Using Django to create webapps

So far we have learnt the basics of python that can help us start working on building real world applications. The applications we have built so far, we cannot be able to share with other people to use them. Django is a python web framework that makes it easy for us to create web applications with speed.

Django is an MVC framework with various components for handling database, views, routing and templating. Django's documentation is available on www.djangoproject.org
Why Django:

- It's very fast
- It's easy to learn
- It has a lot of batteries included.
- It's secure
- It can scale to millions of requests and users

Prerequisites:

Choosing a Database.

Django needs a database to store all the data that our applications will be handling. We need a database installed in our machines in order to be able to use Django. There are various databases we can use with Django like:

- Postgresql
- Mysql
- Oracle
- Sqlite
- Mssql

Django comes with sqlite installed out of the box.

Installing Django

The next step is to Install Django on our machines

To install Django, ensure you have Python >=3.4 on your command prompt.

We need to ensure we have pip installed in our machine.

Type pip --version on your command prompt

Type python --version To ensure you have the latest version of python on the path.

Creating a virtual env

The next thing we do is create a virtual environment where we will put our django project and all its dependencies.

What is a virtualenv? It allows us to create independent virtual environments with their own Python libraries in our machines that are isolated from the main system Python libraries.

To create a virtual environment type

```
python -m venv env1
```

The above creates a virtual environment where Django will be installed

But first we need to activate our virtual environment

To do that type `source env/bin/activate`

Now our environment has been activated

To install Django, type pip install django

To see if django has been installed type pip freeze

To start a project, type django-admin startproject project1

We now have django installed and running on our machines.

It's good to understand the various components of a django projects.

Type cd project1

In our folder we have

- Manage.py - we use this file to interact with our django project.
- Inside project1 we have
    - Urls.py - we keep all our projects url configurations here
    - Settings.py - we keep our project settings here
    - Wsgi.py - this is the entrypoint for launching a webserver to run our django project

Our virtual environment has dependencies including django that we installed using pip.
To see the dependencies, type pip freeze.
To save them in a file type. pip freeze > requirements.txt
It's general practise to store your project dependencies in a file a named requirements.txt

To see if our Django project is running type;
python manage.py runserver

Then open your browser and type http://127.0.0.1:8000

Things you have learnt in this class:

- What is django
- What is a virtual environment in Python
- How to create a virtual environment in Python
- What is Python pip
- How to install libraries into a python virtual environment using pip

- How to install the django web framework using pip
- How to create a django project