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LEARNING

django-admin

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#django-admin

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About

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Chapter 1: Getting started with django-admin

Remarks

Django Admin is the CRUD interface of Django web framework. It is mostly automatically generated but can be widely customize. However, you must keep in mind that it is designed **for trusted users only** and has its limits. In any case, you must **never give admin access to untrusted users**.

Django Admin provides a high level of customization, but be careful of not falling too much customization details. If you do so, it's probably time to create you own custom interface without Django Admin at all.

Resources

- Django Admin Official Introduction
- Django Admin Official Tutorial
- Django Admin Official Documentation
- Django Admin Source Code

Versions

Version	Release Date
1.10	2106-08-01
1.9	2015-12-01
1.8	2015-04-01
1.7	2014-09-02
1.6	2013-11-06
1.5	2013-02-26
1.4	2012-03-23
1.3	2011-03-23
1.2	2010-05-17
1.1	2009-07-29
1.0	2008-09-03

Examples

Setup Django Admin

Everything you need to get started with Django admin is already setup in Django's default project layout. This includes:

```
# settings.py

# `django.contrib.admin` and its dependancies.
INSTALLED_APPS = [
    'django.contrib.admin',
    'django.contrib.auth',
    'django.contrib.contenttypes',
    'django.contrib.sessions',
    'django.contrib.messages',
    ...,
]

MIDDLEWARE = [
    ...
    'django.contrib.auth.middleware.AuthenticationMiddleware',
    'django.contrib.messages.middleware.MessageMiddleware',
    ...
]

TEMPLATES = [
    {
        ...,
        'OPTIONS': {
            'context_processors': [
                'django.contrib.auth.context_processors.auth',
                'django.contrib.messages.context_processors.messages',
                ...
            ],
        },
    },
]
```

Be careful about `urls.py` that is slightly different in Django >= 1.9 than in older versions.

1.9

```
from django.conf.urls import url
from django.contrib import admin

urlpatterns = [
    url(r'^admin/', admin.site.urls),
]
```

1.9

```
from django.conf.urls import url, include
from django.contrib import admin

urlpatterns = [
```

```
    url(r'^admin/', include(admin.site.urls)),
]
```

Version with `include` will still work in Django 1.9 but is deprecated and will be removed in the future.

If not already done, you must apply the base migrations:

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

To access the admin, you also have to create a superuser with:

```
$ python manage.py createsuperuser
```

Once this is done, you can run your server:

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

And visit the admin page at http://127.0.0.1:8000/admin/

Add a Model to Admin pages

When you created your own Models in a app, they still need to be *registered* in order to become available in the admin pages.

This is done in the `admin` submodule. If your app was created using `manage.py startapp`, an `admin.py` file should already lay in you app module. Otherwise create it.

```
#myapp/admin.py
from django.contrib import admin
from myproject.myapp.models import MyModel

admin.site.register(MyModel)
```

All options are defined on the ModelAdmin subclass. some options:

```
class MyCustomAdmin(admin.ModelAdmin):
    list_display = ('name','age','email')  # fields to display in the listing
    empty_value_display = '-empty-'        # display value when empty
    list_filter = ('name', 'company')      # enable results filtering
    list_per_page = 25                     # number of items per page
    ordering = ['-pub_date', 'name']       # Default results ordering

# and register it
admin.site.register(MyModel, MyCustomAdmin)
```

A more concise way to register a model is to use the `admin.register` decorator:

```
@admin.register(MyModel)
class MyCustomAdmin(admin.ModelAdmin)
```

```
    ...
```

Remove a Model from Admin pages

Django Admin comes with some Models registerd by default. There a some occasions where you might want to remove a Model from the admin pages.

This is done in the `admin` submodule. If your app wass created using `manage.py startapp`, the `admin.py` file should already lay in your app module. Otherwise create it.

```
#myapp/admin.py
from django.contrib import admin
from django.contrib.auth.models import User

admin.site.unregister(User)
```

Customize django User Admin Model

```
from django.contrib.auth.models import User
class UserAdmin(admin.ModelAdmin):
    list_display = ('email', 'first_name', 'last_name')
    list_filter = ('is_staff', 'is_superuser')

admin.site.unregister(User)
admin.site.register(User, UserAdmin)
```

We need to unregister before register custom UserAdmin because in django User Model Admin already registered, So we need to firstly unregister User Model in our admin.py then we can register User Model with custom ModelAdmin

Read Getting started with django-admin online: https://riptutorial.com/django-admin/topic/3499/getting-started-with-django-admin

Chapter 2: Admin actions

Remarks

I don't think you need get_price(self) specially when you are not making any changes to the price variable. I would remove the method get_price since you can get the same value from the price under the product model. I could be wrong. Just don't see the value of get_price method here.

Examples

Product discount action

One day I had a conversation with a friend of mine who uses Laravel PHP framework in his job. When I told him that Django has its own all-included HTML CRUD system, for interacting with the database, called Django admin, his eyes popped off! He told me: "*It took me months to build an Admin interface for my current web app and you're saying that you have all these without having to write a single line of code?*". I responded "*Yeap!*"

Django admin is a powerful feature of Django which provides many goodies. One of these are actions.

But what "*actions*" are?

Suppose you have a model and you have already added some entries (maybe hundreds, maybe thousands) into it. Now, you want to apply a rule-action to at least one of them, **without** using the console (`python manage.py shell`):

```
# python manage.py shell (interactive console)

from math import ceil

from my_app.models import Product


DISCOUNT = 10  # percentage

for product in Product.objects.filter(is_active=True):
    """ Set discount to ALL products that are flagged as active """
    multiplier = DISCOUNT / 100.  # DISCOUNT / 100 in python 3 (without dot)
    old_price = product.price
    new_price = ceil(old_price - (old_price * multiplier))  # seller wins :)
    product.price = new_price
    product.save(update_fields=['price'])
```

Did you noticed that we applied the discount to **all** products. What if we wanted to apply this logic to specific ones? Or if we wanted to manually enter the value of discount and then apply this value to some products? All these through the Django admin! You are on the right track. Django actions FTW. Lets look at a complete example.

The basics:

- Python 3.4.3
- Django 1.10
- SQLite (built in Python, no need for extra installation-setup)

The model:

- Representing a Product for our e-shop
- Price of a Product would be integers (not decimals)

The goal:

- To be able, through the Django Admin interface, to apply a fixed discount to one or more product entries.

Setup (app, model and Django admin)

Assuming you have already started a project, go to the directory where `manage.py` lives and create an app with the name `stock`, by typing:

```
python manage.py createapp stock
```

Django will automatically create a directory structure for you. Go and edit `models.py` file and add:

```
# models.py

from django.db import models


class Product(models.Model):
    name = models.CharField('Product name', max_length=100)  # required field
    price = models.PositiveIntegerField('Product price')

    def __str__(self):  # __unicode__ in Python 2
        return self.name
```

Our `Product` model has been created, but nothing in the database yet. In order for migrations to work, our app must be included in the `INSTALLED_APPS` list.

Edit your `settings.py` file and under the `INSTALLED_APPS` list add:

```
# settings.py

INSTALLED_APPS = [
    # ... previous Django apps
    'stock.apps.StockConfig',
```

```
]
```

Now run:

```
python manage.py makemigrations
python manage.py migrate
```

After the `migrate` command, your database has now a table named `product` which contains three columns, `id`, `name` and `price`. So far so good!

If you haven't changed anything in your ROOT_URLCONF file, which usually lives inside the folder `<your_project_name>/<your_project_name>/`, then the URL that points to the Django admin site should be:

```
# urls.py

urlpatterns = [
    # ... other URLs
    url(r'^admin/', admin.site.urls),
]
```

Until now, we haven't looked anything specific about the Django admin actions. Take a final step and add these inside your `stock/admin.py` file:

```
# admin.py

from django.contrib import admin

from .models import Product


@admin.register(Product)
class ProductAdmin(admin.ModelAdmin):
    pass
```

OK. The setup is done. Just to make sure everything works, run:

```
python manage.py runserver
```

and with your favourite browser visit the page `127.0.0.1:8000/admin/`. You should see the shiny-glamorous-terrific Django admin page, which allows you to **C**reate-**R**ead-**U**pdate-**D**elete your `Product` model! If by any chance, the above page asks you for a username/password and you do not have any, no problem. You just haven't created a `User` to login to the admin. Simply run:

```
python manage.py createsuperuser
```

enter your name, email, username and password (twice) and you're done.

Generate some fake products

So far we have created the model but no entries (no products) yet. We need some entries in order to shed light to the power of Django admin actions.

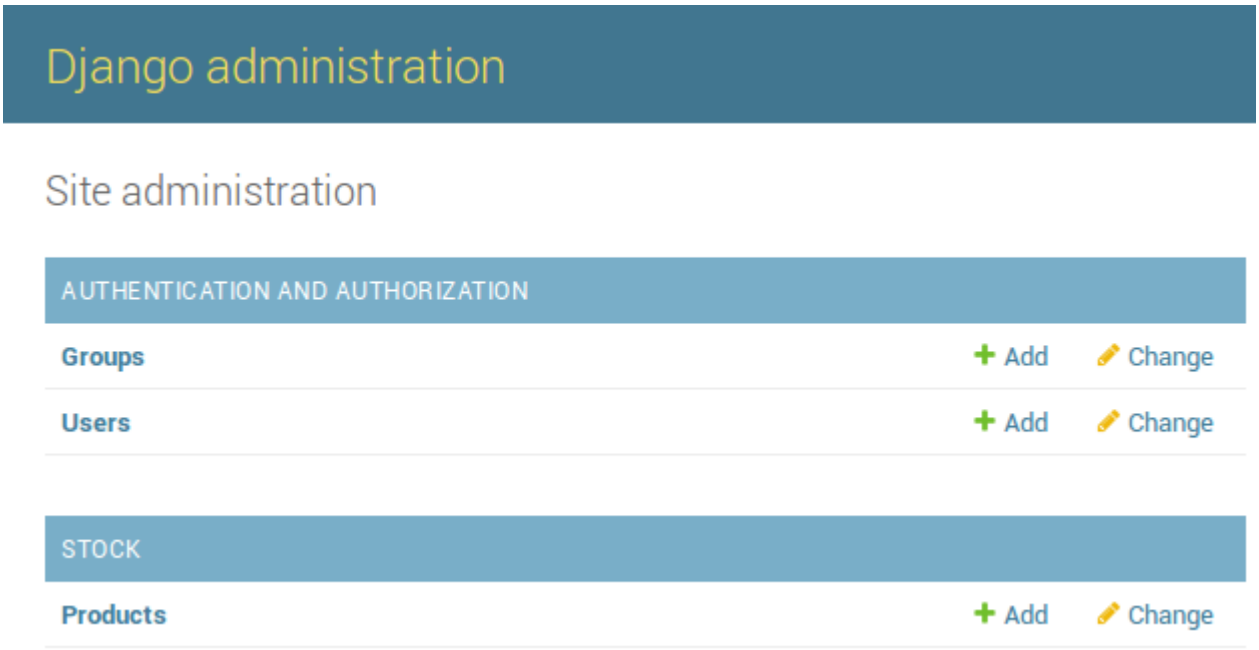
We are going to create 100 products and work with these. But, instead of manually pressing the ADD button and entering a `name` and a `price`, we will write a script to do the job for us.

Run `python manage.py shell` and enter the following:

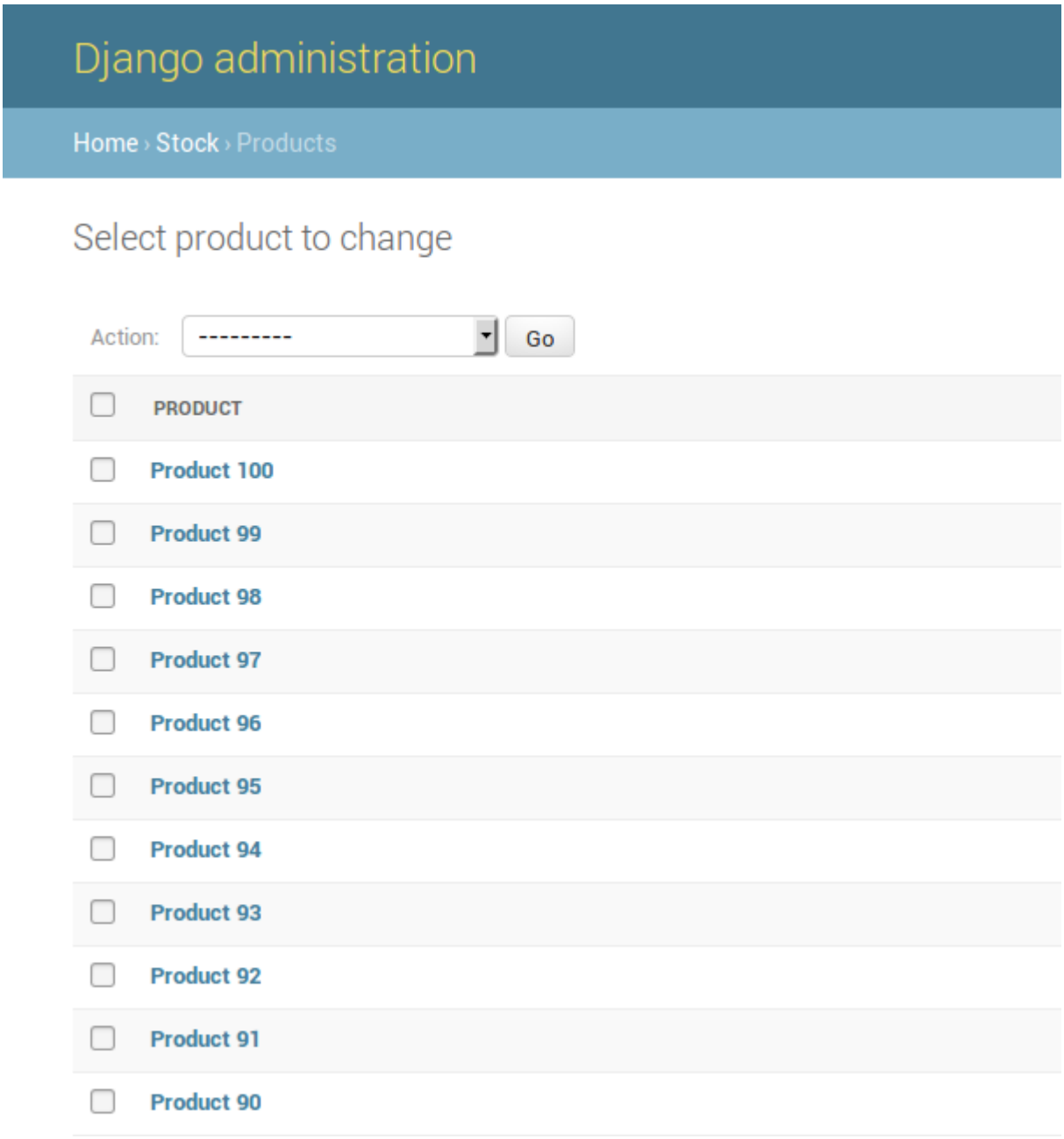
```
# python manage.py shell

from stock.models import Product


for i in range(1, 101):
    p = Product.objects.create(name='Product %s' % i, price=i)
```

The above `for` loop creates (which means that data are saved in the database) 100 products (entries) with names `Product 1`, `Product 2`, ... `Product 100` and prices `1`, `2`, ..., `100`.

In order to view these products through the Django admin page, just visit again `127.0.0.1:8000/admin/` and click the `Products` link:



Enjoy your auto-generated 100 products:



This is known as the Django's `change list` page. Now, in order for this to look much prettier, edit your `stock/admin.py` file and enter:

```
@admin.register(Product)
class ProductAdmin(admin.ModelAdmin):
    list_display = ('name', 'price')
```

Now, hit refresh and you should see a second column displaying the prices.

Phew! Final the actions

To recap, we have the model and we have the entries. Next, we want to create an action which once selected it will make a discount 30% to the selected product(s).

Did you notice that there is, already, a select box at the top of the `change list` page, with the label `Action`? Django, automatically adds a default action on each entry which performs the **D**elete action.

Django admin actions are written as simple functions. Lets dive in. Edit the `stock/admin.py` file and add the following:

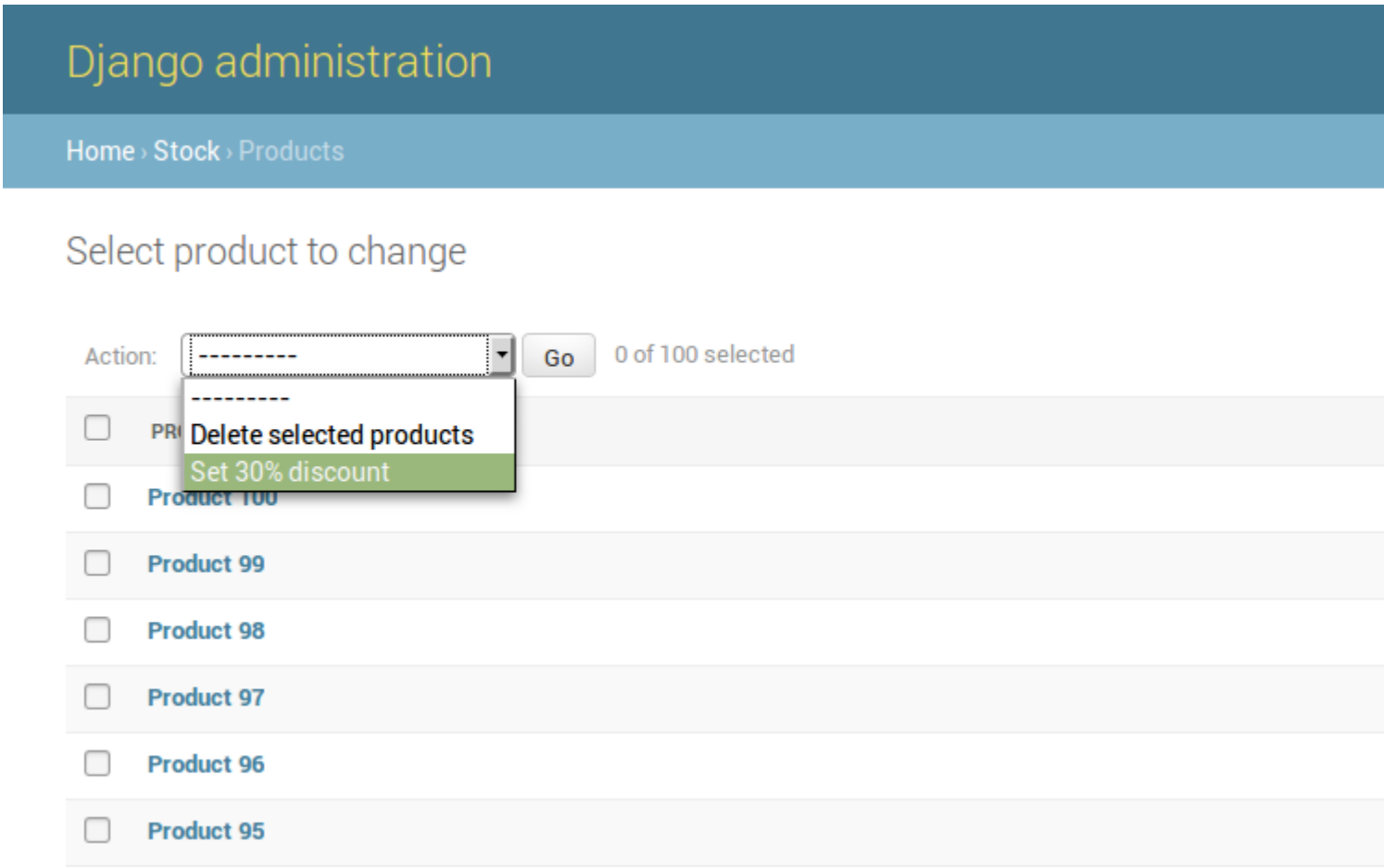
```
# admin.py

@admin.register(Product)
class ProductAdmin(admin.ModelAdmin):
    list_display = ('name', 'price')
    actions = ['discount_30']

    def discount_30(self, request, queryset):
        from math import ceil
        discount = 30  # percentage

        for product in queryset:
            """ Set a discount of 30% to selected products """
            multiplier = discount / 100.  # discount / 100 in python 3
            old_price = product.price
            new_price = ceil(old_price - (old_price * multiplier))
            product.price = new_price
            product.save(update_fields=['price'])
    discount_30.short_description = 'Set 30%% discount'
```

A few things to note here:

- The `ProductAdmin` class has one extra attribute (`actions`) which is a list of strings (each string is the name of the function that represents the action).
- The action-function which is a method of the `ProductAdmin` class. It takes as arguments the `ModelAdmin` instance (`self` since this is a method), the `HTTP request` object and the `queryset` (a list of the selected objects-entries-products).
- The last line is a function attribute (`short_description`) which sets the displayed name inside the actions select box (there is a double % there in order to escape the single %).

Inside the function-action we iterate on each product (that was selected) and we set its value decreased by 30%. Then we call the `save()` method with the argument `update_fields` in order to force an UPDATE on the fields that are included in the `update_fields` list (instead of an UPDATE on all the fields of the model) in the database, for performance reasons (not a performance gain in this example, with only 2 columns, but you get the point).

Now, hit refresh in the `change list` page and you should see your action under the `delete` one. Go ahead and select some products (using the checkbox on the left of each or all products using the left-top most checkbox), select the `Set 30% discount` action and click the `Go` button. **That's it!**



Of course, this is not very handy in most situations, since this action does not allow you to enter a different amount of discount. You must edit the `admin.py` file each time you want to apply a different discount. In the upcoming example we will see how to do that.

Read Admin actions online: https://riptutorial.com/django-admin/topic/7747/admin-actions

Credits

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1	Getting started with django-admin	Antoine Pinsard, Community, lxer, NeErAj KuMaR, Roald Nefs, Udi
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