Prashant Lakhera Follow
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100 Days of DevOps — Day 95-Introduction to Django

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Welcome to Day 95 of 100 Days of DevOps, Focus for today is Introduction to Django

Django is a popular Open Source Web Framework and being a Web framework it majorly solves our two major problem

- *It maps a requested URL from a user to the code that actually meant to handle it*
- *It also allows us to create that requested HTML dynamically*

Installing Django

I am installing Django via Anaconda and then try to create a virtual env. Using Virtual Env we can have future without breaking the existing app. The reason I am doing it via Anaconda as it includes the virtual environment handler.

```
conda create --name myvirtualenv django # package we want to initiate
env.
```

To activate this environment, use:

```
# > source activate myvirtualenv
```

Once again the advantage of using Virtual Env

- *Now anything installed via pip or conda when this environment is activated will only be installed for this environment.*
- *It helps projects to keep your project self-contained and not run into issues when we roll new packages.*

Now let's go back to Django, when we install Django it actually installed a command line tool called django-admin

Let's create our first project

```
$ django-admin startproject myfirst_project
```

This will create a directory structure like this

```
$ tree myfirst_project/
myfirst_project/
├── manage.py
└── myfirst_project
    ├── __init__.py
    ├── settings.py
    ├── urls.py
    └── wsgi.py
```

- *manage.py: It will be associated with many commands as we build our web app.*
- *__init__.py: This is a blank Python script, that do its special name let's Python know that this directory can be treated as a package*
- *settings.py: This is where we are going to store our project settings*
- *urls.py: It stores all the URL patterns for our project. Basically different pages of our web application*
- *wsgi.py: Python script that acts as the web server gateway interface, it helps us to deploy our web app to Production*

Let's use manage.py now

```
$ python manage.py runserver
Performing system checks...

System check identified no issues (0 silenced).

You have 13 unapplied migration(s). Your project may not work properly
until you apply the migrations for app(s): admin, auth, contenttypes,
sessions.
Run 'python manage.py migrate' to apply them.
May 27, 2017-00:00:44
Django version 1.10.5, using settings 'myfirst_project.settings'
Starting development server at http://127.0.0.1:8000/
Quit the server with CONTROL-C.
[27/May/2017 00:00:50] "GET / HTTP/1.1" 200 1767
```

On the web gui, we will see something like this http://127.0.0.1:8000/

NOTE: For the time being ignore migration warning

Let's create our first web application with our Django Project

```
$ python manage.py startapp myfirst_app

$ tree
├── db.sqlite3
├── manage.py
├── myfirst_app
│   ├── __init__.py
│   ├── admin.py
│   ├── apps.py
│   ├── migrations
│   │   └── __init__.py
│   ├── models.py
│   ├── tests.py
│   ├── views.py
├── myfirst_project
│   ├── __init__.py
│   ├── __pycache__
│   ├── settings.py
│   ├── urls.py
│   ├── wsgi.py

4 directories, 17 files
```

- *__init__.py : This is a blank Python script, that due to its special name let's Python know that this directory can be treated as a package*
- **admin.py**: *We can register our models here which Django will then use them with Django admin interface*
- **apps.py**: *We can place application-specific configuration here*
- **models.py**: *To store the application's data models*
- **tests.py**: *We can store test functions to test our code*
- **views.py**: *We can define functions that handle requests and return responses*
- **Migrations folder**: *This folder stores database specific information as it relates to the model*

Now we need to let Django know that we created this application

```
$ pwd
/Users/prahanera/django/myfirst_project/myfirst_project
vim settings.py

# Application definition
INSTALLED_APPS = (
'django.contrib.admin',
'django.contrib.auth',
'django.contrib.contenttypes',
'django.contrib.sessions',
'django.contrib.messages',
'myfirst_app',  ---> Add this entry about your application
)
```

Once this time we need to create view

```
/Users/prahanera/django/myfirst_project/myfirst_app
vim views.py

from django.shortcuts import render
from django.http import HttpResponse

# Create your views here.

def index(request):
 return HttpResponse("Hello World")
```

In order to see this view we need to map it via urls.py

```
/Users/prahanera/django/myfirst_project/myfirst_project/
vim urls.py

from django.conf.urls import url
from django.contrib.admin import admin
from myfirst_app import views

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

Now try to run the server

```
$ python manage.py runserver
Performing system checks...

System check identified no issues (0 silenced).

You have 13 unapplied migration(s). Your project may not work properly
until you apply the migrations for app(s): admin, auth, contenttypes,
sessions.
Run 'python manage.py migrate' to apply them.
May 27, 2017-17:00:11
Django version 1.10.5, using settings 'myfirst_project.settings'
Starting development server at http://127.0.0.1:8000/
Quit the server with CONTROL-C.
[27/May/2017 17:00:16] "GET / HTTP/1.1" 200 11
```

Looking forward from you guys to join this journey and spend a minimum an hour every day for the next 100 days on DevOps work and post your progress using any of the below medium.

- *Twitter: @100daysofdevops OR @laltheru2015*
- *Facebook: https://www.facebook.com/groups/1795362630280645/*
- *Medium: https://medium.com/@devopsearning*
- *Slack: https://devops-myworld.slack.com/messages/CF41EPG4V/*
- *GitHub Link https://github.com/100daysofdevops*

Reference

100 Days of DevOps — Day 0
Day 0 is just one day away and finally, this is a continuation of the post(I posted a month earlier)
medium.com

100 Days of DevOps — Day 94-Introduction to Numpy for Data Analysis
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