers the best margin.
- Fulfilling a product from the partner geographically closest to the customer.
- Automatically switching to a new partner when stock runs out.
- Supporting transactions in multiple currencies on the same site.
- Supporting different tax treatments on the same site (e.g. UK VAT and US sales tax)
- Having different pricing and availability policies for different customers.

More generally, it provides a structure for customising how pricing, availability work on a per-customer basis. This gives a great deal of flexibility.

See the guide to *prices and availability* for more information.

### Permission-based dashboard

Three changes were necessary to better support marketplace scenarios within Oscar:

- Oscar’s core `Application` class now supports specifying permissions on a per-view basis. This is done via a new default decorator. Legacy behaviour is unchanged.
- The dashboard’s menus are now built dynamically. If the current user does not have access to some views in `OSCAR_DASHBOARD_NAVIGATION`, they will be omitted in the menu returned by `oscar.apps.dashboard.nav.create_menu()`.
- The index, catalogue and order dashboard views have been modified to allow access to non-staff users. See *the dashboard documentation* for details.
- The relation `oscar.apps.partner.abstract_models.AbstractPartner.users` was not used by core Oscar prior 0.6. It is now used to model access for the permission-based dashboard.

### Payment models have abstract versions

The models within the *payment app* have been split into abstract and concrete versions. This brings them inline with other Oscar apps and allows them to be customised in the normal way.

## Wishlists

Wishlist functionality has finally landed. Signed in customers are now able to create multiple named wishlists and add products to them. There is a new section in the customer's account where wishlists can be managed.



Fig. 1: *The add-to-wishlist button.*

See the *wishlist documentation* for more details.



Fig. 2: Editing a wishlist

## Partner dashboard & addresses

Partners can now have addresses. These are useful for US sales tax where tax calculations need to know the origin of a product being shipped.

A dashboard to handle partners, their users and addresses has been added.

## Checkout

The `PaymentDetailsView` checkout view has been restructured for flexibility. There is a new `build_submission()` method which is responsible for building a dict of all data for passing to the `submit` method. This includes the shipping address and shipping method which were previously loaded indirectly within the `submit` method.

**Warning:** While not major, the changes to checkout are backwards incompatible. See the [backwards compatibility notes](#) for more details.

## Demo site

Oscar now ships with a demo site along side the sandbox site. While the sandbox is a minimal Django project that uses Oscar with all its defaults, the demo site is a more realistic example of an Oscar project. It has a custom skin and makes many alterations to the default Oscar behaviour.

It's features include:

- A range of different product types: books, downloads, clothing
- PayPal Express integration using [django-oscar-paypal](#)
- DataCash integration using [django-oscar-datacash](#)

See the [sandbox and demo site documentation](#) for more details. A publicly accessible version of the demo site is available at <http://demo.oscarcommerce.com>.

## Django 1.5, 1.6 and custom user model support

Oscar now supports Django 1.5 and, experimentally, 1.6.

Specifically, Oscar supports [custom user models](#), the headline new feature in Django 1.5. These can be used standalone or with a one-to-one profile model: Oscar's account forms inspect the model fields to dynamically pick up the fields for editing and display.

## Accounts

The views and templates of the accounts section have been reworked to be clearer and easier to extend. There is no longer a generic front page for the accounts section - instead, each subsection has its own page. The navigation has also moved to the left-hand side.

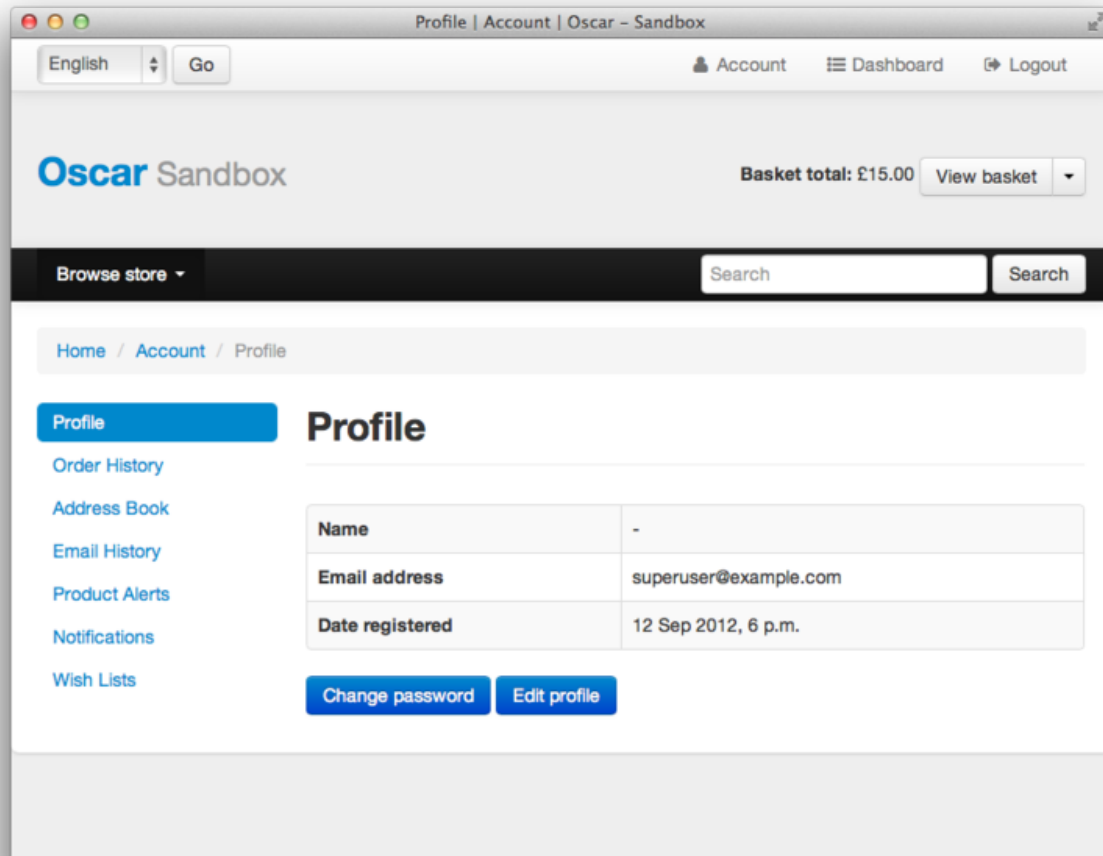


Fig. 3: The new-look account section with navigation on the left-hand side.

## Bootstrap-WYSIHTML5 replaced by TinyMCE

TinyMCE 4.0 is now used in the dashboard for all `textarea` elements with the class `wysiwyg`. This has better browser support and is easier to customise than `bootstrap-wysihtml5` (which has now been removed).

It is easy to configure or replace with the HTML editor of your choice.

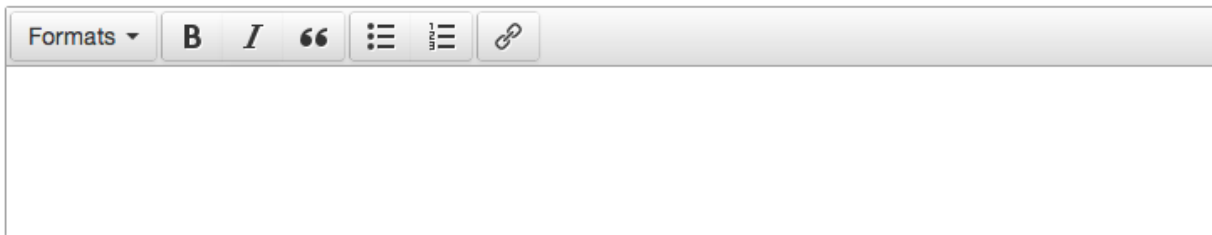
**Description**

Fig. 4: Textarea with class `wysiwyg` now use TinyMCE.

## Improved address fields

The postcode and phone number fields have been improved.

- The postcode field is now validated in the model’s `clean()` method to ensure it is valid for the selected country.
- The phone number field now uses a specialist `PhoneNumberField` field class which validates and cleans the phone number.

## Better bankcard handling

In 0.5, there were two classes that representing a bankcard. These have been merged - the new version is `AbstractBankcard`.

An instance of this model is returned by the `bankcard` property.

## Customer-facing range pages

Ranges can now be flagged as public which means they get a customer-facing detail page which shows a range description and allows its products to be browsed.

In the dashboard, the display order of the range’s products can be controlled.

To this end, the core `Range` model has been extended with a HTML description field.

## Reworked search app

Oscar’s search app has been reviewed and simplified. The main view class (now `FacetedSearchView`) has been reworked to provide better support for faceting, which can be easily specified using the `OSCAR_SEARCH_FACETS` setting.

The `SuggestionsView` has been removed as it wasn’t being used. A later version of Oscar will include a replacement.

See the [search app documentation](#) for more details.

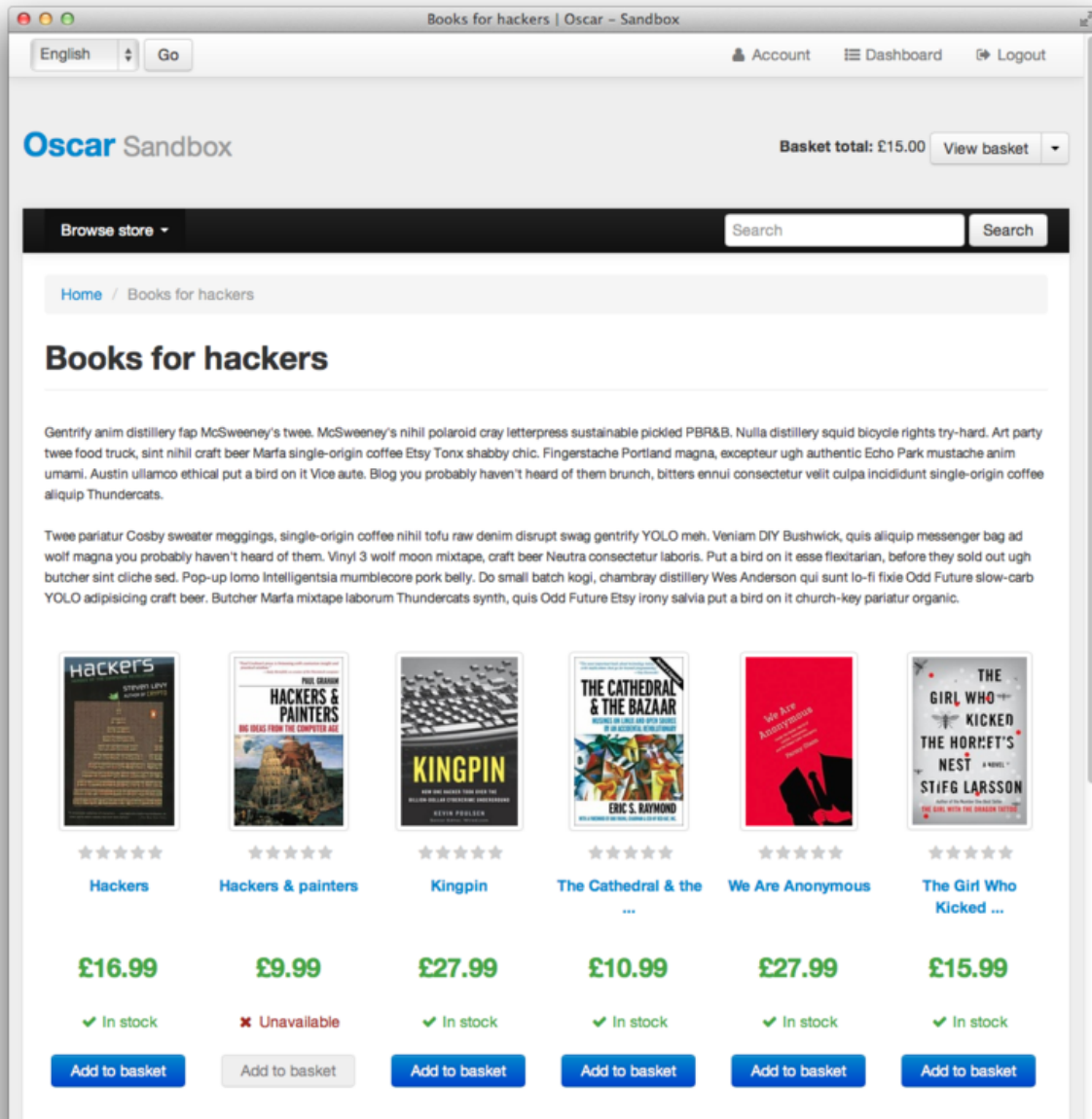


Fig. 5: A customer-facing range page

## Order processing changes

The core `EventHandler` class has been extended.

- The `handle_shipping_event` method now validates a proposed shipping event before saving it.
- The `handle_payment_event` method now validates a proposed payment event before saving it.

See the `EventHandler` for the available methods.

## Tracking Oscar sites

Oscar's dashboard now serves a single pixel image from one of Tangent's servers. This is included to gather information on which sites use Oscar, which is an important metric for Tangent, who sponsor Oscar's development.

It can easily be disabled by setting `OSCAR_TRACKING=False`. If you do opt out, please email the mailing list with any production Oscar sites you are running. This will help to ensure investment in Oscar's future.

## Minor changes

- `detox` is a new dependency, which allows running `tox` tests in parallel.
- `OSCAR_ALLOW_ANON_REVIEWS` has been a documented setting since Oscar 0.4. But there's never been any code to support this, which has been rectified with this release. Things should now work as expected.
- Oscar uses a cookie to display recently displayed products. This cookie never expired and wasn't a `HttpOnly` cookie. It is now a `HttpOnly` cookie and expires after 7 days. Additionally, two settings have been introduced to configure it analogues to the basket cookies: `OSCAR_RECENTLY_VIEWED_COOKIE_LIFETIME` and `OSCAR_RECENTLY_VIEWED_COOKIE_NAME`.

## Backwards incompatible changes in 0.6

There were quite a few backwards incompatible changes in Oscar 0.6. There shouldn't be quite as many in future Oscar releases as we approach 1.0.

## Additional apps

Four new apps are required in your `INSTALLED_APPS`:

```
INSTALLED_APPS = (
    ...
    'oscar.apps.wishlists',
    'oscar.apps.dashboard.pages',
    'oscar.apps.dashboard.partners',
    'oscar.apps.dashboard.reviews',
    ...
)
```

If you are using the `get_core_apps` helper function, then these new apps will be added automatically. The new wishlists app contains database migrations, so you will need to run the `migrate` management command.

## Checkout app

Several changes have been made to the checkout in the name of simplification and making things easier to customise.

The `PaymentDetailsView` has been adjusted to explicitly pass variables around rather than relying on methods that load them on demand. This makes customisation easier and everything more explicit (a good thing).

- The `submit` method in `PaymentDetailsView` has a new signature. It now accepts the user, shipping address, shipping method and order total as required parameters. The intention is that the `build_submission` methods returns a dict of kwargs for `submit` so that it can be called like:

```
submission = self.build_submission()
return self.submit(**submission)
```

If your payment or order submission process requires additional parameters (e.g. a bankcard instance), override the `build_submission` method to provide them. The dict returned from the new `build_submission` method is also passed to the template.

- The `handle_payment` method in `PaymentDetailsView` now accepts a `Price` instance instead of a `Decimal` for the order total.
- The `handle_order_placement` method in `OrderPlacementMixin` now accepts the user, shipping address and shipping method in a different order consistent with the `submit` method from `PaymentDetailsView`.
- The `place_order` method in `OrderPlacementMixin` has a new signature. The parameters have been reordered and the shipping address, shipping method and billing address must be passed in explicitly (as unsaved instances).
- The `create_shipping_address` method in `OrderPlacementMixin` has changed signature. Instead of being passed a basket, it is now passed the user and an unsaved shipping address instance.
- The `create_billing_address` method in `OrderPlacementMixin` has changed signature. It is now passed an unsaved billing address instance as well as a shipping address instance.
- The `get_shipping_method` (from `CheckoutSessionMixin`) no longer defaults to returning free shipping if no shipping method can be looked up.
- The `OrderTotalCalculator` now returns a `Price` instance from a new `calculate` method. The old methods `order_total_incl_tax` and `order_total_excl_tax` have been removed.

Other changes:

- The checkout gateway page has a new option “Register and continue” which allows a customer to register before checking out. As part of this change, the option value `new` in `GatewayForm` has changed to `guest` as `new` option is used for this feature.
- The checkout decorators `basket_required` and `prev_steps_must_be_complete` have been removed as they were no longer used.

## Shipping app changes

The default implementation of the `Repository` class has been adjusted to avoid thread-safety issues. If you define your own shipping `Repository` class, ensure that your shipping methods are instantiated per-request and not at compile time.

For example, avoid this:

```
from oscar.apps.shipping import repository

class Repository(repository.Repository)
```

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```
# Don't instantiate at compile time!
methods = [SomeMethod(), AnotherMethod()]
```

Instead, instantiate the methods within `get_shipping_methods`:

```
from oscar.apps.shipping import repository

class Repository(repository.Repository):
    # Note, methods are not instantiated. The get_shipping_methods
    # method will instantiate them.
    methods = [SomeMethod, AnotherMethod]
```

**Warning:** Beware of shipping methods that are configured via constructor parameters, like *FixedPrice*. If you are using methods that work this way, ensure you instantiate them at runtime.

Shipping methods will be reworked for Oscar 0.7 to avoid these issues.

## Address model changes

- The `UserAddress.salutation` and `UserAddress.name` methods are now properties.
- The `Country` model's `is_highlighted` column has been renamed to `display_order` and is now an integer field to allow fine-grained country selection.

## Basket app changes

Several properties of the basket `Line` model have been renamed:

- `Line.line_price_excl_tax_and_discounts` has been renamed to `Line.line_price_excl_tax_incl_discounts`.
- `Line.line_price_incl_tax_and_discounts` has been renamed to `Line.line_price_incl_tax_incl_discounts`.

The `basket_form()` templatetag has been altered to take the `request` as the first parameter, not `request.basket`.

## Catalogue app changes

3 properties have been removed from `oscar.apps.catalogue.abstract_models.AbstractProductImage` as they were unused: `resized_image_url`, `fullsize_url` and `thumbnail_url`. Thumbnailing is instead achieved in templates with `sorl-thumbnail`.

- The function `add_category_from_breadcrumbs` was not used and has been removed.
- Alternative product class templates now use `slug` field instead of `name.lower()` to determine their filename. If you have templates for specific product classes, please update your filenames accordingly

## Customer app changes

The `oscar.apps.customer.forms.EmailAuthenticationForm` form now needs to be instantiated with a host name so prevent redirects to external sites.

## Offer app changes

The `ManyToManyField` `included_product` of the `Range` model was changed to use `through` relationship:

- Use `Range.add_product(product)` instead of `Range.included_product.add(product)`.
- Use `Range.remove_product(product)` instead of `Range.included_product.remove(product)`.

When adding a product into a range, position in the range can be specified with `display_order` parameter: `Range.add_product(product, display_order=3)`

## Payment app changes

The `balance` method on the `AbstractSource` model is now a property, not a method.

## Reviews app changes

The two product review forms, `SignedInUserProductReviewForm` and `AnonymousUserProductReviewForm`, have been replaced by a new `oscar.apps.catalogue.reviews.forms.ProductReviewForm`.

## Search app changes

Some of the names have been simplified.

- The `MultiFacetedSearchView` and `SuggestionsView` view classes have been removed. The `MultiFacetedSeachView` class is replaced by `FacetedSearchView`.
- The `MultiFacetedSearchForm` has been removed in favour of `SearchForm`.

## Loading baskets

Now that products can have multiple stockrecords, several changes have been made to baskets to allow the appropriate stockrecord to be tracked for each basket line. The basket line model has a new field that links to the selected stockrecord and the basket itself requires an instance of the strategy class so that prices can be calculated for each line. Hence, if you loading baskets and manipulating baskets directly, you need to assign a strategy class in order for prices to calculate correctly:

```
from oscar.apps.basket import models

basket = models.Basket.objects.get(id=1)
basket.strategy = request.strategy
```

Without an assigned strategy class, a basket will raise a `RuntimeError` when attempting to calculate totals.

## Renamed templates

Some templates have been renamed for greater consistency. If you are overriding these templates, ensure you rename your corresponding project templates.

Many of the profile templates have been reorganised:

- `customer/address_list.html` is renamed to `customer/address/address_list.html`
- `customer/address_form.html` is renamed to `customer/address/address_form.html`
- `customer/address_delete.html` is renamed to `customer/address/address_delete.html`
- `customer/email.html` is renamed to `customer/email/email_detail.html`
- `customer/email_list.html` is renamed to `customer/email/email_list.html`
- `customer/order.html` is renamed to `customer/order/order_detail.html`
- `customer/order_list.html` is renamed to `customer/order/order_list.html`
- `customer/profile.html` is renamed to `customer/profile/profile.html`
- `customer/profile_form.html` is renamed to `customer/profile/profile_form.html`
- `customer/change_password_form.html` is renamed to `customer/profile/change_password_form.html`
- `partials/nav_profile.html` has been removed.

## Template block changes

- The template `dashboard/orders/order_detail.html` has been reorganised. The `tab_transactions` block has been renamed to `payment_transactions`.
- In `checkout/checkout.html`, the `checkout-nav` block has been renamed `checkout_nav`.

## Changes to Partner permissions

The following permissions on the `AbstractPartner` model were not used in Oscar and have been removed to avoid confusion with the newly introduced permission-based dashboard:

- `can_edit_stock_records`
- `can_view_stock_records`
- `can_edit_product_range`
- `can_view_product_range`
- `can_edit_order_lines`
- `can_view_order_lines`

The permission-based dashboard introduced a new permission:

- `dashboard_access`

## Migrations

There are rather a lot of new migrations in Oscar 0.6. They are all detailed below.

If you are upgrading and your project overrides one of these apps with new migrations, then ensure you pick up the schema changes in a new migration within your app. You can generally do this using `manage.py schemamigration $APP --auto` but check the corresponding core migration to ensure there aren't any subtleties that are being overlooked.

Some of these migrations rename fields for consistency, while others ensure `CharField` fields are not nullable.

- Address:
  - 0003: A new field `display_order` is added to the `Country` model. This is the first of 3 migrations that replace the boolean `is_highlighted` field with an integer field that allows fine-grained control of the order of countries in dropdowns.
  - 0004: A data migration to ensure highlighted countries have a display order of 1.
  - 0005: Remove the `is_highlighted` field from the `Country` model as it is no longer necessary.
  - 0006: Add a uniqueness constraint across `user_id` and `hash` for the `UserAddress` model to prevent duplicate addresses.
  - 0007: Use a custom field for address postcodes.
- Basket:
  - 0004: Add `stockrecord` field to the `Line` model to track which stockrecord has been selected to fulfil a particular line.
  - 0005: Add `price_currency` field to the `Line` model.
- Catalogue:
  - 0011: Larger `max_length` on `FileFields` and `ImageFields`
  - 0012: Use `NullBooleanField` for the `value_boolean` field of the `ProductAttributeValue` model.
  - 0013: Add `value_file` and `value_image` fields to the `ProductAttributeValue` model to support file and image attributes.
- Customer:
  - 0005: Don't allow `sms_template` field of `CommunicationEventType` model to be nullable.
- Dashboard:
  - 0002: Don't allow `error_message` field of `RangeProductFileUpload` model to be nullable.
- Offer app:
  - 0020: Data migration to set null offer descriptions to empty string.
  - 0021: Don't allow null offer descriptions or benefit types.
  - 0022: Add a `slug` field to the [Range](#) model.
  - 0023: A data migration to populate the new range slug field.
  - 0024: Add a `is_public` field to the [Range](#) model.
  - 0025: Add a `description` field to the [Range](#) model.
  - 0026: Add a `applies_to_tax_exclusive_price` field to `ConditionalOffer` model to try and handle offers that apply in both the US and UK (this field is later removed).
  - 0027: Create a joining table for the new M2M relationship between ranges and products.

- 0028: Remove `applies_to_tax_exclusive_price` field.
- Order app:
  - 0010: Allow postcodes for shipping- and billing addresses to be nullable.
  - 0011: Rename date field on `CommunicationEvent`, `ShippingEvent` and `PaymentEvent` models to be `date_created`.
  - 0012: Add `reference` field to `PaymentEvent` model.
  - 0013: Add a foreign key to `ShippingEvent` from `PaymentEvent` model.
  - 0014: Change `postcode` field on `ShippingAddress` and `BillingAddress` models to use `UpperCaseCharField` field.
  - 0015: Remove `is_required` and `sequence_number` fields from `ShippingEventType` and `PaymentEventType` models.
  - 0016: Add `currency` field to `Order` model. Add a foreign key to the `StockRecord` model from the `Line` model.
  - 0017: Add a `shipping_code` field to the `Order` model.
  - 0018: `ShippingAddress`'s `phone_number` is now a `PhoneNumberField` to allow better validation.
- Partner app:
  - 0008: Remove unnecessary `partner_abstractstockalert` table.
  - 0009: Create table for new `PartnerAddress` model.
  - 0010: Remove uniqueness constraint on `product_id` for the `StockRecord` model. This allows a product to have more than one stockrecord.
- Payment app:
  - 0002: Ensure all `CharField` fields are not nullable. This migration handles both the data- and schema-migration in one.
- Promotions app:
  - 0002: Ensure all `CharField` fields are not nullable.
  - 0003: Extend the `max_length` of the `image` field.
- Wishlist app:
  - 0001: Initial table creation

## Features deprecated in 0.6

### Accessing a product's stockrecords

Several properties and methods of the core `AbstractProduct` class have been deprecated following the change to allow multiple stockrecords per product.

- The `has_stockrecord` property no longer makes sense when there can be more than one stockrecord. It is replaced by `has_stockrecords`
- The `stockrecord` property is deprecated since it presumes there is only one stockrecord per product. Choosing the appropriate stockrecord is now the responsibility of the *strategy class*. A backward compatible version has been kept in place that selects the first stockrecord for a product. This will continue to work for sites that only have one stockrecord per product.

All availability logic has been moved to *availability policies* which are determined by the *strategy class*.

- The `is_available_to_buy` property is deprecated. The functionality is now part of availability policies.
- The `is_purchase_permitted()` method is deprecated. The functionality is now part of availability policies.

### Checkout session manager

The `shipping_method` method of the `CheckoutSessionData` is now deprecated in favour of using `shipping_method_code`. It is being removed as the `CheckoutSessionData` class should only be responsible for retrieving data from the session, not loading shipping method instances.

### Checkout order placement mixin

The following methods within `OrderPlacementMixin` are deprecated as the flow of placing an order has been changed.

- `create_shipping_address_from_form_fields()`
- `create_shipping_address_from_user_address()`
- `create_user_address()`

### Bankcard model

The `card_number` is deprecated in favour of using `number`.

### “Partner wrappers”

Before Oscar 0.6, availability and pricing logic was encapsulated in “partner wrappers”. A partner wrapper was a class that provided availability and price information for a particular partner, as specified by the `OSCAR_PARTNER_WRAPPERS` setting. The stockrecord model had several properties and methods which delegated to the appropriate wrapper for the record’s partner.

This functionality is now deprecated in favour of using *strategy classes*. How prices and taxes are determined is not generally a function of the partner, and so this system was not a good model. Strategy classes are much more flexible and allow better modelling of taxes and availability.

The following properties and methods from `StockRecord` are deprecated and will be removed for Oscar 0.7. These are all convenience properties and methods that delegate to the appropriate partner wrapper.

- `AbstractStockRecord.is_available_to_buy`
- `AbstractStockRecord.is_purchase_permitted`
- `AbstractStockRecord.availability_code`
- `AbstractStockRecord.availability`
- `AbstractStockRecord.max_purchase_quantity`
- `AbstractStockRecord.dispatch_date`
- `AbstractStockRecord.lead_time`
- `AbstractStockRecord.price_incl_tax`
- `AbstractStockRecord.price_tax`

All the above properties and methods have effectively been moved to the `availability` and `pricing` policies that a strategy class is responsible for loading. To upgrade your project, replace your partner wrapper classes with equivalent *availability and pricing policies*.

### Test support extension brought back into core

The `Oscar test support library` has been ported back into Oscar core. This simplifies things and avoids circular dependency issues. If your project is using this extension, you should remove it as a dependency and use the analogous functionality from `oscar/test/`.

### Oscar 0.6.1 release notes

This is Oscar 0.6.1. It fixes one potentially serious data loss issue and a few minor bugs.

#### Possible data loss from deleted users

Before this release, the foreign key from the `Order` model to the `User` model did not specify an `on_delete` behaviour. The default is for deletes to cascade to related objects, even if the field is nullable. Hence, deleting a user would also delete any orders they had placed.

As of 0.6.1, the foreign keys to user, shipping address and billing address on the `Order` model specify `on_delete=SET_NULL` to avoid orders being deleted accidentally.

See [Django's docs](#) for more info on `on_delete` options.

#### Missing translations

The 0.6 release failed to include several translations from Transifex due to a problem in the way we updated translation files before release. This release rectifies that and includes the latest translation files.

#### Known issues

- Django 1.4 only: The changes in [#1127](#) mean you explicitly need to register a call to `migrate_alerts_to_users` when the `post_save` signal is emitted for a `User` model.

#### Bug fixes

The following bugs were fixed:

- [#1109](#) - Workaround for a bug in Bootstrap regarding the collapsing of the navigation bar.
- [#1121](#) - Added a confirmation view to removing products from wish lists because one can't POST to it in all cases.
- [#1127](#) required that the `migrate_alerts_to_user` function is now explicitly called in Oscar's base `User` class. It previously was wired up as a `post_save` signal receiver on the `User` model, which does not work in Django 1.5+.
- [#1128](#) - Calls to `Source.debit` without an `amount` argument were failing as `balance` was being called as a method instead of a property.
- [#1130](#) - Variant products were not fetching the product class instance correctly within `is_shipping_required`.

- [#1132](#) and [#1149](#) - Rich text attributes were not supported. Should be displayed correctly now. Also introduced hooks for adding support for e.g. file and image types.
- [#1133](#) - The order detail page for anonymous checkouts failed to render if reviews were disabled.
- [#1134](#) - Fixed a bug caused where Unicode characters in child products' titles were incorrectly handled.
- [#1138](#) - Adjust the *OrderAndItemCharges* shipping method to not count lines that don't require shipping.
- [#1146](#) - Various templates were adjusted to gracefully handle deleted products.

### Oscar 0.6.2 release notes

This is Oscar 0.6.2. It fixes an unfortunate regression introduced in 0.6.1 as well as a couple of bugs.

#### Overriding models

Commit [fa1f8403](#) changed the way signal receivers were registered. While this helped work around issues with the latest debug toolbar, it also broke the way custom models were imported. This happened as the relocated receiver imports caused core models to be imported before local ones.

This is fixed in 0.6.2 by [reverting the original commit](#). Users of the debug toolbar are recommended to follow the [explicit installation instructions](#) to avoid any circular import issues that [fa1f8403](#) was introduced to solve..

See [#1159](#) for more details.

#### Bug fixes

The following bugs were fixed:

- [#1157](#) - Ensure group products have a price submitted to the search backend when indexing.
- [#1127](#) - Remove a circular dependency bug around importing the *StockAlert* model when indexing.

### Oscar 0.6.3 release notes

This is Oscar 0.6.3. It fixes a few issues that have been discovered since the latest release.

#### Known issues

- Django 1.4 only: The changes in [#1127](#) mean you explicitly need to register a call to `migrate_alerts_to_users` when the `post_save` signal is emitted for a `User` model.

#### Bug fixes

The following issues were fixed:

- Several strings have been marked translatable.
- [#1167](#) - Offers without ranges can be created correctly.
- [#1166](#), [#1176](#) - Migrations work again with custom `User` model.
- [#1186](#) - Fix bug with dashboard order search

### Oscar 0.6.4 release notes

This is Oscar 0.6.4. This is a minor release which addresses a few niggles, mainly around how partner users are handled in the dashboard.

#### Bug fixes

The following issues were fixed:

- Editing variant products didn't correctly look up the parent product class.
- [#1177](#) - Fix a regression in `get_classes` that prevented overridden dashboard apps being loaded correctly.
- [#1273](#) - Dashboard partner views now allow user forms to be dynamically loaded (and hence overridden).
- [#1275](#) - Dashboard partner user form now checks that the right fields are picked up from the user model (see also [#1282](#), [#1283](#))

### Oscar 0.6.5 release notes

This is Oscar 0.6.5, a minor security release. If you rely on the `permissions_required` decorator or the `Application.permissions_map` and `Application.default_permissions` syntax, you must upgrade.

#### Bug fixes

- The `permissions_required` decorator now handles both methods and properties on the User model. Previously, it wasn't supported, but a docstring showed `is_anonymous` as an example, which is a method.

0.5 release branch

### Oscar 0.5 release notes

Welcome to Oscar 0.5!

These release notes cover the *new features* as well as *upgrading advice*.

#### Overview

The main aim of this release was to add functionality to offers but scope expanded over time to include many fixes and improvements. Whilst there aren't that many new features from a customer perspective, a great deal of work has gone into reworking Oscar's structure to be more extensible.

Thanks to all the contributors who helped with this release.

## What's new in Oscar 0.5?

### Offers++

Most of the new features in 0.5 are around offers.

- It is now possible to create custom ranges, conditions and benefits that can be used to create flexible offers. These ranges are created as Python classes conforming to a set interface which are registered at compile time to make them available in the dashboard.
- Offer benefits can now apply to the shipping charge for an order. Previously, all benefits were applied against the basket lines. There are three shipping benefits ready to use:
  - Fixed discount off shipping (e.g., get £5 off your shipping costs)
  - Percentage discount off shipping (e.g., get 25% off your shipping costs)
  - Fixed price shipping (e.g., your shipping charge will be £5)
- Offer benefits can now be deferred. That is, they don't affect either the basket lines nor the shipping charge. This is useful for creating benefits such as awarding loyalty points.
- Several new ways of restricting an offer's availability have been introduced:
  - An offer's lifetime can now be controlled to the second rather to the day (i.e., the relevant model fields used `datetime` rather than `date`). This makes it possible to run offers for a small amount of time (e.g., for a single lunchtime).
  - An offer can be restricted to a max number of applications per *basket/order*. For example, an offer can be configured so that it can only be used once in a single order.
  - An offer can be restricted to a max number of applications per *user*.
  - An offer can be restricted to a max number of *global* applications.
  - An offer can be restricted to give a maximum total discount. After this amount of discount has been awarded, the offer becomes unavailable.
- Offers can now be suspended and reinstated.
- The offers dashboard has been rewritten.
- There is now an offers homepage that lists all active offers.

### New dashboard skin

The design of the dashboard has been reworked, offering a better user experience throughout the dashboard. This work is still ongoing, further improvements in how the dashboard pages are laid out will appear in 0.6.

### Internationalisation

Oscar now uses [Transifex](#) to manage its translation files. Since 0.4, a considerable number of new languages are now supported (although many have partial coverage).

Oscar's default templates also now support a simple language picker.

New settings have been introduced to control how slugs are generated. By default, the [Unidecode](#) package is used to gracefully handle non-ASCII chars in slugs.

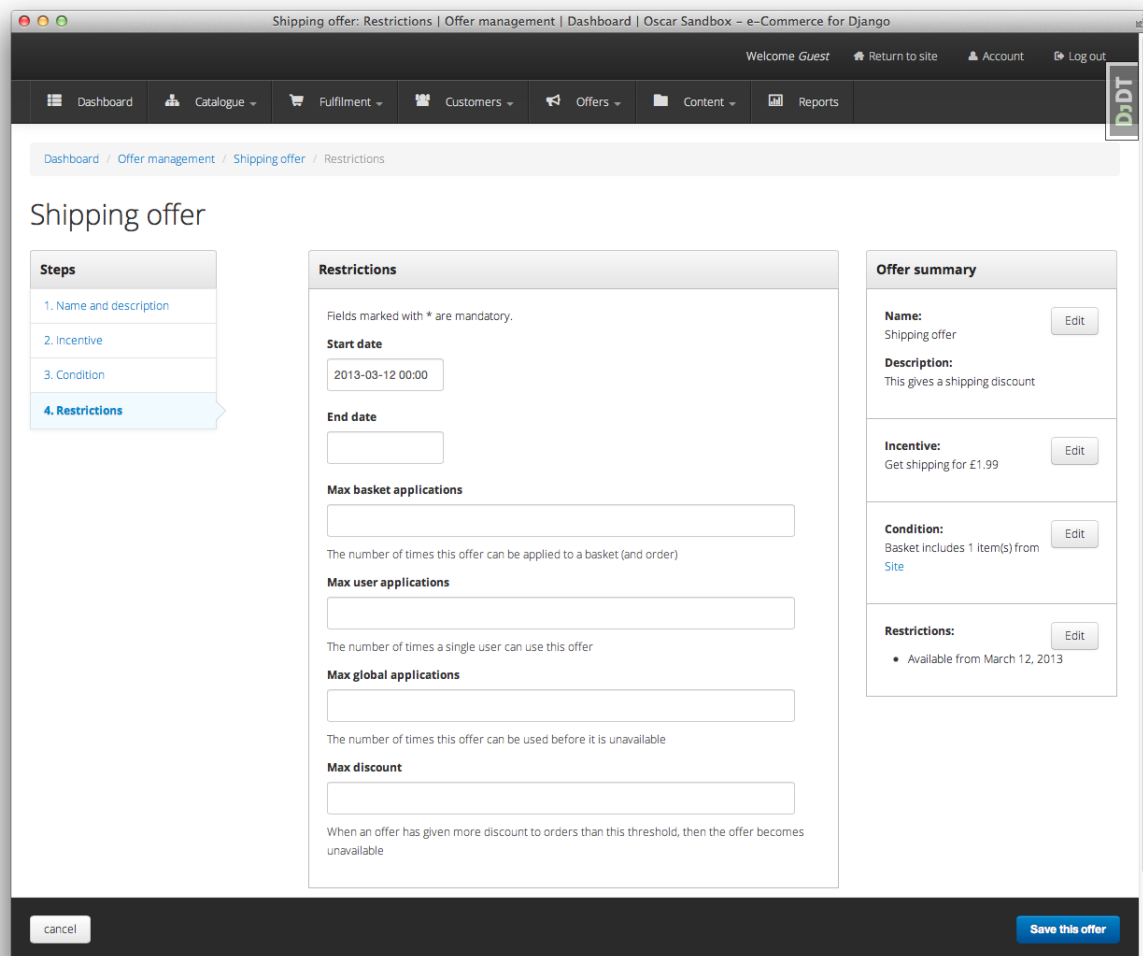


Fig. 6: The restrictions editing page for an offer within the dashboard.

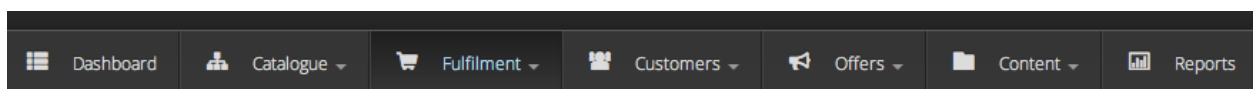


Fig. 7: The new dashboard navigation.

**LANGUAGES** [+ Create language](#) [Widgets](#) [Get TMX file](#)

English (source language)	<div><div></div></div>	100%	🕒 Mar 22, 03:37p.m.
Polish	<div><div></div></div>	100%	🕒 Mar 26, 02:34p.m.
Portuguese (Brazil)	<div><div></div></div>	97%	🕒 Mar 27, 05:09p.m.
Slovak	<div><div></div></div>	75%	🕒 Mar 22, 03:37p.m.
Spanish	<div><div></div></div>	39%	🕒 Mar 22, 03:37p.m.
Russian (Russia)	<div><div></div></div>	38%	🕒 Mar 22, 03:37p.m.
German	<div><div></div></div>	34%	🕒 Mar 26, 11:23p.m.
French	<div><div></div></div>	23%	🕒 Mar 25, 09:09p.m.
Japanese	<div><div></div></div>	9%	🕒 Mar 22, 03:37p.m.
Greek (Greece)	<div><div></div></div>	4%	🕒 Mar 22, 03:37p.m.

Fig. 8: A snippet from the Oscar Transifex page.

## Minor features

There are several noteworthy smaller improvements

- The basket page now updates using AJAX rather than page reloads.
- Oscar's documentation has been reorganised and improved. This is part of an ongoing effort to improve it. Watch this space.
- Oscar's template now use [django-compressor](#) to compress CSS and JS assets.
- Products can now be deleted using the catalogue dashboard.
- Warnings emails are sent to customers when their password or email address is changed.
- Flash messages can now contain HTML.

## Minor improvements

Several improvements have been made to ease development of Oscar (and Oscar projects):

- The sandbox can be configured to compile the LESS files directly. This is useful for developing Oscar's CSS/LESS files.
- A new management command `oscar_fork_statics` has been added to help with setting up static files for a new Oscar project.
- Alternative templates can now be used for different product classes in product browsing views.
- jQuery upgraded to 1.9.1
- Bootstrap upgraded to 2.3.1
- The test runner can now be run with `tox`.
- Oscar ships with profiling tools. There is a decorator and middleware available in `oscar.profiling` that can be used to help profile Oscar sites.
- Customers are notified if changes to their basket lead to new offers being applied (or if previously applied offers are no longer available).

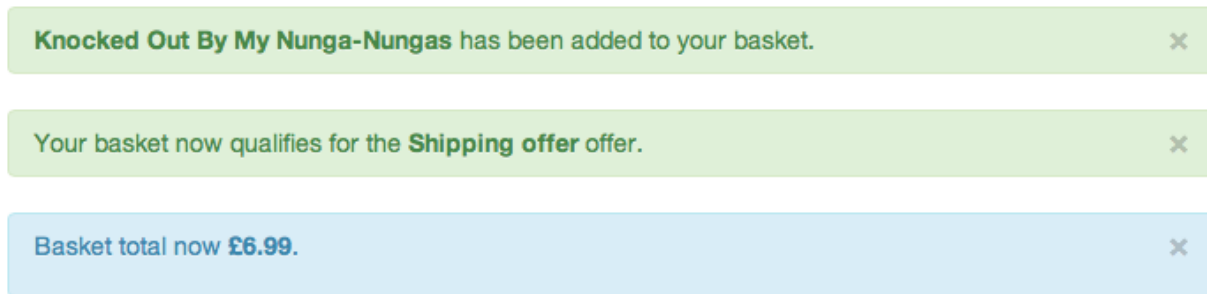


Fig. 9: A flash message indicating that the customer’s basket has now qualified for a new offer.

- Some testing utilities have been extracted into a new package, [django-oscar-testsupport](#), so they can be used by Oscar extensions.
- A [Vagrant](#) manifest is provided for testing Oscar against different database vendors.
- Oscar’s Javascript has been rewritten to be cleaner and more extensible.
- Coverage data is now submitted to [coveralls.io](#)

## Upgrading

This section describes changes in core Oscar that you need to be aware of if you are upgrading from 0.4. See the [upgrading guidelines](#) for further details on the steps you need to take.

## Migrations

There are new migrations in the following apps to be aware of.

- Address:
  - 0002: Make `postcode` nullable on the `Address` model
- Catalogue:
  - 0009: Add a `rating` field to the product model
  - 0010: Populate the new `rating` field

---

**Note:** Note, if you are using a customised version of the catalogue app, then you should create a similar data migration to 0010 in your own project.

---

- Offer:
  - 0007: Add `max_global_applications` field to `ConditionalOffer` model
  - 0008: Add `num_applications` field to `ConditionalOffer` model
  - 0009: Rename `max_applications` field to `max_basket_applications`
  - 0010: Add `max_user_applications` field to `ConditionalOffer` model
  - 0011: Add `proxy_class` field to `Range` model
  - 0012: Add `proxy_class` field to `Condition` model and make `range`, `type` and `value` nullable.

- 0013: Add unique index on `proxy_class` for the Range model
- 0014: Empty migration after branch merge
- 0015: Add `max_discount` field to ConditionalOffer model
- 0016: Add `status` field to ConditionalOffer model
- 0017: Change `start_date` and `end_date` to use `datetime`.
- 0018: Rename `start_date` and `end_date` to `start_datetime` and `end_datetime` respectively.
- 0019: Add `proxy_class` field to Benefit model and make `range`, `type` and `value` nullable.
- Order:
  - 0007: Add `frequency` field to OrderDiscount model
  - 0008: Add `category` field to OrderDiscount model
  - 0009: Add `message` field to OrderDiscount model
- Partner:
  - 0004: Add `code` field to Partner model
  - 0005: Populate the new `code` field
  - 0006: Add unique index on `code` field
  - 0007: Remove unique index from `name` field and make nullable

---

**Note:** Note, if you are using a customised version of the partner app, then you should create a similar data migration to 0005 in your own project.

---

### Oscar 0.5.1 release notes

This is a bugfix release for Oscar 0.5, backporting a few issues discovered during development of Oscar’s demo site and fixing a couple of other bugs.

This release contains fixes for the following issues:

- The `is_available_to_buy` method was failing for variant products where the product class is defined on the parent product. Fixed in [7fd62f2af0](#) and ... [80384a4007](#).
- The stockrecord partial `catalogue/partials/stock_record.html` incorrectly handled group products. Fixed in [5594bcccd6](#).
- The checkout thank-you template `checkout/thank_you.html` incorrectly looked up the line product URL. Fixed in [cc5f63d827](#).
- The basket URL used for AJAX requests is no longer hard-coded. Fixed in ... [fd256b63b1](#).
- The dashboard voucher form now correctly validates when no start- or end-dates are entered. Fixed in [02b3644e3c](#)
- The `AbstractStockRecord` model was not declared abstract. A migration has been added that cleans up the unnecessary database table. Fixed in ... [610de82eb2](#)

### Oscar 0.5.2 release notes

This is Oscar 0.5.2, a security release for Oscar 0.5.

#### Insecure use of SECRET\_KEY in basket cookie

For anonymous users, the basket ID is stored in a cookie. Previously, the value was signed using a simple CRC32 hash using the SECRET\_KEY. However, a good rule of thumb is to never roll your own encryption, and it is possible that this method weakens the security of the SECRET\_KEY.

The fix uses Django's cryptographic signing functionality to sign the cookie in a more secure manner.

### Oscar 0.5.3 release notes

This is Oscar 0.5.3, a bug-fix release for Oscar 0.5.

The only change from 0.5.2 is to [pin the dependency on Haystack to version 2.0.0](#). Previously, `setup.py` specified `2.0.0-beta` but this beta release has now been removed from PyPi, stopping Oscar from installing correctly.

0.4 release branch

### Oscar 0.4.11 release notes

**release** 2013-08-08

Add extra blocks to order dashboard template.

### Oscar 0.4.10 release notes

**release** 2013-07-03

Extend range of bankcard expiry month field.

### Oscar 0.4.9 release notes

**release** 2013-04-17

Make AbstractStockRecord abstract ([#645](#))

### Oscar 0.4.8 release notes

**release** 2013-04-08

Fix bug with order dashboard line editing ([#622](#))

### Oscar 0.4.7 release notes

**release** 2013-03-20

Fix bug with order dashboard searching (#587)

### Oscar 0.4.6 release notes

**release** 2013-03-05

Fix dependencies in `setup.py`

### Oscar 0.4.5 release notes

**release** 2013-01-25

Extend `get_class` to support loading from non-Oscar packages

### Oscar 0.4.4 release notes

**release** 2013-01-16

Correct `django-haystack` in `setup.py`

### Oscar 0.4.3 release notes

**release** 2013-01-16

Pin `django-haystack` version as backwards-incompatible changes are happening

### Oscar 0.4.2 release notes

**release** 2012-12-14

Small release to fix logout redirect bug

### Oscar 0.4.1 release notes

**release** 2012-12-06

Small release to bump dependency versions.

### Oscar 0.4.0 release notes

**release** 2012-10-19

Quite a big release this one. Several new features have been added since the 0.3 release series:

- Better support for digital products. Additional fields added to product class model.
- HTML editing within the dashboard
- A new email dashboard
- Major refactor of the offers module and test suite

- Product stock alerts: customers can request an alert when when a product comes back into stock
- Customer notifications: an API and inbox for sending users notifications

### Upgrading

Four apps have new migrations. If you subclass these apps in your project, you will need to create a new schema migration for each to pick up the upstream changes.

- Basket:
  - A `price_excl_tax` has been added to `basket.Line`. This is useful for applications that use dynamic pricing where both the price with and without tax needs to be stored.
- Catalogue:
  - A `requires_shipping` field has been added to `catalogue.ProductClass` to facilitate better support for digital products (that don't require shipping).
  - The `code` field of `catalogue.Option` now has a unique index.
- Customer:
  - New models for stock alerts and notifications
  - The `email_subject_template` field from `customer.CommunicationEventType` is now nullable.
- Order:
  - An `offer_name` field has been added to `order.OrderDiscount` so retain audit information on discounts after offers are deleted.

Please ask on the mailing list if any other problems are encountered.

0.3 release branch

### Oscar 0.3.7 release notes

**release** 2013-07-03

- Extend number of years in bankcard expiry field

### Oscar 0.3.6 release notes

**release** 2013-04-08

- Fix line-handling bug in order dashboard.

### Oscar 0.3.5 release notes

**release** 2012-09-28

A couple of minor adjustments for Tangent projects

- Add handling of custom redirect after adding to basket
- Add recursive URL decoration

### Oscar 0.3.4 release notes

**release** 2012-09-24

- Rework price lookups in offer calculations (backport of functionality from 0.4)
- Add additional block to profile template

Diff: <https://github.com/django-oscar/django-oscar/compare/0.3.3...0.3.4>

### Oscar 0.3.3 release notes

**release** 2012-08-24

- Minor bug fixes around category editing and order history.

### Oscar 0.3.2 release notes

**release** 2012-08-13

- Bug fix for basket calculations.
- Bug fix for absolute discount benefit calculations.

### Oscar 0.3.1 release notes

**release** 2012-08-08

- Now including the translation files.

### Oscar 0.3.0 release notes

**release** 2012-08-08

- i18n support added - Oscar now ships with .po files for seven languages. Translation files are welcome.
- Category management added to dashboard
- Some improvements to how group/variant products are handled
- Improved installation process using Makefile

## Migrations

There are 3 new migrations in the catalogue app. If you have a local version, you will need to run:

```
./manage.py schemamigration catalogue --auto
```

to pick up the changes in Oscar's catalogue app.

### Breaking changes

A new setting `OSCAR_MAIN_TEMPLATE_DIR` has been introduced as the template structure has been altered. This requires your `TEMPLATE_DIRS` setting to be altered to include this folder, e.g.:

```
from oscar import OSCAR_MAIN_TEMPLATE_DIR
TEMPLATE_DIRS = (
    location('templates'),
    OSCAR_MAIN_TEMPLATE_DIR
)
```

If you want to extend one of Oscar's templates, then use:

```
# base.html
{% extends 'oscar/base.html' %}
```

instead of:

```
# base.html
{% extends 'templates/base.html' %}
```

0.2 release branch

### Oscar 0.2.2 release notes

**release** 13 July 2012

Fixes a bug with applying absolute-discount benefits

### Oscar 0.2.1 release notes

**release** 09 July 2012

Mainly small bug-fixes to templates and Javascript.

### Oscar 0.2.0 release notes

**release** 01 June 2012

Many components have been rewritten since 0.1 - Oscar is much more of a complete package now. New features include:

- Dashboard for managing catalogue, offers, stock, vouchers and more. This includes statistics pages to track performance.
- Sample templates, CSS and JS to get a shop up and running in a minutes.
- Updated documentation.
- Reworking of shipping methods.
- Automatic up-selling on the basket page. We now inform the user if they partially qualify for an offer.

The documentation still needs more work which we'll do over the next week or two.

0.1 release branch

## Oscar 0.1.0 release notes

- Initial release - used in production by two major applications at Tangent but still quite rough around the edges. Many features were implemented directly in the applications rather than using a feature from oscar.
- Docs are a bit stale and need updating in 0.2

## 1.3.3 Contributing to Oscar

You're thinking of helping out. That's brilliant - thank you for your time! You can contribute in many ways:

- Join the [django-oscar](#) mailing list and answer questions.
- *Report bugs* in our [ticket tracker](#).
- *Submit pull requests* for new and/or fixed behaviour.
- *Improve the documentation*.
- *Write tests*.
- Translations can be contributed using [Transifex](#). Just apply for a language and go ahead!

## Overview

### Setting up the development environment

Fork the repository and run:

```
$ git clone git@github.com:<username>/django-oscar.git
$ cd django-oscar
$ mkvirtualenv oscar # needs virtualenvwrapper
$ make install
```

If using Ubuntu, the `python3-dev` package is required for some packages to compile.

The [sandbox](#) site can be used to examine changes locally. It is easily created by running:

```
$ make sandbox
```

## JPEG Support

On Ubuntu, you need to install a few libraries to get JPEG support with Pillow:

```
$ sudo apt-get install python3-dev libjpeg-dev libfreetype6-dev zlib1g-dev
```

If you already installed PIL (you did if you ran `make install` previously), reinstall it:

```
$ pip uninstall Pillow
$ pip install Pillow
```

### Creating migrations

As the sandbox is a vanilla Oscar site, it is what we use to build migrations against:

```
$ make sandbox
$ sandbox/manage.py makemigrations
```

### Writing SCSS/CSS

Oscar's CSS files are built using SASS.

If you want to develop the SCSS files, run:

```
npm run watch
```

Which will watch for and compile changes to the source files into output CSS.

You can manually compile static assets files by running:

```
npm run build
```

### Testing migrations

To test the migrations against PostgreSQL you will need to set up an environment with both installed and do the following:

1. Change to sandbox folder and activate your virtualenv
2. Run helper script:

```
./test_migrations.sh
```

This will recreate the Oscar database in PostgreSQL and rebuild it using `migrate`.

### Reporting bugs and requesting features

Before reporting a bug or requesting a new feature, please consider these general points:

- Check that someone hasn't already filed the bug or feature request by searching in the ticket tracker.
- Don't use the ticket system to ask support questions. Use the [django-oscar](#) mailing list for that.
- Don't use the ticket tracker for lengthy discussions, because they're likely to get lost. If a particular ticket is controversial, please move the discussion to [django-oscar](#).

All bugs are reported on our [GitHub issue tracker](#).

## Reporting security issues

Security is paramount for e-commerce software like Oscar. Hence, we have adopted a policy which allows for responsible reporting and disclosure of security related issues.

If you believe you have found something in Oscar (or one of its extensions) which has security implications, please report it via email to `oscar.security@tangentlabs.co.uk`. Someone from the core team will acknowledge your report and take appropriate action.

## Reporting bugs

Well-written bug reports are *incredibly* helpful. However, there's a certain amount of overhead involved in working with any bug tracking system so your help in keeping our ticket tracker as useful as possible is appreciated. In particular:

- **Do** ask on [django-oscar](#) *first* if you're not sure if what you're seeing is a bug.
- **Do** write complete, reproducible, specific bug reports. You must include a clear, concise description of the problem, and a set of instructions for replicating it. Add as much debug information as you can: code snippets, test cases, exception stack traces, screenshots, etc. A nice small test case is the best way to report a bug, as it gives us an easy way to confirm the bug quickly.

## Reporting user interface bugs and features

If your bug or feature request touches on anything visual in nature, there are a few additional guidelines to follow:

- Include screenshots in your ticket which are the visual equivalent of a minimal test case. Show off the issue, not the crazy customisations you've made to your browser.
- If you're offering a pull request which changes the look or behaviour of Oscar's UI, please attach before *and* after screenshots.
- Screenshots don't absolve you of other good reporting practices. Make sure to include URLs, code snippets, and step-by-step instructions on how to reproduce the behaviour visible in the screenshots.

## Requesting features

We're always trying to make Oscar better, and your feature requests are a key part of that. Here are some tips on how to make a request most effectively:

- First request the feature on the [django-oscar](#) list, not in the ticket tracker. It'll get read more closely if it's on the mailing list. This is even more important for large-scale feature requests. We like to discuss any big changes to Oscar's core on the mailing list before actually working on them.
- Describe clearly and concisely what the missing feature is and how you'd like to see it implemented. Include example code (non-functional is OK) if possible.
- Explain *why* you'd like the feature, because sometimes it isn't obvious why the feature would be useful.

As with most open-source projects, code talks. If you are willing to write the code for the feature yourself or, even better, if you've already written it, it's much more likely to be accepted. Just fork Oscar on GitHub, create a feature branch, and show us your work!

## Coding Style

### General

Please follow these conventions while remaining sensible:

- [PEP8 – Style Guide for Python Code](#)
- [PEP257 – Docstring Conventions](#)
- [Django Coding Style](#)

[Code Like a Pythonista](#) is recommended reading.

`flake8` and `isort` are used to enforce basic coding standards. To run these checks, use:

```
$ make lint
```

### URLs

- List pages should use plurals; e.g. `/products/`, `/notifications/`
- Detail pages should simply be a PK/slug on top of the list page; e.g. `/products/the-bible/`, `/notifications/1/`
- Create pages should have ‘create’ as the final path segment; e.g. `/dashboard/notifications/create/`
- URL names use dashes not underscores.
- Update pages are sometimes the same as detail pages (i.e., when in the dashboard). In those cases, just use the detail convention, e.g. `/dashboard/notifications/3/`. If there is a distinction between the detail page and the update page, use `/dashboard/notifications/3/update/`.
- Delete pages; e.g., `/dashboard/notifications/3/delete/`

### View class names

Classes should be named according to:

```
'%s%sView' % (class_name, verb)
```

For example, `ProductUpdateView`, `OfferCreateView` and `PromotionDeleteView`. This doesn’t fit all situations, but it’s a good basis.

### Referencing managers

Use `_default_manager` rather than `objects`. This allows projects to override the default manager to provide domain-specific behaviour.

## HTML

Please indent with four spaces.

### Submitting pull requests

- To avoid disappointment, new features should be discussed on the mailing list ([django-oscar@googlegroups.com](mailto:django-oscar@googlegroups.com)) before serious work starts.
- Write tests! Pull requests will be rejected if sufficient tests aren't provided.
- Write docs! Please update the documentation when altering behaviour or introducing new features.
- Write good commit messages: see [Tim Pope's excellent note](#).
- Make pull requests against Oscar's master branch unless instructed otherwise.
- Always submit pull requests from a custom branch. Don't submit from your master branch.

### Test suite

#### Testing requirements

You'll need:

- A running SQL server (PostgreSQL, or SQLite with `--sqlite` parameters)
- python3.7 or higher.

#### Running tests

Oscar uses `pytest` to run the tests.

The fast way is:

```
$ make test
```

This will create a virtualenv in `venv`, install the test dependencies and run `pytest`.

#### Details

First we create a virtualenv, install the required dependencies and activate it:

```
$ make venv
$ source venv/bin/activate
```

Then we run the test suite using:

```
$ py.test
```

You can run a subset of the tests by passing a path:

```
$ py.test tests/integration/offer/test_availability.py
```

To run an individual test class, use:

```
$ py.test tests/integration/offer/test_availability.py::TestASuspendedOffer
```

(Note the ‘::’.)

To run an individual test, use:

```
$ py.test tests/integration/offer/test_availability.py::TestASuspendedOffer::test_is_
↪unavailable
```

You can also run tests which match an expression via:

```
$ py.test tests/integration/offer/test_availability.py -k is_unavailable
```

### Testing against different setups

To run all tests against multiple versions of Django and Python, use [tox](#):

```
$ tox
```

You need to have all Python interpreters to test against installed on your system. All other requirements are downloaded automatically.

To speed up the process, you may want to use [tox parallel mode](#).

### Kinds of tests

Tests are split into 3 folders:

- integration - These are for tests that exercise a collection or chain of units, like testing a template tag.
- functional - These should be as close to “end-to-end” as possible. Most of these tests should use WebTest to simulate the behaviour of a user browsing the site.

### Naming tests

When running a subset of tests, Oscar uses the [spec](#) plugin. It is a good practice to name your test cases and methods so that the spec output reads well. For example:

```
$ py.test tests/integration/catalogue/test_product.py --spec
===== test session starts =====
platform darwin -- Python 3.6.0, pytest-3.0.6, py-1.4.33, pluggy-0.4.0
rootdir: /Users/sasha0/projects/djangooscar, inifile: setup.cfg
plugins: xdist-1.15.0, warnings-0.2.0, spec-1.1.0, django-3.1.2, cov-2.4.0
collected 15 items

tests/integration/catalogue/test_product.py::ProductCreationTests
    [PASS] Allow two products without upc
    [PASS] Create products with attributes
    [PASS] None upc is represented as empty string
    [PASS] Upc uniqueness enforced
```

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```

tests/integration/catalogue/test_product.py::TopLevelProductTests
[PASS] Top level products are part of browsable set
[PASS] Top level products must have product class
[PASS] Top level products must have titles

tests/integration/catalogue/test_product.py::ChildProductTests
[PASS] Child products are not part of browsable set
[PASS] Child products dont need a product class
[PASS] Child products dont need titles
[PASS] Child products inherit fields

tests/integration/catalogue/test_product.py::TestAChildProduct
[PASS] Delegates requires shipping logic

tests/integration/catalogue/test_product.py::ProductAttributeCreationTests
[PASS] Entity attributes
[PASS] Validating option attribute

tests/integration/catalogue/test_product.py::ProductRecommendationTests
[PASS] Recommended products ordering

===== 15 passed in 15.39 seconds =====

```

## Writing documentation

### Directory Structure

The docs are built by calling `make docs` from your Oscar directory. The `make docs` command currently uses *python3*, so make sure it links to one of these versions.

They live in `/docs/source`. This directory structure is a simplified version of what Django does.

- `internals/` contains everything related to Oscar itself, e.g. contributing guidelines or design philosophies.
- `ref/` is the reference documentation, esp. consisting of
- `ref/apps/` which should be a guide to each Oscar core app, explaining it's function, the main models, how it relates to the other apps, etc.
- `topics/` will contain “meta” articles, explaining how things tie together over several apps, or how Oscar can be combined with other solutions.
- `howto/` contains tutorial-style descriptions on how to solve a certain problem.

`/index.rst` is designed as the entry point, and diverges from above structure to make the documentation more approachable. Other `index.rst` files should only be created if there's too many files to list them all. E.g. `/index.rst` directly links to all files in `topics/` and `internals/`, but there's an `index.rst` both for the files in `howto/` and `ref/apps/`.

## Style guides

Oscar currently does not have it's own style guide for writing documentation. Please carefully review style guides for [Python](#) and [Django](#). Please use [gender-neutral language](#).

## PYTHON MODULE INDEX

### O

- `oscar.apps.address.abstract_models`, 36
- `oscar.apps.analytics.abstract_models`, 39
- `oscar.apps.basket.abstract_models`, 39
- `oscar.apps.basket.views`, 42
- `oscar.apps.catalogue.abstract_models`, 44
- `oscar.apps.catalogue.views`, 49
- `oscar.apps.checkout.calculators`, 56
- `oscar.apps.checkout.forms`, 55
- `oscar.apps.checkout.mixins`, 53
- `oscar.apps.checkout.session`, 54
- `oscar.apps.checkout.utils`, 56
- `oscar.apps.checkout.views`, 50
- `oscar.apps.communication.abstract_models`, 57
- `oscar.apps.communication.utils`, 57
- `oscar.apps.customer.abstract_models`, 58
- `oscar.apps.customer.forms`, 58
- `oscar.apps.customer.views`, 60
- `oscar.apps.customer.wishlists.views`, 91
- `oscar.apps.dashboard.views`, 65
- `oscar.apps.offer.abstract_models`, 67
- `oscar.apps.offer.models`, 69
- `oscar.apps.offer.views`, 73
- `oscar.apps.order.processing`, 76
- `oscar.apps.order.utils`, 77
- `oscar.apps.partner.abstract_models`, 78
- `oscar.apps.partner.availability`, 83
- `oscar.apps.partner.prices`, 82
- `oscar.apps.partner.strategy`, 80
- `oscar.apps.payment.abstract_models`, 84
- `oscar.apps.search.facets`, 86
- `oscar.apps.search.forms`, 86
- `oscar.apps.search.views`, 85
- `oscar.apps.shipping.methods`, 86
- `oscar.apps.shipping.models`, 88
- `oscar.apps.shipping.repository`, 88
- `oscar.apps.voucher.abstract_models`, 89
- `oscar.apps.wishlists.abstract_models`, 90
- `oscar.core.application`, 34
- `oscar.core.loading`, 34
- `oscar.core.prices`, 35
- `oscar.forms.mixins`, 36
- `oscar.models.fields`, 36



## A

AbsoluteDiscountBenefit	(class in os-car.apps.offer.models), 69	AbstractPartner	(class in os-car.apps.partner.abstract_models), 78
AbsoluteDiscountBenefit.DoesNotExist	69	AbstractPartnerAddress	(class in os-car.apps.address.abstract_models), 37
AbsoluteDiscountBenefit.MultipleObjectsReturned	69	AbstractProduct	(class in os-car.apps.catalogue.abstract_models), 45
AbstractAddress	(class in os-car.apps.address.abstract_models), 36	AbstractProductAlert	(class in os-car.apps.customer.abstract_models), 58
AbstractAttributeOption	(class in os-car.apps.catalogue.abstract_models), 44	AbstractProductAttribute	(class in os-car.apps.catalogue.abstract_models), 47
AbstractAttributeOptionGroup	(class in os-car.apps.catalogue.abstract_models), 44	AbstractProductAttributeValue	(class in os-car.apps.catalogue.abstract_models), 47
AbstractBankcard	(class in os-car.apps.payment.abstract_models), 84	AbstractProductCategory	(class in os-car.apps.catalogue.abstract_models), 47
AbstractBasket	(class in os-car.apps.basket.abstract_models), 39	AbstractProductClass	(class in os-car.apps.catalogue.abstract_models), 47
AbstractBillingAddress	(class in os-car.apps.address.abstract_models), 37	AbstractProductImage	(class in os-car.apps.catalogue.abstract_models), 48
AbstractCategory	(class in os-car.apps.catalogue.abstract_models), 44	AbstractProductRecommendation	(class in os-car.apps.catalogue.abstract_models), 48
AbstractCategory.Meta	(class in os-car.apps.catalogue.abstract_models), 45	AbstractProductRecord	(class in os-car.apps.analytics.abstract_models), 39
AbstractCommunicationEventType	(class in os-car.apps.communication.abstract_models), 57	AbstractRange	(class in os-car.apps.offer.abstract_models), 68
AbstractCondition	(class in os-car.apps.offer.abstract_models), 67	AbstractRangeProduct	(class in os-car.apps.offer.abstract_models), 69
AbstractConditionalOffer	(class in os-car.apps.offer.abstract_models), 68	AbstractShippingAddress	(class in os-car.apps.address.abstract_models), 38
AbstractCountry	(class in os-car.apps.address.abstract_models), 37	AbstractSource	(class in os-car.apps.payment.abstract_models), 84
AbstractEmail	(class in os-car.apps.communication.abstract_models), 57	AbstractSourceType	(class in os-car.apps.payment.abstract_models), 85
AbstractLine	(class in os-car.apps.basket.abstract_models), 41	AbstractStockAlert	(class in os-car.apps.partner.abstract_models), 79
AbstractLine	(class in os-car.apps.wishlists.abstract_models), 90	AbstractStockRecord	(class in os-car.apps.partner.abstract_models), 79
AbstractLineAttribute	(class in os-car.apps.basket.abstract_models), 42	AbstractTransaction	(class in os-car.apps.payment.abstract_models), 85
AbstractOption	(class in os-car.apps.catalogue.abstract_models), 45	AbstractUser	(class in os-car.apps.customer.abstract_models), 58
		AbstractUserAddress	(class in os-car.apps.address.abstract_models), 38

AbstractUserRecord (class in <i>os-car.apps.analytics.abstract_models</i> ), 39	<i>car.apps.payment.abstract_models.AbstractSource</i> property), 84	
AbstractVoucher (class in <i>os-car.apps.voucher.abstract_models</i> ), 89	AnonymousOrderDetailView (class in <i>os-car.apps.customer.views</i> ), 61	
AbstractVoucherApplication (class in <i>os-car.apps.voucher.abstract_models</i> ), 89	applied_offers() (os- <i>car.apps.basket.abstract_models.AbstractBasket</i> method), 40	
AbstractVoucherSet (class in <i>os-car.apps.voucher.abstract_models</i> ), 89	apply_benefit() (os- <i>car.apps.offer.abstract_models.AbstractConditionalOffer</i> method), 68	
AbstractWishList (class in <i>os-car.apps.wishlists.abstract_models</i> ), 90	apply_deferred_benefit() (os- <i>car.apps.offer.abstract_models.AbstractConditionalOffer</i> method), 68	
AbstractWishListSharedEmail (class in <i>os-car.apps.wishlists.abstract_models</i> ), 90	apply_shipping_offer() (os- <i>car.apps.shipping.repository.Repository</i> method), 88	
AccountAuthView (class in <i>oscar.apps.customer.views</i> ), 60	apply_shipping_offers() (os- <i>car.apps.shipping.repository.Repository</i> method), 88	
AccountRegistrationView (class in <i>os-car.apps.customer.views</i> ), 60	are_stock_allocations_available() (os- <i>car.apps.order.processing.EventHandler</i> method), 76	
AccountSummaryView (class in <i>os-car.apps.customer.views</i> ), 60	attribute_summary (os- <i>car.apps.catalogue.abstract_models.AbstractProduct</i> property), 46	
active_address_fields() (os- <i>car.apps.address.abstract_models.AbstractAddress</i> method), 36	authentication_form (os- <i>car.apps.dashboard.views.LoginView</i> attribute), 65	
add() ( <i>oscar.apps.basket.abstract_models.AbstractBasket</i> method), 39	availability ( <i>oscar.apps.partner.strategy.PurchaseInfo</i> property), 81	
add() ( <i>oscar.apps.wishlists.abstract_models.AbstractWishList</i> method), 90	availability_description() (os- <i>car.apps.offer.abstract_models.AbstractConditionalOffer</i> method), 68	
add_payment_event() (os- <i>car.apps.checkout.mixins.OrderPlacementMixin</i> method), 53	availability_policy() (os- <i>car.apps.partner.strategy.Structured</i> method), 81	
add_payment_source() (os- <i>car.apps.checkout.mixins.OrderPlacementMixin</i> method), 53	Available (class in <i>oscar.apps.partner.availability</i> ), 83	
add_product() ( <i>oscar.apps.basket.abstract_models.AbstractBasket</i> method), 39	<b>B</b>	
add_product() ( <i>oscar.apps.offer.abstract_models.AbstractOffer</i> method), 68	balance ( <i>oscar.apps.payment.abstract_models.AbstractSource</i> property), 84	
AddressChangeStatusView (class in <i>os-car.apps.customer.views</i> ), 60	Base (class in <i>oscar.apps.partner.availability</i> ), 83	
AddressCreateView (class in <i>os-car.apps.customer.views</i> ), 60	Base (class in <i>oscar.apps.partner.prices</i> ), 82	
AddressDeleteView (class in <i>os-car.apps.customer.views</i> ), 60	Base (class in <i>oscar.apps.partner.strategy</i> ), 80	
AddressListView (class in <i>oscar.apps.customer.views</i> ), 61	Base (class in <i>oscar.apps.shipping.methods</i> ), 86	
AddressUpdateView (class in <i>os-car.apps.customer.views</i> ), 61	base_qs() (in module <i>oscar.apps.search.facets</i> ), 86	
all_lines() ( <i>oscar.apps.basket.abstract_models.AbstractBasket</i> method), 39	basket, 137	
all_products() ( <i>oscar.apps.offer.abstract_models.AbstractOffer</i> method), 68	basket_model ( <i>oscar.apps.basket.views.BasketView</i> attribute), 43	
allocate() ( <i>oscar.apps.partner.abstract_models.AbstractStockRecord</i> method), 79	basket_model ( <i>oscar.apps.basket.views.SavedView</i> attribute), 43	
allocate() ( <i>oscar.apps.payment.abstract_models.AbstractSource</i> method), 84	BasketAddView (class in <i>oscar.apps.basket.views</i> ), 42	
amount_available_for_refund (os-	BasketDiscount (class in <i>oscar.apps.offer.models</i> ), 69	
	BasketView (class in <i>oscar.apps.basket.views</i> ), 43	

- Benefit (class in *oscar.apps.offer.models*), 69
- Benefit.DoesNotExist, 69
- Benefit.MultipleObjectsReturned, 69
- bill\_to\_new\_address() (os-car.apps.checkout.utils.CheckoutSessionData method), 56
- bill\_to\_shipping\_address() (os-car.apps.checkout.utils.CheckoutSessionData method), 56
- bill\_to\_user\_address() (os-car.apps.checkout.utils.CheckoutSessionData method), 56
- billing\_address\_same\_as\_shipping() (os-car.apps.checkout.utils.CheckoutSessionData method), 56
- billing\_user\_address\_id() (os-car.apps.checkout.utils.CheckoutSessionData method), 56
- BrowseCategoryForm (class in os-car.apps.search.forms), 86
- build\_submission() (os-car.apps.checkout.session.CheckoutSessionMixin method), 54
- ## C
- calculate() (*oscar.apps.shipping.methods.Base* method), 86
- calculate() (*oscar.apps.shipping.methods.FixedPrice* method), 87
- calculate() (*oscar.apps.shipping.methods.Free* method), 87
- calculate() (*oscar.apps.shipping.methods.TaxExclusiveOfferDiscount* method), 87
- calculate() (*oscar.apps.shipping.methods.TaxInclusiveOfferDiscount* method), 87
- calculate\_excl\_discount() (os-car.apps.shipping.methods.OfferDiscount method), 87
- calculate\_excl\_tax() (os-car.apps.shipping.methods.TaxInclusiveOfferDiscount method), 87
- calculate\_payment\_event\_subtotal() (os-car.apps.order.processing.EventHandler method), 76
- calculate\_rating() (os-car.apps.catalogue.abstract\_models.AbstractProduct method), 46
- can\_apply\_condition() (os-car.apps.offer.abstract\_models.AbstractCondition method), 67
- can\_be\_edited(*oscar.apps.basket.abstract\_models.AbstractBasket* property), 40
- can\_be\_parent() (os-car.apps.catalogue.abstract\_models.AbstractProduct method), 46
- can\_track\_allocations (os-car.apps.partner.abstract\_models.AbstractStockRecord attribute), 79
- cancel\_stock\_allocations() (os-car.apps.order.processing.EventHandler method), 77
- CatalogueView (class in *oscar.apps.catalogue.views*), 49
- ChangePasswordView (class in os-car.apps.customer.views), 61
- check\_basket\_is\_valid() (os-car.apps.checkout.session.CheckoutSessionMixin method), 55
- CheckoutSessionData (class in os-car.apps.checkout.utils), 56
- CheckoutSessionMixin (class in os-car.apps.checkout.session), 54
- clean() (*oscar.apps.address.abstract\_models.AbstractAddress* method), 36
- clean() (*oscar.apps.catalogue.abstract\_models.AbstractOption* method), 45
- clean() (*oscar.apps.catalogue.abstract\_models.AbstractProduct* method), 46
- clean() (*oscar.apps.catalogue.abstract\_models.AbstractProductAttribute* method), 47
- clean() (*oscar.apps.checkout.forms.GatewayForm* method), 55
- clean() (*oscar.apps.customer.abstract\_models.AbstractUser* method), 58
- clean() (*oscar.apps.customer.forms.OrderSearchForm* method), 59
- clean() (*oscar.apps.customer.forms.ProductAlertForm* method), 59
- clean() (*oscar.apps.offer.abstract\_models.AbstractCondition* method), 67
- clean() (*oscar.apps.offer.abstract\_models.AbstractConditionalOffer* method), 68
- clean() (*oscar.apps.voucher.abstract\_models.AbstractVoucher* method), 89
- clean() (*oscar.apps.voucher.abstract\_models.AbstractVoucherSet* method), 89
- clean\_email() (*oscar.apps.customer.forms.EmailUserCreationForm* method), 58
- clean\_email() (*oscar.apps.customer.forms.UserForm* method), 59
- clear\_discount() (os-car.apps.basket.abstract\_models.AbstractLine method), 41
- code (*oscar.apps.address.abstract\_models.AbstractCountry* property), 37
- code (*oscar.apps.partner.availability.Base* attribute), 83
- code (*oscar.apps.partner.availability.StockRequired* property), 83

- `code` (*oscar.apps.shipping.methods.Base* attribute), 86
  - `code` (*oscar.apps.shipping.methods.OfferDiscount* property), 87
  - COMPARISON\_FIELDS (os-  
*car.apps.catalogue.abstract\_models.AbstractCategory* attribute), 45
  - `Condition` (class in *oscar.apps.offer.models*), 69
  - `Condition.DoesNotExist`, 69
  - `Condition.MultipleObjectsReturned`, 69
  - `ConditionalOffer` (class in *oscar.apps.offer.models*), 69
  - `ConditionalOffer.DoesNotExist`, 69
  - `ConditionalOffer.MultipleObjectsReturned`, 69
  - `ConfirmPasswordForm` (class in os-  
*car.apps.customer.forms*), 58
  - `consume()` (*oscar.apps.basket.abstract\_models.AbstractLineItem* method), 42
  - `consume_allocation()` (os-  
*car.apps.partner.abstract\_models.AbstractStockRecord* method), 79
  - `consume_items()` (os-  
*car.apps.offer.models.CountCondition* method), 69
  - `consume_items()` (os-  
*car.apps.offer.models.CoverageCondition* method), 70
  - `consume_items()` (os-  
*car.apps.offer.models.ValueCondition* method), 72
  - `consume_stock_allocations()` (os-  
*car.apps.order.processing.EventHandler* method), 77
  - `contains_voucher()` (os-  
*car.apps.basket.abstract\_models.AbstractBasket* method), 40
  - `CountCondition` (class in *oscar.apps.offer.models*), 69
  - `CountCondition.DoesNotExist`, 69
  - `CountCondition.MultipleObjectsReturned`, 69
  - `CoverageCondition` (class in *oscar.apps.offer.models*), 70
  - `CoverageCondition.DoesNotExist`, 70
  - `CoverageCondition.MultipleObjectsReturned`, 70
  - `create_additional_line_models()` (os-  
*car.apps.order.utils.OrderCreator* method), 77
  - `create_billing_address()` (os-  
*car.apps.checkout.mixins.OrderPlacementMixin* method), 53
  - `create_communication_event()` (os-  
*car.apps.order.utils.OrderDispatcher* method), 78
  - `create_deferred_transaction()` (os-  
*car.apps.payment.abstract\_models.AbstractSource* method), 84
  - `create_discount_model()` (os-  
*car.apps.order.utils.OrderCreator* method), 77
  - `create_line_attributes()` (os-  
*car.apps.order.utils.OrderCreator* method), 77
  - `create_line_models()` (os-  
*car.apps.order.utils.OrderCreator* method), 77
  - `create_line_price_models()` (os-  
*car.apps.order.utils.OrderCreator* method), 78
  - `create_order_model()` (os-  
*car.apps.order.utils.OrderCreator* method), 78
  - `create_shipping_address()` (os-  
*car.apps.checkout.mixins.OrderPlacementMixin* method), 53
  - `Creator` (class in *oscar.models.fields*), 36
  - `currency` (*oscar.apps.partner.prices.Base* attribute), 82
  - `currency` (*oscar.core.prices.Price* attribute), 35
- ## D
- `debit()` (*oscar.apps.payment.abstract\_models.AbstractSource* method), 84
  - `Default` (class in *oscar.apps.partner.strategy*), 80
  - `default_permissions` (os-  
*car.core.application.OscarConfigMixin* attribute), 34
  - `DeferredTax` (class in *oscar.apps.partner.strategy*), 80
  - `delete()` (*oscar.apps.catalogue.abstract\_models.AbstractProductImage* method), 48
  - `description` (*oscar.apps.offer.models.AbsoluteDiscountBenefit* property), 69
  - `description` (*oscar.apps.offer.models.CountCondition* property), 70
  - `description` (*oscar.apps.offer.models.CoverageCondition* property), 70
  - `description` (*oscar.apps.offer.models.MultibuyDiscountBenefit* property), 71
  - `description` (*oscar.apps.offer.models.PercentageDiscountBenefit* property), 71
  - `description` (*oscar.apps.offer.models.ValueCondition* property), 72
  - `description` (*oscar.apps.shipping.methods.Base* attribute), 86
  - `description` (*oscar.apps.shipping.methods.OfferDiscount* property), 87
  - `description()` (*oscar.apps.customer.forms.OrderSearchForm* method), 59
  - `discount()` (*oscar.apps.basket.abstract\_models.AbstractLineItem* method), 42
  - `discount()` (*oscar.apps.shipping.methods.Base* method), 86

discount() (*oscar.apps.shipping.methods.TaxExclusiveOfferDiscount* method), 87

discount() (*oscar.apps.shipping.methods.TaxInclusiveOfferDiscount* method), 87

discount\_name (*oscar.apps.shipping.methods.OfferDiscount* property), 87

dispatch\_date (*oscar.apps.partner.availability.Base* attribute), 83

dispatch\_order\_messages() (*oscar.apps.order.utils.OrderDispatcher* method), 78

display\_order (*oscar.apps.catalogue.abstract\_models.AbstractProduct* attribute), 48

do\_reorder() (*oscar.apps.customer.views.OrderDetailView* method), 62

## E

email\_user() (*oscar.apps.customer.abstract\_models.AbstractUser* method), 58

EmailAuthenticationForm (class in *oscar.apps.customer.forms*), 58

EmailDetailView (class in *oscar.apps.customer.views*), 62

EmailHistoryView (class in *oscar.apps.customer.views*), 62

EmailUserCreationForm (class in *oscar.apps.customer.forms*), 58

ensure\_postcode\_is\_valid\_for\_country() (*oscar.apps.address.abstract\_models.AbstractAddress* method), 37

EventHandler (class in *oscar.apps.order.processing*), 76

excl\_tax (*oscar.apps.partner.prices.Base* attribute), 82

excl\_tax (*oscar.core.prices.Price* attribute), 35

exists (*oscar.apps.partner.prices.Base* attribute), 82

ExtendedURLField (class in *oscar.models.fields*), 36

extra\_context() (*oscar.apps.search.views.FacetedSearchView* method), 85

## F

FacetedSearchView (class in *oscar.apps.search.views*), 85

fetch\_for\_line() (*oscar.apps.partner.strategy.Base* method), 80

fetch\_for\_parent() (*oscar.apps.partner.strategy.Base* method), 80

fetch\_for\_parent() (*oscar.apps.partner.strategy.Structured* method), 81

fetch\_for\_product() (*oscar.apps.partner.strategy.Base* method), 80

fetch\_for\_product() (*oscar.apps.partner.strategy.Structured* method), 81

FixedPrice (class in *oscar.apps.partner.prices*), 82

FixedPrice (class in *oscar.apps.shipping.methods*), 87

FixedPriceBenefit (class in *oscar.apps.offer.models*), 70

FixedPriceBenefit.DoesNotExist, 70

FixedPriceBenefit.MultipleObjectsReturned, 70

FixedRateTax (class in *oscar.apps.partner.strategy*), 80

flush() (*oscar.apps.basket.abstract\_models.AbstractBasket* method), 40

flush() (*oscar.apps.checkout.utils.CheckoutSessionData* method), 56

form\_class (*oscar.apps.basket.views.BasketAddView* attribute), 42

form\_class (*oscar.apps.basket.views.BasketView* attribute), 43

form\_class (*oscar.apps.basket.views.SavedView* attribute), 43

form\_class (*oscar.apps.basket.views.VoucherAddView* attribute), 44

form\_class (*oscar.apps.checkout.views.IndexView* attribute), 50

form\_class (*oscar.apps.checkout.views.ShippingAddressView* attribute), 52

form\_class (*oscar.apps.checkout.views.ShippingMethodView* attribute), 52

form\_class (*oscar.apps.checkout.views.UserAddressUpdateView* attribute), 53

form\_class (*oscar.apps.customer.views.AccountRegistrationView* attribute), 60

form\_class (*oscar.apps.customer.views.AddressCreateView* attribute), 60

form\_class (*oscar.apps.customer.views.AddressUpdateView* attribute), 61

form\_class (*oscar.apps.customer.views.ChangePasswordView* attribute), 61

form\_class (*oscar.apps.customer.views.OrderHistoryView* attribute), 62

form\_class (*oscar.apps.customer.views.ProfileDeleteView* attribute), 63

form\_class (*oscar.apps.customer.views.ProfileUpdateView* attribute), 63

form\_class (*oscar.apps.customer.wishlists.views.WishListCreateView* attribute), 91

form\_class (*oscar.apps.customer.wishlists.views.WishListDetailView* attribute), 92

form\_class (*oscar.apps.customer.wishlists.views.WishListUpdateView* attribute), 92

form\_invalid() (*oscar.apps.basket.views.BasketAddView* method), 42

form\_invalid() (*oscar.apps.basket.views.VoucherAddView* method), 44

[form\\_invalid\(\)](#) (*oscar.apps.checkout.views.ShippingMethodView* method), 52  
[form\\_valid\(\)](#) (*oscar.apps.basket.views.BasketAddView* method), 42  
[form\\_valid\(\)](#) (*oscar.apps.basket.views.VoucherAddView* method), 44  
[form\\_valid\(\)](#) (*oscar.apps.checkout.views.IndexView* method), 50  
[form\\_valid\(\)](#) (*oscar.apps.checkout.views.ShippingAddressView* method), 52  
[form\\_valid\(\)](#) (*oscar.apps.checkout.views.ShippingMethodView* method), 52  
[form\\_valid\(\)](#) (*oscar.apps.customer.views.AccountRegistrationView* method), 60  
[form\\_valid\(\)](#) (*oscar.apps.customer.views.ChangePasswordView* method), 61  
[form\\_valid\(\)](#) (*oscar.apps.customer.views.ProfileDeleteView* method), 63  
[form\\_valid\(\)](#) (*oscar.apps.customer.views.ProfileUpdateView* method), 63  
[form\\_valid\(\)](#) (*oscar.apps.customer.wishlists.views.WishListCreateView* method), 91  
[form\\_valid\(\)](#) (*oscar.apps.customer.wishlists.views.WishListDetailView* method), 92  
[form\\_valid\(\)](#) (*oscar.apps.customer.wishlists.views.WishListUpdateView* method), 92  
[formset\\_class](#) (*oscar.apps.basket.views.BasketView* attribute), 43  
[formset\\_class](#) (*oscar.apps.basket.views.SavedView* attribute), 43  
[formset\\_invalid\(\)](#) (*oscar.apps.basket.views.BasketView* method), 43  
[formset\\_invalid\(\)](#) (*oscar.apps.basket.views.SavedView* method), 43  
[formset\\_valid\(\)](#) (*oscar.apps.basket.views.BasketView* method), 43  
[formset\\_valid\(\)](#) (*oscar.apps.basket.views.SavedView* method), 43  
[Free](#) (class in *oscar.apps.shipping.methods*), 87  
[freeze\(\)](#) (*oscar.apps.basket.abstract\_models.AbstractBasket* method), 40  
[freeze\\_basket\(\)](#) (*oscar.apps.checkout.mixins.OrderPlacementMixin* method), 54  
[Fulfilment partner](#), 17  
[full\\_name](#) (*oscar.apps.catalogue.abstract\_models.AbstractCategory* property), 45  
[full\\_slug](#) (*oscar.apps.catalogue.abstract\_models.AbstractCategory* property), 45  
**G**  
[GatewayForm](#) (class in *oscar.apps.checkout.forms*), 55  
[generate\\_hash\(\)](#) (*oscar.apps.address.abstract\_models.AbstractAddress* method), 37  
[generate\\_order\\_number\(\)](#) (*oscar.apps.checkout.mixins.OrderPlacementMixin* method), 54  
[generate\\_slug\(\)](#) (*oscar.apps.catalogue.abstract\_models.AbstractCategory* method), 45  
[get\(\)](#) (*oscar.apps.basket.views.SavedView* method), 44  
[get\(\)](#) (*oscar.apps.basket.views.VoucherAddView* method), 44  
[get\(\)](#) (*oscar.apps.catalogue.views.ProductDetailView* method), 49  
[get\(\)](#) (*oscar.apps.checkout.views.IndexView* method), 50  
[get\(\)](#) (*oscar.apps.checkout.views.ShippingMethodView* method), 52  
[get\(\)](#) (*oscar.apps.customer.views.AccountRegistrationView* method), 60  
[get\\_absolute\\_url\(\)](#) (*oscar.apps.catalogue.abstract\_models.AbstractProduct* method), 46  
[get\\_active\\_vouchers\(\)](#) (*oscar.apps.dashboard.views.IndexView* method), 46  
[get\\_address\\_field\\_values\(\)](#) (*oscar.apps.address.abstract\_models.AbstractAddress* method), 37  
[get\\_address\\_for\\_stockrecord\(\)](#) (*oscar.apps.partner.abstract\_models.AbstractPartner* method), 78  
[get\\_ancestors\\_and\\_self\(\)](#) (*oscar.apps.catalogue.abstract\_models.AbstractCategory* method), 45  
[get\\_applicable\\_lines\(\)](#) (*oscar.apps.offer.abstract\_models.AbstractCondition* method), 67  
[get\\_available\\_shipping\\_methods\(\)](#) (*oscar.apps.checkout.views.ShippingMethodView* method), 52  
[get\\_available\\_shipping\\_methods\(\)](#) (*oscar.apps.shipping.repository.Repository* method), 88  
[get\\_basket\\_voucher\\_form\(\)](#) (*oscar.apps.basket.views.BasketView* method), 43  
[get\\_basket\\_warnings\(\)](#) (*oscar.apps.basket.views.BasketView* method), 43  
[get\\_billing\\_address\(\)](#) (*oscar.apps.checkout.session.CheckoutSessionMixin* method), 55  
[get\\_categories\(\)](#) (*oscar.apps.catalogue.abstract\_models.AbstractProduct* method), 46

method), 46

get\_categories() (os-car.apps.catalogue.views.ProductCategoryView method), 49

get\_class() (in module oscar.core.loading), 34

get\_context\_data() (os-car.apps.basket.views.BasketView method), 43

get\_context\_data() (os-car.apps.catalogue.views.ProductDetailView method), 49

get\_context\_data() (os-car.apps.checkout.views.ShippingAddressView method), 52

get\_context\_data() (os-car.apps.checkout.views.ShippingMethodView method), 52

get\_context\_data() (os-car.apps.checkout.views.ThankYouView method), 53

get\_context\_data() (os-car.apps.customer.views.AccountRegistrationView method), 60

get\_context\_data() (os-car.apps.customer.views.AddressCreateView method), 60

get\_context\_data() (os-car.apps.customer.views.AddressUpdateView method), 61

get\_context\_data() (os-car.apps.customer.views.OrderHistoryView method), 62

get\_context\_data() (os-car.apps.customer.wishlists.views.WishListCreateView method), 91

get\_context\_data() (os-car.apps.customer.wishlists.views.WishListDetailView method), 92

get\_context\_data() (os-car.apps.customer.wishlists.views.WishListRemoveProduct method), 92

get\_context\_data() (os-car.apps.customer.wishlists.views.WishListUpdateView method), 92

get\_context\_data() (os-car.apps.offer.views.OfferDetailView method), 73

get\_context\_data() (os-car.apps.offer.views.RangeDetailView method), 73

get\_default\_billing\_address() (os-car.apps.checkout.views.PaymentDetailsView method), 50

get\_default\_shipping\_method() (os-car.apps.shipping.repository.Repository method), 88

get\_descendants\_and\_self() (os-car.apps.catalogue.abstract\_models.AbstractCategory method), 45

get\_exponent() (oscar.apps.partner.strategy.FixedRateTax method), 80

get\_form\_kwargs() (os-car.apps.basket.views.BasketAddView method), 42

get\_form\_kwargs() (os-car.apps.checkout.views.IndexView method), 50

get\_form\_kwargs() (os-car.apps.checkout.views.ShippingMethodView method), 52

get\_form\_kwargs() (os-car.apps.checkout.views.UserAddressUpdateView method), 53

get\_form\_kwargs() (os-car.apps.customer.views.AccountRegistrationView method), 60

get\_form\_kwargs() (os-car.apps.customer.views.AddressCreateView method), 60

get\_form\_kwargs() (os-car.apps.customer.views.AddressUpdateView method), 61

get\_form\_kwargs() (os-car.apps.customer.views.ChangePasswordView method), 61

get\_form\_kwargs() (os-car.apps.customer.views.ProfileDeleteView method), 63

get\_form\_kwargs() (os-car.apps.customer.views.ProfileUpdateView method), 63

get\_form\_kwargs() (os-car.apps.customer.wishlists.views.WishListCreateView method), 91

get\_form\_kwargs() (os-car.apps.customer.wishlists.views.WishListDetailView method), 92

get\_form\_kwargs() (os-car.apps.customer.wishlists.views.WishListUpdateView method), 92

get\_formset\_kwargs() (os-car.apps.basket.views.BasketView method), 43

get\_formset\_kwargs() (os-car.apps.basket.views.SavedView method), 44

get\_full\_name() (os-car.apps.customer.abstract\_models.AbstractUser

<code>method), 58</code>	<code>car.apps.checkout.views.PaymentDetailsView</code>
<code>get_hourly_report()</code> (os-	<code>method), 51</code>
<code>car.apps.dashboard.views.IndexView</code> <code>method), 65</code>	<code>get_price_breakdown()</code> (os-
<code>get_initial()</code> (oscar.apps.checkout.views.ShippingAddressView <code>method), 42</code>	<code>car.apps.basket.abstract_models.AbstractLine</code>
<code>method), 52</code>	<code>get_product_class()</code> (os-
<code>get_is_discountable()</code> (os-	<code>car.apps.catalogue.abstract_models.AbstractProduct</code>
<code>car.apps.catalogue.abstract_models.AbstractProduct</code> <code>method), 46</code>	<code>method), 46</code>
<code>get_max_applications()</code> (os-	<code>get_queryset()</code> (oscar.apps.basket.views.BasketView
<code>car.apps.offer.abstract_models.AbstractConditionalOffer</code> <code>method), 68</code>	<code>method), 43</code>
<code>get_messages()</code> (oscar.apps.communication.abstract_models.CommunicationEventTypes	<code>get_queryset()</code> (oscar.apps.basket.views.SavedView
<code>method), 57</code>	<code>method), 44</code>
<code>get_missing_image()</code> (os-	<code>get_queryset()</code> (oscar.apps.checkout.views.UserAddressDeleteView
<code>car.apps.catalogue.abstract_models.AbstractProduct</code> <code>method), 46</code>	<code>method), 53</code>
<code>get_model_field_data()</code> (os-	<code>get_queryset()</code> (oscar.apps.customer.views.AddressDeleteView
<code>car.apps.customer.views.ProfileView</code> <code>method), 63</code>	<code>method), 61</code>
<code>get_object()</code> (oscar.apps.catalogue.views.ProductDetailView <code>method), 49</code>	<code>get_queryset()</code> (oscar.apps.customer.views.AddressListView
<code>get_object()</code> (oscar.apps.checkout.views.ThankYouView <code>method), 53</code>	<code>method), 61</code>
<code>get_object()</code> (oscar.apps.customer.views.AnonymousOrderDetailView <code>method), 61</code>	<code>get_queryset()</code> (oscar.apps.customer.views.AddressUpdateView
<code>get_object()</code> (oscar.apps.customer.views.EmailDetailView <code>method), 62</code>	<code>method), 61</code>
<code>get_object()</code> (oscar.apps.customer.views.OrderDetailView <code>method), 62</code>	<code>get_queryset()</code> (oscar.apps.customer.views.EmailHistoryView
<code>get_object()</code> (oscar.apps.customer.views.OrderLineView <code>method), 63</code>	<code>method), 62</code>
<code>get_object()</code> (oscar.apps.customer.wishlists.views.WishListDetailView <code>method), 91</code>	<code>get_queryset()</code> (oscar.apps.customer.views.OrderHistoryView
<code>get_object()</code> (oscar.apps.customer.wishlists.views.WishListDetailView <code>method), 92</code>	<code>method), 62</code>
<code>get_object()</code> (oscar.apps.customer.wishlists.views.WishListDetailView <code>method), 92</code>	<code>get_queryset()</code> (oscar.apps.customer.wishlists.views.WishListListView
<code>get_order_totals()</code> (os-	<code>method), 92</code>
<code>car.apps.checkout.session.CheckoutSessionMixin</code> <code>method), 55</code>	<code>get_queryset()</code> (oscar.apps.offer.views.OfferDetailView
<code>get_page_title()</code> (os-	<code>method), 73</code>
<code>car.apps.customer.views.EmailDetailView</code> <code>method), 62</code>	<code>get_queryset()</code> (oscar.apps.offer.views.OfferListView
<code>get_page_title()</code> (os-	<code>method), 73</code>
<code>car.apps.customer.views.OrderDetailView</code> <code>method), 62</code>	<code>get_queryset()</code> (oscar.apps.offer.views.RangeDetailView
<code>get_permissions()</code> (os-	<code>method), 73</code>
<code>car.core.application.OscarConfigMixin</code> <code>method), 34</code>	<code>get_queryset()</code> (oscar.apps.partner.strategy.FixedRateTax
<code>get_pre_conditions()</code> (os-	<code>method), 80</code>
<code>car.apps.checkout.session.CheckoutSessionMixin</code> <code>method), 55</code>	<code>get_queryset()</code> (oscar.apps.search.views.FacetedSearchView
<code>get_pre_conditions()</code> (os-	<code>method), 85</code>
<code>get_shipping_address()</code> (os-	<code>get_shipping_address()</code> (os-
<code>car.apps.checkout.session.CheckoutSessionMixin</code> <code>method), 55</code>	<code>car.apps.checkout.session.CheckoutSessionMixin</code>
<code>get_shipping_method()</code> (os-	<code>method), 55</code>
<code>car.apps.checkout.session.CheckoutSessionMixin</code> <code>method), 55</code>	<code>get_shipping_methods()</code> (os-
<code>get_shipping_methods()</code> (os-	<code>car.apps.shipping.repository.Repository</code>
<code>car.apps.shipping.repository.Repository</code> <code>method), 88</code>	<code>method), 88</code>
<code>get_short_name()</code> (os-	<code>get_skip_conditions()</code> (os-
<code>car.apps.customer.abstract_models.AbstractUser</code> <code>method), 58</code>	<code>car.apps.checkout.session.CheckoutSessionMixin</code>
<code>get_skip_conditions()</code> (os-	<code>method), 55</code>
<code>car.apps.checkout.session.CheckoutSessionMixin</code> <code>method), 55</code>	<code>get_skip_conditions()</code> (os-
<code>get_skip_conditions()</code> (os-	<code>method), 55</code>

<i>car.apps.checkout.views.PaymentDetailsView</i> method), 51	
<code>get_stock_info()</code> ( <i>os-car.apps.basket.abstract_models.AbstractBasket</i> method), 40	
<code>get_success_url()</code> ( <i>os-car.apps.basket.views.BasketAddView</i> method), 42	
<code>get_success_url()</code> ( <i>os-car.apps.basket.views.BasketView</i> method), 43	
<code>get_success_url()</code> ( <i>os-car.apps.basket.views.SavedView</i> method), 44	
<code>get_success_url()</code> ( <i>os-car.apps.checkout.views.UserAddressUpdateView</i> method), 53	
<code>get_success_url()</code> ( <i>os-car.apps.customer.views.AddressCreateView</i> method), 60	
<code>get_success_url()</code> ( <i>os-car.apps.customer.views.AddressUpdateView</i> method), 61	
<code>get_success_url()</code> ( <i>os-car.apps.customer.wishlists.views.WishListUpdateView</i> method), 92	
<code>get_success_url()</code> ( <i>os-car.apps.dashboard.views.LoginView</i> method), 65	
<code>get_template_names()</code> ( <i>os-car.apps.catalogue.views.ProductDetailView</i> method), 49	
<code>get_template_names()</code> ( <i>os-car.apps.checkout.views.PaymentDetailsView</i> method), 51	
<code>get_template_names()</code> ( <i>os-car.apps.customer.views.OrderDetailView</i> method), 62	
<code>get_template_names()</code> ( <i>os-car.apps.dashboard.views.IndexView</i> method), 65	
<code>get_title()</code> ( <i>oscar.apps.catalogue.abstract_models.AbstractProduct</i> method), 46	
<code>get_url_decorator()</code> ( <i>os-car.core.application.OscarConfigMixin</i> method), 34	
<code>get_urls()</code> ( <i>oscar.core.application.OscarConfigMixin</i> method), 35	
<code>get_warning()</code> ( <i>oscar.apps.basket.abstract_models.AbstractLine</i> method), 42	
<code>grouped_voucher_discounts</code> ( <i>os-car.apps.basket.abstract_models.AbstractBasket</i> property), 40	
	<b>H</b>
	<code>handle_order_placement()</code> ( <i>os-car.apps.checkout.mixins.OrderPlacementMixin</i> method), 54
	<code>handle_order_status_change()</code> ( <i>os-car.apps.order.processing.EventHandler</i> method), 77
	<code>handle_payment()</code> ( <i>os-car.apps.checkout.mixins.OrderPlacementMixin</i> method), 54
	<code>handle_payment_details_submission()</code> ( <i>os-car.apps.checkout.views.PaymentDetailsView</i> method), 51
	<code>handle_payment_event()</code> ( <i>os-car.apps.order.processing.EventHandler</i> method), 77
	<code>handle_place_order_submission()</code> ( <i>os-car.apps.checkout.views.PaymentDetailsView</i> method), 51
	<code>handle_shipping_event()</code> ( <i>os-car.apps.order.processing.EventHandler</i> method), 77
	<code>handle_successful_order()</code> ( <i>os-car.apps.checkout.mixins.OrderPlacementMixin</i> method), 54
	<code>has_stockrecords</code> ( <i>os-car.apps.catalogue.abstract_models.AbstractProduct</i> property), 46
	<code>hash</code> ( <i>oscar.apps.address.abstract_models.AbstractUserAddress</i> attribute), 38
	<code>have_lines_passed_shipping_event()</code> ( <i>os-car.apps.order.processing.EventHandler</i> method), 77
	<code>hidable_feature_name</code> ( <i>os-car.core.application.OscarConfigMixin</i> at- tribute), 35
	<b>I</b>
	<code>incl_tax</code> ( <i>oscar.apps.partner.prices.Base</i> attribute), 82
	<code>incl_tax</code> ( <i>oscar.core.prices.Price</i> attribute), 35
	<code>IndexView</code> (class in <i>oscar.apps.checkout.views</i> ), 50
	<code>IndexView</code> (class in <i>oscar.apps.dashboard.views</i> ), 65
	<code>is_active()</code> ( <i>oscar.apps.voucher.abstract_models.AbstractVoucher</i> method), 89
	<code>is_active()</code> ( <i>oscar.apps.voucher.abstract_models.AbstractVoucherSet</i> method), 90
	<code>is_allocation_consumption_possible()</code> ( <i>os-car.apps.partner.abstract_models.AbstractStockRecord</i> method), 79
	<code>is_available()</code> ( <i>oscar.apps.offer.abstract_models.AbstractConditionalO</i> method), 68
	<code>is_available_for_basket()</code> ( <i>os-car.apps.voucher.abstract_models.AbstractVoucher</i> method), 89

<code>is_available_to_buy</code> (os-car.apps.partner.availability.Base property), 83	<code>is_review_permitted()</code> (os-car.apps.catalogue.abstract_models.AbstractProduct method), 46	
<code>is_available_to_user()</code> (os-car.apps.voucher.abstract_models.AbstractVoucher method), 89	<code>is_satisfied()</code> (oscar.apps.offer.abstract_models.AbstractCondition method), 67	
<code>is_billing_address_set()</code> (os-car.apps.checkout.utils.CheckoutSessionData method), 56	<code>is_satisfied()</code> (oscar.apps.offer.models.CountCondition method), 70	
<code>is_default_for_billing</code> (os-car.apps.address.abstract_models.AbstractUserAddress attribute), 38	<code>is_satisfied()</code> (oscar.apps.offer.models.CoverageCondition method), 70	
<code>is_default_for_shipping</code> (os-car.apps.address.abstract_models.AbstractUserAddress attribute), 38	<code>is_satisfied()</code> (oscar.apps.offer.models.ValueCondition method), 72	
<code>is_discountable</code> (os-car.apps.catalogue.abstract_models.AbstractProduct attribute), 46	<code>is_shipping_address_set()</code> (os-car.apps.checkout.utils.CheckoutSessionData method), 56	
<code>is_discounted</code> (oscar.apps.shipping.methods.Base attribute), 86	<code>is_shipping_method_set()</code> (os-car.apps.checkout.utils.CheckoutSessionData method), 56	
<code>is_editable</code> (oscar.apps.offer.abstract_models.AbstractRange property), 68	<code>is_shipping_required()</code> (os-car.apps.basket.abstract_models.AbstractBasket method), 40	
<code>is_empty</code> (oscar.apps.basket.abstract_models.AbstractBasket property), 40	<code>is_successful</code> (oscar.apps.offer.models.BasketDiscount property), 69	
<code>is_expired()</code> (oscar.apps.voucher.abstract_models.AbstractVoucher method), 89	<code>is_tax_known</code> (oscar.apps.basket.abstract_models.AbstractBasket property), 40	
<code>is_partially_satisfied()</code> (os-car.apps.offer.abstract_models.AbstractCondition method), 67	<code>is_tax_known</code> (oscar.apps.partner.prices.Base attribute), 82	
<code>is_partially_satisfied()</code> (os-car.apps.offer.models.CountCondition method), 70	<code>is_tax_known</code> (oscar.apps.partner.prices.FixedPrice property), 82	
<code>is_partially_satisfied()</code> (os-car.apps.offer.models.CoverageCondition method), 70	<code>is_tax_known</code> (oscar.core.prices.Price attribute), 35	
<code>is_partially_satisfied()</code> (os-car.apps.offer.models.ValueCondition method), 72	<b>J</b>	
<code>is_primary()</code> (oscar.apps.catalogue.abstract_models.AbstractProductImage method), 48	<code>join_fields()</code> (oscar.apps.address.abstract_models.AbstractAddress method), 37	
<code>is_purchase_permitted()</code> (os-car.apps.partner.availability.Available method), 83	<b>K</b>	
<code>is_purchase_permitted()</code> (os-car.apps.partner.availability.Base method), 83	<code>key</code> (oscar.apps.wishlists.abstract_models.AbstractWishList attribute), 90	
<code>is_purchase_permitted()</code> (os-car.apps.partner.availability.StockRequired method), 83	<code>line_quantity()</code> (os-car.apps.basket.abstract_models.AbstractBasket method), 40	
<code>is_quantity_allowed()</code> (os-car.apps.basket.abstract_models.AbstractBasket method), 40	<code>LineMixin</code> (class in os-car.apps.customer.wishlists.views), 91	
<code>is_reorderable</code> (oscar.apps.offer.abstract_models.AbstractRange property), 68	<code>login_form_class</code> (os-car.apps.customer.views.AccountAuthView attribute), 60	
	<code>LoginView</code> (class in oscar.apps.dashboard.views), 65	
	<code>LogoutView</code> (class in oscar.apps.customer.views), 62	
	<code>low_stock_threshold</code> (os-car.apps.partner.abstract_models.AbstractStockRecord attribute), 79	

## M

- `max_allowed_quantity()` (*oscar.apps.basket.abstract\_models.AbstractBasket* method), 40
- `media` (*oscar.apps.checkout.forms.GatewayForm* property), 55
- `media` (*oscar.apps.checkout.forms.ShippingAddressForm* property), 56
- `media` (*oscar.apps.checkout.forms.ShippingMethodForm* property), 56
- `media` (*oscar.apps.customer.forms.ConfirmPasswordForm* property), 58
- `media` (*oscar.apps.customer.forms.EmailAuthenticationForm* property), 58
- `media` (*oscar.apps.customer.forms.EmailUserCreationForm* property), 58
- `media` (*oscar.apps.customer.forms.OrderSearchForm* property), 59
- `media` (*oscar.apps.customer.forms.PasswordResetForm* property), 59
- `media` (*oscar.apps.customer.forms.ProductAlertForm* property), 59
- `media` (*oscar.apps.customer.forms.UserForm* property), 59
- `media` (*oscar.apps.search.forms.BrowseCategoryForm* property), 86
- `media` (*oscar.apps.search.forms.SearchForm* property), 86
- `merge()` (*oscar.apps.basket.abstract\_models.AbstractBasket* method), 40
- `merge_line()` (*oscar.apps.basket.abstract\_models.AbstractBasket* method), 40
- `message` (*oscar.apps.partner.availability.Base* attribute), 83
- `message` (*oscar.apps.partner.availability.StockRequired* property), 83
- `MissingProductImage` (class in *oscar.apps.catalogue.abstract\_models*), 48
- `model` (*oscar.apps.basket.views.BasketView* attribute), 43
- `model` (*oscar.apps.basket.views.SavedView* attribute), 44
- `model` (*oscar.apps.catalogue.views.ProductDetailView* attribute), 49
- `model` (*oscar.apps.customer.views.AddressCreateView* attribute), 60
- `model` (*oscar.apps.customer.views.AddressDeleteView* attribute), 61
- `model` (*oscar.apps.customer.views.AddressUpdateView* attribute), 61
- `model` (*oscar.apps.customer.views.AnonymousOrderDetailView* attribute), 61
- `model` (*oscar.apps.customer.views.OrderDetailView* attribute), 62
- `model` (*oscar.apps.customer.views.OrderHistoryView* attribute), 62
- `model` (*oscar.apps.customer.wishlists.views.WishListCreateView* attribute), 91
- `model` (*oscar.apps.customer.wishlists.views.WishListDeleteView* attribute), 91
- `model` (*oscar.apps.customer.wishlists.views.WishListUpdateView* attribute), 92
- `model` (*oscar.apps.offer.views.OfferListView* attribute), 73
- module
  - oscar.apps.address.abstract\_models*, 36
  - oscar.apps.analytics.abstract\_models*, 39
  - oscar.apps.basket.abstract\_models*, 39
  - oscar.apps.basket.views*, 42
  - oscar.apps.catalogue.abstract\_models*, 44
  - oscar.apps.catalogue.views*, 49
  - oscar.apps.checkout.calculators*, 56
  - oscar.apps.checkout.forms*, 55
  - oscar.apps.checkout.mixins*, 53
  - oscar.apps.checkout.session*, 54
  - oscar.apps.checkout.utils*, 56
  - oscar.apps.checkout.views*, 50
  - oscar.apps.communication.abstract\_models*, 57
  - oscar.apps.communication.utils*, 57
  - oscar.apps.customer.abstract\_models*, 58
  - oscar.apps.customer.forms*, 58
  - oscar.apps.customer.views*, 60
  - oscar.apps.customer.wishlists.views*, 91
  - oscar.apps.dashboard.views*, 65
  - oscar.apps.offer.abstract\_models*, 67
  - oscar.apps.offer.models*, 69
  - oscar.apps.offer.views*, 73
  - oscar.apps.order.processing*, 76
  - oscar.apps.order.utils*, 77
  - oscar.apps.partner.abstract\_models*, 78
  - oscar.apps.partner.availability*, 83
  - oscar.apps.partner.prices*, 82
  - oscar.apps.partner.strategy*, 80
  - oscar.apps.payment.abstract\_models*, 84
  - oscar.apps.search.facets*, 86
  - oscar.apps.search.forms*, 86
  - oscar.apps.search.views*, 85
  - oscar.apps.shipping.methods*, 86
  - oscar.apps.shipping.models*, 88
  - oscar.apps.shipping.repository*, 88
  - oscar.apps.voucher.abstract\_models*, 89
  - oscar.apps.wishlists.abstract\_models*, 90
  - oscar.core.application*, 34
  - oscar.core.loading*, 34
  - oscar.core.prices*, 35
  - oscar.forms.mixins*, 36
  - oscar.models.fields*, 36
- `MultibuyDiscountBenefit` (class in *oscar.apps.offer.models*), 70

MultibuyDiscountBenefit.DoesNotExist, 71  
 MultibuyDiscountBenefit.MultipleObjectsReturned,  
 71

## N

name (oscar.apps.address.abstract\_models.AbstractCountry  
 attribute), 37  
 name (oscar.apps.communication.abstract\_models.AbstractCommunicationType  
 attribute), 57  
 name (oscar.apps.offer.models.AbsoluteDiscountBenefit  
 property), 69  
 name (oscar.apps.offer.models.CountCondition property),  
 70  
 name (oscar.apps.offer.models.CoverageCondition prop-  
 erty), 70  
 name (oscar.apps.offer.models.FixedPriceBenefit prop-  
 erty), 70  
 name (oscar.apps.offer.models.MultibuyDiscountBenefit  
 property), 71  
 name (oscar.apps.offer.models.PercentageDiscountBenefit  
 property), 71  
 name (oscar.apps.offer.models.ShippingAbsoluteDiscountBenefit  
 property), 72  
 name (oscar.apps.offer.models.ShippingFixedPriceBenefit  
 property), 72  
 name (oscar.apps.offer.models.ShippingPercentageDiscountBenefit  
 property), 72  
 name (oscar.apps.offer.models.ValueCondition property),  
 72  
 name (oscar.apps.shipping.methods.Base attribute), 87  
 name (oscar.apps.shipping.methods.OfferDiscount prop-  
 erty), 87  
 net\_stock\_level (os-  
 car.apps.partner.abstract\_models.AbstractStockRequirement  
 property), 79  
 new\_billing\_address\_fields() (os-  
 car.apps.checkout.utils.CheckoutSessionData  
 method), 56  
 new\_shipping\_address\_fields() (os-  
 car.apps.checkout.utils.CheckoutSessionData  
 method), 56  
 no\_query\_found() (os-  
 car.apps.search.forms.BrowseCategoryForm  
 method), 86  
 NoShippingRequired (class in os-  
 car.apps.shipping.methods), 87  
 NoTax (class in oscar.apps.partner.strategy), 80  
 NullCharField (class in oscar.models.fields), 36  
 num\_allocated (oscar.apps.partner.abstract\_models.AbstractStockRequirement  
 attribute), 79  
 num\_in\_stock (oscar.apps.partner.abstract\_models.AbstractStockRequirement  
 attribute), 79  
 num\_items (oscar.apps.basket.abstract\_models.AbstractBasket  
 property), 40

num\_lines (oscar.apps.basket.abstract\_models.AbstractBasket  
 property), 40  
 num\_orders\_as\_billing\_address (os-  
 car.apps.address.abstract\_models.AbstractUserAddress  
 attribute), 38  
 num\_orders\_as\_shipping\_address (os-  
 car.apps.address.abstract\_models.AbstractUserAddress  
 attribute), 38  
 numeric\_code (oscar.apps.address.abstract\_models.AbstractCountry  
 property), 37

## O

offer\_discounts (os-  
 car.apps.basket.abstract\_models.AbstractBasket  
 property), 41  
 OfferDetailView (class in oscar.apps.offer.views), 73  
 OfferDiscount (class in oscar.apps.shipping.methods),  
 87  
 OfferListView (class in oscar.apps.offer.views), 73  
 options (oscar.apps.catalogue.abstract\_models.AbstractProduct  
 property), 47  
 options (oscar.apps.catalogue.abstract\_models.AbstractProductClass  
 attribute), 48  
 order, 137, 138  
 order (oscar.apps.address.abstract\_models.AbstractBillingAddress  
 property), 37  
 order (oscar.apps.address.abstract\_models.AbstractShippingAddress  
 property), 38  
 order\_number() (oscar.apps.order.utils.OrderNumberGenerator  
 method), 78  
 OrderAndItemCharges (class in os-  
 car.apps.shipping.methods), 88  
 OrderAndItemCharges.DoesNotExist, 88  
 OrderAndItemCharges.MultipleObjectsReturned,  
 88  
 OrderCreator (class in oscar.apps.order.utils), 77  
 OrderDetailView (class in oscar.apps.customer.views),  
 62  
 OrderDispatcher (class in oscar.apps.order.utils), 78  
 OrderHistoryView (class in os-  
 car.apps.customer.views), 62  
 OrderLineView (class in oscar.apps.customer.views), 63  
 OrderNumberGenerator (class in os-  
 car.apps.order.utils), 78  
 OrderPlacementMixin (class in os-  
 car.apps.checkout.mixins), 53  
 OrderSearchForm (class in oscar.apps.customer.forms),  
 59  
 order\_total\_calculator (class in os-  
 car.apps.checkout.calculators), 56  
 oscar.apps.address.abstract\_models  
 module, 36  
 oscar.apps.analytics.abstract\_models  
 module, 39

oscar.apps.basket.abstract\_models  
     module, 39  
 oscar.apps.basket.signals.basket\_addition  
     (built-in class), 136  
 oscar.apps.basket.signals.voucher\_addition  
     (built-in class), 137  
 oscar.apps.basket.views  
     module, 42  
 oscar.apps.catalogue.abstract\_models  
     module, 44  
 oscar.apps.catalogue.reviews.signals.review\_added  
     (built-in class), 138  
 oscar.apps.catalogue.signals.product\_search  
     (built-in class), 136  
 oscar.apps.catalogue.signals.product\_viewed  
     (built-in class), 135  
 oscar.apps.catalogue.views  
     module, 49  
 oscar.apps.checkout.calculators  
     module, 56  
 oscar.apps.checkout.forms  
     module, 55  
 oscar.apps.checkout.mixins  
     module, 53  
 oscar.apps.checkout.session  
     module, 54  
 oscar.apps.checkout.signals.post\_checkout  
     (built-in class), 138  
 oscar.apps.checkout.signals.post\_payment  
     (built-in class), 137  
 oscar.apps.checkout.signals.pre\_payment  
     (built-in class), 137  
 oscar.apps.checkout.signals.start\_checkout  
     (built-in class), 137  
 oscar.apps.checkout.utils  
     module, 56  
 oscar.apps.checkout.views  
     module, 50  
 oscar.apps.communication.abstract\_models  
     module, 57  
 oscar.apps.communication.utils  
     module, 57  
 oscar.apps.customer.abstract\_models  
     module, 58  
 oscar.apps.customer.forms  
     module, 58  
 oscar.apps.customer.signals.user\_registered  
     (built-in class), 136  
 oscar.apps.customer.views  
     module, 60  
 oscar.apps.customer.wishlists.views  
     module, 91  
 oscar.apps.dashboard.views  
     module, 65  
 oscar.apps.offer.abstract\_models  
     module, 67  
 oscar.apps.offer.models  
     module, 69  
 oscar.apps.offer.views  
     module, 73  
 oscar.apps.order.processing  
     module, 76  
 oscar.apps.order.signals.order\_placed (built-in  
     class), 137  
 oscar.apps.order.utils  
     module, 77  
 oscar.apps.partner.abstract\_models  
     module, 78  
 oscar.apps.partner.availability  
     module, 83  
 oscar.apps.partner.prices  
     module, 82  
 oscar.apps.partner.strategy  
     module, 80  
 oscar.apps.payment.abstract\_models  
     module, 84  
 oscar.apps.search.facets  
     module, 86  
 oscar.apps.search.forms  
     module, 86  
 oscar.apps.search.views  
     module, 85  
 oscar.apps.shipping.methods  
     module, 86  
 oscar.apps.shipping.models  
     module, 88  
 oscar.apps.shipping.repository  
     module, 88  
 oscar.apps.voucher.abstract\_models  
     module, 89  
 oscar.apps.wishlists.abstract\_models  
     module, 90  
 oscar.core.application  
     module, 34  
 oscar.core.loading  
     module, 34  
 oscar.core.prices  
     module, 35  
 oscar.forms.mixins  
     module, 36  
 oscar.models.fields  
     module, 36  
 OscarConfig (class in oscar.core.application), 34  
 OscarConfigMixin (class in oscar.core.application), 34  
 OscarDashboardConfig (class in os-  
     car.core.application), 35

## P

- Partner, [17](#)
  - partner\_sku(*oscar.apps.partner.abstract\_models.AbstractPartner* attribute), [79](#)
  - PasswordResetForm (class in *oscar.apps.customer.forms*), [59](#)
  - PaymentDetailsView (class in *oscar.apps.checkout.views*), [50](#)
  - PaymentMethodView (class in *oscar.apps.checkout.views*), [52](#)
  - PercentageDiscountBenefit (class in *oscar.apps.offer.models*), [71](#)
  - PercentageDiscountBenefit.DoesNotExist, [71](#)
  - PercentageDiscountBenefit.MultipleObjectsReturned, [71](#)
  - permissions\_map (oscar.core.application.OscarConfigMixin attribute), [35](#)
  - PhoneNumberMixin (class in *oscar.forms.mixins*), [36](#)
  - place\_order() (*oscar.apps.checkout.mixins.OrderPlacementMixin* method), [54](#)
  - place\_order() (*oscar.apps.order.utils.OrderCreator* method), [78](#)
  - populate\_alternative\_model() (oscar.apps.address.abstract\_models.AbstractAddress method), [37](#)
  - PositiveDecimalField (class in *oscar.models.fields*), [36](#)
  - post() (*oscar.apps.basket.views.BasketAddView* method), [42](#)
  - post() (*oscar.apps.checkout.views.ShippingAddressView* method), [52](#)
  - post() (*oscar.apps.checkout.views.ShippingMethodView* method), [53](#)
  - post() (*oscar.apps.customer.wishlists.views.WishListCreateUpdateViewMixin* method), [91](#)
  - post\_order\_actions (oscar.apps.basket.abstract\_models.AbstractBasket property), [41](#)
  - post\_process\_urls() (oscar.core.application.OscarConfigMixin method), [35](#)
  - PostOrderAction (class in *oscar.apps.offer.models*), [71](#)
  - Price (class in *oscar.core.prices*), [35](#)
  - price (*oscar.apps.partner.strategy.PurchaseInfo* property), [81](#)
  - pricing\_policy() (oscar.apps.partner.strategy.Structured method), [81](#)
  - primary\_address (oscar.apps.partner.abstract\_models.AbstractPartner property), [78](#)
  - primary\_image() (oscar.apps.catalogue.abstract\_models.AbstractProduct method), [47](#)
  - printable\_name(*oscar.apps.address.abstract\_models.AbstractCountry* attribute), [37](#)
  - product, [135](#), [136](#)
  - Product Category, [17](#)
  - Product Class, [17](#)
  - Product Options, [17](#)
  - Product Range, [17](#)
  - product\_class(*oscar.apps.catalogue.abstract\_models.AbstractProduct* attribute), [47](#)
  - product\_model(*oscar.apps.basket.views.BasketAddView* attribute), [42](#)
  - product\_options (oscar.apps.catalogue.abstract\_models.AbstractProduct attribute), [47](#)
  - product\_quantity() (oscar.apps.basket.abstract\_models.AbstractBasket method), [41](#)
  - product\_queryset (oscar.apps.offer.abstract\_models.AbstractRange attribute), [68](#)
  - ProductAlertForm (class in *oscar.apps.customer.forms*), [59](#)
  - ProductCategoryView (class in *oscar.apps.catalogue.views*), [49](#)
  - ProductDetailView (class in *oscar.apps.catalogue.views*), [49](#)
  - products() (*oscar.apps.offer.abstract\_models.AbstractConditionalOffer* method), [68](#)
  - ProfileDeleteView (class in *oscar.apps.customer.views*), [63](#)
  - ProfileForm (in module *oscar.apps.customer.forms*), [59](#)
  - ProfileUpdateView (class in *oscar.apps.customer.views*), [63](#)
  - ProfileView (class in *oscar.apps.customer.views*), [63](#)
  - purchase\_info(*oscar.apps.basket.abstract\_models.AbstractLine* property), [42](#)
  - PurchaseInfo (class in *oscar.apps.partner.strategy*), [80](#)
- ## Q
- query, [136](#)
- ## R
- random\_key() (*oscar.apps.wishlists.abstract\_models.AbstractWishList* class method), [90](#)
  - Range (class in *oscar.apps.offer.models*), [71](#)
  - Range.DoesNotExist, [71](#)
  - Range.MultipleObjectsReturned, [71](#)
  - RangeDetailView (class in *oscar.apps.offer.views*), [73](#)
  - RangeProduct (class in *oscar.apps.offer.models*), [71](#)
  - RangeProduct.DoesNotExist, [71](#)
  - RangeProduct.MultipleObjectsReturned, [71](#)
  - RangeProductFileUpload (class in *oscar.apps.offer.models*), [71](#)

[RangeProductFileUpload.DoesNotExist](#), 71  
[RangeProductFileUpload.MultipleObjectsReturned](#), 71  
[record\\_discount\(\)](#) (os-car.apps.voucher.abstract\_models.AbstractVoucher method), 89  
[record\\_usage\(\)](#) (oscar.apps.voucher.abstract\_models.AbstractVoucher method), 89  
[record\\_voucher\\_usage\(\)](#) (os-car.apps.order.utils.OrderCreator method), 78  
[refund\(\)](#) (oscar.apps.payment.abstract\_models.AbstractSource method), 84  
[registration\\_form\\_class](#) (os-car.apps.customer.views.AccountAuthView attribute), 60  
[remove\\_deleted\\_forms\(\)](#) (os-car.apps.basket.views.BasketView method), 43  
[remove\\_product\(\)](#) (os-car.apps.offer.abstract\_models.AbstractRange method), 68  
[render\\_payment\\_details\(\)](#) (os-car.apps.checkout.views.PaymentDetailsView method), 51  
[render\\_preview\(\)](#) (os-car.apps.checkout.views.PaymentDetailsView method), 51  
[Repository](#) (class in oscar.apps.shipping.repository), 88  
[request](#), 135–138  
[requires\\_shipping](#) (os-car.apps.catalogue.abstract\_models.AbstractProductClass attribute), 48  
[reset\\_offer\\_applications\(\)](#) (os-car.apps.basket.abstract\_models.AbstractBasket method), 41  
[response](#), 136, 138  
[restore\\_frozen\\_basket\(\)](#) (os-car.apps.checkout.mixins.OrderPlacementMixin method), 54  
[retail](#) (oscar.apps.partner.prices.Base attribute), 82  
[ReverseStartsWith](#) (class in os-car.apps.catalogue.abstract\_models), 48  
[review](#), 138  
  
**S**  
[salutation](#) (oscar.apps.address.abstract\_models.AbstractAddress property), 37  
[save\(\)](#) (oscar.apps.address.abstract\_models.AbstractAddress method), 37  
[save\(\)](#) (oscar.apps.address.abstract\_models.AbstractUserAddress method), 38  
[save\(\)](#) (oscar.apps.basket.abstract\_models.AbstractLine save()) (oscar.apps.catalogue.abstract\_models.AbstractCategory method), 45  
[save\(\)](#) (oscar.apps.catalogue.abstract\_models.AbstractProduct method), 47  
[save\(\)](#) (oscar.apps.customer.abstract\_models.AbstractProductAlert method), 58  
[save\(\)](#) (oscar.apps.customer.abstract\_models.AbstractUser method), 58  
[save\(\)](#) (oscar.apps.customer.forms.EmailUserCreationForm method), 58  
[save\(\)](#) (oscar.apps.customer.forms.PasswordResetForm method), 59  
[save\(\)](#) (oscar.apps.customer.forms.ProductAlertForm method), 59  
[save\(\)](#) (oscar.apps.offer.abstract\_models.AbstractConditionalOffer method), 68  
[save\(\)](#) (oscar.apps.payment.abstract\_models.AbstractBankcard method), 84  
[save\(\)](#) (oscar.apps.payment.abstract\_models.AbstractSource method), 85  
[save\(\)](#) (oscar.apps.voucher.abstract\_models.AbstractVoucher method), 89  
[save\(\)](#) (oscar.apps.wishlists.abstract\_models.AbstractWishList method), 90  
[save\\_payment\\_details\(\)](#) (os-car.apps.checkout.mixins.OrderPlacementMixin method), 54  
[save\\_payment\\_events\(\)](#) (os-car.apps.checkout.mixins.OrderPlacementMixin method), 54  
[save\\_payment\\_sources\(\)](#) (os-car.apps.checkout.mixins.OrderPlacementMixin method), 54  
[SavedView](#) (class in oscar.apps.basket.views), 43  
[SearchForm](#) (class in oscar.apps.search.forms), 86  
[SearchInput](#) (class in oscar.apps.search.forms), 86  
[select\\_children\\_stockrecords\(\)](#) (os-car.apps.partner.strategy.Structured method), 81  
[select\\_stockrecord\(\)](#) (os-car.apps.partner.strategy.Structured method), 81  
[selected\\_multi\\_facets](#) (os-car.apps.search.forms.SearchForm property), 86  
[Selector](#) (class in oscar.apps.partner.strategy), 81  
[set\\_as\\_submitted\(\)](#) (os-car.apps.basket.abstract\_models.AbstractBasket method), 41  
[ship\\_to\\_new\\_address\(\)](#) (os-car.apps.checkout.utils.CheckoutSessionData method), 56  
[ship\\_to\\_user\\_address\(\)](#) (os-car.apps.checkout.utils.CheckoutSessionData

method), 57

shipping\_discounts (oscar.apps.basket.abstract\_models.AbstractBasket property), 41

shipping\_method\_code() (oscar.apps.checkout.utils.CheckoutSessionData method), 57

shipping\_user\_address\_id() (oscar.apps.checkout.utils.CheckoutSessionData method), 57

ShippingAbsoluteDiscountBenefit (class in oscar.apps.offer.models), 71

ShippingAbsoluteDiscountBenefit.DoesNotExist, 71

ShippingAbsoluteDiscountBenefit.MultipleObjectsReturned, 71

ShippingAddressForm (class in oscar.apps.checkout.forms), 55

ShippingAddressView (class in oscar.apps.checkout.views), 52

ShippingBenefit (class in oscar.apps.offer.models), 72

ShippingBenefit.DoesNotExist, 72

ShippingBenefit.MultipleObjectsReturned, 72

ShippingDiscount (class in oscar.apps.offer.models), 72

ShippingFixedPriceBenefit (class in oscar.apps.offer.models), 72

ShippingFixedPriceBenefit.DoesNotExist, 72

ShippingFixedPriceBenefit.MultipleObjectsReturned, 72

ShippingMethodForm (class in oscar.apps.checkout.forms), 56

ShippingMethodView (class in oscar.apps.checkout.views), 52

ShippingPercentageDiscountBenefit (class in oscar.apps.offer.models), 72

ShippingPercentageDiscountBenefit.DoesNotExist, 72

ShippingPercentageDiscountBenefit.MultipleObjectsReturned, 72

short\_message (oscar.apps.partner.availability.Base property), 83

short\_message (oscar.apps.partner.availability.StockRequired property), 83

SKU, 17

sorted\_recommended\_products (oscar.apps.catalogue.abstract\_models.AbstractProduct property), 47

Stock-keeping unit., 17

stockrecord (oscar.apps.partner.strategy.PurchaseInfo property), 81

StockRequired (class in oscar.apps.partner.availability), 83

StockRequired (class in oscar.apps.partner.strategy), 81

strategy() (oscar.apps.partner.strategy.Selector method), 81

Structured (class in oscar.apps.partner.strategy), 81

submit() (oscar.apps.basket.abstract\_models.AbstractBasket method), 41

submit() (oscar.apps.checkout.views.PaymentDetailsView method), 51

summary (oscar.apps.address.abstract\_models.AbstractAddress property), 37

summary() (oscar.apps.catalogue.abstract\_models.AbstractProductAttribute method), 47

## T

tax (oscar.apps.partner.prices.Base attribute), 82

tax (oscar.core.prices.Price attribute), 35

TaxExclusiveOfferDiscount (class in oscar.apps.shipping.methods), 87

TaxInclusiveFixedPrice (class in oscar.apps.partner.prices), 82

TaxInclusiveOfferDiscount (class in oscar.apps.shipping.methods), 87

ThankYouView (class in oscar.apps.checkout.views), 53

thaw() (oscar.apps.basket.abstract\_models.AbstractBasket method), 41

title (oscar.apps.wishlists.abstract\_models.AbstractLine attribute), 90

total\_excl\_tax (oscar.apps.basket.abstract\_models.AbstractBasket property), 41

total\_excl\_tax\_excl\_discounts (oscar.apps.basket.abstract\_models.AbstractBasket property), 41

total\_incl\_tax (oscar.apps.basket.abstract\_models.AbstractBasket property), 41

total\_incl\_tax\_excl\_discounts (oscar.apps.basket.abstract\_models.AbstractBasket property), 41

total\_tax (oscar.apps.basket.abstract\_models.AbstractBasket property), 41

track\_stock (oscar.apps.catalogue.abstract\_models.AbstractProductClass attribute), 48

## U

UK (class in oscar.apps.partner.strategy), 81

Unavailable (class in oscar.apps.partner.availability), 84

Unavailable (class in oscar.apps.partner.prices), 83

unit\_effective\_price (oscar.apps.basket.abstract\_models.AbstractLine property), 42

Universal Product Code, 18

UPC, 17

update\_address\_book() (oscar.apps.checkout.mixins.OrderPlacementMixin

method), 54  
 update\_rating() (os-  
   car.apps.catalogue.abstract\_models.AbstractProduct  
   method), 47  
 update\_stock\_records() (os-  
   car.apps.order.utils.OrderCreator method),  
   78  
 UppercaseCharField (class in oscar.models.fields), 36  
 US (class in oscar.apps.partner.strategy), 82  
 use\_free\_shipping() (os-  
   car.apps.checkout.utils.CheckoutSessionData  
   method), 57  
 use\_shipping\_method() (os-  
   car.apps.checkout.utils.CheckoutSessionData  
   method), 57  
 UseFirstStockRecord (class in os-  
   car.apps.partner.strategy), 82  
 user, 135–138  
 user\_address\_id() (os-  
   car.apps.checkout.utils.CheckoutSessionData  
   method), 57  
 UserAddressDeleteView (class in os-  
   car.apps.checkout.views), 53  
 UserAddressUpdateView (class in os-  
   car.apps.checkout.views), 53  
 UserForm (class in oscar.apps.customer.forms), 59  
 users (oscar.apps.partner.abstract\_models.AbstractPartner  
   attribute), 79

**V**

validate\_shipping\_event() (os-  
   car.apps.order.processing.EventHandler  
   method), 77  
 validate\_unique() (os-  
   car.apps.address.abstract\_models.AbstractUserAddress  
   method), 38  
 value\_as\_html (oscar.apps.catalogue.abstract\_models.AbstractProductAttributeValue  
   property), 47  
 value\_as\_text (oscar.apps.catalogue.abstract\_models.AbstractProductAttributeValue  
   property), 47  
 ValueCondition (class in oscar.apps.offer.models), 72  
 ValueCondition.DoesNotExist, 72  
 ValueCondition.MultipleObjectsReturned, 72  
 view, 137  
 voucher, 137  
 voucher\_discounts (os-  
   car.apps.basket.abstract\_models.AbstractBasket  
   property), 41  
 voucher\_model (oscar.apps.basket.views.VoucherAddView  
   attribute), 44  
 voucher\_model (oscar.apps.basket.views.VoucherRemoveView  
   attribute), 44  
 VoucherAddView (class in oscar.apps.basket.views), 44  
 VoucherRemoveView (class in oscar.apps.basket.views),  
   44

**W**

WeightBand (class in oscar.apps.shipping.models), 88  
 WeightBand.DoesNotExist, 88  
 WeightBand.MultipleObjectsReturned, 88  
 WeightBased (class in oscar.apps.shipping.models), 88  
 WeightBased.DoesNotExist, 88  
 WeightBased.MultipleObjectsReturned, 88  
 WishListAddProduct (class in os-  
   car.apps.customer.wishlists.views), 91  
 WishListCreateUpdateViewMixin (class in os-  
   car.apps.customer.wishlists.views), 91  
 WishListCreateView (class in os-  
   car.apps.customer.wishlists.views), 91  
 WishListCreateWithProductView (class in os-  
   car.apps.customer.wishlists.views), 91  
 WishListDeleteView (class in os-  
   car.apps.customer.wishlists.views), 91  
 WishListDetailView (class in os-  
   car.apps.customer.wishlists.views), 91  
 WishListListView (class in os-  
   car.apps.customer.wishlists.views), 92  
 WishListMoveProductToAnotherWishList (class in  
   oscar.apps.customer.wishlists.views), 92  
 WishListRemoveProduct (class in os-  
   car.apps.customer.wishlists.views), 92  
 WishListUpdateView (class in os-  
   car.apps.customer.wishlists.views), 92