

***“GuideMe- An Efficient Platform for Career Guidance.”***

**A Minor Project Report Submitted to  
Rajiv Gandhi Proudhyogiki Vishwavidyalaya**



**Towards Partial Fulfillment for the Award of  
Bachelor of Technology in Information Technology**

***Submitted by:***

**Atharv Sharma (0827CS201047)  
Apoorva Shrivastava(0827CS201041)  
Archika Kasliwal(0827CS201042)  
Bhavik Sharma (0827CS201058)**

***Guided by:***

**Prof. Preeti Shukla  
Professor, CSE  
AITR, Indore**



***Acropolis Institute of Technology & Research, Indore  
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# EXAMINER APPROVAL

The Project entitled “*GuideMe*” submitted by **Apoorva Shrivastava (0827CS201041)**, **Archika Kasliwal (0827CS201042)**, **Atharv Sharma(0827CS201047)**, **Bhavik Sharma(0827CS201058)** has been examined and is hereby approved towards partial fulfillment for the award of *Bachelor of Technology degree in Computer Science Engineering* discipline, for which it has been submitted. It understood that by this approval the undersigned do not necessarily endorse or approve any statement made, opinion expressed, or conclusion drawn therein, but approve the project only for the purpose for which it has been submitted.

**(Internal Examiner)**

**Date:**

**(External Examiner)**

**Date:**

# GUIDE RECOMMENDATION

This is to certify that the work embodied in this project entitled “GuideMe” submitted by **Atharv Sharma (0827CS201047)**, **Apoorva Shrivastava(0827CS201041)**, **Archika Kasliwal(0827CS20142)**, **Bhavik Sharma (0827CS201058)** is a satisfactory account of the bonafide work done under the supervision of **Prof. Preeti Shukla**, is recommended towards partial fulfillment for the award of the Bachelor of Engineering (Information Technology) degree by Rajiv Gandhi Proudyogiki Vishwavidhyalaya, Bhopal.

**(Project Guide)**

**(Project Coordinator)**

# STUDENTS UNDERTAKING

This is to certify that a project entitled “*GuideMe*” has been developed by us under the supervision of ***Prof. Preeti Shukla***. The whole responsibility of the work done in this project is ours. The sole intention of this work is only for practical learning and research.

We further declare that to the best of our knowledge; this report does not contain any part of any work which has been submitted for the award of any degree either in this University or in any other University / Deemed University without proper citation and if the same work is found then we are liable for explanation to this.

**Atharv Sharma (0827CS201047)**

**Apoorva Shrivastava (0827CS201041),**

**Archika Kasliwal (0827CS20142)**

**Bhavik Sharma (0827CS201058)**

# Acknowledgement

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We thank the almighty Lord for giving me the strength and courage to sail out through the tough and reach shore safely.

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We owe a debt of sincere gratitude, deep sense of reverence and respect to our guide and mentor **Preeti Shukla**, Professor, AITR, Indore for his motivation, sagacious guidance, constant encouragement, vigilant supervision and valuable critical appreciation throughout this project work, which helped us to successfully complete the project on time. We express profound gratitude and heartfelt thanks to **Kamal Kumar Sethi**, HOD CSE, AITR Indore for his support, suggestion and inspiration for carrying out this project. I am very thankful to other faculty and staff members of CSE Dept, AITR Indore for providing me all support, help and advice during the project. We would be failing in our duty if we do not acknowledge the support and guidance received from **Dr S C Sharma**, Director, AITR, Indore whenever needed. We take the opportunity to convey my regards to the management of Acropolis Institute, Indore for extending academic and administrative support and providing me with all necessary facilities for the project to achieve our objectives.

We are grateful to **our parents** and **family members** who have always loved and supported us unconditionally. To all of them, we want to say, “Thank you”, for being the best family that one could ever have and without whom none of this would have been possible.

**Atharv Sharma (0827CS201047)**

**Apoorva Shrivastava (0827CS201041),**

**Archika Kasliwal (0827CS20142)**

**Bhavik Sharma (0827CS201058)**

# Executive Summary

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## ***GuideMe -An Efficient Platform for Career Guidance***

This project is submitted to Rajiv Gandhi Proudyogiki Vishwavidhyalaya, Bhopal (MP), India for partial fulfillment of Bachelor of Engineering in Information Technology branch under the sagacious guidance and vigilant supervision of ***Prof. Preeti Shukla***.

The project is based on web development in which we build a dynamic website for students and their parents related to career guidance and one-to-one mentoring of the students by which they can choose the right career path for their future. Also we provide all these information in the online form so they can access from anywhere in the world.

**Key words :** Career Guidance , Nodejs, MongoDB

*“Where the vision is one year,  
cultivate flowers;*

*Where the vision is ten years,  
cultivate trees;*

*Where the vision is eternity,  
cultivate people.”*

*- Oriental Saying*

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# List of Abbreviations

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***Abbr1:*** GUI: Graphical User Interface

***Abbr2:*** ML: Machine Learning

***Abbr3:*** DBMS: Database Management System

***Abbr4:*** PHP: Hypertext Preprocessor (a server-side scripting language)

***Abbr5:*** IDE: Integrated Development Environment

***Abbr6:*** HTML: Hypertext Markup Language

***Abbr7:*** CSS: Cascading Style Sheets

***Abbr8:*** SQL: Structured Query Language

***Abbr9:*** UX: User Experience

***Abbr10:*** UI: User Interface

***Abbr11:*** OS: Operating System

***Abbr12:*** HTTP: Hypertext Transfer Protocol

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# Chapter 1. Introduction

## Introduction

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Career development is a lifelong process, whether one knows it or not, actually started when one is born! There are a number of factors that influence one's career development, including your interests, abilities, values, personality, background, and circumstances. Career Counseling is a process that will help one to know and understand oneself and the world of work in order to make career, educational, and life decisions.

Career counseling is a method for the students which is responsible for the students to understand the career option that they have, and how to pursue them. GuideMe is a platform where the students can understand about the career that they want to pursue. The project is a web based solution which provides necessary information related to each and every field with a field expert mentor support. It solves the problem of thousands suffering from doubt related to career.

### 1.1 Overview

This project is based on career counseling amenities such as pregrad and postgrad students' assistance and also solves unemployment issues prevailing in the society.

The goal of the project is to develop a career guidance system that can help users identify suitable career options based on their interests and abilities. The unmatched content regarding career options in our project helps in better decision making of students.

With the help of machine learning, we will help the student to decide which is the best career option and domain for them using different machine learning techniques. The career is decided based on academic information filled by the student. This project will help the student to get directed towards a specific domain as per their skills.

## 1.2 Background and Motivation

The motivation behind developing the career guidance system is to help engineering students explore diverse career options beyond traditional paths. Many students who pursue engineering are often unaware of the numerous career paths that their degree can lead to, and may find themselves following the crowd and imitating the decisions of others. This can result in a lack of motivation and fulfillment in their careers, as they may end up pursuing a career that they do not have a genuine interest in.

To address this issue, the GuideMe team has developed a career guidance system that uses machine learning algorithms to provide engineering students with suitable career options based on their interests and abilities. By using this system, students can gain a better understanding of their career options and make informed decisions about their future. This can help them find a career that aligns with their passions and interests, and ultimately lead to a more fulfilling and satisfying career path.

## 1.3 Problem Statement and Objectives

The current problem is that engineering students often struggle to identify the most suitable career path based on their individual interests, skills, and academic background. To address this issue, a career guidance system for engineering students that uses machine learning algorithms to analyze input fields such as likes, interests, skills, and academic performance is required. The system aims to suggest the most appropriate field for each student, improving their chances of success and job satisfaction in the engineering industry.

### Objectives:

- To provide personalized career guidance for engineering students based on their interests, skills, and academic background.
- To suggest the most suitable field for each student's career in engineering, considering their individual preferences and career goals.
- To help students make informed decisions about their career path in engineering by providing them with detailed information about job roles and growth opportunities.
- To create a user-friendly interface that is accessible to all engineering students, regardless of their technical or academic background.
- To increase the chances of success and job satisfaction for engineering students by guiding them towards the most suitable and rewarding career path in engineering.

## 1.4 Scope of the Project

The scope of the "GuideMe" project is to develop an intelligent career guidance system for engineering students that suggests the most suitable career path based on their individual interests, skills, and academic background. The system will collect and analyze data from students to provide personalized recommendations and detailed information about various fields within engineering. The project aims to create a user-friendly interface that is accessible to all engineering students and to continuously improve the accuracy and effectiveness of the system using machine learning algorithms and data analysis techniques.

## 1.5 Team Organization

### **Apoorva Shrivastava:**

Responsible for designing and developing the front-end and back-end of the system, ensuring that the user interface is intuitive and easy to use, and that the system is accessible across multiple devices and platforms.

### **Archika Kasliwal:**

I played a significant role in researching pre-existing websites and identifying areas for improvement in our website. I also worked on the front-end development of the website and was responsible for creating the user interface. Additionally, I took charge of the documentation part of the project.

### **Atharv Sharma:**

Responsible for designing and developing the machine learning algorithms that power the system's recommendations, as well as ensuring that the system is continuously learning and adapting based on user feedback.

### **Bhavik Sharma:**

Responsible for designing and developing the database structure, managing data input and retrieval, and ensuring that the system is secure and scalable.

## 1.6 Report Structure

The project **GuideMe** is primarily concerned with **Career counseling**, the whole project report is categorized into five chapters.

Chapter 1: Introduction- introduces the background of the problem followed by rationale for the project undertaken. The chapter describes the objectives, scope and applications of the project. Further, the chapter gives the details of team members and their contribution in the development of the project which is then subsequently ended with a report outline.

Chapter 2: Review of Literature- explores the work done in the area of Project undertaken and discusses the limitations of the existing system and highlights the issues and challenges of the project area. The chapter finally ends up with the requirement identification for present project work based on findings drawn from reviewed literature and end user interactions.

Chapter 3: Proposed System - starts with the project proposal based on requirement identified, followed by benefits of the project. The chapter also illustrates the software engineering paradigm used along with different design representations. The chapter also includes a block diagram and details of major modules of the project. The chapter also gives insights of different types of feasibility study carried out for the project undertaken. Later it gives details of the different deployment requirements for the developed project.

Chapter 4: Implementation - includes the details of different Technology/ Techniques/ Tools/ Programming Languages used in developing the Project. The chapter also includes the different user interfaces designed in the project along with their functionality. Further it discusses the experiment results along with testing of the project. The chapter ends with an evaluation of the project on different parameters like accuracy and efficiency.

Chapter 5: Conclusion - Concludes with objective wise analysis of results and limitation of present work which is then followed by suggestions and recommendations for further improvement

# Chapter 2. Review of Literature

## Review of Literature

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The field of career guidance has been evolving rapidly over the years, with various technological advancements and approaches being adopted to help individuals make informed decisions about their career paths. In the context of engineering, there have been several studies that have explored the various factors that influence career decision-making among engineering students. These studies have identified a range of factors, including individual interests, skills, personality traits, academic background, and job market trends.

Machine learning has also emerged as a promising approach for career guidance systems, with studies demonstrating its effectiveness in providing personalized recommendations based on user input.

### 2.1 Preliminary Investigation

#### 2.1.1 Current System

There are several current career guidance systems available for engineering students that utilize machine learning and other advanced technologies. Here are some examples:

- **Career Key:** This is a comprehensive career guidance system that provides personalized recommendations based on a user's interests, skills, and personality traits. The system utilizes machine learning algorithms to analyze user data and suggest suitable career paths.
- **Sokanu:** Sokanu is an online career assessment platform that uses a proprietary algorithm to match users with suitable career options based on their personality, interests, and skills.
- **MyPlan:** MyPlan is a career guidance system that offers a range of tools and assessments to help users identify their strengths and interests. The system uses machine learning algorithms to provide personalized career recommendations.



- **CareerExplorer:** CareerExplorer is a career guidance platform that provides personalized recommendations based on user input, including interests, skills, and values. The system utilizes machine learning algorithms to analyze user data and provide customized career recommendations.

Overall, these systems utilize various approaches and technologies to provide personalized career guidance to engineering students. The "Guideme" project aims to build upon these systems and develop an intelligent career guidance system that is tailored specifically to engineering students and provides accurate, up-to-date information about the field.

## 2.2 Limitations of Current System

While current career guidance systems offer a range of benefits, there are also limitations to their use. Here are some limitations of existing career guidance systems:

- **Limited Data:** Existing systems may have limited data about a user's skills, interests, and personality traits, which can affect the accuracy of the system's recommendations.
- **Lack of Customization:** Many systems offer a one-size-fits-all approach to career guidance, which may not consider individual differences and preferences.
- **Lack of Human Interaction:** Some systems may rely solely on machine learning algorithms and lack human interaction, which can limit the system's ability to provide personalized guidance.
- **Lack of Accessibility:** Some systems may not be accessible to all users, particularly those who do not have access to technology or the internet.

While current career guidance systems offer a range of benefits, their limitations highlight the need for continued research and development in this area. The "Guideme" project aims to address some of these limitations by developing an intelligent career guidance system specifically for engineering students that is based on accurate and up-to-date data and utilizes machine learning algorithms to provide personalized recommendations.

## 2.3 Requirement Identification and Analysis for Project

Requirements identification and analysis is a critical phase in the development of any project, as it helps to identify the specific needs of the users and stakeholders. Here is a detailed analysis of the requirements for the "Guideme" project:

- **User Interface:** The system should have an intuitive and user-friendly interface that allows users to input their likes, interests, skills, and academic background easily. The interface should be interactive and engaging, making the process of career guidance more enjoyable.
- **Database:** The system should have a comprehensive database of engineering careers that includes up-to-date information on job market trends, required skills, and qualifications. The database should be regularly updated to ensure the accuracy of the information provided to users.
- **Machine Learning Algorithms:** The system should incorporate machine learning algorithms to analyze user data and provide personalized career recommendations. The algorithms should be able to learn and adapt to new information over time to improve the accuracy of the recommendations.
- **Accuracy:** The system should be accurate in providing recommendations based on user input. The recommendations should take into account the user's likes, interests, skills, academic background, and job market trends.
- **Customization:** The system should allow for customization based on individual user preferences and differences. The recommendations should be tailored to the specific needs of the user, and the system should provide options for users to adjust their preferences.
- **Accessibility:** The system should be accessible to all users, including those with disabilities. The system should meet accessibility standards and be available on multiple platforms, including desktop and mobile devices.

- **Integration:** The system should be able to integrate with other career guidance resources and tools. The system should provide users with links to other resources, including job postings and educational resources.
- **Security:** The system should ensure the privacy and security of user data. The system should meet industry standards for data privacy and security, and user data should be encrypted and stored securely.
- **Testing:** The system should undergo rigorous testing to ensure its accuracy and effectiveness. The system should be tested by users, developers, and quality assurance teams to identify and fix any issues.
- **Maintenance:** The system should be easy to maintain and update as needed. The system should be designed with scalability in mind, and updates should be rolled out quickly and easily without affecting user experience.

Overall, the "Guideme" project should be designed to meet the specific needs of engineering students, providing accurate and personalized career guidance based on user input and machine learning algorithms. The system should be accessible, secure, and easy to maintain, with a user-friendly interface that engages and empowers user

### 2.3.1 Conclusion

In conclusion, a review of existing career guidance systems for engineering students revealed that while some systems provide personalized career recommendations, many are limited in their scope and accuracy. These systems often lack comprehensive databases of engineering careers and may not incorporate machine learning algorithms to analyze user data. Additionally, many existing systems may not be customizable or accessible to all users.

The "Guideme" project aims to address these limitations by providing a comprehensive, user-friendly system that incorporates machine learning algorithms to provide personalized career guidance to engineering students. By identifying and analyzing the specific requirements for this project, we can ensure that the "Guideme" system is accurate, effective, and accessible to all user

# Chapter 3. Proposed System

## Proposed System

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### 3.1 The Proposal

The proposed system, "Guideme," is a career guidance platform designed specifically for engineering students. The system aims to provide personalized career recommendations based on user input and machine learning algorithms. By providing a comprehensive database of engineering careers, up-to-date information on job market trends, and analysis of user data, the "Guideme" system aims to empower students to make informed decisions about their future careers and achieve success in their chosen field.

### 3.2 Benefits of the Proposed System

The benefits of the proposed system include:

- **Personalized Career Recommendations:** The system will provide personalized career recommendations based on user input and machine learning algorithms, taking into account the user's individual preferences and job market trends.
- **Comprehensive Database:** The system will have a comprehensive database of engineering careers that includes up-to-date information on job market trends, required skills, and qualifications. This will help users make informed decisions about their future careers.
- **Accessibility:** The system will be accessible to all users, including those with disabilities. The system will meet accessibility standards and be available on multiple platforms, including desktop and mobile devices.
- **Privacy and Security:** To ensure the privacy and security of user data, the system will meet industry standards for data privacy and security. User data will be encrypted and stored securely.

- Empowerment: The "Guideme" system aims to empower engineering students to make informed decisions about their future careers and achieve success in their chosen field.

The "Guideme" system will be a comprehensive, user-friendly, and secure platform that provides accurate and personalized career guidance to engineering students. By providing up-to-date information on job market trends and individualized career recommendations, the system aims to help users make informed decisions about their future careers and achieve success in their chosen field.

### 3.3 Use Case Diagram

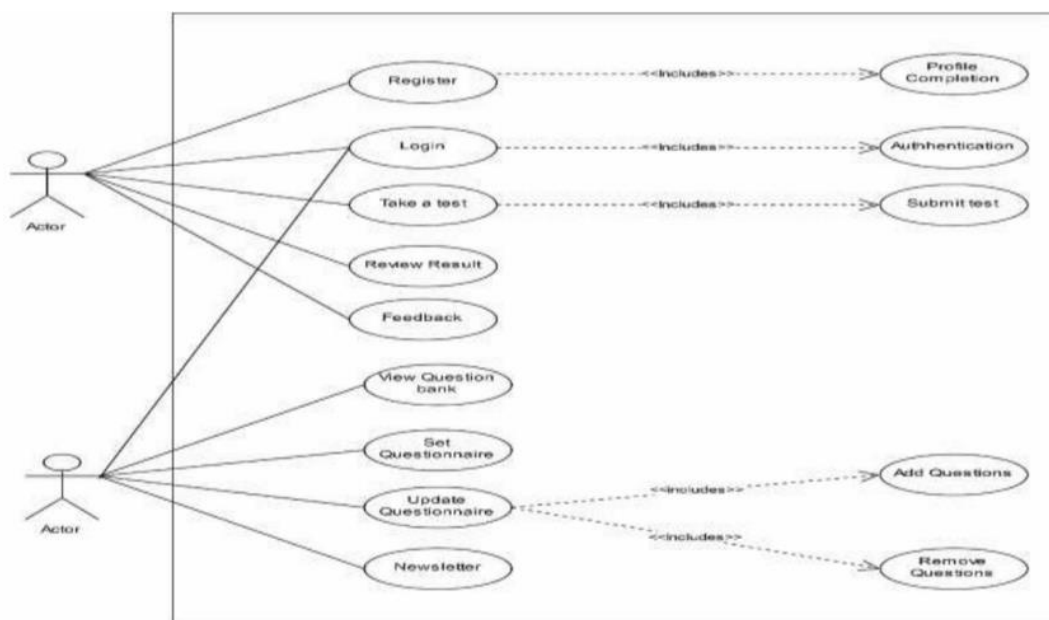


Figure 3-1: Use Case diagram

### 3.4 Feasibility Study

A feasibility study is an analysis of how successfully a system can be implemented, accounting for factors that affect it such as economic, technical and operational factors to determine its potential positive and negative outcomes before investing a considerable amount of time and money into it.

### **3.4.1 Technical**

The technical feasibility of the project refers to the ability to develop and implement the necessary technology for the project. The "Guideme" project requires the use of machine learning algorithms and the development of a user-friendly platform that is accessible on multiple devices. The technology required for the project is widely used and available, which indicates that the project is technically feasible.

### **3.4.2 Economical**

Economic feasibility analyzes the project's profitability and its financial viability in the long run. The "Guideme" project will require a significant investment of time and resources. However, the project's potential benefits, such as providing personalized career guidance to engineering students, suggest that the project is economically feasible. Revenue can be generated by charging subscription fees to institutions or students and charging employers for access to the platform's talent pool.

### **3.4.3 Operational**

Operational feasibility evaluates the capability of the project team to complete the project within the established timeline and budget. The "Guideme" project will require a team of developers, data analysts, and quality assurance personnel. The project team has the necessary skills and expertise, and the project timeline is reasonable, indicating that the project is operationally feasible.

### **3.4.4 Scheduling**

Scheduling feasibility evaluates whether the project can be completed within the established timeline. The project timeline for the "Guideme" project is reasonable, with a projected development time of 12-18 months. However, it is crucial to account for potential delays, such as issues with data integration or technical difficulties, to ensure the project stays on schedule.

## 3.5 Design Representation

### 3.5.1 Data Flow Diagrams

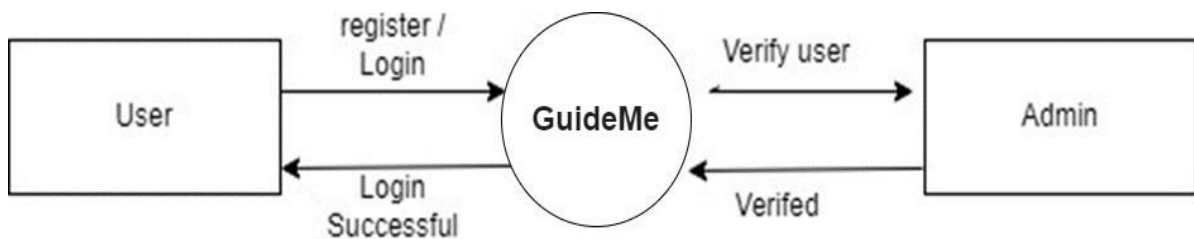


Figure 3-2 Data Flow Diagram Level 0

### 3.5.2 Database Structure

The name of the database created is “My\_db” and there is one table in the database named “Users” for storing the records.

The “Users” table has the following structure:

Name Of data	Type of data store	Description
<b>User Id</b>	Int	<b>Stores the number of users created</b>
<b>User name</b>	String	<b>Stores name of the user</b>
<b>Password</b>	Password	<b>Store the password of the students</b>
<b>Created at</b>	<b>Date</b>	<b>Stores the date of first registration</b>

Table 2: Database Structure

## 3.6 Deployment Requirements

There are various requirements (hardware, software and services) to successfully deploy the system.

These are mentioned below:

### 3.6.1 Hardware

We strongly recommend a computer less than 5 years old.

- Processor: Minimum 1 GHz; Recommended 2GHz or more
- Ethernet connection (LAN) OR a wireless adapter (Wi-Fi)
- Hard Drive: Minimum 32 GB; Recommended 64 GB or more.
- Memory (RAM): Minimum 1 GB; Recommended 4 GB or above.

### 3.6.2 Software

For Software requirement we require following software: -

- Operating System: Windows 10 or higher, or macOS Mojave or higher
- Web Browser: Google Chrome, Mozilla Firefox, Safari or Microsoft Edge
- Database Management System: MySQL, PostgreSQL or Microsoft SQL Server
- Programming Language: Python 3.7 or higher
- Libraries/Frameworks: Flask, scikit-learn, NumPy, pandas



# Chapter 4. Implementation

## Implementation

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For the problem of choosing the right subjects of students of class 10 and also the career options they get from that subjects after school and college so we addressed this problem and come up with a solution and made our platform “GuideMe“which provide all the information related to career and choosing the right subject and chatbot and mentoring features which enhance the platform importance in the market.

### 4.1 Technique Used

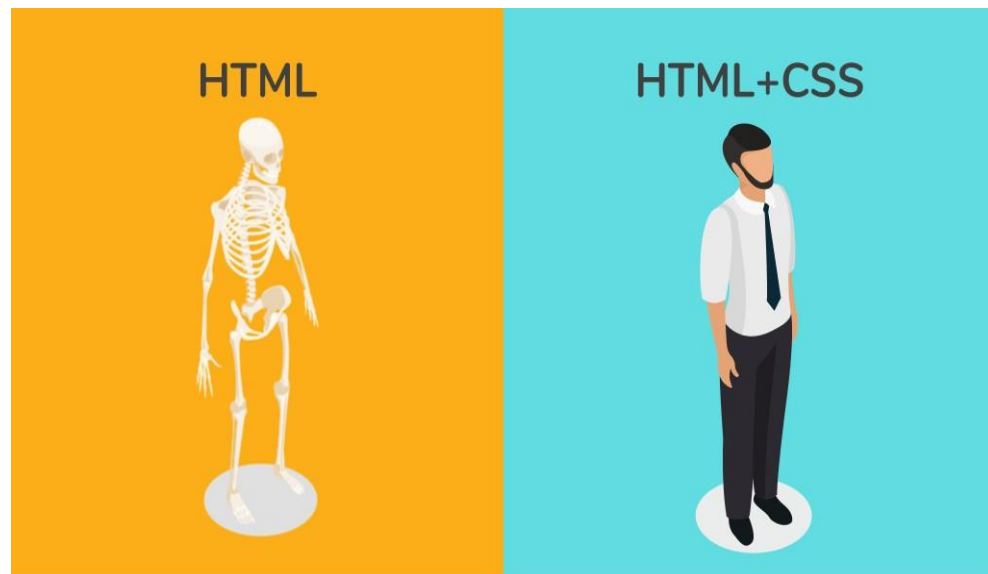
#### 4.1.1 HTML & CSS

The **HyperText Markup Language** or **HTML** is the standard markup language for documents designed to be displayed in a web browser. It can be assisted by technologies such as Cascading Style Sheets (CSS) and scripting languages such as JavaScript.

Web browsers receive HTML documents from a web server or from local storage and render the documents into multimedia web pages. HTML describes the structure of a web page semantically and originally included cues for the appearance of the document.

**Cascading Style Sheets (CSS)** is a style sheet language used for describing the presentation of a document written in a markup language such as HTML or XML (including XML dialects such as SVG, MathML or XHTML). CSS is a cornerstone technology of the World Wide Web, alongside HTML and JavaScript.

CSS is designed to enable the separation of content and presentation, including layout, colors, and fonts. This separation can improve content accessibility; provide more flexibility and control in the specification of presentation characteristics; enable multiple web pages to share formatting by specifying the relevant CSS in a separate .css file, which reduces complexity and repetition in the structural content; and enable the css file to be cached to improve the page load speed between the pages that share the file and its formatting.

**Figure 4-1 : HTML & CSS**

#### **4.1.2 Python:**

Python is a high-level, interpreted programming language that is widely used for web development, data analysis, machine learning, and other areas of computer science. It is known for its simplicity, readability, and ease of use, making it a popular choice for beginners and experts alike.

In the "Guideme" project, Python will be used to develop the backend server and machine learning algorithms that power the platform. Specifically, the Flask web framework in Python will be used to create the server, which will handle user requests, store user data, and retrieve results from the machine learning models.

The scikit-learn library, which is a popular Python library for machine learning, will be used to build and train the models that provide career guidance recommendations to users. The NumPy and pandas libraries will be used for data manipulation and analysis.

#### **4.1.3 Php**

PHP (Hypertext Preprocessor) is a server-side scripting language used for web development. It is designed to create dynamic web pages and can be embedded into HTML code.

In the "Guideme" project, PHP is used for the frontend development of the platform. It can be used in conjunction with HTML and CSS to create the user interface and provide interactivity for the platform.

Additionally, PHP can be used for server-side scripting, which involves processing data submitted by users and returning appropriate responses. For example, when a user submits their interests and skills, PHP code can be used to validate and process that data before storing it in a database.

However, it is important to note that the specific use of PHP in the "Guideme" project may vary based on the design and implementation of the platform. The main focus of the project is to use Python and machine learning algorithms to provide career guidance recommendations, and the use of PHP would likely be limited to frontend and server-side scripting tasks.

## 4.2 Tools Used

### 4.2.1 Visual Studio Code

**Visual Studio Code**, also commonly referred to as **VS Code**, is a source-code editor made by Microsoft with the Electron Framework, for Windows, Linux and macOS. Features include support for debugging, syntax highlighting, intelligent code completion, snippets, code refactoring, and embedded Git. Users can change the theme, keyboard shortcuts, preferences, and install extensions that add additional functionality.

Visual Studio Code is a source-code editor that can be used with a variety of programming languages, including Java, JavaScript, Go, Node.js, Python, C++, C, Rust and Fortran. It is based on the Electron framework, which is used to develop Node.js web applications that run on the Blink layout engine. Visual Studio Code employs the same editor component (codenamed "Monaco") used in Azure DevOps (formerly called Visual Studio Online and Visual Studio Team Services).

### 4.2.2 Github

**GitHub, Inc.** is an Internet hosting service for software development and version control using Git. It provides the distributed version control of Git plus access control, bug tracking, software feature requests, task management, continuous integration, and wikis for every project. Headquartered in California, it has been a subsidiary of Microsoft since 2018.

It is commonly used to host open source software development projects. As of June 2022, GitHub reported having over 83 million developers and more than 200 million repositories, including at least 28 million public repositories.<sup>[10]</sup> It is the largest source code host as of November 2021.

## 4.3 Language Used

Javascript language is used in the system due to the following Characteristics

### **Scripting Language:**

JavaScript is a lightweight scripting language made for client-side execution on the browser. Since it is not designed as a general-purpose language and is specially engineered for web applications, the set of libraries is also geared primarily towards web applications.

### **Interpreter Based:**

JavaScript is an interpreted language instead of a compiled one. In that sense, it is closer to languages like Ruby and Python. The browser interprets JavaScript's source code, line by line and runs it. In contrast, a compiled language needs to be compiled into a byte-code code executable. Java and C++ are examples of compiled languages.

### **Light Weight:**

JavaScript isn't a compiled language, so it doesn't get converted to byte-code beforehand. However, it does follow a paradigm called Just-In-Time (JIT) Compilation. Meaning it gets converted to bytecode just as it's about to run. This enables JS to be lightweight. Even less powerful devices are capable of running JavaScript.

### **Platform Independent:**

JavaScript is platform-independent; it can run on any computer irrespective of the operating systems used. JavaScript is built into Netscape 2.0 and greater. Since the JavaScript interpreter is part of Netscape, it runs on platforms that support Netscape, which means that a piece of Javascriptcode will give the same output with the same setup on all platforms.

## 4.4 Screenshots

The Following are the screenshots of the result of the project :

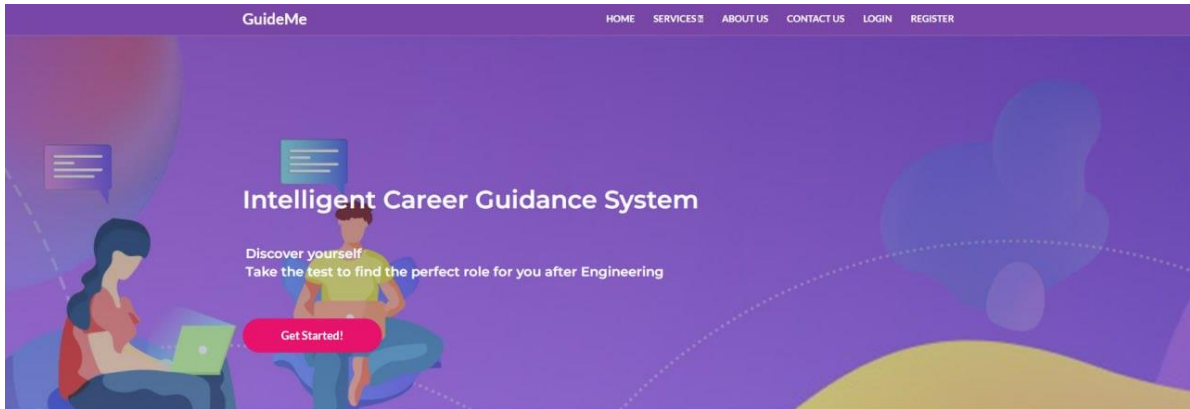


Figure 4-2: Screenshot 1 (Home page)

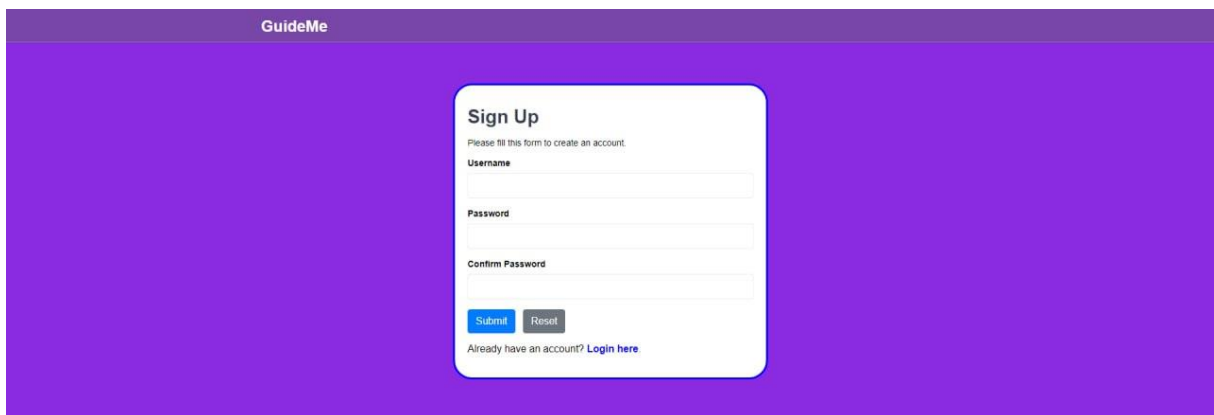


Figure 4-3: Screenshot 2 (Sign up Page)

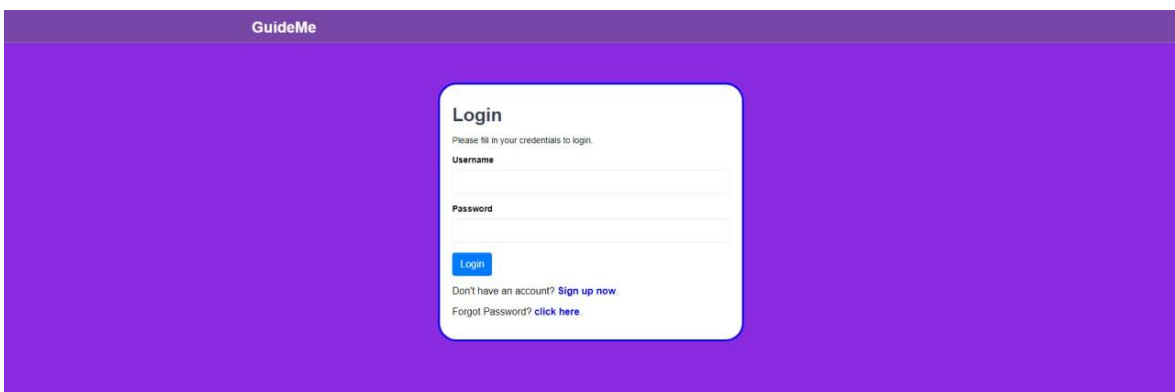


Figure 4-4: Screenshot 3 (Login Page)

GuideMe

HOME SERVICES? ABOUT US CONTACT US LOG OUT

Services Career Prediction

Get Started to Discover Yourself!

**RATE YOURSELF .....!!**

Database Fundamentals Choose option

Computer Architecture Choose option

Distributed Computing Systems Choose option

Data Science Choose option

Troubleshooting skills Choose option

Graphics Designing Choose option

**DISCOVER YOURSELF!**

GuideMe

Figure 4-5: Screenshot 4 (Rate yourself form)

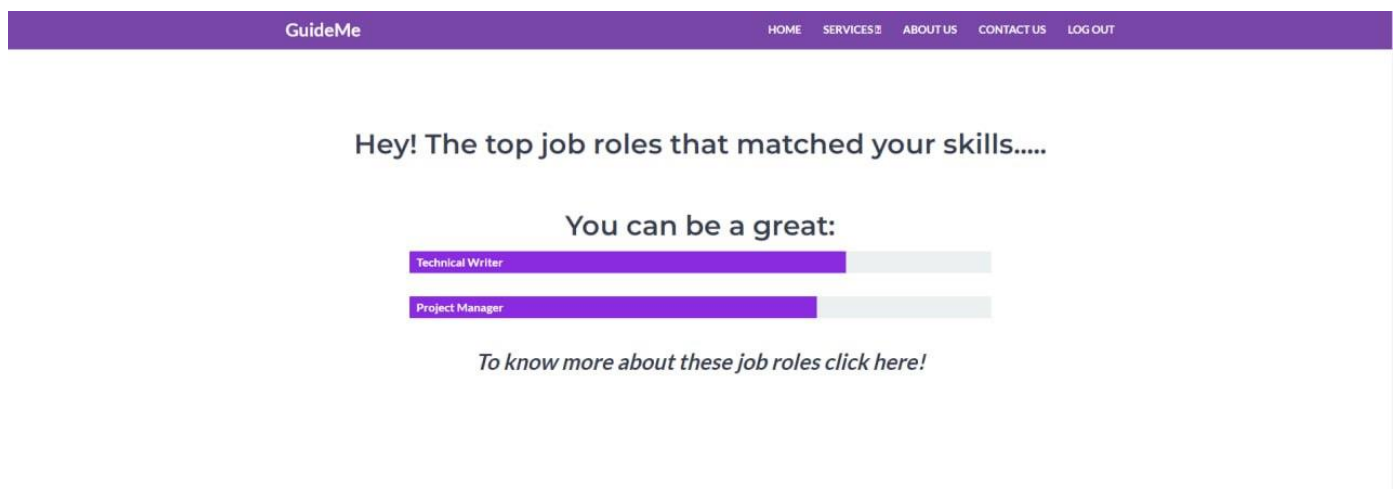


Figure 4-6: Screenshot 4 (Result)

## **4.5 Testing**

Testing is the process of evaluation of a system to detect differences between given input and expected output and to assess the features of the system. Testing assesses the quality of the product. It is a process that is done during the development process.

### **4.5.1 Strategy Used**

Tests can be conducted by simply putting different kinds of values and checking whether the value is acceptable or not. If the value is accepted then it will be saved in the database otherwise return the error.

# Chapter 5. Conclusion

## Conclusion

---

### 5.1 Conclusion

In conclusion, the career guidance project will provide valuable insights and resources for individuals looking to explore and pursue their career aspirations. Through the research and analysis conducted, we have highlighted various career paths and industries, as well as the skills and qualifications needed to succeed in them. We have also discussed the importance of networking, internships, and continued education in the job search process. By utilizing the information provided in this project, individuals can make informed decisions about their career goals and take steps towards achieving them. We hope that this project has been helpful in providing guidance and inspiration for individuals as they navigate their career journey.

### 5.2 Limitations of the Work

While the proposed "Guideme" project is designed to provide valuable guidance and support to engineering students, there are some limitations to the platform that should be considered. Some of these limitations include:

- **Limited Scope:** The system is designed specifically for engineering students, and may not be applicable to students pursuing other fields or disciplines.
- **Limited Data:** The accuracy and reliability of the system's recommendations depend heavily on the quality and quantity of data available. If the system is not able to access enough relevant data, its recommendations may not be as accurate or helpful.
- **Machine Learning Limitations:** While machine learning algorithms can be powerful tools for making predictions and recommendations, they are not foolproof. The system's recommendations may be influenced by factors such as bias in the data or limitations in the algorithm itself.
- **User Error:** The accuracy of the system's recommendations also depends on the



accuracy of the information provided by the user. If the user inputs incorrect or incomplete data, the system may provide inaccurate recommendations.

- **Human Input Limitations:** Even with machine learning algorithms and advanced data analysis, the system is still limited by the human expertise and knowledge of the development team. It is possible that some fields or career paths may be overlooked or not included in the system's recommendations due to the limitations of human input.

While these limitations should be considered, they do not detract from the value and usefulness of the "Guideme" project. By providing a user-friendly platform that incorporates machine learning algorithms and advanced data analysis, the platform can provide valuable guidance and support to engineering students as they navigate their educational and career paths.

### **5.3 Suggestion and Recommendations for Future Work**

There are several potential areas for future work and improvements for the "Guideme" project. Some suggestions and recommendations include:

- **Integration with Additional Data Sources:** In order to improve the accuracy and relevance of the system's recommendations, future work could focus on integrating additional data sources, such as job market trends and employer hiring practices. This could provide students with more up-to-date and relevant information to inform their career decisions.
- **Expansion to Other Fields:** While the initial focus of the project is on engineering students, there is potential for expansion to other fields or disciplines. Future work could focus on developing similar systems for students pursuing other areas of study.
- **Refinement of Machine Learning Algorithms:** As machine learning algorithms continue to evolve, there is potential for improvements to the accuracy and reliability of the system's recommendations. Future work could focus on refining these algorithms and incorporating more advanced techniques such as deep learning.
- **Integration with Career Development Resources:** In order to provide more

comprehensive support to students, future work could focus on integrating the system with other career development resources, such as resume builders or job search engines.

- **User Feedback and Testing:** Finally, ongoing user feedback and testing is critical to the success and usefulness of the "Guideme" project. Future work could focus on gathering feedback from users and incorporating this feedback into ongoing improvements and updates to the system.

# Bibliography

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- Muhammad Dawood, Amna Arshad, “Career Counselling for Better Future Studies using Machine Learning techniques”, July 2018
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# Guide Interaction Sheet

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Date	Discussion	Action Plan
9/08/2022	Discussed about topic	Choose the topic from the list of projects
16/08/2022	Discussion on the title of the project that we use	Choose the title Margadarshak for our project
25/08/2022	Discussion of the creation of synopsis of the project	Gathering of information for synopsis creation
28/08/2022	Suggestions on how to do a literature survey and preliminary investigation on the topic	Many research papers were read , understood and their abstract were to be written.
03/09/2022	Discussion on the implementation of the project	Using web development technology
20/11/2022	Discussion on project documentation	Discussion on the documentation

# Source Code

---

## 1 Home page

```

<?php
// Initialize the session
session_start();
?>

<!DOCTYPE html>
<html lang="en">
<?php include 'header.php'?>
    <!-- Home -->
    <div id="home" class="hero-area">

        <!-- Background Image -->
        <div class="bg-image bg-parallax overlay" style="background-
image:url(/img/bg.jpg); width:100%; height: 656px;"></div>
        <!-- /Background Image -->

        <div class="home-wrapper">
            <div class="container">
                <div class="row">
                    <div class="col-md-8">

                        <h1 class="white-text" style="font-size: 40px;margin-top:
20px;
                        margin-bottom:50px;">Intelligent Career Guidance System</h1>

                        <?php
                            // Check if the user is logged in, if not then redirect
                            him to login page
                            if(!isset($_SESSION["loggedin"]) || $_SESSION["loggedin"]
!= true):?>
                                <p class="lead white-text" style="margin-left: 5px;"
><b>Discover yourself<br>Take the test to find the perfect role for you after
Engineering</b></p>

                                <a class="main-button icon-button"
href="login.php">Get Started!</a>

                                <?php else: ?>
                                    <p class="lead white-text" style="margin-left: 5px;"
><b>Hi, <?php echo htmlspecialchars($_SESSION["username"]); ?> !<br><b>Discover
yourself,<br>Take the test to find the perfect role for you after Engineering</b></p>

                                    <a class="main-button icon-button"
href="http://127.0.0.1:5000/">Get Started!</a>

                                <?php endif ?>

```

```

        </div>
    </div>
</div>
<!-- /Home -->

<!-- Why us -->
<div id="why-us" class="section">

    <!-- container -->
    <div class="container">

        <!-- row -->
        <div class="row">
            <div class="section-header text-center">

                <h2 style="margin-top: 100px; font-size: 45px;">Welcome to
GuideMe</h2>

                <!--<p class="lead">We all want to fly high and in real time!<br>
And in this random pursuit of success, we end up making wrong career choices.</p>-->
                <p class="lead"><b style="color: rgb(56, 48, 48);">GuideMe</b> is
one stop destination <br>in helping you understand yourself, the best career for you <br>
and providing all the resources in the process.</p>
            </div>
        </div>

        <div class="row">
            <!-- feature -->
            <div class="col-md-4">
                <div class="feature">
                    <i class="feature-icon fa "><span>
&#x1F50E;&#xFE0E;</span></i>
                    <div class="feature-content">
                        <a href="#" >
                            <?php
                                // Check if the user is logged in, if not then redirect
him to login page

                                if(!isset($_SESSION["loggedin"]) || $_SESSION["loggedin"]
!= true):?>
                                    <a href="login.php"><h4>Career Prediction</h4></a>
                                <?php else: ?>
                                    <a href="http://127.0.0.1:5000/"><h4>Career
Prediction</h4></a>

                                <?php endif ?>

                                <p>Take the test to find the perfect role for you after
Engineering.</p>

```

```

        </div>
    </div>
</div>
<!-- /feature -->

<!-- feature -->
<div class="col-md-4">
    <div class="feature">
        <i class="feature-icon fa "><span>&#x1F50E;&#xFE0E;</span></i>
        <div class="feature-content">
            <a href="blog.php" >
                <h4>Knowledge Network</h4>
            </a>
            <p>Gain knowledge through various sources, like important
informational links, access to study materials, etc.</p>
        </div>
    </div>
</div>
<!-- /feature -->

<!-- feature -->
<div class="col-md-4">
    <div class="feature">
        <i class="feature-icon fa "><span>&#x1F50E;&#xFE0E;</span></i>
        <div class="feature-content">
            <a href="courses.php" >
                <h4>Online Courses</h4>
            </a>
            <p>Links to relevant Courses.</p>
        </div>
    </div>
</div>
<!-- /feature -->

</div>
<!-- /row -->

<hr class="section-hr">

</div>
<!-- /container -->

</div>
<!-- /Why us -->

<!-- Call To Action -->
<div id="cta" class="section" style="height: 400px;">

    <!-- Background Image -->
    <div class="bg-image bg-parallax overlay" style="background-
image:url(./img/bgmid.jpg)"></div>
    <!-- /Background Image -->

    <!-- container -->
    <div class="container">

```

```

        <!-- row -->
        <div class="row">

            <div class="col-md-6">

                <?php
                    // Check if the user is logged in, if not then redirect
him to login page
                    if(!isset($_SESSION["loggedin"]) || $_SESSION["loggedin"]
!= true):?>
                        <h2 class="white-text" style="font-size: 30px;
width:700px ;">Hi,</h2>

                        <h2 class="white-text" style="font-size: 25px;
width:700px ; margin-top:10px;">Your Career Path Begins Here</h2>
                        <p class="lead white-text" >We Create Beautiful
Experiences

                            That Drive Successful Careers.</p>
                            <a class="main-button icon-button"
href="register.php">Get Started!</a>
                        <?php else: ?>
                            <h2 class="white-text" style="font-size: 30px;
width:700px ;">Hi, <b><?php echo htmlspecialchars($_SESSION["username"]); ?> !</b></h2>

                            <h2 class="white-text" style="font-size: 25px;
width:700px ; margin-top:10px;">Your Career Path Begins Here</h2>
                            <p class="lead white-text" >We Create Beautiful
Experiences

                                That Drive Successful Careers.</p>
                                <a class="main-button icon-button"
href="/templates/hometest.html">Get Started!</a>

                        <?php endif ?>
                    </div>

                </div>
            <!-- /row -->

        </div>
    <!-- /container -->

</div>
<!-- /Call To Action -->

<!-- About -->
<div id="about" class="section">

    <!-- container -->
    <div class="container">

        <!-- row -->
        <div class="row">

```



```

<div class="col-md-6">
  <div class="section-header">
    <h2 style="font-size: 35px;">About GuideMe</h2>
    <p class="lead" style="font-size: 18px; font-style: italic;
margin-top: 50px;">Education seekers get a personalised experience on our site, based on
educational background and career interest, enabling them to make well informed course
and career decisions. The decision making is empowered with easy access to detailed
information on career choices, courses, exams, colleges, admission criteria, eligibility,
placement statistics, rankings, reviews, scholarships, latest updates etc as well as by
interacting with other GuideMe users, experts, current students in colleges and alumni
groups. We have introduced several student oriented products and tools like Career
Prediction, Knowledge Network, Daily Bytes, Blogs, Community discussion forum, and
various Courses.</p>
    <!--Education seekers get a personalised experience on our
site, based on educational background and career interest, enabling them to make well
informed course and college decisions. The decision making is empowered with easy access
to detailed information on career choices, courses, exams, colleges, admission criteria,
eligibility, fees, placement statistics, rankings, reviews, scholarships, latest updates
etc as well as by interacting with other Shiksha.com users, experts, current students in
colleges and alumni groups. We have introduced several student oriented products and
tools like Career Central, Common Application Form, Top Colleges, College Compare, Alumni
Employment Stats, Campus Connect, College Reviews, College Predictors, MyShortlist and
Shiksha Café.-->
  </div>
</div>

<div class="col-md-6">
  <div class="about-img">
    
  </div>
</div>
</div>
<!-- row -->
<hr class="section-hr">
</div>
<!-- container -->
</div>
<!-- /About -->

<!-- Contact CTA -->
<div id="contact-cta" class="section" style="height: 400px;">

  <!-- Background Image -->
  <div class="bg-image bg-parallax overlay" style="background-
image:url(./img/cta2-background.jpg)"></div>
  <!-- Background Image -->

  <!-- container -->
  <div class="container">

    <!-- row -->
    <div class="row">

```

```

        <div class="col-md-8 col-md-offset-2 text-center">
            <h2 class="white-text">Contact Us</h2>
            <p class="lead white-text">Help us to get to know you.</p>
            <a class="main-button icon-button" href="contact.php">Contact Us
Now</a>

        </div>

    </div>
<!-- /row -->

</div>
<!-- /container -->

</div>
<!-- /Contact CTA -->

<?php include 'footer.php'?>
</html>

```

## 2 testapp.py

```

from flask import Flask, render_template, request
import pickle
import numpy as np

app = Flask(__name__)

@app.route('/')
def career():
    return render_template("hometest.html")

@app.route('/predict', methods = ['POST', 'GET'])
def result():
    if request.method == 'POST':
        result = request.form
        i = 0
        print(result)
        res = result.to_dict(flat=True)
        print("res:", res)
        arr1 = res.values()
        arr = ([value for value in arr1])

        data = np.array(arr, dtype=np.float64)

        data = data.reshape(1,-1)
        print(data)
        loaded_model = pickle.load(open("careerlast.pkl", 'rb'))
        predictions = loaded_model.predict(data)
        #return render_template('testafter.html', a=predictions)

        print(predictions)

```

```

pred = loaded_model.predict_proba(data)
print(pred)
#acc=accuracy_score(pred,)
pred = pred > 0.05
#print(predictions)
i = 0
j = 0
index = 0
res = {}
final_res = {}
while j < 17:
    if pred[i, j]:
        res[index] = j
        index += 1
    j += 1
# print(j)
#print(res)
index = 0
for key, values in res.items():
    if values != predictions[0]:
        final_res[index] = values
        print('final_res[index]:',final_res[index])
        index += 1
#print(final_res)
jobs_dict = {0:'AI ML Specialist',
              1:'API Integration Specialist',
              2:'Application Support Engineer',
              3:'Business Analyst',
              4:'Customer Service Executive',
              5:'Cyber Security Specialist',
              6:'Data Scientist',
              7:'Database Administrator',
              8:'Graphics Designer',
              9:'Hardware Engineer',
              10:'Helpdesk Engineer',
              11:'Information Security Specialist',
              12:'Networking Engineer',
              13:'Project Manager',
              14:'Software Developer',
              15:'Software Tester',
              16:'Technical Writer'}

#print(jobs_dict[predictions[0]])
job = {}
#job[0] = jobs_dict[predictions[0]]
index = 1

data1=predictions[0]
print(data1)
return

render_template("testafter.html",final_res=final_res,job_dict=jobs_dict,job0=data1)

if __name__ == '__main__':
    app.run(debug = True)

```

### 3 testmodel.py

```

import pandas as pd
import numpy as np
import pickle
career = pd.read_csv('dataset9000.data', header = None)
#np.dtype('float64')

X = np.array(career.iloc[:, 0:17]) #X is skills
print(X)
y = np.array(career.iloc[:, 17]) #Y is Roles
print("hi")
print(y)

## attribute to return the column labels of the given Dataframe
career.columns = ["Database Fundamentals","Computer Architecture","Distributed Computing Systems",
"Cyber Security","Networking","Development","Programming Skills","Project Management",
"Computer Forensics Fundamentals","Technical Communication","AI ML","Software Engineering","Business Analysis",
"Communication skills","Data Science","Troubleshooting skills","Graphics Designing","Roles"]

career.dropna(how='all', inplace=True)
#print("career.dropna(how='all', inplace=True)",career.dropna(how='all', inplace=True))
career.head()
## splitting the data into training and test sets
from sklearn.model_selection import train_test_split
X_train, X_test, y_train, y_test = train_test_split(X, y, test_size = 0.3, random_state = 524)
from sklearn.neighbors import KNeighborsClassifier
from sklearn import metrics
scores = {}
knn = KNeighborsClassifier(n_neighbors=5)

knn.fit(X_train, y_train)
print('X_train',X_train)
print('y_train',y_train)
y_pred = knn.predict(X_test)
print('y_pred',y_pred)
scores[5] = metrics.accuracy_score(y_test, y_pred)
print('Accuracy=',scores[5]*100)

pickle.dump(knn, open('careerlast.pkl','wb'))
print('test file created')

```