**Software Guide:** Django ORM model

**Required Software:**

1. Python (latest version)
2. Visual studio code
3. Sqlite

Django is a high-level Python-based free and open-source web framework, which follows the model-view-template (MVT) architectural pattern. It is maintained by the Django Software Foundation (DSF). Django's primary goal is to ease the creation of complex, database-driven websites. Some well-known sites that use Django include the Public Broadcasting Service, Instagram, Mozilla, The Washington Times, Disqus, Bitbucket, and Nextdoor.

In this tutorial we will see:

* Cerate 1st Django project
* Python and Django Versions to use
* Download, Install and Setup Python
* Install and Setup Django
* Create Django project Running the server

# Python download:

<https://www.python.org/downloads/>

download latest version according to the type of operating system

I am downloading for windows 64 bit OS

Graphical user interface, text, application

Description automatically generated

Make sure to check add python to PATH, so that you don’t have to do it manually

**Verify that python is installed:**

Open command prompt (CMD) and check for the python version using following command:

*python –version*

Text

Description automatically generated

# Install Django:

*pip install Django*

*django-admin --version*

Text

Description automatically generated

*Django 8.2.2 is installed successfully*

***Create Django Project***

*Create a folder for your project in in the local drive*

*For example in C derive create folder* ***DjangoProjects***

*In command prompt change directory to* ***DjangoProjects***

Text

Description automatically generated

*You can see new folder created in your local drive*

Graphical user interface, application

Description automatically generated

*Create first project by starting Django-admin*

*django-admin startproject <any project name>*

*django-admin startproject DjangoProjects*

*Then change directory to project you just have created using the above command*

*>cd DjangoProjects*

*Use following command to see file created in the project*

*>cd DjangoProjects>dir*

Text

Description automatically generated

*It will create a project for you with few python files:*

*Navigate to your local drive and explore what these files are:*

*Outer project files:*

Graphical user interface, text, application

Description automatically generated

*Inner Project files*

Graphical user interface, text, application

Description automatically generated

*We can run this project (although it is empty but for demo purpose) using Django server*

*>DjangoProjects>python manage.py runserver*

*Note the IP address where server is running and open in a browser, in my case it is following:*

[*http://127.0.0.1:8000/*](http://127.0.0.1:8000/)

Text

Description automatically generated

*Note the IP address and run in your browser*

Graphical user interface, text, application, email

Description automatically generated

*At this point we are all set with Django installation*

# Next we will install SQLite:

We need to connect with a database, Django provide default configuration for SQLlite, so we will use that for simplicity:

***Download from here:***

[***https://sqlitebrowser.org/dl/***](https://sqlitebrowser.org/dl/)

Graphical user interface, text, application

Description automatically generated

Table

Description automatically generated

***Once installed, run the browser*** Graphical user interface, text, application

Description automatically generated

# Next step is install visual studio code to develop application which will interact with our database

***Set-up Visual Studio for Django project***

***Download and install visual studio code***

[***https://code.visualstudio.com/***](https://code.visualstudio.com/)

***once installed upload the jandgo project we created in the previous step:***

Graphical user interface, text

Description automatically generated

***Now we are all set to create application using Object-Relational Mapper (ORM).***

* ORM enable applications to interact with databases such as SQlite, PostgreSQLl, sqlserver, Oracle.
* Automatically create a database schema from defined classes or models.
* Map object attributes to respective table fields  
  use connector to connect database with a application

Text

Description automatically generated with medium confidence

***Application- Database interaction using ORM***

Table

Description automatically generated with low confidence

***Mapping model class into Database***

***In the next class we will create model classes which works as follow:***

* A model class is a single definitive source of information about data, contain the essential fields and behavior of data
* Each model (class) map to a single database table
* Each object map to a row in a table
* Each field represent a column in a table
* Schema and database is automatically created once model classes are defined

***Text

Description automatically generated***

At this point you have installed all necessary software to work with Object-Relational Model. In the next class we will create applications to work on Object-Relational data model.