VISVESVARAYA TECHNOLOGICAL UNIVERSITY

"Jnana Sangama", Belgaum-590 014, Karnataka.

Internship Report

On

"Ecommerce website with Python"

Submitted in the partial fulfilment of the requirements for the award of the Degree of

BACHELOR OF ENGINEERING

IN

INFORMATION SCIENCE AND ENGINEERING

Submitted by

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EAST WEST INSTITUTE OF TECHNOLOGY

DEPARTMENT OF INFORMATION SCIENCE AND ENGINEERING

EAST WEST INSTITUTE OF TECHNOLOGY

BANGALORE - 560 091

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EAST WEST INSTITUTE OF TECHNOLOGY

Sy. No.63, Off. Magadi Road, Vishwaneedam Post, Bangalore - 560 091

(Affiliated To Visvesvaraya Technological University, Belgaum)

DEPARTMENT OF INFORMATION SCIENCE AND ENGINEERING

CERTIFICATE

This is to certify that the internship activity entitled as **"WEB DEVELOPMENT USING PYTHON"** presented by **SURYA KUMAR K V(1EW21IS108),** bonafide students of **EAST WEST INSTITUTE OF TECHNOLOGY**, Bangalore in partial fulfilment for the award of **Bachelor of Engineering** in **Information Science and Engineering** of **Visvesvaraya Technological University**, Belgaum during the year **2023-2024**. It is certified that all corrections/suggestions indicated have been incorporated in the report. The internship activity has been approved as it satisfies the academic requirements in respect of the internship activity prescribed for the said degree.

Signature of Guide	Signature of HOD	Signature of Principal
Ms. Prakruthi G R	**Dr Suresh M B**	**Dr K Channakeshavalu**
Asst. Prof ,Dept of ISE	Prof & Head, Dept of ISE	Principal
EWIT, Bangalore	EWIT, Bangalore	EWIT, Bangalore

Name of the Examiners **Signature with date**

1._____ _____

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DEPARTMENT OF INFORMATION SCIENCE & ENGINEERING

DECLARATION

Surya Kumar K V Student of Fourth Semester B.E ,in the Department of INFORMATION SCIENCE & ENGINEERING, **East West Institute of Technology,** Bangalore hereby declare that the internship entitled **"E-COMMERCE WEBSITE USINGWEB DEVELOPMENT IN PYTHON**" has been carried out by me and submitted in partial fulfilment of course requirements for the award of degree in **Bachelor of Engineering** in INFORMATION SCIENCE & ENGINEERING, discipline of **Visvesvaraya Technological University**, Belgaum during the academic year **2022-2023.**Further,the matter embodied in internship report has not been submitted previously by anybody for the award of any degree or diploma to any other university.

Place: Bangalore
Date:

NAME: Surya Kumar K V
USN: 1EW21IS108

CERTIFICATION OF THE ORGANIZATION

ACCURATE
INFO-SOLUTION

#6, 1st Main Road, ITI Layout, Mallathahalli, Near Deepa Complex, Nagarbhavi,
Bangalore - 560 056 Mob: 7676795276 Web.: www.accurateinfosolution.com

Date: 25/11/2023

INTERNSHIP COMPLETION CERTIFICATE

This is to certify that **SURYA KUMAR K V (1EW21IS108)** from **EAST WEST INSTITUTE OF TECHNOLOGY,** has successfully completed 4 weeks of internship programme in our organisation from **25/10/2023** to **25/11/2023.** We take the pleasure in recognizing the achievement with the award of internship certificate in **WEB DEVELOPMENT USING PYTHON.**

During the period of his internship programme, he was found punctual, hardworking and inquisitive.

ACCURATE INFO SOLUTIONS
#6, 1st Main Road, ITI Layout, Mallathahalli,
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ACCURATE INFO SOLUTION,
BANGALORE.

ABSTRACT

The report focuses on the development process of an Ecommerce Website utilizing Django, a high-level Python web framework known for its scalability, security, and rapid development capabilities. Python, being a versatile programming language, was chosen for its robustness in handling complex web applications. The project aimed to create a user-friendly, responsive website that enables seamless transactions between buyers and sellers. The report extensively covers the architectural design, emphasizing the use of Django's MVC (Model-View-Controller) pattern for efficient data management, clean code organization, and easy maintenance. It discusses the implementation of key features such as user authentication, product catalog management, secure payment gateways integration, order processing, and inventory management using Django's built-in functionalities and third-party libraries. Moreover, the report dives into the significance of responsive UI/UX elements to ensure a consistent and engaging experience across various devices and platforms. Accessibility, speed optimization, and a user-centric approach were prioritized to enhance customer satisfaction and retention. Throughout the development process, challenges such as database optimization, security measures, and performance tuning were encountered. The report elucidates the strategies and best practices adopted to tackle these challenges, ensuring a robust and secure Ecommerce platform. Furthermore, it concludes with an in-depth analysis of the project's success metrics, including user feedback, performance benchmarks, and business goals achieved. It also outlines potential future enhancements such as AI-driven recommendations, expansion of features, and scalability improvements to sustain the platform's growth in the dynamic Ecommerce landscape.

ACKNOWLEDGEMENT

Any achievement, be it scholastic or otherwise does not depend solely on individual efforts buton the guidance, encouragement, and cooperation of intellectuals, elders, and friends. A number of personalities, in their own capacities, have helped me in carrying out this internshipwork. I would like to take this opportunity to thank them all.

First and foremost, I would like to thank **Dr K Channakeshavalu**, Principal, EWIT, Bangalore, for his moral support in completing our internship work.

I would like to thank, **Dr Suresh M B,** Professor, and Head of Department of ISE, EWIT, Bangalore, for his valuable suggestions and expert advice.

I deeply express my sincere gratitude to my guide **Ms. Prakruthi G R.,** Assistant Professor, Department of ISE, EWIT, Bangalore for her able guidance throughout the internship work and for guiding me to organize the report in a systematic manner.

I thank my Parents and all the Faculty members of the Department of Information Science & Engineering for their constant support and encouragement.

Last, but not least, I would like to thank my peers and friends who provided me with valuable suggestions to improve my internship activity.

Surya Kumar K V

(1EW21IS108)

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CHAPTER 1

INTRODUCTION

Python is a dynamic but strictly typed programming language. It is both interpreted and compiled in that the original source code is compiled into byte code and then interpreted, but this happens transparently to the user; you do not have to explicitly ask Python to compile your code. The Python language has several implementations, but the most common is the version written in C, often referred to as C, Python. Other implementations include Python, written in Java, and Iron Python, written for the Microsoft .NET platform.

Python programs are written in text files that customarily have the extension .py. The Python interpreter, called python (in lowercase) does not actually care about the extension; it is only for the user's benefit (and in some operating systems to allow the file and interpreter to be linked). You can also input Python code directly to the interpreter. This method makes for a highly interactive development style where ideas are prototyped or tested in the interpreter and then transferred into a code editor. The Python interpreter is a powerful learning tool when you are starting to use a new concept or code module.

Python comes with two helpful functions that assist you in exploring the language: dir(name) and help(name). dir(name) tells you all of the names available in the object identified by name. help(name) displays information about the object called name. When you first import a new module, you will often not know what functions or classes are included. By looking at the dir() listing of the module, you can see what is available. You can then use help() on any of the features listed. Be sure to experiment with these functions; they are an invaluable source of information.

Django is a Python-based web framework that allows you to quickly create efficient web applications. It is also called batteries included framework because Django provides built-in features for everything including Django Admin Interface, default database – SQLlite3, etc. When you're building a website, you always need a similar set of components: a way to handle user authentication (signing up, signing in, signing out), a management panel for your website, forms, a way to upload files, etc. Django gives you ready-made components to use and that too for rapid development..

1.1 Purpose

- Django is a rapid web development framework that can be used to develop fully fleshed web applications in a short period of time.
- It’s very easy to switch database in Django framework.
- Django is fully functional framework that requires nothing else.
- It has thousands of additional packages available.
- It is very scalable.

1.2 Objective

The Prime Objective of the Health Care Management web application is to provide users with a secure. User-friendly digital platform that enhances productivity, time management, and collaboration by efficiently organizing and managing their schedules and tasks.

CHAPTER 2

COMPANY PROFILE

2.1 AN OVERVIEW OF THE ORGANIZATION

AIS (ACCURATE INFO SOLUTION) is a company who majorly deals with project work, internship, soft skill training, robotics mainly to engineering and BCA students Workshops and course content prepared based on industry practices and requirements Students who indulge in and complete real time industrial projects will be awarded certificate of merit. The company follows a non-conventional approach towards internship by letting the interns learn by their own experiences instead of undergoing a classroom teaching program

The interns are encouraged to take up real time problems and develop a problem solving approach towards it. Through a well-defined development, support and quality framework, Accurate info solution consults companies on their technology road map and implements, supports and maintains business-critical applications and the underlying infrastructure. The company brings along in-depth expertise and robust experience in IT Infrastructure Management, Digital Experience Management, Digital Networking, Automation solutions, Cloud services, performance management, Cloud Security Solutions, Global Network Software Solutions , customized web ,product and application development , technology consulting , web- publishing and maintenance-services.

OUR VISION

Our vision is to enable people and organizations realize their potential reinventing their engagement in defining the future using - technology.

OUR MISSION

Our mission is to achieve the leading position as a distinguished & absolute end-to-end information technology infrastructure & service provider.

2.2 OPERATIONS OF THE ORGANIZATION

operation of the company is associated with providing managed services and software development. We offer a wide range of services to build a solution that is right our clients business needs. We have a satisfied client base throughout PAN India and Asia Pacific locations . We are associated with many Multi National as well as Fortune 500 companies

namely Versa Networks, Tekion, Vimeo, Dr.Reddy's, TechMahindra, BVG India ,Riverbed India Pvt Ltd., HPE , Indian Institute of Science (IISC) and many more . A Business Unit of Accurate info solution Software Consulting is an service and application development based organization .Customized Software development involves product development or application development for the other companies based on their own requirements as well as inhouse ERP Software development which we sell to the other companies on subscription basis .We have been building cross-channel Services & solutions for clients and organizations who are just expanding into more than one channel. Accurate info solution Software Consulting P. also offers technology consulting ,application maintenance & support.

2.3 OBJECTIVES OF THE ORGANIZATION

- To emerge as a global leader in the field of software solutions and services.
- To sustain a leadership position and gain market share in our existing product or service offerings and continuously upgrading them by adapting to new technologies.
- To continuously benchmark and partner with the global leaders to usher in futuristic products and services.
- To be a good corporate citizen by inculcating high degree of ethics in its business practices

2.4 STRENGTHS AND STRATEGIES

- A commitment to our core values has helped us build long – term, value centric relationship with customers.
- Continuously re-skilling, training and building the capabilities of our employees to be future-ready.
- "Future proofing" your business by making the required business model changes and building innovative alliances within an ecosystem of strategic partners.

2.5 PRODUCTS AND SERVICES OFFERED BY THE ORGANIZATION

- Managed Services – Managed services include :
  - Infrastructure Management Services
  - Data Centre Management Services
  - Managed Network Services
  - Managed Security services

- Managed customer experience
- Consulting Services
- Cloud Services
- Managed Collaboration and Productivity Services
- Digital Infrastructure and Networking Services
- Digital Infrastructure Security
- Technical Support & Services

- Enterprise Software Solutions
- Web Application Development
- Application Maintenance & Support Cloud Web Services

2.6 DEPARTMENTS

Each department consists different teams working on specific domains. Each team consists of employees who have different roles and responsibilities to handle.

The main departments in Accurate info solution are:

- Software Development Department
- IT Department
- Sales and Marketing Department
- Human Resource Department
- Accounts and Finance Department

Software Development Department: The Development team involves in the process of conceiving, specifying, designing, programming, documentation, testing and bug fixing involved in creating and maintaining applications, frameworks or other software components.

The software development team consists of :

- Requirement Analysts
- Project Managers
- Developers
- Product Consultants

Requirement Analysts: They work to figure out the customer needs, gather project requirements, and draw up the technical specifications that would be used by their developers in order to define the time frame they need to implement the project.

Project Managers: Project managers make sure that the project is delivered timely and it corresponds to your vision and requirements. They spend their working time ensuring each stage of development goes according to plan and all the timeframes and requirements are met.

For this reason, project managers read the technical documentation. After that, they draw up a project plan and split it into stages, usually called sprints (periods of time allocated to complete a specific work). However, this process may differ depending on what methodology your team sticks to.

As soon as all the preparations are done, project managers proceed to their main duties: monitoring the entire process of development and coordinating actions of other team members.

Developers: The developers are responsible for the front-end and back-end development.

Front-end Developers: They turn your prototype into a working website. They create the client-side of the site and make sure the product looks great on any device as well as works stable on any browser.

Back-end Developers: They create the server-side of the website to breathe life into the functionality. Also, these specialists may be involved in database creation and CMS development. There is a myriad of programming languages for this purpose.

Full-Stack Developers: These developers can deal with both front-end and back-end.

Product Consultant: The product consultant team is responsible to customize and personalize the software applications as per the client needs.

IT Department: The role of an IT department within an organization is to design, maintain, and support an organization's information technology infrastructure, thus allowing the organization to leverage both information and technology in an efficient, productive and secure manner.

Sales and Marketing Department: A strong sales team is crucial to the success of a company because the sales department is responsible for making sales, growing your business and retaining existing customers. Ultimately, the most important function of your sales department is maintaining relationships with your customers. The sales team plays the crucial role of selling the products to the customers and contributing to the revenue growth of the company .

Human Resource Department: The HR department comprises of HR Manager and HR Executives They are responsible for recruiting, screening, interviewing and placing work.

force in an organization . They also handle employee relations, payroll, benefits, and training. HR managers plan, direct and coordinate the administrative functions of an organization.

Accounts and Finance Department: The accounting department is responsible for recording and reporting the cash flow transactions of a company. This department has some key roles and responsibilities, including accounts receivable, accounts payable, payroll, financial reporting, and maintaining financial controls.

Each department has various sub-divisions where each division in the department performs their particular tasks assigned for providing good services to the customers.

As a part of your internship , you will be working as a Software Developer intern as a part of our the Development Team , which comprises of 32 people.

CHAPTER 3

ECOMMERCE WEBSITE USING PYTHON AND D JANGO

To create a Health Care app that uses Django as backend. Django provides a Python Web framework based web framework that allows rapid development and clean, pragmatic design.

Django is a Python-based web framework that allows you to quickly create efficient web applications. It is also called batteries included framework because Django provides built-in features for everything including Django Admin Interface, default database – SQLlite3, etc. When you're building a website, you always need a similar set of components: a way to handle user authentication (signing up, signing in, signing out), a management panel for your website, forms, a way to upload files, etc. Django gives you ready-made components to use and that too for rapid development.

1. It's very easy to switch database in Django framework.
2. It has built-in admin interface which makes easy to work with it.
3. Django is fully functional framework that requires nothing else.
4. It has thousands of additional packages available.
5. It is very scalable.

Django is used in many popular sites like as: Disqus, Instagram, Knight Foundation, MacArthur Foundation, Mozilla, National Geographic etc. There are more than 5k online sites based on the Django framework

Sites like Hot Frameworks assess the popularity of a framework by counting the number of GitHub projects and Stack Overflow questions for each platform, here Django is in 6th position. Web frameworks often refer to themselves as "opinionated" or "un-opinionated" based on opinions about the right way to handle any particular task. Django is somewhat opinionated, hence delivers the in both worlds (opinionated & un-opinionated).

3.1 Background

Before we begin a new system it is important to study the system that will be improved or replaced (if there is one). We need to analyze how this system uses software, network and the people resources to convert data resources, such as transaction data, into information products, such as reports and displays. Thus we should document how the information system activities of input, processing, output, storage and control are accomplished.

3.2 Problem of Existing System

1. USER INTERFACE DESIGN: Cluttered or unintuitive user interfaces can hinder user experience and lead to difficulties in navigating the system. If users find it challenging to perform basic tasks, it can impact their overall satisfaction and productivity.

2. LIMITED COLLOBRATION EATURES: If the existing system lacks robust collaboration features, such as real-time editing, commenting, or file sharing, it may hinder effective communication and collaboration among users. A modern Health Care system should support seamless teamwork and information sharing.

3. SECURITY CONCERNS: Inadequate security measures could expose sensitive information to unauthorized access or data breaches. Users need assurance that their personal and professional data stored in the Health Care system is secure and protected from potential threats..

4. INTEGRATION ISSUES: The system might not integrate well with other essential tools or platforms that users rely on. Seamless integration with email, calendars, and other productivity tools is crucial for ensuring a streamlined workflow and avoiding redundant data entry..

5. LIMITED MOBILE AND ACCESSIBILITY If the Health Care system is not accessible across various devices and lacks a mobile-friendly interface, it may restrict users' ability to update or access their diaries on the go. In today's mobile-driven environment, accessibility is a key factor.

6. DATA BACKUP AND RECOVERY Inadequate or infrequent data backup mechanisms can lead to the loss of crucial information in case of system failures, crashes, or accidental deletions. A robust backup and recovery system should be in place to prevent data loss..

CHAPTER 4

SYSTEM REQUIREMENT SPECIFICATION

The software and hardware requirements are very important to be generally required to the system and work is being done in accordance to the matter for designing a particular computer architecture, the power of central processing unit is a fundamental requirement for the computer, to be used in a very alternatively manner it's important to work in an orderly manner that can be generally categorized and worked with increasing demand for high processing power and resources of attest versions with increasing over a period of time.

4.1 Hardware components

- CPU configuration
    - AMD processors 4000+ series
    - RAM 1 GB DDR
- Monitor
    - -17" color
- Operating System
    - Windows OS

4.2 Software tools

- Python 3
    - PyCharm
    - Django Module

CHAPTER 5

SYSTEM DESIGN

5.1 Proposed System:

Before we begin a new system it is important to study the system that will be improved or replaced (if there is one). We need to analyze how this system uses hardware, software, network and the people resources to convert data resources, such as transaction data, into information products, such as reports and displays. Thus we should document how the information system activities of input, processing, output, storage and control are accomplished.

The prime objective of an HealthCare Management web application is to provide users with a digital platform that efficiently organizes and manages their daily schedules, tasks, and personal or professional commitments. This application aims to seamlessly replace traditional paper diaries by offering a user-friendly, accessible, and feature-rich interface. The key focus is on enhancing productivity, time management, and collaboration among users. The prime objective of an HealthCare management web application is to revolutionize and simplify the way individual organize and manage their daily lives.

Software design sits at the technical kernel of the software engineering process and is applied regardless of the development paradigm and area of application. Design is the first step in the development phase for any engineered product or system. The designer's goal is to produce a model or representation of an entity that will later be built. Beginning, once system requirement have been specified and analyzed, system design is the first of the three technical activities -design, code and test that is required to build and verify software.

The importance can be stated with a single word "Quality". Design is the place where quality is fostered in software development. Design provides us with representations of software that can assess for quality. Design is the only way that we can accurately translate a customer's view into a finished software product or system. Software design serves as a foundation for all the software engineering steps that follow. Without a strong design we risk building an unstable system – one that will be difficult to test, one whose quality cannot be assessed until the last stage.

During design, progressive refinement of data structure, program structure, and procedural details are developed reviewed and documented. System design can be viewed from either technical or project management perspective. From the technical point of view, design is comprised of four activities – architectural design, data structure design, interface design and procedural design.

Django is a Python-based web framework which allows you to quickly create web application without all of the installation or dependency problems that you normally will find with other frameworks. When you're building a website, you always need a similar set of components: a way to handle user authentication (signing up, signing in, signing out), a management panel for your website, forms, a way to upload files, etc. Django gives you ready-made components to use.

5.2 FEASIBILITY STUDY

All projects are feasible if they have unlimited resources and infinite time. But the development of software is plagued by the scarcity of resources and difficult delivery rates. It is necessary and prudent to evaluate the feasibility of a project at the earliest possible time. The three considerations are involved in the feasibility analysis.

- **Economic Feasibility:**

This procedure is to determine the benefits and savings that are expected from a candidate system and compare with cost. If benefits outweigh cost, then the decision is made to design and implement the system.

Otherwise, further justification or alterations in proposed systems that have to be made if it is having a change of being approved. This is an ongoing effort that improves any feasibility costs spent on this project.

- **Technical Feasibility:**

Technical feasibility centers on the existing mobile system (hardware, software…etc) and to what extent it can support the proposed addition if the budget is a serious constraint, then the project is judged not feasible. The technical feasibilities are important role in my project because here I am using android operating system.

- **Operational Feasibility:**

People are inherently resistant to change and mobiles have been known to facilitate change. In my project a technical people require to configure the software and technical background is necessary to work on the sensors.

Performance is measured in terms of the output provided by the application.

Requirement specification plays an important part in the analysis of a system. Only when the requirement specifications are properly given, it is possible to design a system, which will fit into required environment. It rests largely in the part of the users of the existing system to give the requirement specifications because they are the people who finally use the system. This is because the requirements have to be known during the initial stages so that the system can be designed according to those requirements. It is very difficult to change the system once it has been designed and on the other hand designing a system, which does not cater to the requirements of the user, is of no use.

The requirement specification for any system can be broadly stated as given below:

- The system should be able to interface with the existing system
- The system should be accurate
- The system should be better than the existing system

5.3 Characteristics Of Proposed System

Django is based on **MVT (Model-View-Template)** architecture. MVT is a software design pattern for developing a web application.

MVT Structure has the following three parts –

Model: Model is going to act as the interface of your data. It is responsible for maintaining data. It is the logical data structure behind the entire application and is represented by a database (generally relational databases such as MySql, Postgres). To check more, visit – Django Models

View: The View is the user interface — what you see in your browser when you render a website. It is represented by HTML/CSS/Javascript and Jinja files. To check more, visit – Django Views.

Template: A template consists of static parts of the desired HTML output as well as some special syntax describing how dynamic content will be inserted. To check more, visit – Django Templates

A Django Project when initialised contains basic files by default such as manage.py, view.py, etc. A simple project structure is enough to create a single page application. Here are the major files and there explanations. Inside the geeks_site folder (project folder) there will be following files-

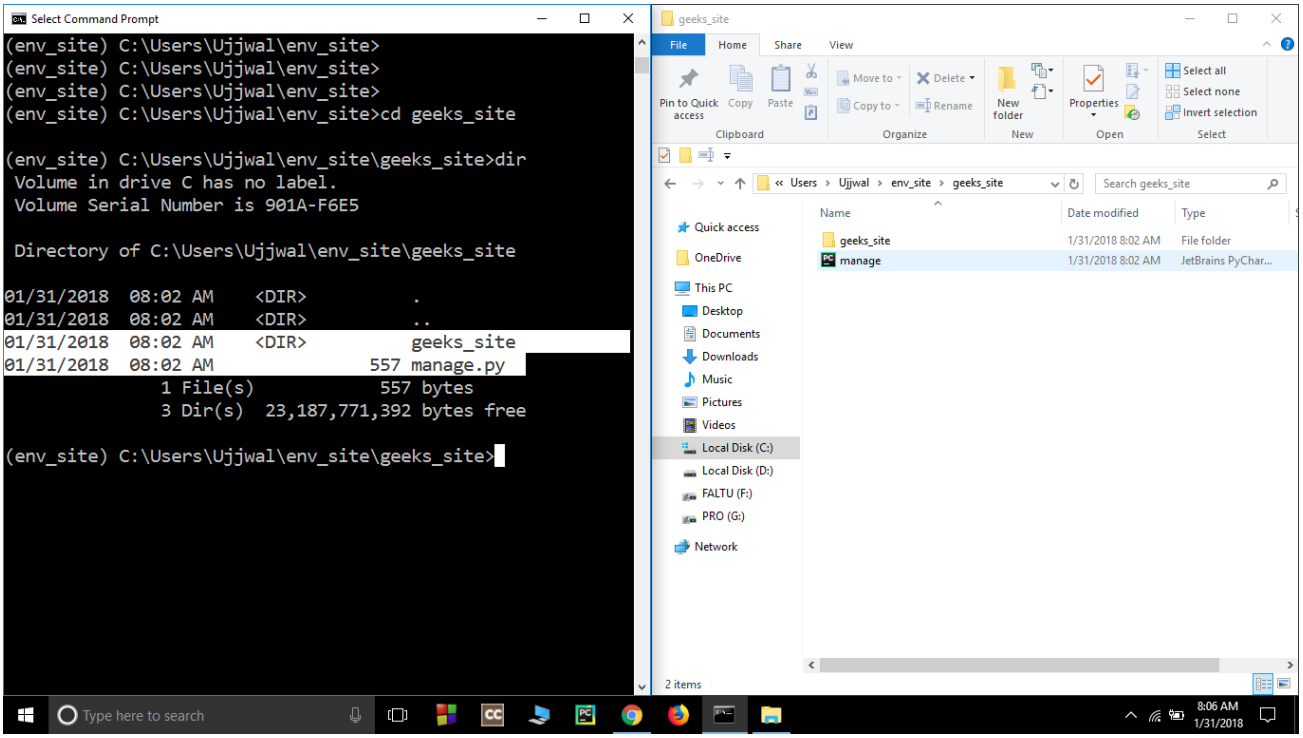


Figure 5.1:Install python file

manage.py-This file is used to interact with your project via the command line(start the server, sync the database… etc). For getting the full list of command that can be executed by manage.py type this code in the command window-

```
$ python manage.py help
```

folder (geeks_site) – This folder contains all the packages of your project. Initially it contains four files –

- **init_.py –** It is python package.
- **settings.py –** As the name indicates it contains all the website settings. In this file we register any applications we create, the location of our static files, database configuration details, etc.
- **urls.py –** In this file we store all links of the project and functions to call.
- **wsgi.py –** This file is used in deploying the project in WSGI. It is used to help your Django application communicate with the web server.

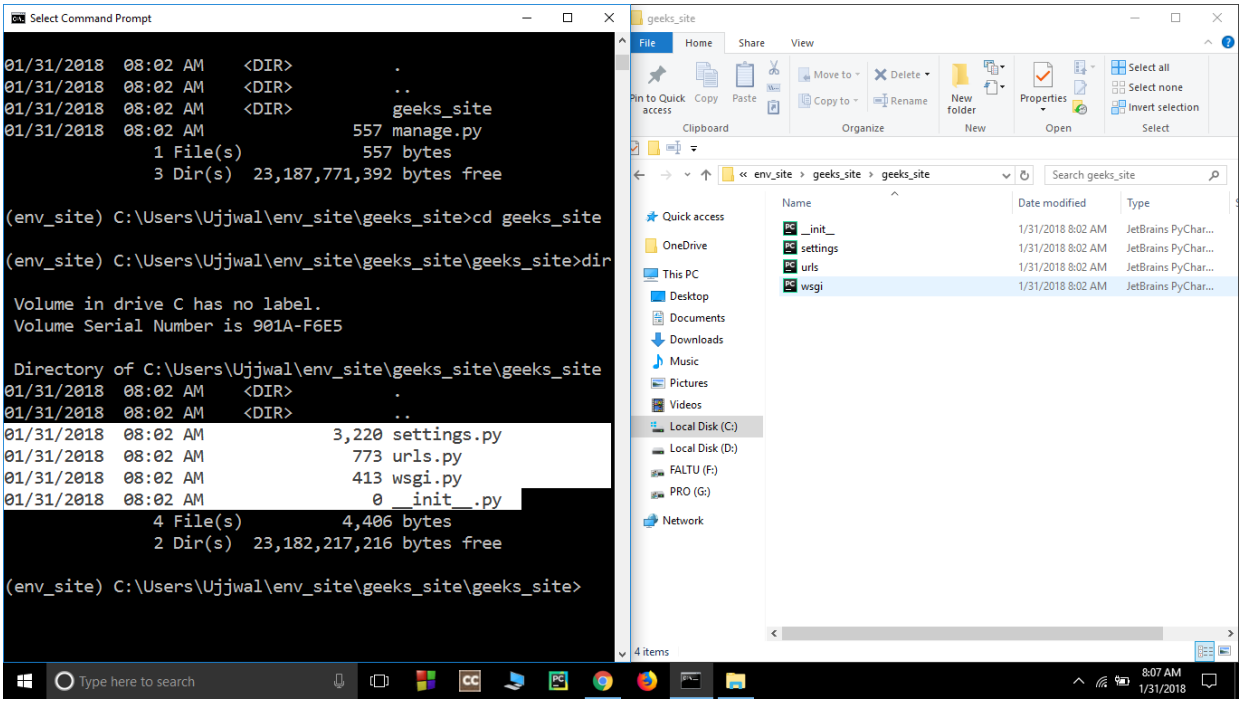


Figure 5.2 : Installing Django

5.4 Implementation

Lets' check how to create a basic project using Django after you have installed it in your pc.

- To initiate a project of Django on Your PC, open Terminal and Enter the following command

```
django-admin startproject projectName
```

- A New Folder with name projectName will be created. To enter in the project using terminal enter command

```
cd projectName
```

Now run,

```
Python manage.py runserver
```

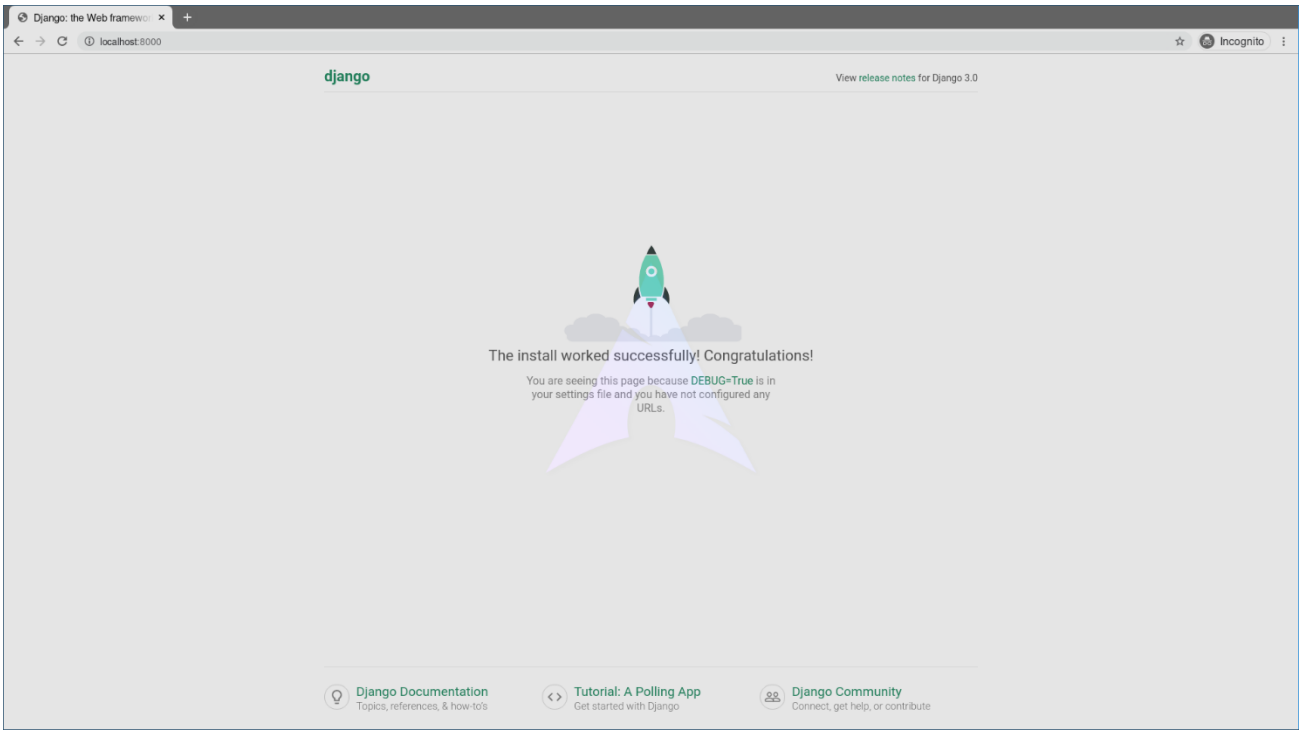


Figure 5.3 : Launching app

Creating an App

Django is famous for its unique and fully managed app structure. For every functionality, an app can be created like a completely independent module. This article will take you through how to create a basic app and add functionalities using that app.

- To create a basic app in your Django project you need to go to directory containing manage.py and from there enter the command:

  ```
  python manage.py startapp projectApp
  ```

  Now you can see your directory structure as under:

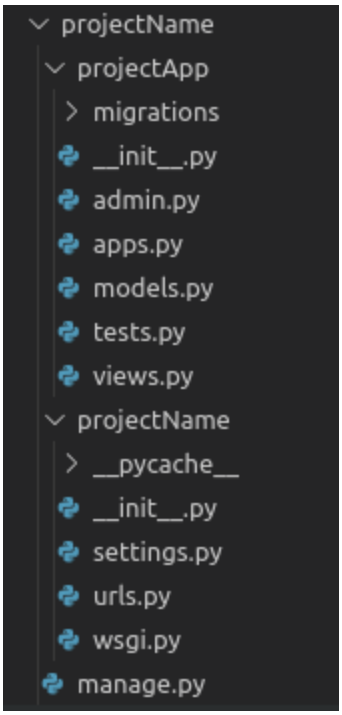


Figure 5.4 : Python file dashboard

- To consider the app in your project you need to specify your project name in INSTALLED_APPS list as follows in settings.py:

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

- So, we have finally created an app but to render the app using urls we need to include the app in our main project so that urls redirected to that app can be rendered. Let us explore it. Move to projectName-> projectName -> urls.py and add below code in the header

```
from django.urls import include
```

Now in the list of URL patterns, you need to specify app name for including your app urls. Here is the code for it –

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

urlpatterns = [
    path('admin/', admin.site.urls),
    # Enter the app name in following syntax for this to work
    path('', include("projectApp.urls")),
]
```

- Now You can use the default MVT model to create URLs, models, views, etc. in your app and they will be automatically included in your main project.

Features of Django

Versatility of Django

Django can build almost any type of website. It can also work with any client-side framework and can deliver content in any format such as HTML, JSON, XML etc. Some sites which can be built using Django are wikis, social networks, new sites etc.

Security

Since Django framework is made for making web development easy, it has been engineered in such a way that it automatically do the right things to protect the website. For example, In the Django framework instead of putting a password in cookies, the hashed password is stored in it so that it can't be fetched easily by hackers.

Scalability

Django web nodes have no stored state, they scale horizontally – just fire up more of then when you need them. Being able to do this is the essence of good scalability. Instagram and Disqus are two Django based products that have millions of active users, this is taken as an example of the scalability of Django.

Portability

All the codes of the Django framework are written in Python, which runs on many platforms. Which leads to run Django too in many platforms such as Linux, Windows and Mac OS.

Installation of Django

- Install python3 if not installed in your system (according to configuration of your system and OS). Try to download the latest version of python it's python3.6.4 this time.

Note- Installation of Django in Linux and Mac is similar, here I am showing it in windows for Linux and mac just open terminal in place of command prompt and go through the following commands.

- **Install pip-** Open command prompt and enter following command-

```
python -m pip install -U pip
```

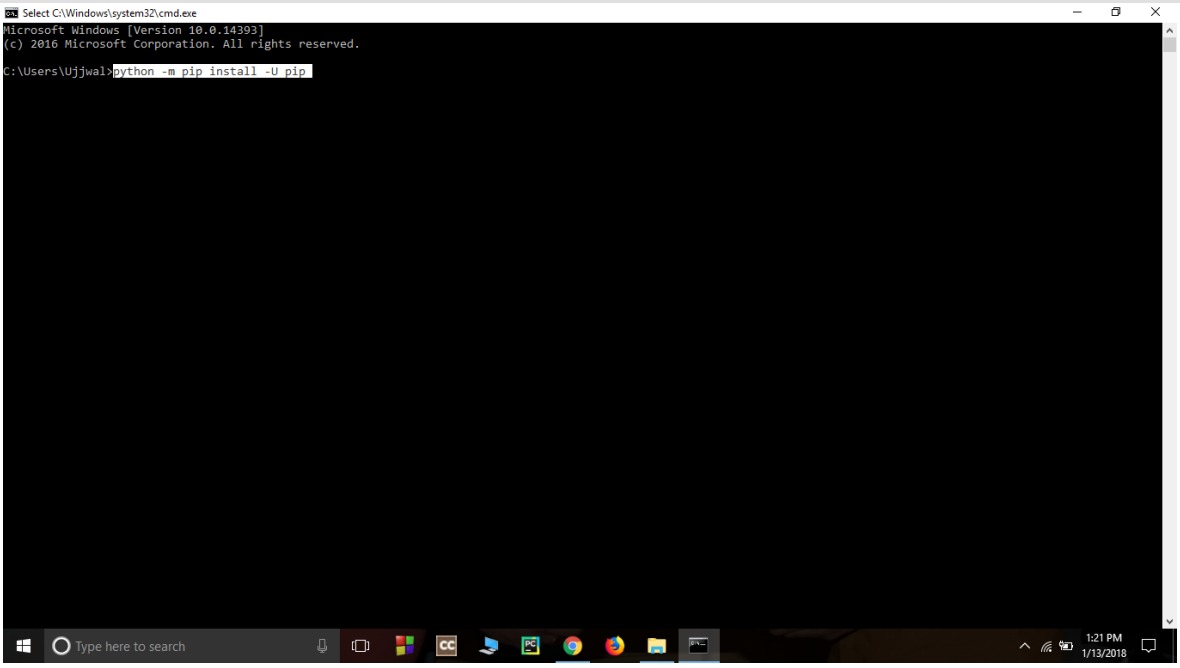
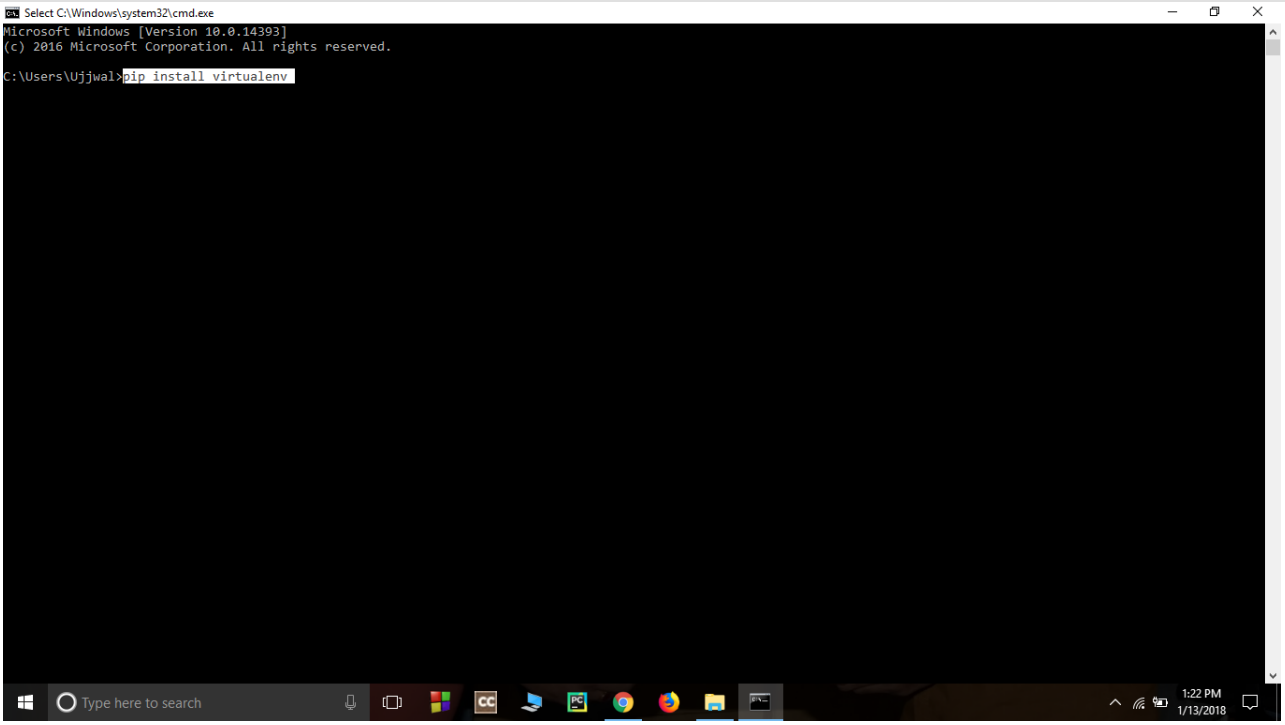


Figure 5.4 : Pip install

- **Install virtual environment-** Enter following command in cmd-

```
pip install virtualenv
```

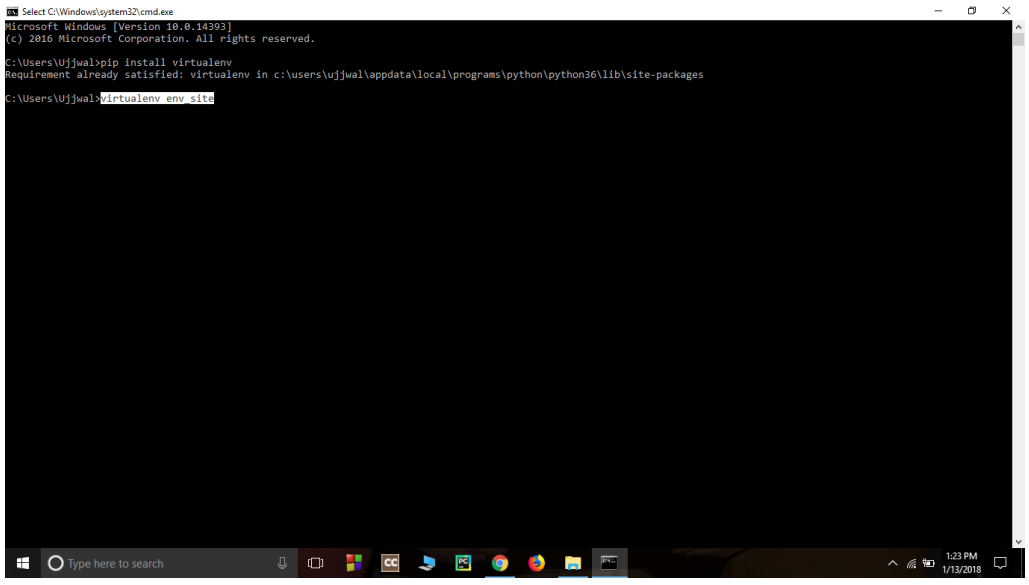


- **Set Virtual environment-** Setting up the virtual environment will allow you to edit the dependency which generally your system wouldn't allow.

  Follow these steps to set up a virtual environment-

  1. Create a virtual environment by giving this command in cmd-

     ```
     virtualenv env_site
     ```



  1. Change directory to env_site by this command-

```
cd env_site
```

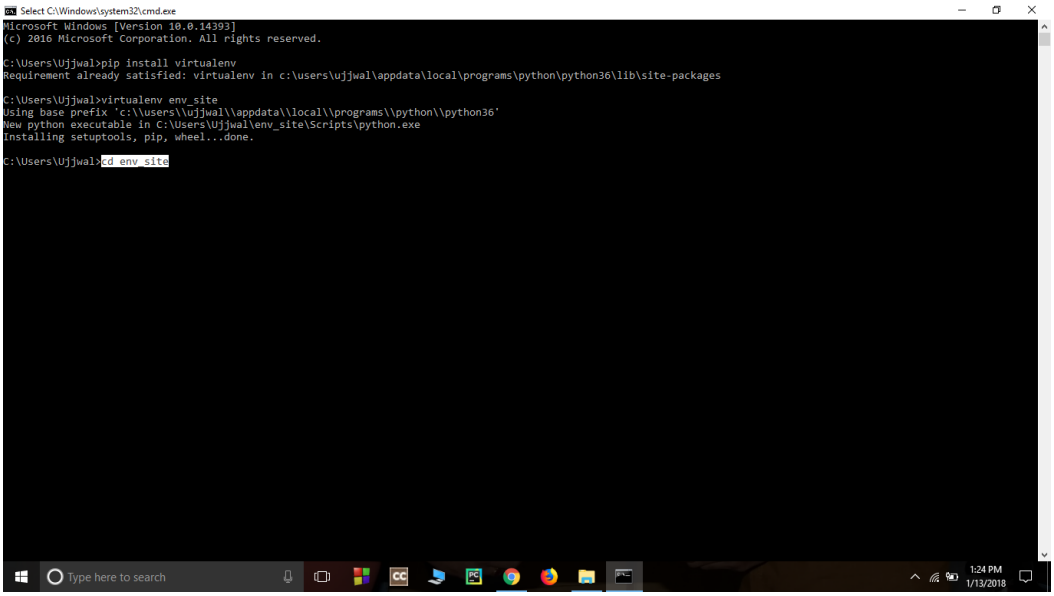


Figure 5.5 : Adding directory

2. Go to Script directory inside env_site and activate virtual environment-

```
cd Script

activate
```

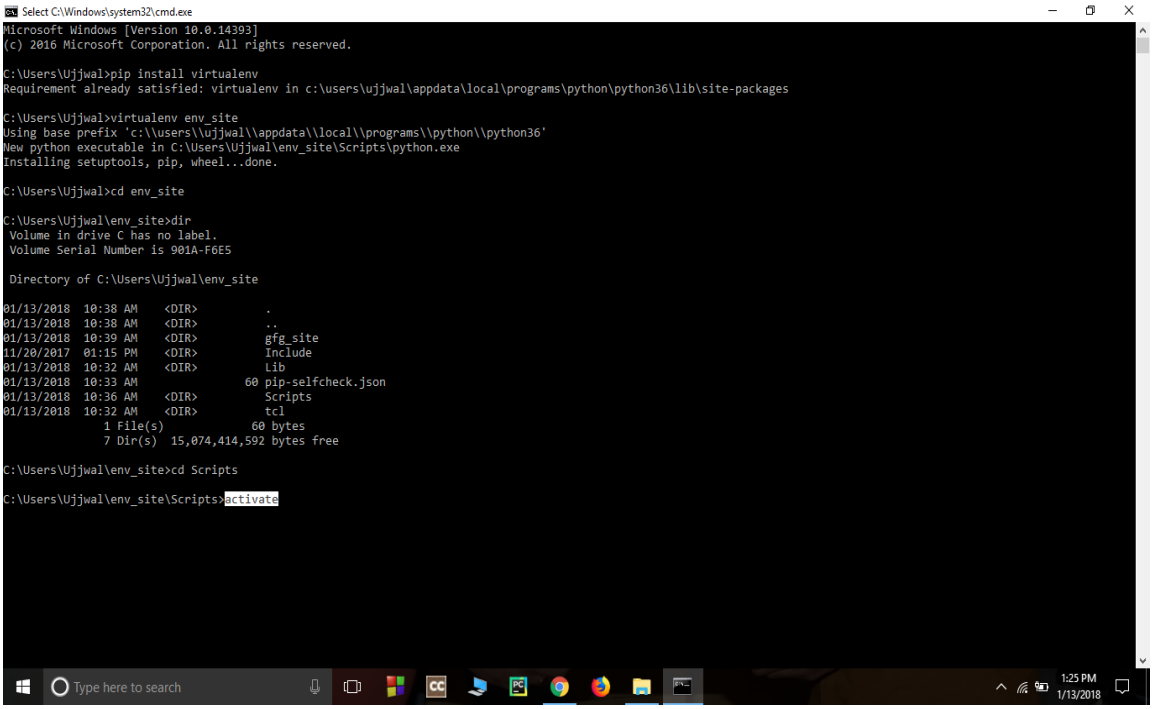
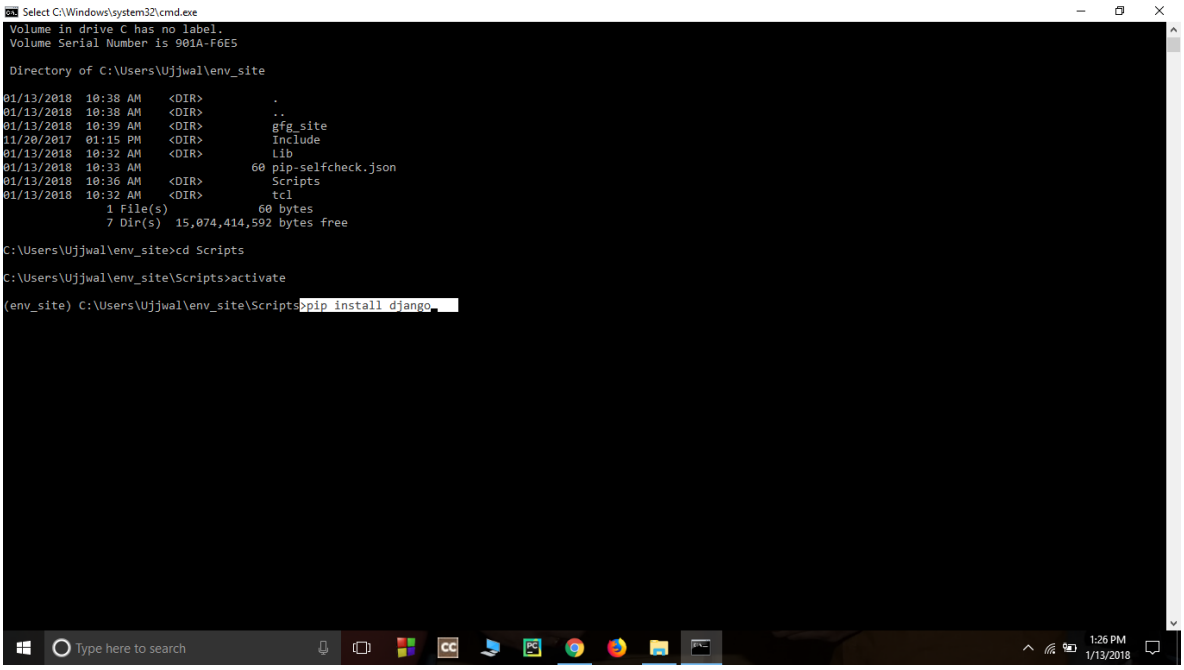


Figure 5.6 : Installing Django

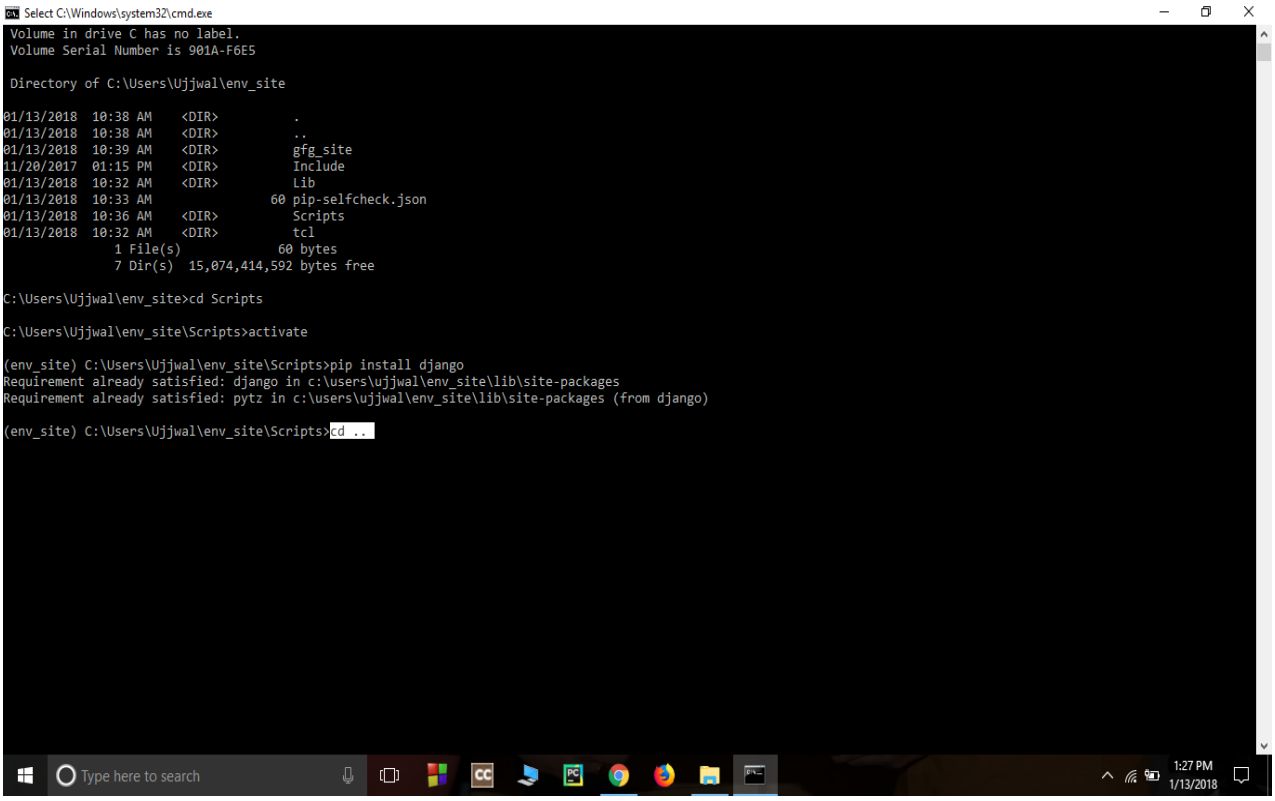
- **Install Django-** Install django by giving following command-

```
pip install django
```



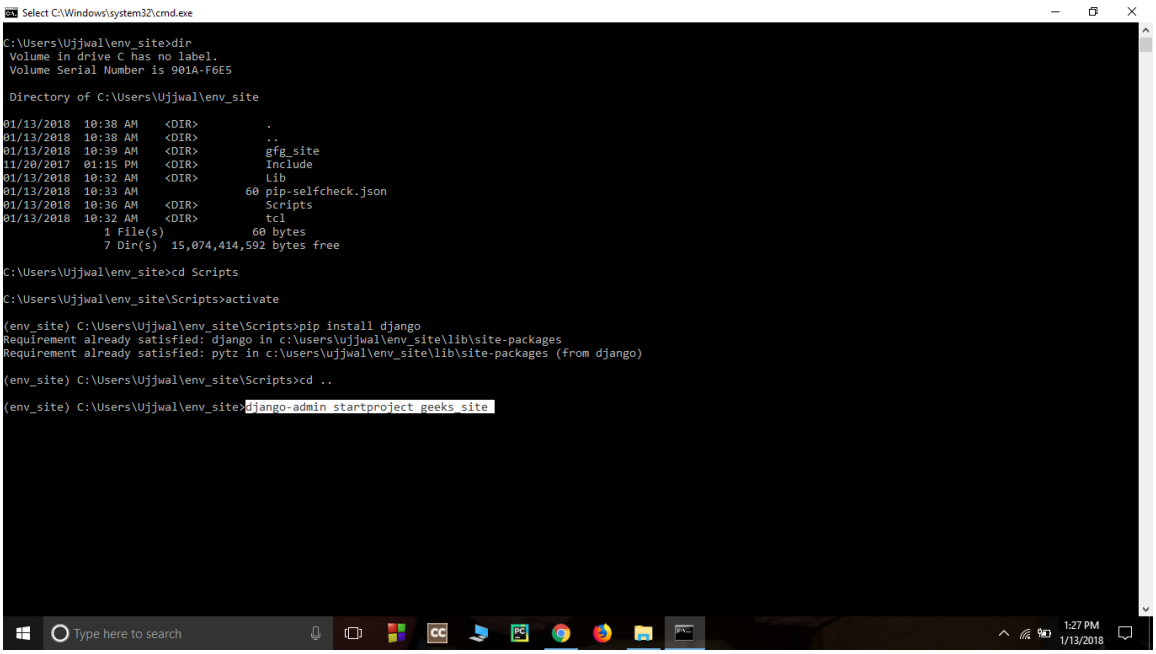
- Return to the env_site directory-

```
cd ..
```



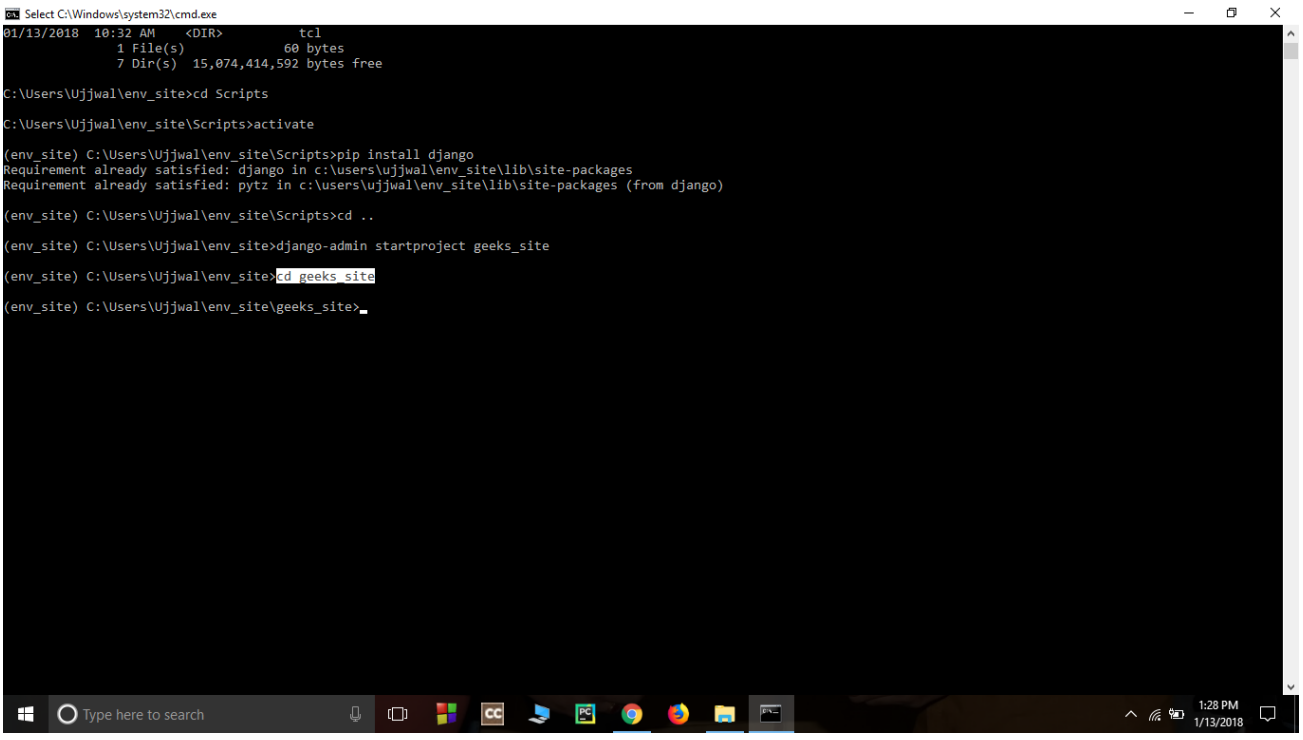
- Start a project by following command-

```
django-admin startproject geeks_site
```



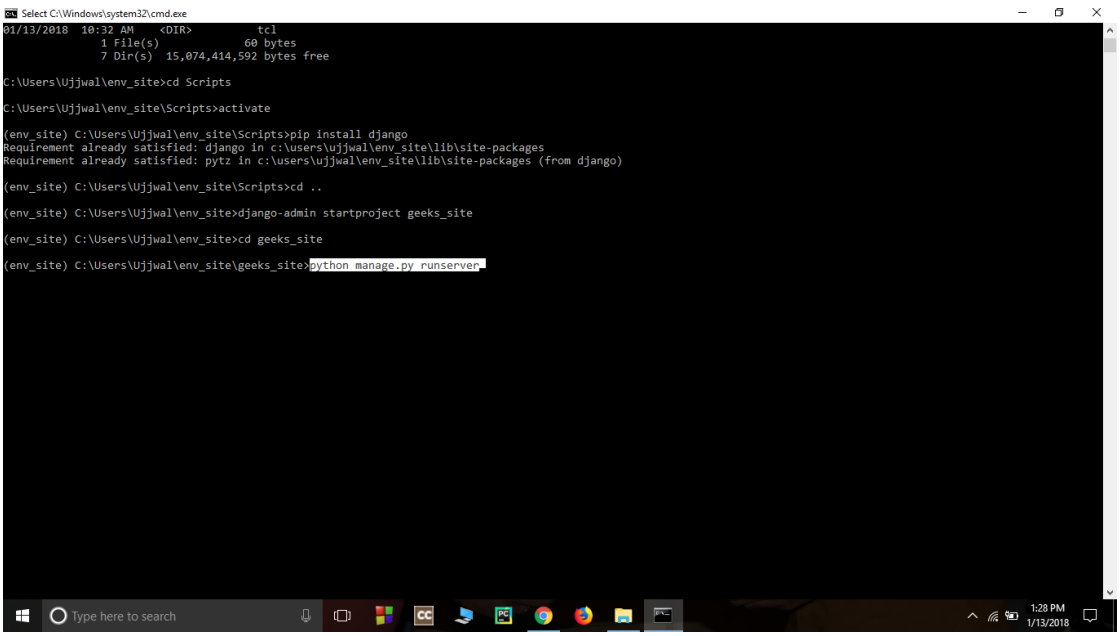
- Change directory to geeks_site

```
cd geeks_site
```

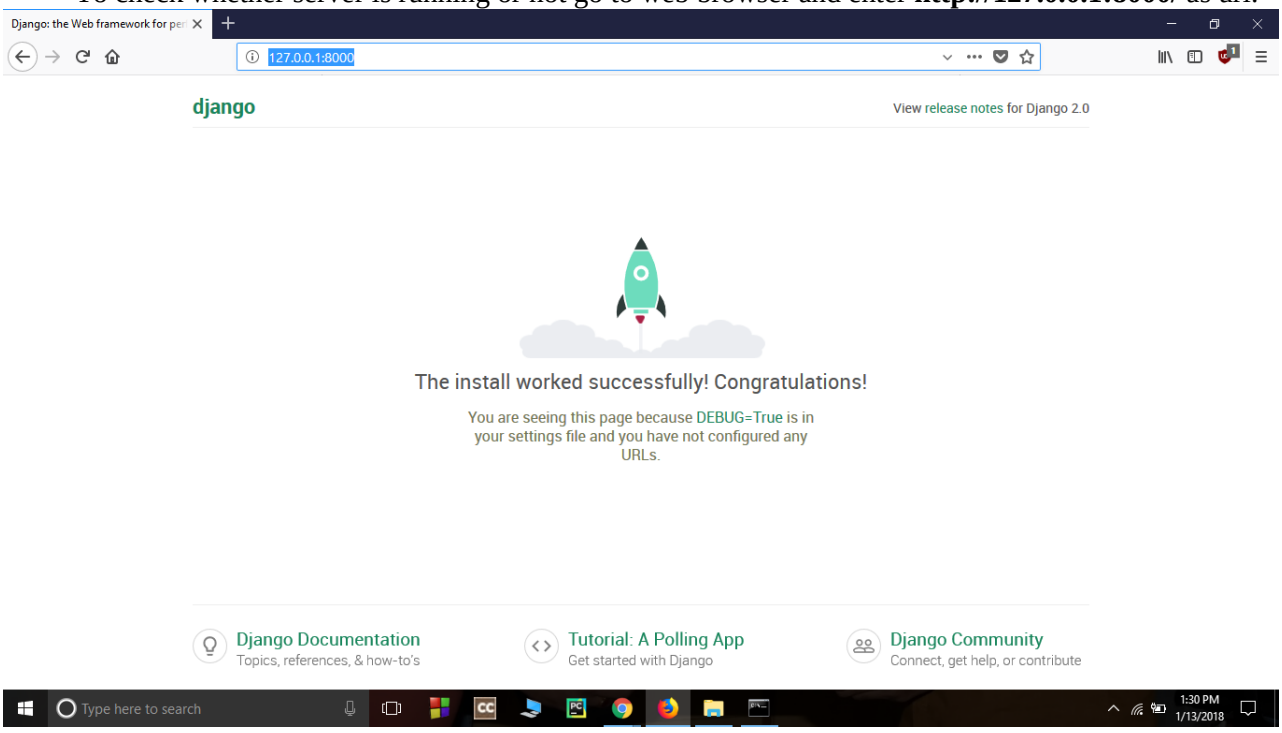


- **Start the server-** Start the server by typing following command in cmd-

```
python manage.py runserver
```



- To check whether server is running or not go to web browser and enter **http://127.0.0.1:8000/** as url.



Benefits of Django Architecture –

- Rapid Development
- Loosely Coupled
- Ease of Modification

Drawbacks of MVC Architecture –

- Too much load on Model Component
- Development Complexity is high

- Two components are controlling View

Modules

This system has two main interfaces one for user's orders and other is admin panel. Beyond this we have other interfaces which can be discussed as below:

- **The Admin Dashboard**
- **Creating the App**
- **Adding the Template and View**
- **Using the HealthCare API**
- **Displaying the Data in the Template**
- **Creating the Form**

To create a Weather app that uses Django as backend. Django provides a Python Web framework based web framework that allows rapid development and clean, pragmatic design.

Basic Setup –

Change directory to Healthcare –

```
cd HealthCare management
```

Start the server –

```
python manage.py runserver
```

To check whether the server is running or not go to a web browser and enter http://127.0.0.1:8000/ as URL. Now, you can stop the server by pressing

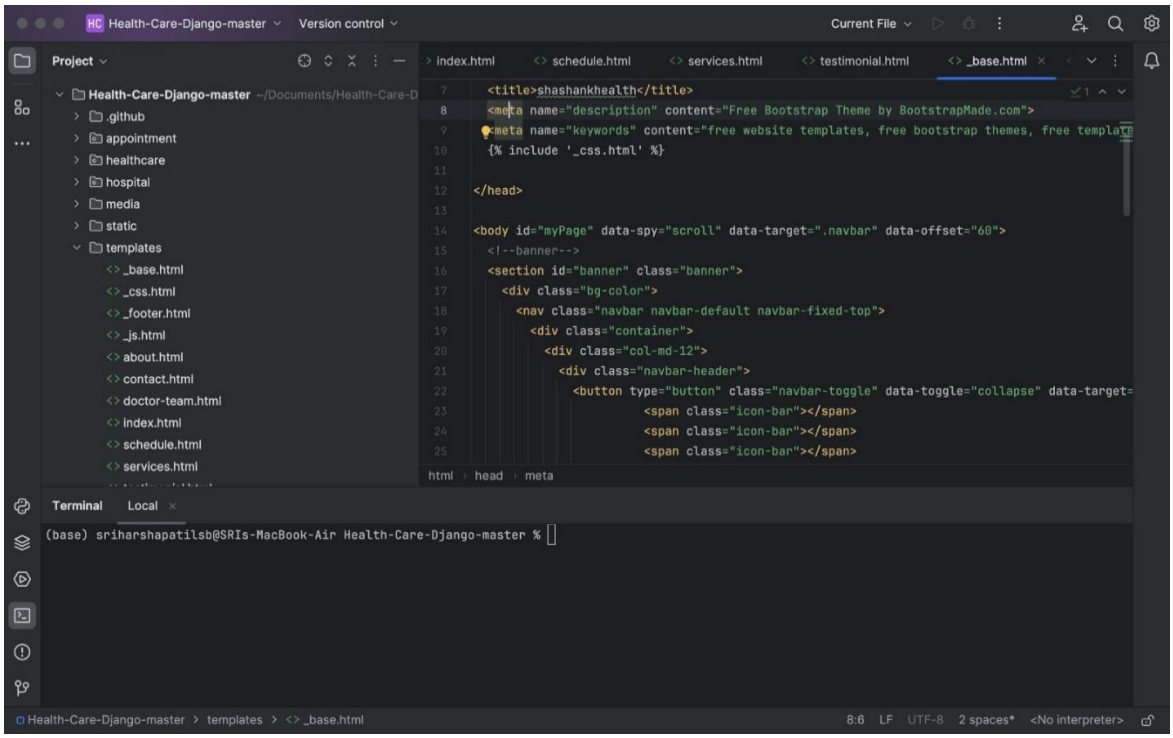
```
ctrl-c

python manage.py startapp main
```

Goto main/ folder by doing :

```
cd main
```

and create a folder with index.html file: templates/main/index.html

Open the project folder using a text editor. The directory structure should look like this :



- Now add main app in settings.py

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

    'crispy_forms',
    'crispy_tailwind',
    'hospital.apps.HospitalConfig',
    'appointment.apps.AppointmentConfig',

]
```

Now that we have our template created, let’s create a view and URL combination so we can actually see this in our app.

Views in Django are either functions or classes. In our case since we’re creating a simple view, we’ll create a function. Add this function to your views.py:

from django.shortcuts import render

def index(request):

    return render(request, 'weather/index.html') #returns the index.html template

View index because it will be at the index of our app, which is the root URL. To have the template render, we return request, which is necessary for the render function, and the name of the template file we want to render, in this case MyDigitalNotes/index.html.

Let's add the URL that will send the request to this view. In the *urls.py* for the app, update the urlpatterns list.

```
from django.urls import path

from . import views

urlpatterns = [

    path('', views.index),  #the path for our index view

]
```

This allows us to reference the view we just created.

Django is going to match any URL without an endpoint and route it to the view function we created.

CHAPTER 6

TESTING

System testing is the stage of implementation, which is aimed at ensuring that the system works accurately and efficiently before live operation commences. Testing is vital to the success of the system. Testing is the process of executing a program with the explicit intention of finding errors that is making the program fail. The tester may analysts, programmer or a specialist trained for software testing, is actually trying to make the program fail. Analysts know that an effective testing program does not guarantee system reliability. Therefore reliability must be designed into the system.

Unit Testing

In unit testing we have to test the programs making up the system. For this reason unit testing is sometimes called as the Program testing. The software units in a system are modules and routines that are assembled and integrated to perform a specific function.

Unit testing focuses first on modules, independently of one another, to locate errors. This enables, to detect errors in coding and logic that are contained with in the module alone. Unit testing can be performed from the bottom up, starting with the lowest level modules and proceeding one at a time. Unit testing is done for each module in salon management. This ensures that the value we enter match with the data type and within the specified limits.

Integration Testing

Data can be lost across any interface, one module can have an adverse effect on another, sub functions when combined, may not produce the desired major functions. Integration testing is a systematic testing for conducting tests to uncover errors associated within the interface. The objective is to take unit tested modules and build a program structure. All the modules are combined and tested as a whole. Here correction is difficult because the vast expenses of the entire program complicate the isolation of causes. Thus in the integration testing step, all the errors are corrected for the next testing steps. In salon management each module is integrated and tested. This testing provides the assurance that the application is well integrated functional unit with smooth transition of data.

Validation Testing

At the culmination of integration testing, software is completely assembled as a package; interfacing

errors have been recovered and corrected and a final series of a software tests-validation tests begin.

Validation testing can be defined in many ways but a simple definition is that validation succeeds when the software functions in a manner that can be reasonably expected by the customer.In validation testing if user wants to enter the numeric value he can only enter the numeric value not the text value. For e.g.: in phone number field user can only enter numeric value to it. The system is user friendly with user guide and messages to explain further procedures. An attempt has been made to perfect the process by incorporating validation at each level.

Table 1: TEST CASES TO INPUT THE CAFÉ BILLING

TEST CASE	**1**
DISCRIPTION	**ONLINE EXAMINATION APP DISPLAY**
INPUT	**SELECT THE EXAM**
EXPECTED OUTPUT	**ONLINE EXAM MARKS DISPLAY**
ACTUAL OUTPUT	**SAME AS EXPECTED**
RESULT AND REMARK	**PASSED**

CHAPTER 7

RESULTS

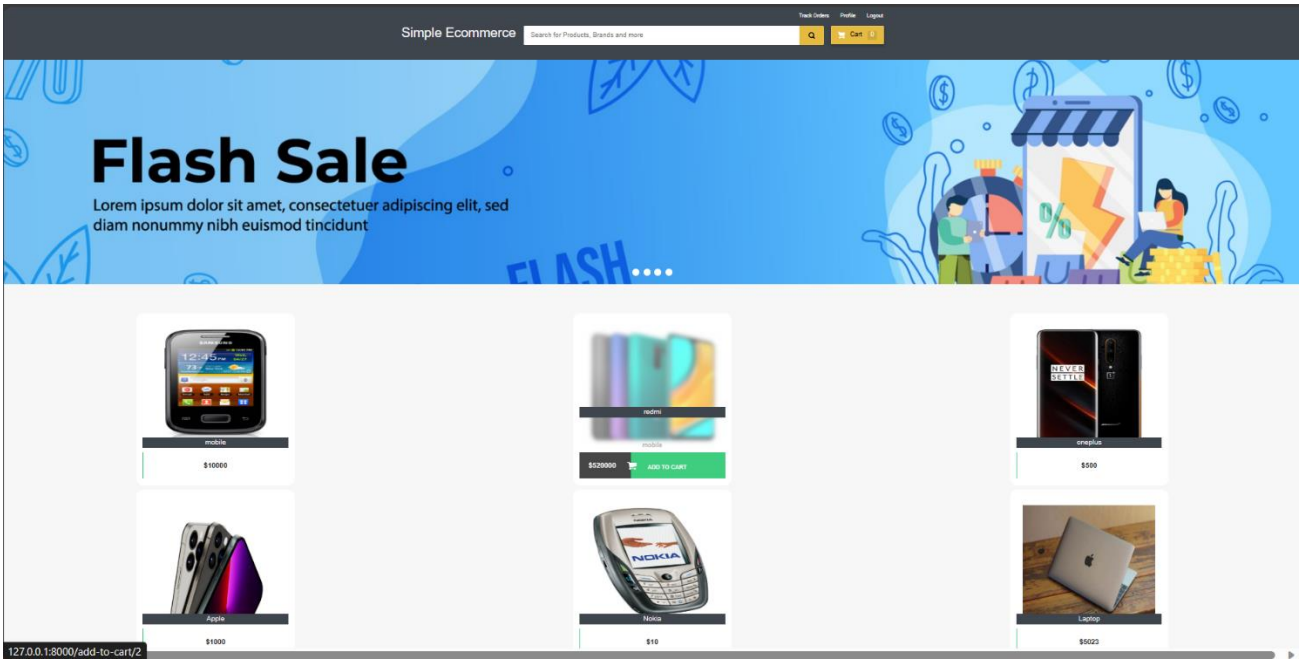


Figure 7.1 : Home Page of the website

The home page figure represents the digital storefront, serving as the gateway to the Ecommerce platform, showcasing featured products, categories, and promotions, aimed at captivating and guiding users into the shopping experience with a visually engaging and intuitive interface

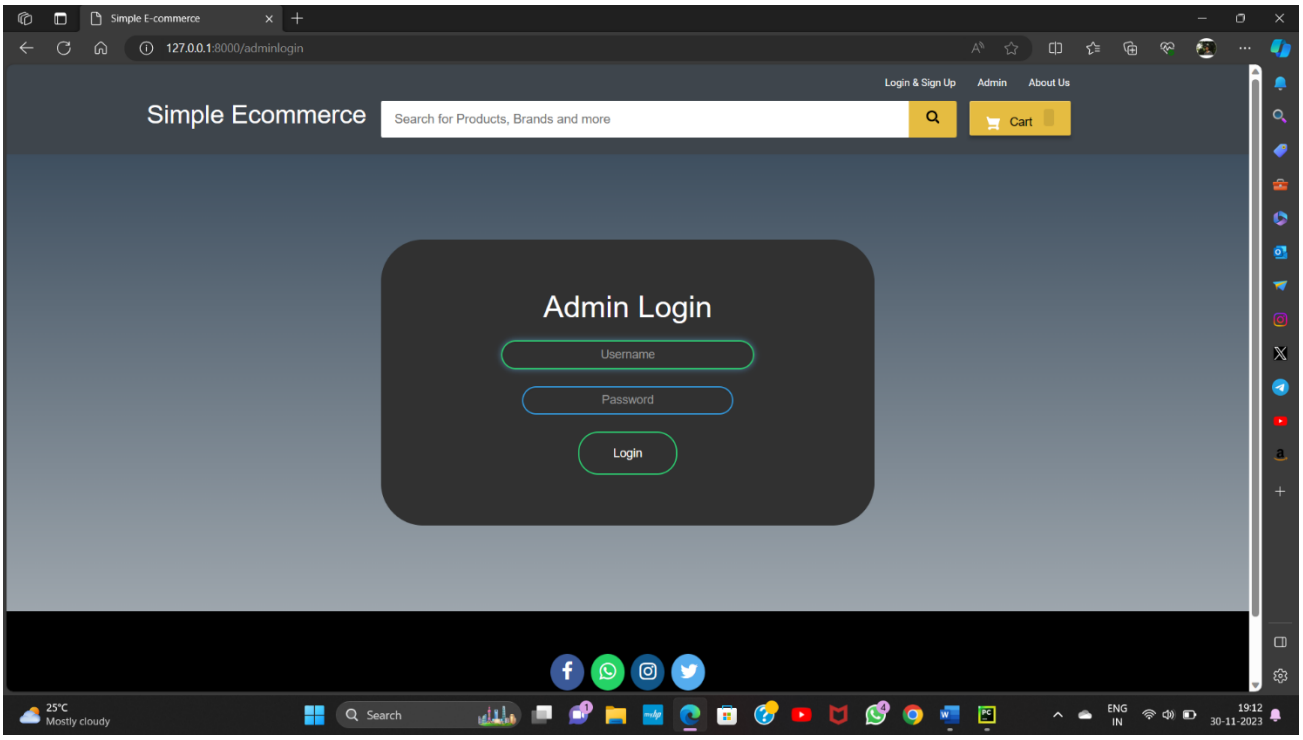


Figure 7.2 : Admin login and Signup

The login and signup figure in the Ecommerce website project depicts essential gateways for users, enabling secure access for existing customers and a seamless registration process for new users, ensuring personalized experiences and secure transactions.

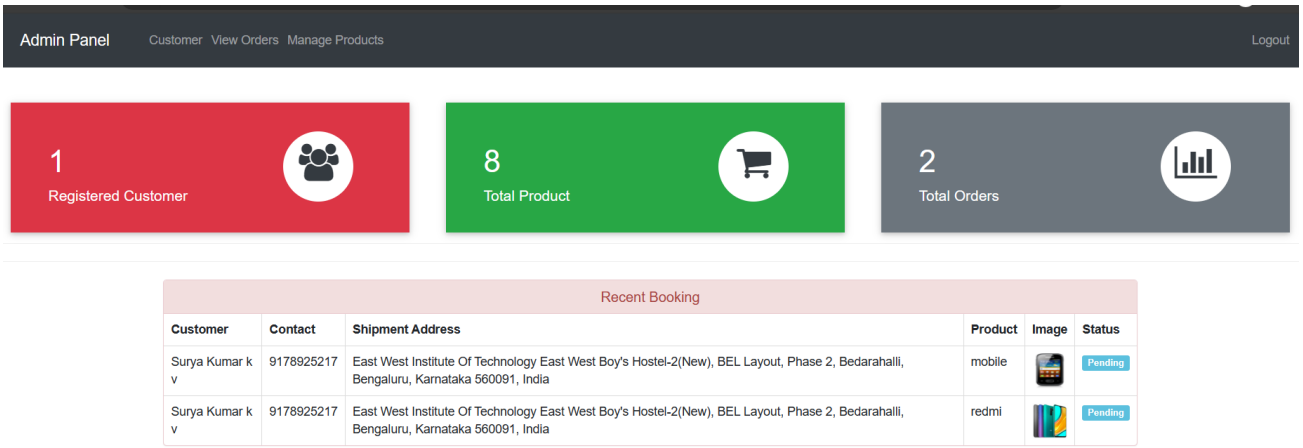


Figure 7.3: Admin Panel

The Admin panel showcasing order details serves as a centralized hub for managing and tracking customer purchases, providing comprehensive insights into transactional data, order statuses, and inventory management, enabling efficient decision-making and streamlined operations for the Ecommerce platform.

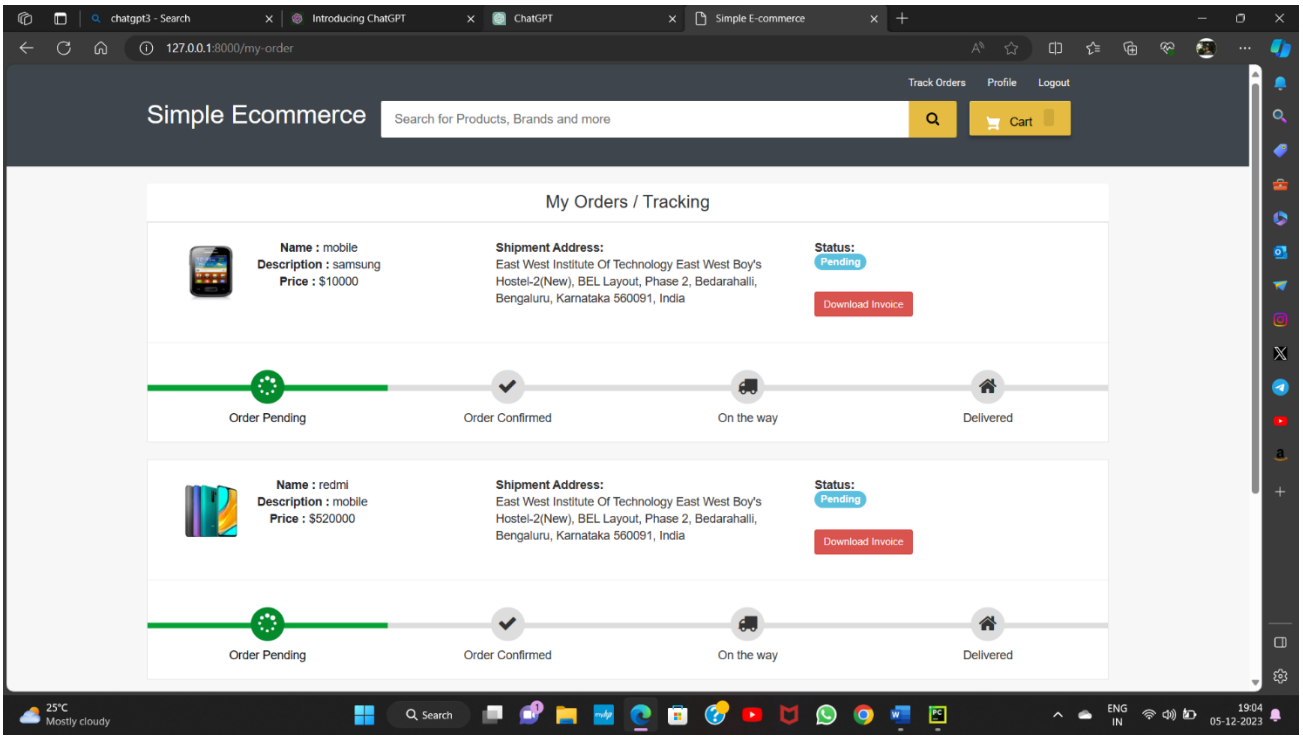


Figure 7.4 : User panel of order status

The User panel displaying order details and order status in the Ecommerce project provides customers with a comprehensive overview of their purchases, including current status updates, enhancing transparency and enabling efficient tracking of their transactions for a streamlined shopping experience.

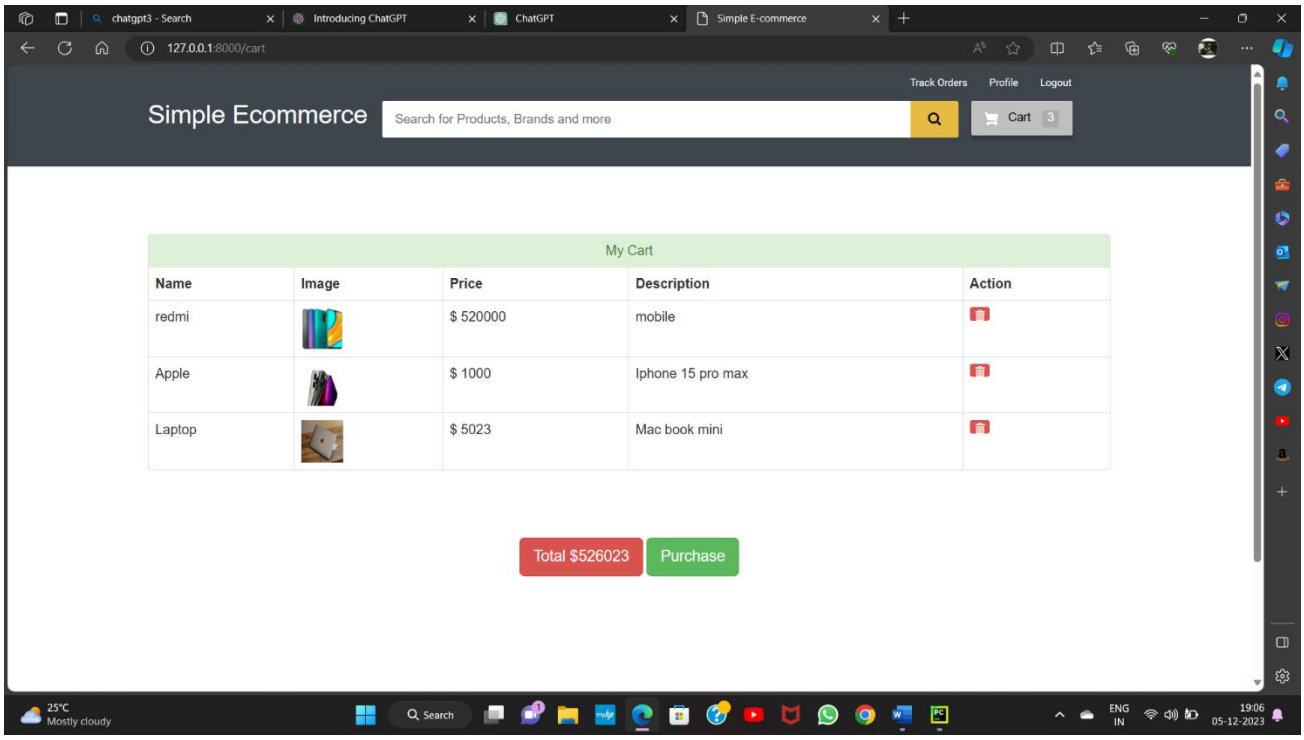


Figure 7.4 : User cart consisting of products

The User panel featuring the Cart in the Ecommerce website project serves as a central hub for customers to manage selected items, review purchases, and proceed to checkout, streamlining the shopping experience by providing a convenient and organized way to track and finalize their orders.

CONCLUSION

In conclusion, the development of the Ecommerce website using Django and Python has resulted in a robust, user-centric platform that facilitates seamless transactions. Leveraging Django's framework and Python's versatility, the project successfully implemented crucial features such as user authentication, product management, and secure payment gateways, ensuring a secure and engaging shopping experience. The project's emphasis on responsive UI/UX elements aimed to enhance customer satisfaction, while overcoming challenges such as database optimization and security measures showcased the project team's problem-solving skills. Looking ahead, potential enhancements in AI-driven recommendations, scalability, and feature expansion promise sustained growth and continued success in the dynamic Ecommerce landscape. In conclusion, web development is a vibrant and ever-evolving domain that has witnessed remarkable transformations over the years. From the foundational elements of HTML and CSS to the intricate functionalities powered by JavaScript and diverse frameworks, the journey is a testament to technological advancement. The emphasis on responsive design, user-centric experiences, and cross-browser compatibility has become paramount in the contemporary web landscape. As we look ahead, the integration of cutting-edge technologies such as artificial intelligence and virtual reality is poised to redefine the boundaries of web development. Collaboration and open-source contributions remain integral to the community's growth, fostering innovation and sharing of best practices.

FUTURE ENCHANCEMENT

The future landscape of web development is poised for dynamic enhancements, driven by technological evolution and user-centric demands. One notable trend is the pervasive integration of artificial intelligence (AI) into web applications. AI algorithms will play a pivotal role in personalizing user experiences, predicting user behavior, and automating routine tasks, thereby elevating the overall efficiency and engagement of websites. Additionally, Progressive Web Apps (PWAs) are set to become more mainstream, providing users with faster, more reliable, and app-like experiences directly through web browsers. The seamless convergence of web development and Augmented Reality (AR) and Virtual Reality (VR) technologies is on the horizon, promising immersive and interactive web experiences that transcend traditional boundaries.

REFERENCES

PYCHARM TEXT EDITOR(EDITOR):

https://www.pycharm.com

XAMPP:

https://www.apachefriends.org/

SQL:

https://www.w3schools.com/sql/default.asp