VISVESVARAYA TECHNOLOGICAL UNIVERSITY

Jnana Sangama, Belagavi - 590018

Internship Report
on

"PYTHON DEVELOPMENT WITH DJANGO"

Submitted in partial fulfillment for the award of the degree of

BACHELOR OF ENGINEERING

in

INFORMATION SCIENCE & ENGINEERING

(*Accredited by NBA*)

by

Dhanush Acharya
4MT20IS007

Internship Carried out
at
JUMPWHERE

Internal Guide
Mr .Rajesh N Kamath
Senior Assistant Professor

External Guide
Mr.Mohammed Saqib
CXO
JumpWhere

DEPARTMENT OF INFORMATION SCIENCE & ENGINEERING
(*Accredited by NBA*)
MANGALORE INSTITUTE OF TECHNOLOGY & ENGINEERING
(*A Unit of Rajalaxmi Education Trust*®)
Autonomous Institute Affiliated to VTU, Belagavi, Approved by AICTE, New Delhi
Accredited by NAAC with A+ Grade, & ISO 9001: 2015 Certified Institution
BadagaMijar, Moodabidri-574225, Karnataka

2023-24

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CERTIFICATE

Certified that the Internship report entitled "**PYTHON DEVELOPMENT WITH DJANGO"** is a bonafide work carried out in the eighth semester by **DHANUSH ACHARYA** with USN: **4MT20IS007** in partial fulfillment for the award of degree of **Bachelor of Engineering** in **Information Science & Engineering** of the **Visvesvaraya Technological University, Belagavi** during the year **2023–24.** It is certified that all corrections/suggestions indicated for Internal Assessment have been incorporated in the report and deposited in the departmental library. The internship report has been approved as it satisfies the academic requirements in respect of internship work prescribed for the said degree.

Mr. Rajesh N Kamath	**Prof. Manjunath H.**	**Dr. Prashanth C M**
Internship Guide	**Head of the Department**	**Principal**

External Viva

External Viva	Name of the Examiners	Signature with Date
1.		
2.		

INTERNSHIP CERTIFICATE

JUMPWHERE

Internship Completion Letter

TO WHOMSOEVER IT MAY CONCERN

Name: Dhanush Acharya
USN No: 4MT20IS007
Department: Information Science
College: Mangalore Institute of Technology and Engineering

We officially affirm that **Dhanush Acharya** performed admirably and successfully completed a rigorous one-month internship programme with **JUMPWHERE** from **01-Sep-2023** to **3-Oct-2023,** leaving an everlasting impression on our organization.

Throughout the Internship program, Dhanush Acharya acquired in-depth knowledge of web application concepts, data structures and algorithms, database management systems (DBMS), and Python fundamentals.

Additionally, he has gained hands-on experience in the Django framework, showcasing proficiency in developing robust and scalable web applications. Notably, Dhanush Acharya has successfully completed real-time projects, including the creation of an HRMS for employees to generate resumes.

We wish him all the very best for his future career.

Yours Truly,

Mohammed Saqib

(Mohammed Saqib)
Founder
JUMPWHERE

ACKNOWLEDGEMENT

Thoughtful gratitude fills my heart, as I take a step back in time to thank people involved in successful completion of this task, without whose continuous guidance and support, it wouldn't have been possible for me to accomplish the same.

Special thanks to **JumpWhere** Company for providing invaluable internship opportunity which has been instrumental in enhancing my skills and knowledge.

Special thanks to our Internship Coordinator **Mr. Rajesh N Kamath**, Senior Assistant Professor, Department of Information Science & Engineering, for valuable and timely support.

Special thanks to **Prof. Manjunath H**, Head of Department of Information Science & Engineering for his coordination and support.

I am indebted to our Principal **Dr. Prashanth C M** , **Mangalore Institute of Technology & Engineering**, **Moodabidri** for having provided all the facilities that helped us in timely completion of this report.

I express my sincere gratitude towards our institution and management for providing us with good infrastructure, laboratory facilities, qualified and inspiring staff, whose guidance was of immense help in completion of this seminar successfully.

Dhanush Acharya

(4MT20IS007)

ABSTRACT

A Python Programming with Django internship provides an opportunity for individuals to gain practical experience in building and maintaining websites. During this internship, interns can expect to learn about front-end web development, back-end web development, and database management. They will also learn how to use various programming languages such as HTML, CSS and Django.Throughout the internship, interns will work closely with senior developers to create dynamic and responsive websites that meet the needs of clients. They will also assist in maintaining existing websites, troubleshooting issues, and implementing updates.In addition to technical skills, interns will also develop valuable soft skills such as communication, teamwork, and time management. They will learn how to collaborate with other developers and designers, communicate effectively with clients, and manage their workload to meet project deadlines.A Python Programming with Django internship provides an excellent opportunity for individuals interested in pursuing a career in web development to gain practical experience and develop the skills needed to succeed in the field. It is an excellent way to gain a competitive edge in the job market and set oneself up for a successful career.

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WEEKLY OVERVIEW OF INTERNSHIP ACTIVITY

	DATE	DAY	NAME OF THE TOPIC/MODULE COMPLETED
	28-08-2023	MONDAY	Learn about Internet
	29-08-2023	TUESDAY	
	30-08-2023	WEDNESDAY	How to google like pro
	31-08-2023	THURSDAY	Learn about git
	01-09-2023	FRIDAY	Learn about the basics of programming
	02-09-2023	SATURDAY	Understanding web application

	DATE	DAY	NAME OF THE TOPIC/MODULE COMPLETED
	04-09-2023	MONDAY	Get started with Bootstrap
	05-09-2023	TUESDAY	Explore the fundamentals of HTML&CSS
	06-09-2023	WEDNESDAY	
	07-09-2023	THURSDAY	Basic understanding of Data structure and Algorithm
	08-09-2023	FRIDAY	OOPS concepts
	09-09-2023	SATURDAY	

	DATE	DAY	NAME OF THE TOPIC/MODULE COMPLETED
	11-09-2023	MONDAY	Understanding the DBMS Concepts
	12-09-2023	TUESDAY	
	13-09-2023	WEDNESDAY	Learning the SQL Basics
	14-09-2023	THURSDAY	
	15-09-2023	FRIDAY	Understanding the Python Basics
	16-09-2023	SATURDAY	

	DATE	DAY	NAME OF THE TOPIC/MODULE COMPLETED
	18-09-2023	MONDAY	Complete understanding of OOPS with Python
	19-09-2023	TUESDAY	
	20-09-2023	WEDNESDAY	Complete implementation of Python with Django
	21-09-2023	THURSDAY	
	22-09-2023	FRIDAY	
	23-09-2023	SATURDAY	

INTRODUCTION

This internship was done at JumpWhere located in Mangalore. It focused on the programming languages such as HTML, CSS and Java Script. They also gave us chance to explore various features of every language we used.Training was given to us before the project was started. There they taught us how real world projects works, brushed up on our languages, programming skills, also made us ready to deal with the issues which would be faced while working on the project.

When the training ended, they assigned us with the projects we had to work on.The project was given individually, which helped me to gain experience in working and complete the work given. This internship shaped me in every aspect possible to make me more familiar with the industry, the way it works also the way they look at problems and solve it.

Django is a high-level Python Web framework that encourages rapid development and clean pragmatic design. A Web framework is a set of components that provide a standard way to develop websites fast and easily. Django's primary goal is to ease the creation of complex database-driven websites. Some well known sites that use Django include PBS, Instagram, Disqus, Washington Times, Bitbucket and Mozilla.

CHAPTER 1
ABOUT THE COMAPANY

Company: JumpWhere , Manglore , India

Established on : 2013

Founder : Mohammed Saqib

Website : https://jumpwhere.com

A community of enthusiastic recruiters, techies and bloggers. These are people who are passionate about making a difference in the EMPLOYEE'S world with whatever they can.We provide Job tips, interview tips, Job vacancies and Job opportunities for job seekers.

Figure 1.1 Company Logo

We want to be Employee's friend and be a part of day to day activity of an employee. Our motto is 'You concentrate on the work and we will provide learning's and opportunities'. Articles that help employees in their day to day activity. Aptitude that helps freshers to prepare for interviews. Motivational videos on our YouTube page Guide to freshers and college graduates to get into placements/ interviews. A job seeker looking for a job opportunity Employees/HR looking to make some impact sharing various job opportunities.

Additional Benefits of doing Python Internship

- **Resume Review:** Post completion, get your Resume Reviewed by Experts and get valid feedbacks.
- **Project and Assignment Review:** All the submissions done via git will be reviewed and appropriate feedbacks will be shared.
- **Interview:** Real time Mock Interview will be conducted after the Internship/Course Completion to prepare you for the Placements.

PYTHON

▸ Python is a popular programming language with a large user community, and is widely used for web development, scientific computing, data analysis, artificial intelligence, and more.

▸ Many well-known websites use Python in their technology stack, including: Google,YouTube,Dropbox, Quora, Spotify, Reddit, Instagram, Netflix, Uber, Pinterest

WHY LEARN PYTHON

1. Highest in demand
2. Opportunity in Multiple Domains
3. Large community
4. Beginner friendly

Python Internship/Course Syllabus

- General Concepts
- Understanding Web Application
- HTML and CSS
- Learn about the basics of Programming
- Database Management System
- Learning Python Basics
- OOPS with Python
- Python Django

CHAPTER 2

TECHNICAL ASPECTS

For the completion of the tasks the following web languages and scripts have been used: HTML, CSS, Django and Python, which are used to build the structure and design of web pages. Web development frameworks like React, Angular, and Vue.js are used to develop dynamic and responsive web applications. Version control systems like Git are used to manage code changes and collaboration. Server-side scripting languages like PHP are used to interact with databases and generate dynamic web pages. Web design is also an essential aspect of web development, which involves creating visually appealing and user- friendly websites using design principles and tools like Adobe Photoshop and Sketch. Finally, web hosting and deployment using services like AWS or Heroku ensures that web applications are accessible to users.

Domains:

2.1 HTML

What I had to take in mind prior to starting the project was accessibility issues and web standards.

I had written a strict XHTML file that contains two sections - one list (<ul>) section for the flag buttons and another ( ) for the modification buttons. One major concern of web accessibility is the use of images. It is considered best practice to add “alt” and “title” attributes for users who cannot distinct images.

The lang attribute is also set as English (lang=”en”) in order to inform the browser of the default human language of the script, which is essential for the proper reading of the web page by certain technologies for the disabled.

2.2 CSS

The main styling is stored in an external spreadsheet, although the HTML DOM style object has also been used to change some settings while the JavaScript is being loaded. For example the Save button for the edit module has set visibility to “hidden” in the external stylesheet,

but the property changes to “visible” when the edit button is clicked to avoid potential confusion. I have also used SCSS. Another method I have used to change properties inside JS is the jQuery CSS () method. I have found it to be effective in changing background and border properties of objects.

2.3 DJANGO

Django is a high-level Python web framework that enables rapid development of secure and maintainable websites. Built by experienced developers, Django takes care of much of the hassle of web development, so you can focus on writing your app without needing to reinvent the wheel. It is free and open source, has a thriving and active community, great documentation, and many options for free and paid-for support. Django, a high-level Python web framework, follows the Model-View-Template (MVT) architectural pattern, distinguishing itself with a "Template" layer, which corresponds to the traditional view in the more commonly known Model-View-Controller (MVC) structure. Models define database structures as Python classes, Views handle HTTP requests and formulate responses, and Templates generate dynamic HTML content. A Django project encompasses the settings for a web application, containing multiple modular functionalities known as apps. The framework's URL routing system directs requests to specific views, while Middleware globally processes requests, enabling tasks such as authentication and security checks.

CHAPTER 3

INTERNSHIP DETAILS

3.1 FIRST WEEK: [28-08-2023 To 02-09-2023]

3.1.1 LEARN ABOUT INTERNET

The internet is a network of networks, consisting of millions of connected computers, servers, routers, and other devices that communicate with each other using standardized protocols. It allows users to access and share information, communicate with others, and conduct business online. At its core, the internet is a packet-switched network, which means that data is transmitted in small packets across the network, rather than in a continuous stream. When you send a message or request a webpage, your device breaks down the data into packets and sends them across the network to their destination. The packets may take different routes to reach their destination, depending on network congestion and other factors.To connect to the internet, you need an internet service provider (ISP), which provides you with a connection to the network. ISPs use a variety of technologies to provide internet access, including DSL, cable, fiber, and wireless. Submarine cables are the backbone of the internet, carrying the vast majority of internet traffic between continents. These cables are laid on the ocean floor and are typically made of fiber-optic cable, which allows for high-speed data transmission over long distances. Submarine cable maps show the locations of these cables and the routes they take across the world's oceans. They also show the landing points, where the cables connect to terrestrial networks and data centers. These maps are important for understanding the global infrastructure of the internet and how data travels around the world. They are also used by telecommunications companies, governments, and researchers to plan and analyze the deployment of new cables and network infrastructure.

3.1.2 HOW TO GOOGLE LIKE PRO

Google is one of the most popular search engines and a powerful tool for finding information on the Internet. However, with so much information available, it can be overwhelming to sift through the results and find what you're looking for. To help you get the most out of Google and find the information you need more efficiently,
here are some tips for smart Googling:

- **Use quotation marks:** If you're searching for a specific phrase, put it in quotation marks. This will return only results that contain the exact phrase you're looking for. For example, searching for "chocolate chip cookie recipe" will return results with that exact phrase, whereas searching for chocolate chip cookie recipe without quotes will return a broader range of results that may not be as relevant.
- **Exclude terms:** If you want to exclude a certain term from your search results, use the minus sign (-). For example, if you want to search for "chocolate chip cookie recipe" but exclude results that contain "gluten-free," you would search for "chocolate chip cookie recipe -gluten- free."
- **Site search:** If you only want to search within a specific website, use the site: operator. For example, to search for "chocolate chip cookie recipe" only on the New York Times website, you would search for "chocolate chip cookie recipe site:nytimes.com."
- **Use file type filters:** If you're looking for a specific type of file, such as a PDF or a PowerPoint presentation, you can use the filetype: operator to narrow your search results. For example, to search for PDF files related to "chocolate chip cookie recipe," you would search for "chocolate chip cookie recipe filetype:pdf."
- **Use the Google Advanced Search page:** If you need to narrow your search further, use the Google Advanced Search page. This allows you to specify criteria such as the language, region, and type of results you want to see.

By using these tips, you can get more relevant and targeted results from your Google searches, saving you time and making it easier to find the information you need.

3.1.3 LEARN ABOUT GIT

Git is a version control system that is widely used by software developers to manage the source code of their projects. There are several reasons why Git is important for software developers.

Collaboration: Git allows multiple developers to work on the same project simultaneously and easily merge their changes into a single repository. This makes it easier to collaborate with others and maintain a consistent codebase.

Backup and recovery: With Git, you can keep track of every change made to your code and easily revert back to previous versions if something goes wrong. This helps ensure that your work is always safe and recoverable.

History and accountability: Git stores a complete history of changes made to the code, including who made the changes, when, and why. This makes it easier to track down bugs .

Branching and experimentation: Git allows you to create separate branches for new features or experiments, which can then be merged back into the main branch when ready. This makes it easier to try new things without affecting the stability of the main codebase.

Open source development: Git is widely used in the open source community, making it easier for developers to contribute to and maintain open source projects.

Overall, Git helps software developers to manage the complexity of their projects, collaborate with others, and maintain a high-quality codebase. It is a critical tool for any software development team looking to improve their workflow and productivity.

3.1.4 LEARN ABOUT THE BASICS OF PROGRAMMING

Programming is the process of creating computer software, applications, and systems using a programming language. A programming language is a set of rules, instructions, and syntax that enables developers to write code and create software that can be executed by a computer.

Here are some of the basic concepts in programming:

- Variables are used to store and manipulate data in a program. They can hold different types of data, such as numbers, text, or Boolean values.
- Data types define the type of data that can be stored in a variable. Examples of data types include integers, floating-point numbers, characters, and strings.
- Control structures are used to control the flow of a program. They include conditional statements (such as if/else statements), loops (such as for and while loops), and functions.
- Functions are blocks of code that can be called by other parts of the program. They can accept inputs (called parameters) and return outputs.
- Object-oriented programming (OOP) is a programming paradigm that organizes code into objects that interact with each other. It uses concepts such as classes, objects, and inheritance to create modular and reusable code.
- To get started with programming and computer science, you can start learning a programming language such as Python, Java, or JavaScript. There are many online resources and courses available to help you get started, and many are free.
- You can also consider studying computer science at a college or university, where you'll learn more advanced topics and have the opportunity to work on research projects.
- Remember that learning programming and computer science takes time and practice, but it can be a rewarding and exciting field to explore.

3.1.5 UNDERSTANDING WEB APPLICATION

web development can greatly benefit you in several ways:

Career Advancement: A comprehensive understanding of web development technologies and methodologies will help you advance your career as a web developer. You will be better equipped to tackle complex projects, understand new technologies, and continuously improve your skills.

Problem Solving: Web development is all about solving problems, and having a solid understanding of web application development, programming languages, and the challenges faced in the field will help you find creative solutions to complex problems.

Flexibility: Having a broad understanding of web development technologies will give you the flexibility to work on a variety of projects, using different programming languages and technologies as needed.

Job Security: Web development is a rapidly growing field with a high demand for skilled developers. By continually learning and improving your skills, you will be in a better position to maintain your job security and stay ahead in a competitive job market.

Better Understanding of the Web: By understanding web application development, you will have a better understanding of how the web works, and how websites and web applications are built, which will make you a more informed user of the web.

There are numerous tools available for web development, each with their own unique features and benefits. Here are seven of the top tools for web development:

Visual Studio Code: Visual Studio Code is a popular code editor that is lightweight and highly customizable. It includes support for various programming languages, debugging tools, and extensions that allow developers to add additional functionality to the editor.

Git: Git is a version control system that allows developers to track changes to their code over time. It enables collaboration between developers, helps manage code changes, and makes it easier to roll back changes if necessary.

Bootstrap: Bootstrap is a popular front-end development framework that includes pre-built HTML, CSS, and JavaScript components. It simplifies the process of creating responsive and mobile-friendly websites, and helps developers save time and effort.

React: React is a JavaScript library for building user interfaces. It allows developers to create reusable UI components and update them in real-time, making it an ideal tool for building complex web applications.

- **Types of Web Application:**

Static Web Applications: Static web applications are simple websites that consist of HTML, CSS, and JavaScript files that are stored on a server and served to the user's web browser.

Dynamic Web Applications: Dynamic web applications use server-side scripting to generate HTML pages dynamically. They can store and manipulate data, and are designed to handle more complex tasks such as user authentication, content management systems, and e-commerce sites.

Single Page Applications (SPA): Single page applications are web applications that load a single HTML page and dynamically update the content as the user interacts with the page. They use AJAX technology to retrieve data from the server and are designed to provide a more responsive and seamless user experience.

Progressive Web Applications (PWA): Progressive web applications are web applications that combine the features of web and native mobile applications. They can be accessed through a web browser, but offer features such as offline mode, push notifications, and device hardware access that are normally associated with native mobile applications.

Portal Web Applications: Portal web applications are designed to provide a single point of access to multiple applications and services. They are commonly used by organizations to provide employees or customers with access to various tools and services.

Web Services: Web services are applications that expose functionality over the web using standard protocols such as REST or SOAP. They allow other applications to access their functionality and are often used for integration between different systems.

3.2 SECOND WEEK: [04-09-2023 To 09-09-2023]

3.2.1 BOOTSTRAP

Bootstrap is a popular front-end framework that is widely used by web developers for building responsive, mobile-first websites and web applications. There are several reasons why Bootstrap is important:

Responsiveness: Bootstrap provides a set of CSS and JavaScript components that make it easy to create responsive designs that look good on different screen sizes and devices. This is critical in today's world where more and more people are using their smartphones and tablets to browse the web.

Consistency: Bootstrap provides a consistent design language that can be applied across a website or web application, which helps to ensure a cohesive and professional look and feel.

Speed and Efficiency: Bootstrap provides pre-designed components and a grid system that can save developers time and effort, allowing them to focus on other aspects of the project.

Accessibility: Bootstrap includes features and components that support accessibility, such as alternative text for images and keyboard-friendly navigation.

Community and Support: Bootstrap is an open-source project with a large and active community of users and developers who contribute to its development and provide support. Bootstrap is an important tool for web developers to build responsive websites .

3.2.2 HTML AND CSS

HTML (Hypertext Markup Language) and CSS (Cascading Style Sheets) are fundamental technologies for building websites, and it is highly recommended for web developers to have a solid understanding of these technologies.HTML is used to create the structure and content of a web page. It uses a set of tags to define different elements of a page, such as headings, paragraphs, images, links, and forms. HTML provides a standardized way of describing the content of a web page, allowing web browsers to display the content consistently across different devices and platforms.

CSS is used to control the presentation and layout of a web page. It allows developers to define styles for different HTML elements, such as font size, color, margin, padding, and positioning. By separating the presentation of a web page from its content, CSS makes it easier to create visually appealing and responsive web pages that can adapt to different screen sizes and devices.

The general form of CSS syntax is as follows:

Selector {property: value;}

Together, HTML and CSS form the foundation of the web. They are constantly evolving to support new features and technologies, such as responsive design, multimedia, and accessibility.

3.2.3 DATA STRUCTURE AND ALGORITHM

DSA or Data Structures and Algorithms is an essential field of study within computer science education. It deals with the organization, storage, and retrieval of data in computer programs, and also involves designing efficient algorithms for manipulating and processing data quickly. DSA plays a critical role in helping programmers solve complex problems, optimize code, and develop scalable software applications. To achieve these objectives,

DSA relies on a range of fundamental data structures like arrays, linked lists, trees, stacks, and queues, which are used to store and organize data. Additionally, DSA algorithms are used to solve a wide range of computational problems such as sorting, searching, and graph traversal. Ultimately, the goal of DSA is to create reliable, efficient, and scalable software solutions capable of handling large volumes of data. Mastery of DSA requires a solid foundation in computer programming, mathematical skills, and logical reasoning. Fortunately, several programming languages such as C++, Python, and Java have built-in libraries and frameworks to aid in implementing DSA algorithms and data Structures.

3.2.4 OOPS CONCEPT

Object-oriented programming (OOP) is a programming paradigm that revolves around the concept of "objects" and their interactions. In OOP, an object is an instance of a class, which encapsulates data and behavior into a single unit. There are four main pillars of OOP: encapsulation, inheritance, polymorphism, and abstraction. Encapsulation refers to the ability to hide data and methods within a class, protecting them from external access and manipulation. Inheritance allows classes to inherit properties and methods from parent classes, reducing code duplication and promoting code reuse. Polymorphism allows objects of different classes to be treated as if they were of the same class, simplifying code and increasing flexibility. Abstraction is the process of hiding implementation details while exposing only the necessary functionality. OOP is beneficial for many reasons, including code organization, maintainability, and scalability. By encapsulating data and methods within a class, OOP promotes modularity and reduces the likelihood of naming conflicts. Inheritance promotes code reuse, saving developers time and effort. Polymorphism simplifies code, making it easier to read and understand. Abstraction reduces complexity, making it easier to reason about code. Overall, OOP is a powerful programming paradigm that offers many benefits to developers. By leveraging the principles of encapsulation, inheritance, polymorphism, and abstraction, developers can create well-organized, maintainable, and scalable codebases that are flexible and easy to work with

3.3 THIRD WEEK: [11-09-2023 To 16-09-2023]

3.3.1 DBMS CONCEPT

A database management system (DBMS) is a software system that allows users to create, store, and manage electronic databases. A database is an organized collection of data that is stored in

electronic form and can be accessed and manipulated by authorized users. A DBMS typically includes a variety of tools and features that help users create and manage databases. Some of the key features of a DBMS include:

- Data definition language (DDL): A DDL is used to create and define the structure of a database, including tables, fields, and relationships between tables
- Data manipulation language (DML): A DML is used to add, modify, and delete data within a database.
- Query language: A query language is used to retrieve data from a database based on specific criteria.
- Security features: A DBMS includes security features such as user authentication and access control to ensure that only authorized users can access and modify the database.
- Backup and recovery: A DBMS includes tools for creating backups of a database and recovering data in the event of a failure or corruption.
- Concurrency control: A DBMS includes mechanisms to ensure that multiple users can access and modify the database without conflicts or data corruption.

There are different types of DBMS, including relational, NoSQL, and object-oriented databases. Relational databases are the most common type of DBMS and store data in tables with defined relationships between them. NoSQL databases are designed to handle unstructured data and offer greater scalability and performance than relational databases.

3.3.2 SQL

SQL (Structured Query Language) is a programming language used to manage and manipulate relational databases. It is the standard language used for interacting with relational databases such as MySQL, Oracle, Microsoft SQL Server, and PostgreSQL. Some common tasks that can be performed with SQL include creating and modifying databases, tables, and indexes; inserting, updating, and deleting data in tables; and retrieving data from tables based on specific criteria. SQL uses a declarative syntax, meaning that users specify what they want the database to do, rather than how to do it. SQL statements are made up of clauses such as SELECT, FROM, WHERE, ORDER BY, and GROUP BY, which specify which data to retrieve and how to sort and group the data. SQL can be used to perform a wide variety of tasks, such as generating reports, analyzing data, and building web applications that interact with databases. SQL is an important skill for anyone working with data, including database administrators, data analysts.

3.3.3 PYTHON BASICS:

Python is high level,interpreted language that is used for web development.

Variables and Data Types: In Python, you can assign values to variables and use them to store and manipulate data. There are several built-in data types in Python, including integers, floats, strings, lists, tuples, and dictionaries.

Control Flow Statements: Python provides control flow statements such as if, else, elif, while, and for to control the flow of code execution.

Functions: Functions are a way to organize code into reusable blocks. They take input arguments, perform some operations, and return a result.

Object-Oriented Programming: Python supports object-oriented programming (OOP) concepts, such as classes, objects, inheritance, and polymorphism.

Modules and Packages: Python provides a module and package system that allows you to organize your code into reusable components and share them across different projects.

Libraries and Frameworks: There are many libraries and frameworks available for Python that provide additional functionality and make it easier to develop specific types of applications, such as Django for web development, Numpy for scientific computing, and Tensor Flow for machine learning.

Interactivity: Python has an interactive mode, which allows you to execute code line by line and see the results immediately. This makes it easier to test and debug code.

Python is known for its simplicity, readability, and ease of use.

3.4 FOURTH WEEK: [18-09-2023 To 23-09-2023]

3.4.1 OOPS WITH PYTHON

Python supports object-oriented programming (OOP) concepts, including classes, objects, inheritance, encapsulation, and polymorphism. Here are some basic concepts of OOP with Python.

Classes: A class is a blueprint for creating objects. It defines the properties and behaviors that objects of that class will have. In Python, you define a class using the class keyword.

Objects: An object is an instance of a class. You can create objects by calling the class **constructor**. For example, if you have a class Car, you can create an object of that class by calling my_car = Car().

Inheritance: Inheritance is a mechanism in which one class inherits properties and behaviors from another class. The class that is inherited from is called the parent class, and the class that inherits from it is called the child class. In Python, you can define inheritance using the super().

Encapsulation: Encapsulation is a mechanism for hiding the implementation details of a class from the user. In Python, you can achieve encapsulation using private and protected attributes and methods. Private attributes and methods are denoted by a double underscore prefix (_), while protected attributes and methods are denoted by a single underscore prefix (_).

Polymorphism: Polymorphism is the ability of objects of different classes to respond to the same message in different ways. In Python, you can achieve polymorphism through method overriding and method overloading:

```
class Car:
        def __init__(self, make, model, year):
            self.make = make
            self.model = model
            self.year = year
            self.odometer_reading = 0

        def describe_car(self):
            description = f"{self.year} {self.make} {self.model}"
            return description

          def read_odometer(self):
            print(f"This car has {self.odometer_reading} miles on it.")

          def update_odometer(self, mileage):
            if mileage >= self.odometer_reading:
               self.odometer_reading = mileage
            else:
               print("You can't roll back an odometer!")
          def increment_odometer(self, miles):
            self.odometer_reading += miles

    my_car = Car("Toyota", "Corolla", 2022)
    your_car = Car("Honda", "Civic", 2023)
    print(my_car.describe_car())
    my_car.read_odometer()
    my_car.update_odometer(100)
    my_car.read_odometer()
    my_car.increment_odometer(50)
    my_car.read_odometer()
```

3.4.2 PYTHON DJANGO

Python Django is a popular high-level web framework that allows for rapid development of secure and maintainable websites and web applications. Django follows the Model-View-Template (MVT) architectural pattern and is built on top of the Python programming language.

Key features of Django:

- Object-Relational Mapping (ORM): Django provides a powerful ORM that allows you to interact with your database using Python code instead of SQL statements.
- URL Routing: Django has a built-in URL routing system that allows you to map URLs to views. This makes it easy to create clean, readable URLs for your application.
- Template Engine: Django comes with a template engine that allows you to create dynamic web pages using a simple syntax. Templates can also be extended and reused to minimize code duplication.
- Authentication: Django provides a built-in authentication system that makes it easy to add user authentication to your application.
- Admin Interface: Django has a powerful admin interface that allows you to manage your application's data through a web interface. The admin interface can also be customized to fit your application's needs.
- Scalability: Django is highly scalable and can handle high traffic websites. It provides caching and database connection pooling to improve performance.
- Security: Django has built-in security features that protect against common web application vulnerabilities, such as cross-site scripting (XSS) and SQL injection.

Example:

- First, install Django using pip: pip install Django
- Create a new Django project: django-admin startproject myproject
- Create a new Django app: python manage.py startapp myapp
- Define a view in the views.py file:
- Define a URL pattern in the urls.py file:
- Run the development server: python manage.py runserver
- Navigate to http://localhost:8000/hello/ in your web browser to see the "Hello, World!" message.

```
from django.http import HttpResponse
def hello(request):
return HttpResponse("Hello, World!")
```

CRUD OPERATION

CRUD stands for Create, Read, Update & Delete. These are the four basic operations which are executed on Database Models. We are developing a web app which is capable of performing these operations.

For example, in a library, books are objects. The books have attributes like name, author, etc. We need an application which can perform CRUD operations on book object. The CRUD operations are defined as follows:

Create Operation: The ability of the application to store data in the database.

Read Operation: The ability of the application to read data from the database.

Update Operation: The ability of the application to edit the stored value in the database.

Delete Operation: The ability of the application to delete the value in the database.

CHAPTER 4

IMPLEMENTATION

4.1 RESUME GENERATOR

Resume Generator provides an intuitive interface where users can easily input their personal information, educational background, work experience, skills, and other relevant details. Leveraging the power of Django's template system, our application dynamically generates resumes based on the user-provided information. This ensures that each resume is unique and tailored to the user's specifications**.** Users can preview their resumes in real-time as they input or modify their information. This allows for instant feedback and adjustments, ensuring a seamless resume creation experience. Once the resume is finalized, users can export it in popular formats such as PDF or Word document, making it easy to share or print for job applications.

Home Page

```
{% extends "home.html" %}
{% block content %}
<div class="container mt-5">
  <h2 class="mb-4">Create Project</h2>
  <form method="POST">
    {% csrf_token %}
    <div class="form-group">
      <label for="project Name">Project Name</label>
        <input type="text" class="form-control" id="project Name"
   name="project_name" required>
    </div>
    <div class="form-group">
       <label for="technology Used">Technology Used</label>
       <select class="form-control" id="technology Used" name="technology_used[]"
       multiple required>
         {% for technology in tech %}
         <option value="{{ technology }}">{{ technology }}</option>
         {% endfor %}
```

```
    <textarea class="form-control" id="projectDescription" name="description" rows="3"
    required></textarea>
 </div>
 <div class="form-group">
  <label for="roleResponsibilities">Role and Responsibilities</label>
  <textarea class="form-control" id="roleResponsibilities" name="role_responsibilities"
  rows="3" required></textarea>
 </div>
  <div class="form-group">
   <label for="startDate">Start Date</label>
   <input type="date" class="form-control" id="startDate" name="start_date" required>
  </div>
  <div class="form-group">
   <label for="endDate">End Date</label>
   <input type="date" class="form-control" id="endDate" name="end_date" required>
  </div>
  <div class="form-group">
   <label>Status:</label>
   <div class="form-check">
    <input class="form-check-input" type="radio" name="is_active" id="active" value="1"
   checked>
    <label class="form-check-label" for="active">
     Active
    </label>
   </div>
   <div class="form-check">
   <input class="form-check-input" type="radio" name="is_active" id="closed" value="0">
    <label class="form-check-label" for="closed">
     Closed
    </label>
   </div>
  </div>
```

```
  <a href="{% url 'project_list' %}" class="btn btn-secondary">Cancel</a>
 </form>
</div>
{% endblock %}
```

Tools Page

```
{% extends 'home.html' %}
{% block content %}
 <h1>Tools List</h1>
 <div class="row">
  <div class="col-md-6">
   <a href="{% url 'create_tool' %}" class="btn btn-primary">Create New</a>
  </div>
 </div>
 <table class="table">
  <thead><tr>
     <th>ID</th>
     <th>Name</th>
     <th>Actions</th> </tr> </thead>
  <tbody>
   {% for tool in tools %}
   <tr>
    <td>{{ tool.id }}</td>
    <td>{{ tool.name }}</td>
    <td>
     <a href="{% url 'edit_tool' tool.id %}" class="btn btn-warning">Edit</a>
     <form action="{% url 'delete_tool' tool.id %}" method="POST" class="d-inline">
      {% csrf_token %}
      <button type="submit" class="btn btn-danger" onclick="return confirm('Are you
     sure?')">Delete</button> </form>
     </td> </tr>
   {% endfor %}
  </tbody>
```

```
 </table>
{% endblock %}
```

Coding Page

```
{% block content %}
 <div class="row">
 <div class="col-md-12">
  <h1>Coding Skills</h1>
  <a href="{% url 'create_coding_skill' %}" class="btn btn-primary float-right">Create
  New</a>
  <table class="table">
   <thead>
    <tr>
     <th>ID</th>
     <th>Name</th>
     <th>Actions</th>
    </tr>
   </thead>
   <tbody>
    {% for coding_skill in coding_skills %}
    <tr>
     <td>{{ coding_skill.id }}</td>
     <td>{{ coding_skill.name }}</td>
     <td>
      <a href="{% url 'edit_coding_skill' coding_skill.id %}" class="btn btn-sm btn-
     info">Edit</a>
      <a href="{% url 'delete_coding_skill' coding_skill.id %}" class="btn btn-sm btn-
     danger">Delete</a>
     </td></tr>
    {% endfor %}
   </tbody>
  </table>
  </div>
```

CHAPTER 5

SNAPSHOTS

5.1 Website for Resume Generator

It displays the various skills present in the individuals resume.

Figure 5.1 Dashboard Page

5.2 Website for Employee list page

It displays the employee lists where we can edit , delete ,map and view resume .

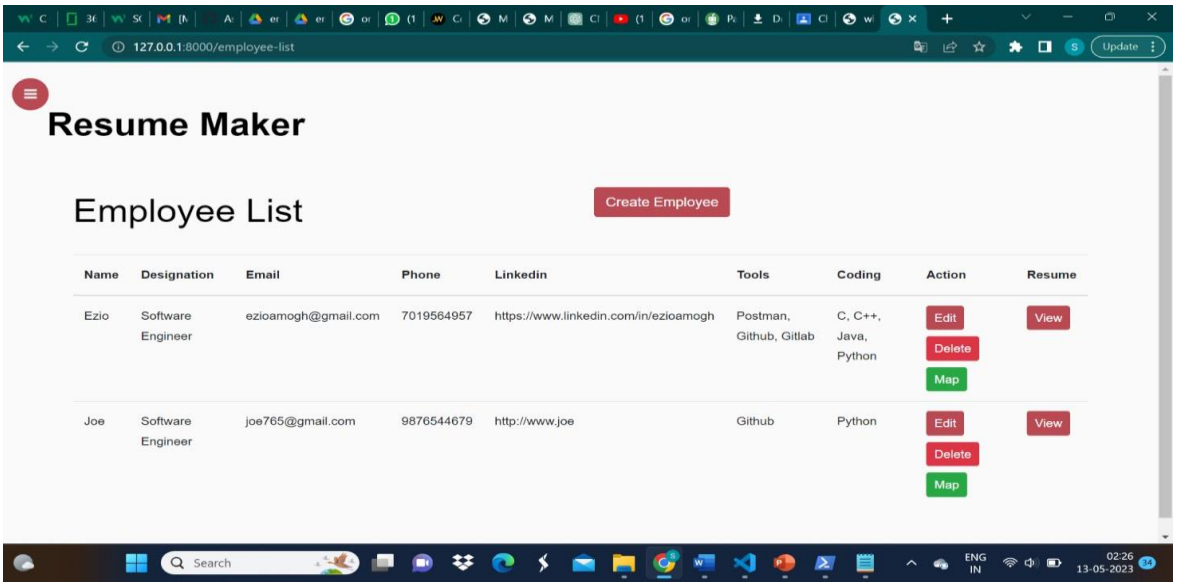

Figure 5.2 Employee list page

5.3 Website for Project list page

It displays the project list of the employee which consists of project name and technology used.

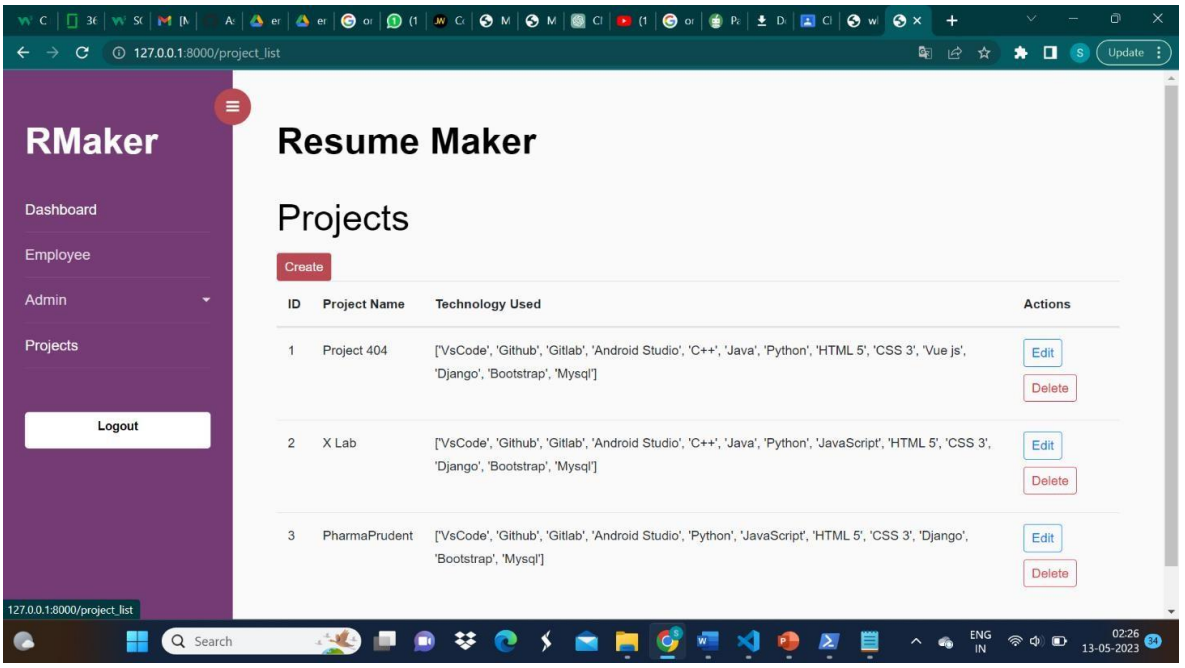

Figure 5.3 Project list Page

5.4 Website for Coding list page

It displays the coding language used to make the project used by the employee .

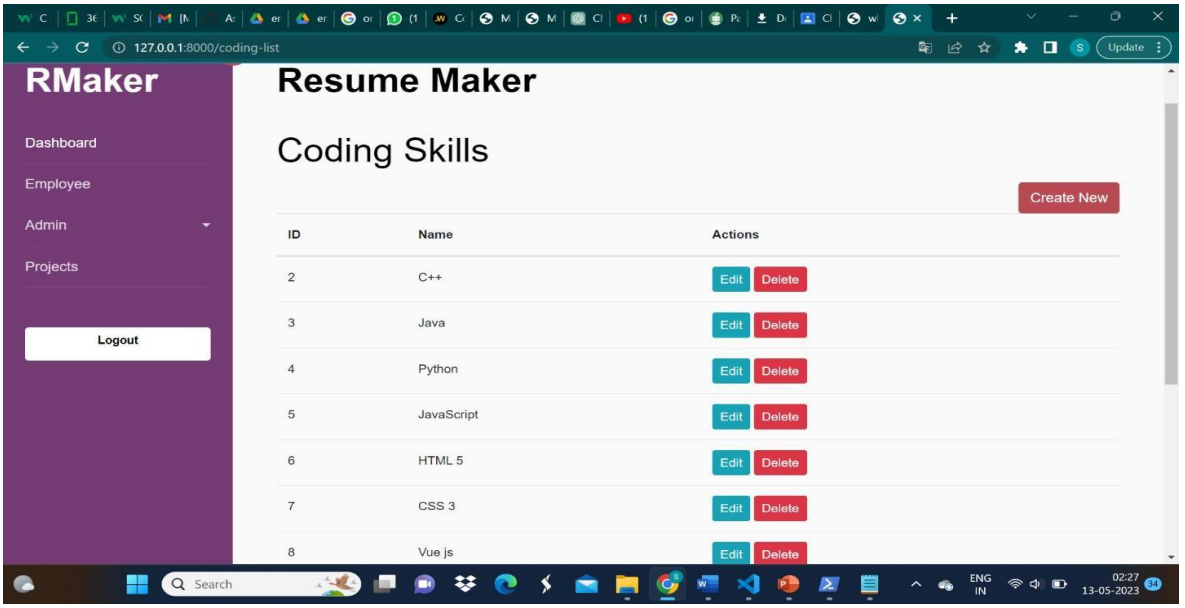

Figure 5.4 Coding list Page

5.5 Website for Tools list page

It consists of tools in the list used by the employee to make the project.

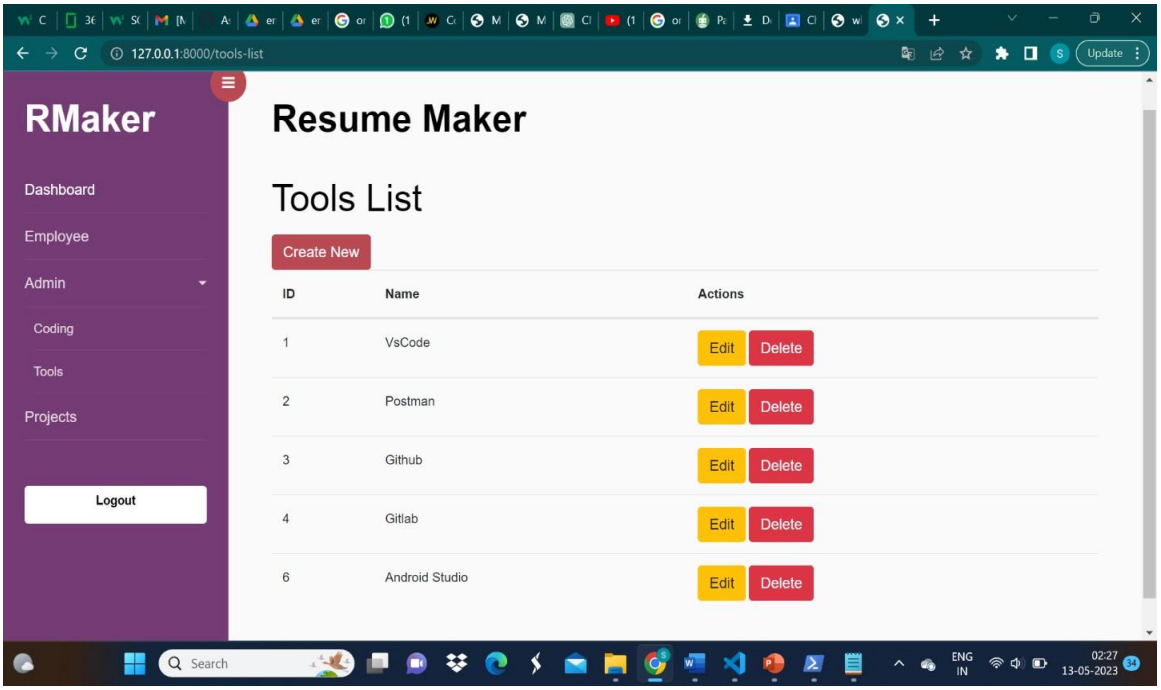

Figure 5.5 Tools list Page

CHAPTER 6

REFLECTION

Python Programming: The internship would likely start with a solid foundation in Python programming since Django is a Python-based framework. This would cover basic syntax, data structures, functions, object-oriented programming, and other essential concepts.

Introduction to Django: we would learn about the Django framework itself, including its architecture, key components, and best practices for building web applications. This would involve understanding concepts such as models, views, templates, URL routing, forms, middleware, and the ORM (Object-Relational Mapper).

Building Web Applications: gain hands-on experience in building web applications from scratch using Django. This includes setting up Django projects and apps, defining data models, creating views and templates, handling user input with forms, implementing authentication and authorization, and managing static files.

Database Management: Since Django includes its own ORM, interns would learn how to interact with databases using Django's models. This involves defining models to represent database tables, performing CRUD (Create, Read, Update, Delete) operations, writing queries, and handling database migrations.

Frontend Development: While Django primarily focuses on backend development, interns may also learn frontend development concepts to create dynamic and interactive user interfaces. This could involve using HTML, CSS, JavaScript, and frontend frameworks like Bootstrap or Vue.js.

Problem-Solving and Debugging: develop problem-solving skills and learn how to debug and troubleshoot issues that arise during development. This involves analyzing errors, reading documentation, using debugging tools, and seeking help from peers or mentors.

Project Collaboration: Depending on the internship structure, we work on individual projects or collaborate with teams on larger projects. They would learn how to communicate effectively, collaborate with team members, and manage project tasks and deadlines.

CHAPTER 7

CONCLUSION

Based on the internship experience, it can be concluded that the training provided a comprehensive understanding of python Django. The Corporate Resume Builder project provided an opportunity to gain practical experience in developing a web application using Django, and to understand the benefits of such a system.

The resume builder application built during the internship offers various modules for managing employee records, project details, and resume generation, providing an efficient and organized solution for HR teams. The system's benefits include time and effort saving, consistency in the format and style of resumes, and customization options for employees. The system can also be expanded to include other HR-related functionalities, making it highly customizable and scalable.

As for the further scope of work, the system can be improved by integrating advanced features such as machine learning algorithms for resume analysis and recommendation, natural language processing for resume parsing, and cloud-based deployment for better scalability and accessibility. These enhancements can help to further optimize the system's efficiency and effectiveness, making it an even more valuable asset for HR teams.

Overall, the internship provided a valuable learning experience, exposing the intern to various web development concepts and technologies, and providing an opportunity to apply that knowledge in practical settings. The Corporate Resume Builder project offered hands-on experience in developing a web application using Django, while the training materials and assignments helped to reinforce the theoretical concepts. The internship also highlighted the importance of continuous learning and adaptation in the fast-paced field of web development.

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