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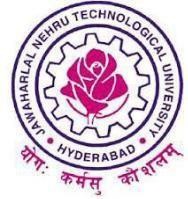
MINI PROJECT REPORT ON

## “CAREER CRAFTS–CUSTOM PATHS FOR UNIQUE MINDS”

##### Submitted in partial fulfilment of the requirement for the award of the Degree of BACHELOR OF TECHNOLOGY

IN

COMPUTER SCIENCE AND ENGINEERING



##### Submitted By

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##### (Approved by AICTE and Affiliated to JNTUH.) (2022-2026)

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Date:

## CERTIFICATE

This is to certify that the project report entitled “CAREER CRAFTS – CUSTOM PATHS FOR UNIQUE MINDS” is a record of bonafide work carried out by **SABA SANIYA (226B1A05A1), SYEDA SANIYA NIMRAH (226B1A05B1), SHAZIA HAQQANI**

**(226B1A05A4), TASMIYA MAHEEN (226B1A05B4)** students of B. Tech, under my supervision and guidance in Partial fulfilment for the award of Bachelor of Technology in Computer Science and Engineering during the academic year 2024 -2025.

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# INDEX

|  |  |
| --- | --- |
| **CONTEXT** | **PAGENO.** |
| **ACKNOWLEDEMENT** | **I** |
| **DECLARATION** | **II** |
| **ABSTRACT** | **III** |
| **1. INTRODUCTION** | **1-3** |
| **2.LITERATURE SURVEY** | **4-5** |
| 1. **SYSTEM ANALYSIS**    1. Existing System    2. Proposed System    3. Algorithm Used | **6-11** |
| 1. **SYSTEM DESIGN**    1. Use Case Diagram    2. ER Diagram    3. Sequence Diagram | **12-18** |
| **5. SYSTEM CODING AND IMPLEMENTATION** | **19-27** |
| **6. TESTING** | **28-29** |
| **7.SCREENSHOTS** | **30-35** |
| **8. CONCLUSION** | **36-37** |
| **9. CHALLENGES AND FUTURE ENHANCEMENTS** | **38-40** |
| **10. REFERENCES** | **41** |

**CAREER CRAFTS – CUSTON PATHS FOR UINQUE MINDS**

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## DECLARATION

We here by declare that this project has been carried out entirely under the esteemed guidance of **Miss SOUNDARIYA** (Asst.prof) for the partial fulfillment of the award of the degree of **Bachelor of Technology in Computer Science and Engineering** at **Kakatiya Institute of Technology & Science for Women,** Manikbhandar, Nizamabad, Affiliated to JNTUH and further it has not been submitted to any other university or institutions for the award of any other degree.

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## ABSTRACT

Choosing the right career is one of the biggest decisions in a student’s life. Many students get confused or end up choosing paths based on family pressure or lack of guidance. *Career Craft* is a smart solution that helps students choose the best career based on what they are good at and what they enjoy doing. It respects every person’s uniqueness and gives career suggestions that suit their personality and interests.

Purpose of the Project:

The main aim of Career Craft is to guide students in a personalized way. Instead of suggesting the same career to everyone, it takes into account each user’s hobbies, skills, and goals. Then, it matches them with the most suitable career options.

How it Works:

1. The user registers on the website (creates an account).
2. After logging in, the user takes a simple interest-based quiz or assessment.
3. The system analyses the answers using logic and shows a list of career options that match the user’s profile.
4. The user can read more about each career—like what it is, what qualifications are needed, job roles, salary, etc.
5. The admin panel helps manage users and update career data in the system.

Key Features:

* + User-friendly design – simple and attractive for students.
  + Login and registration system for security.
  + Personalized career recommendations.
  + Admin dashboard for control and updates.
  + Future scope to include resume building, courses, or mentor guidance.

Why It’s Unique:

Career Craft stands out because it respects every individual’s uniqueness. It doesn’t say “one job fits all.” Instead, it says “let’s find the job that fits *you*.”

Conclusion:

Career Craft is not just a project—it’s a helping hand to all the confused students out there. It guides them toward a path where they can be successful and happy, not just employed.

**KITSW – CSE PAGE - III**

### Introduction

In today’s competitive and ever-evolving world, choosing the right career has become a major challenge for students. With the explosion of opportunities in fields like Artificial Intelligence, Data Science, Entrepreneurship, Digital Marketing, Accounting, Biology and many more, the journey of selecting a suitable career is no longer linear. Students often face confusion, societal pressure, and lack of personalized guidance when it comes to making career-related decisions. This is where the idea of **“Career Crafts”** comes into play.

**Career Crafts** is an innovative and user-centric platform developed as a mini project to offer **interest-driven career guidance** for students. The aim of this project is not just to display available career options, but to understand the user’s unique interests and strengths, and then suggest personalized career paths accordingly. It is crafted with the intention of simplifying one of the most complex decisions a student makes in their lifetime—**choosing a career**.

#### The Real-Life Problem

Imagine a 17-year-old student in a small town who has just completed her intermediate education. She has dreams but doesn’t know where to start. Her parents suggest engineering, society pushes her toward medicine, and her friends talk about studying abroad. However, nobody asks her what she truly *wants*. This scenario is extremely common. Due to lack of proper career awareness, students either follow the crowd or end up in fields they have no interest in—leading to dissatisfaction, poor performance, and even mental health issues.

There are career counsellors and offline seminars available in urban areas, but they are not accessible to everyone. Most students do not get personalized counselling due to the cost, distance, or lack of information. Also, career options are rapidly evolving, and traditional counselling doesn't always keep up with the latest trends.

#### Why "Career Crafts" Was Born?

**Career Crafts** was developed as a solution to these real-world issues. The idea is simple yet powerful—**help students discover career paths based on their interests, not based on marks or family pressure**. Instead of forcing students into predefined boxes, this system

allows them to explore various fields through a guided process. It offers suggestions backed by logic, data, and a clear understanding of the student’s personality and passions.

For example, if a student loves drawing and storytelling, the system may suggest careers like graphic designing, animation, or content creation. If another student is passionate about problem-solving and math, it might suggest data science, machine learning, or engineering paths.

#### Purpose of the Project

The primary objective of this mini project is to develop an **intelligent career guidance platform** that:

* + Understands the interests of students through interest based quiz.
  + Recommends career options that align with those interests.
  + Offers brief descriptions of each career path including required education, skills and future opportunities.

This solution will serve as a digital career companion for students, especially in tier-2 or rural areas, who often lack professional guidance.

#### Scope of the Project

The scope of **Career Crafts** includes:

* + **User Registration and Login**: So each user can securely access their personalized dashboard.
  + **Interest-Based Assessment**: A simple quiz to assess the student’s interests.
  + **Career Suggestion System**: Based on answers, the system suggests suitable career options.
  + **Career Info Pages**: Each career option includes details like required courses and fields to pursue.
  + **Admin Portal**: Admin can log in to manage the database, and accepts the user to interact with webpages.

This platform can later be expanded to include resume-building tips, internship suggestions, real-time job trends, and more.

#### Real-Time Applications and Impact

The value of this system is not just theoretical—it has *practical impact* in real-life scenarios:

* + A student from a village with no career counsellor can use Career Crafts to discover new and emerging fields.
  + A 12th-grade student confused between commerce and arts can take the interest quiz and receive suggestions that match their personality.
  + NGOs working on education can use this as a free tool to guide underprivileged students.

This project is designed not only as an academic assignment but also as a potential real-world product that can genuinely help students shape their future.

#### Who Can Use This Platform?

While Career Crafts is focused on students, it is also useful for:

* + **Parents**: To understand their child’s interests better.
  + **Teachers**: To guide students in choosing subject streams.
  + **Counsellors**: As a tool to assist in career discussions.
  + **Institutions**: To integrate as part of their student support services.

#### Technological Relevance

The platform uses basic **web development technologies** like:

* + **Java Servlets (Backend)**
  + **HTML/CSS (Frontend)**
  + **SQL XAMPP (Database)**

These technologies are not only suitable for mini projects but also prepare students for real- world software development experience.

### Literature Survey

***Title:*** Career Guidance Systems Using Machine Learning

* + **Authors:** Prabhu et al., 2020
  + Summary:

This paper proposes a system that uses personality traits and academic interests to suggest career paths using decision trees. It addresses the need to move beyond traditional counseling.

* + Limitations:

Static rules and limited adaptability for diverse student profiles.

***Title:*** A Web-Based Career Guidance System

* + **Authors:** Sangeetha & Karthik, 2019
  + Summary:

Focused on a simple online portal where users answer questions and get results based on a rule-based algorithm. The interface was basic, and results were not always personalized.

* + Limitations:

Did not consider dynamic user data like performance history or evolving interests.

***Title:*** AI-Powered Career Counselling System

* + **Authors:** Rao & Deepa, 2021
  + Summary:

Introduces AI techniques to provide better career recommendations. The system learns from users’ quiz results, preferences, and skills.

* + Limitations:

High resource requirements and needed more accurate datasets for proper suggestions.

***Title:*** Student Career Prediction Using Machine Learning

* + **Authors:** Anitha et al., 2022
  + Summary:

Used machine learning models (KNN, SVM) to predict suitable career streams. Focused mostly on marks and performance as input.

* + Limitations:

Lacked inclusion of student passions, goals, or external interests.

***Title:*** A Personalized Career Guidance System for High School Students

* + **Authors:** Kumar & Sharma, 2023
  + Summary:

Combined academic data and psychological profiling to guide students. It emphasized personalized suggestions using NLP-based quizzes.

* + Limitations:

Limited to school-level users, with no admin moderation or career tracking.

###### Gap Identified:

Most existing systems either use limited data, lack personalization, or are not interactive. There’s little focus on students’ emotional choices, evolving interests, or admin-controlled environments.

**Project’s Novelty – *Career Crafts***

* + Combines **custom quizzes**, **admin approval**, and **multi-path suggestions**.
  + Focuses on **student uniqueness**, **career diversity**, and **data saving features**.
  + Offers both **user (student)** and **admin** roles for better management and tracking.
  + Presents **dynamic career suggestions**, not just fixed predictions.

### System Analysis

System analysis is a crucial step in the software development lifecycle. It involves a thorough examination of the current (existing) system to identify problems, gaps, and inefficiencies. Based on these findings, a new (proposed) system is designed that aims to offer improved performance, user satisfaction, and operational ease. In this section, we will analyse the current scenario regarding career guidance systems, the limitations that students face, and how our proposed solution – **Career Crafts** – addresses those issues in a smarter, more efficient way.

#### Existing System

The existing system of career guidance primarily relies on:

* + - Traditional school or college counsellors.
    - Parental suggestions or pressure.
    - Peer influence.
    - Marks-based stream selection (e.g., science if marks are high, commerce or arts otherwise).
    - Occasional seminars/webinars by motivational speakers or coaching institutes.
    - Limited mobile apps with general career info.

While some of these approaches have helped students in the past, they are no longer sufficient in the modern world. Today’s students face an overwhelming number of career choices. Fields like UI/UX design, machine learning, ethical hacking, game development, BioTech, Artificial Intelligence and influencer marketing didn’t even exist a decade ago.

#### Real-Life Scenario:-

Consider a student named **Riya**. She is in her final year of intermediate education. She’s creative, enjoys editing videos, and is interested in social media. However, her parents want her to study medicine because her elder brother is a doctor. She has no access to professional career counselling in her town, and she doesn't know that careers like content creation, digital marketing, or media management even exist.

This situation reflects how the **existing system** often fails to recognize individual interests.

#### Problems in the Existing System

1. Lack of Personalization:

The existing systems mostly follow a one-size-fits-all model. They don’t ask students about their interests, hobbies, or aspirations.

1. Outdated Information:

Career options keep evolving with technology. Existing offline systems often don’t keep up with these changes.

1. Urban-Rural Gap:

Most career guidance sessions happen in cities. Students in rural areas rarely get access to professional advice.

1. Marks-Based Judgments:

Students are often forced to choose their career paths based solely on academic scores.

1. Lack of Digital Platforms:

Though some mobile apps exist, they usually give general information about careers without connecting them to the user’s personality.

1. Costly Counselling:

Private career counselling sessions are expensive and unaffordable for many families.

1. Emotional Pressure:

Many students suffer from anxiety, confusion, and depression because of poor career decisions or societal expectations.

#### Limitations:

* + No consideration for personal interest.
  + Not interactive or tech-friendly.
  + Limited access in rural areas.
  + Lack of real-time updates and feedback.
  + Not scalable or adaptable to individual needs.

#### Proposed System – Career Crafts

**Career Crafts** is a digital platform built to overcome the above challenges by offering **interest-driven career guidance** using a simple, interactive, and intelligent web-based interface. It is designed to function like a virtual career counsellor, available anytime and anywhere.

#### Goals of the Proposed System

* + - Help students explore careers that match their interests.
    - Provide detailed and updated information about each career.
    - Reduce dependency on marks and peer pressure.
    - Make career guidance accessible to everyone, especially in remote areas.
    - Allow admin control for real-time data management.
    - Ensure a secure, user-friendly experience.

#### Key Features

1. Interest-Based Quiz:

A simple quiz helps understand the student’s passions, skills, and likes.

1. Personalized Career Suggestions:

Based on answers, the system displays a list of recommended careers.

1. Career Details Page:

Every suggested career has its own page explaining:

* + What the job involves
  + Skills required
  + Educational pathway
  + Job roles

1. Admin Module:

Admin can:

* + Accept the users to interact with webpage.

1. User Registration/Login:

Secure system to store user data for a personalized experience.

1. Future Scope
   * AI-based career matching
   * Resume building and skill tracking
   * College and course recommendations

#### Benefits of Career Crafts

* **Personalization**: Every user gets a unique experience based on their input.
* **User Engagement**: Easy navigation and interactive features encourage user interest.
* **Cost-Effective**: Free to use, unlike costly private counselling.
* **Updated Info**: Admins can allow users to login securely.

#### Real-Life Situation:

Let’s go back to Riya. This time, she logs into **Career Crafts** and takes the interest quiz. The system finds she enjoys creativity, media, and communication. It suggests careers like:

* Video Editor
* Content Creator
* Social Media Manager
* Public Relations Officer
* Digital Marketer

Each career has a clear path, helping Riya understand what she needs to study and what skills to develop. She shares it with her parents, who now see a structured roadmap. With confidence and support, Riya chooses digital media as her career path.

#### Algorithm Used:

The core of Career Crafts is its **Interest-Driven Career Suggestion Algorithm**. This simple yet effective logic powers the entire recommendation engine.

The algorithm matches **user input from the interest quiz** with a **predefined database of careers**, where each career is tagged with specific attributes (e.g., creativity, logic, communication, design, numbers, etc.).

#### Step-by-Step Process:

1. User Registration and Login:

The user registers or login securely.

1. Interest Quiz Starts:

The quiz contains multiple-choice questions like:

* + What do you enjoy more? (e.g., drawing, solving math problems, talking to people)
  + How do you prefer working? (alone/team)
  + What excites you? (writing code, making presentations, fixing machines)

1. Score Calculation:

Each option corresponds to certain attributes like:

* + Creativity = Art, Media, Design
  + Logic = Programming, Data Science
  + Social = Teaching, Marketing, HR

The quiz calculates scores for each attribute.

1. Match Career Tags:

Every career in the database is tagged with relevant attributes.

* + E.g., "UI/UX Designer" = Creativity, Design, Problem-solving
  + "Data Analyst" = Logic, Math, Research

The system compares the quiz scores with these tags.

1. Sort & Recommend:

Careers that best match and gives the recommended result.

1. User Views Details:

Clicking on a career shows:

* + Description
  + Courses needed
  + Skills required

1. Save & View Saved Results Option:

Users can save the suggestions and view the saved results.

#### Example Quiz Output

Let’s assume a student answered:

* Likes storytelling
* Enjoys group projects
* Loves visual creativity Top matches may include:
* Content Writer
* Graphic Designer
* Media Planner
* Marketing Executive

This makes it easy for students to relate their strengths to real-world career options.

**Summary of System Analysis**

|  |  |
| --- | --- |
| **Section** | **Highlights** |
| **Existing System** | Outdated, impersonal, limited access, costly |
| **Proposed System** | Personalized, digital, scalable, free |
| **Algorithm** | Matches interests with tagged careers through weighted scoring |

### System Design

System design is the stage where the conceptual model created during analysis is transformed into a blueprint for construction. It defines the architecture, components, modules, interfaces, and data flow of the system. For Career Crafts, the system design focuses on making the career guidance platform user-friendly, efficient, and scalable.

This section includes:

* **Use Case Diagram** — showing actors and their interactions with the system.
* **ER Diagram (Entity-Relationship Diagram)** — illustrating the database structure and relationships.
* **Sequence Diagram** — depicting the flow of operations in important use cases.

#### Use Case Diagram

**What is a Use Case Diagram?**

A Use Case Diagram graphically represents the interactions between users (called *actors*) and the system, describing the various ways the system can be used. It focuses on user goals and system functionality, helping visualize requirements clearly.

#### Actors in Career Crafts

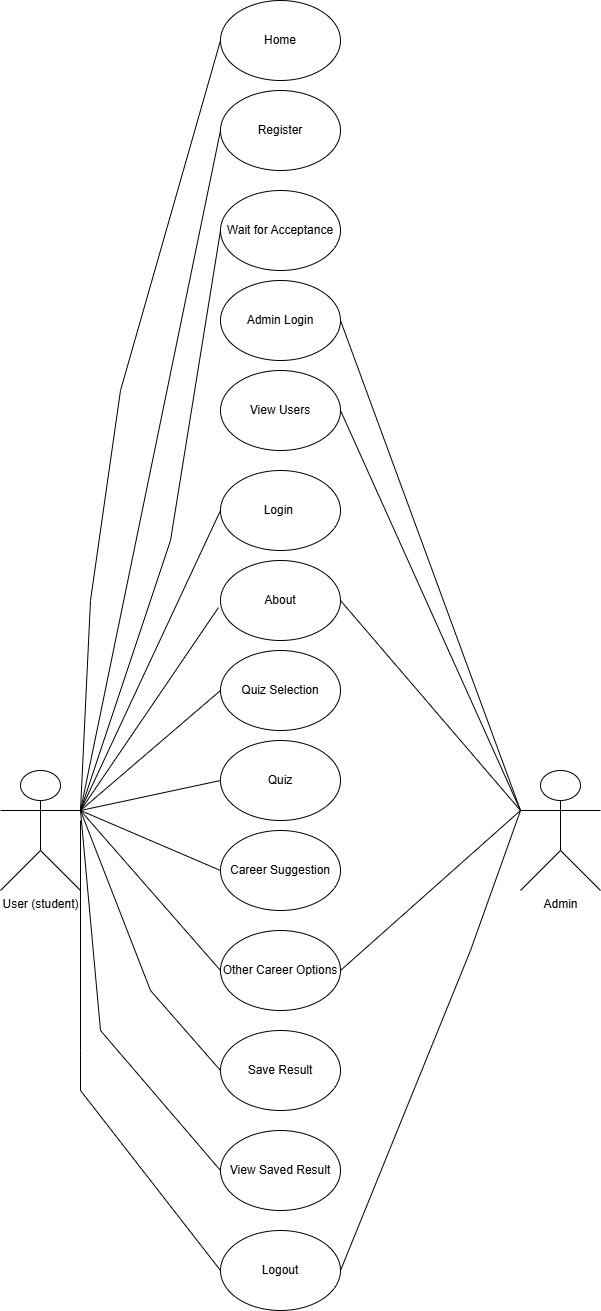
* + - **Student (User):** The primary user who registers, logs in, takes the interest quiz, views suggested careers, and accesses career details.
    - **Admin:** Responsible for managing career data, accepting the users, and monitoring the system.
    - **System:** Represents the automated processes like quiz scoring and career suggestion.

#### Use Cases for Career Crafts

|  |  |  |
| --- | --- | --- |
| **Use Case ID** | **Use Case Name** | **Description** |
| UC1 | User Registration | Student creates an account to use the platform. |
| UC2 | User Login | Student logs in securely. |
| UC3 | Take Interest Quiz | Student answers questions to determine interests. |
| UC4 | View Career Suggestions | System displays personalized career options. |
| UC5 | View Career Details | Student views detailed information about careers. |
| UC6 | Admin Login | Admin logs in to manage system data. |
| UC7 | Logout | User logs out securely. |

**Diagram Explanation**

* + - The **Student** interacts with registration, login, quiz, suggestions, details, and logout.
    - The **Admin** accesses login and management functionalities.
    - The **System** automatically processes quiz answers and generates suggestions.



**FIG 4.1: USE CASE Diagram**

### Entity-Relationship (ER) Diagram

#### What is an ER Diagram?

An ER diagram models the database schema by illustrating entities, their attributes, and relationships. It helps design the database structure before implementation.

**Entities in Career Crafts**

|  |  |
| --- | --- |
| **Entity Name** | **Description** |
| **User** | Stores student information |
| **Admin** | Stores admin login details |
| **Career** | Contains career information |
| **Quiz Question** | Stores questions in the interest quiz |
| **Quiz Option** | Options for each quiz question |
| **User Response** | Records answers given by users |

**Attributes of Entities**

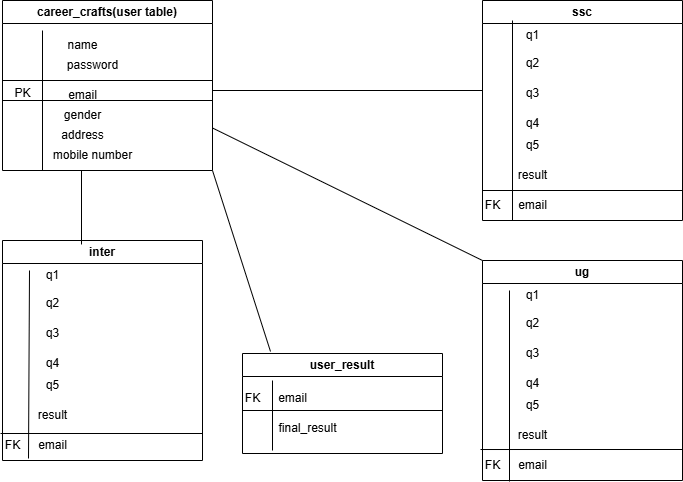
|  |  |
| --- | --- |
| **Entity** | **Attributes** |
| User | name, email(PK), password, address, gender, mobile number etc. |
| Admin | admin name, admin password. |

**Relationships**

* + - **User – User Response:** One-to-Many (A user can answer many quiz questions)
    - **Quiz Question – Quiz Option:** One-to-Many (Each question has multiple options)
    - **Career – Quiz Option:** Many-to-Many (Each career relates to multiple attributes tagged by quiz options)
    - **Admin – Career:** One-to-Many (Admin can manage multiple users to login)

#### Explanation of Relationships

* + - When a user takes the quiz, their **User Response** is recorded for each question.
    - Each **Quiz Option** is tagged with attributes (e.g., creativity, logic) that link to potential career matches.
    - The system uses these attribute tags to recommend **Careers** that best align with user interests.



**FIG 4.2: ER Diagram**

#### Sequence Diagram

**What is a Sequence Diagram?**

Sequence diagrams show how objects (or components) interact in a particular scenario of the system, focusing on the order of messages and events.

Sequence Diagram for “Taking the Interest Quiz and Getting Career Suggestions” Participants:

* + - User
    - User Interface (UI)
    - Quiz Module
    - Career Suggestion Module
    - Database

#### Step-by-step Flow

1. **User** logs into the system.
2. **UI** authenticates user credentials with **Database**.
3. If **Admin** accepts the **User** then the **User** can **Login.**
4. On success, the **User** selects to start the quiz.
5. **UI** requests the list of quiz questions from **Quiz Module**.
6. **Quiz Module** fetches questions and options from **Database**.
7. **UI** displays questions to the **User**.
8. **User** selects answers, and **UI** records responses.
9. After completion, **UI** sends user responses to **Career Suggestion Module**.
10. **Career Suggestion Module** processes responses using the algorithm.
11. **Career Suggestion Module** queries the **Database** for career data matching user interests.
12. Suggestions are sent back to **UI**.
13. **User** views career suggestions and selects any career for detailed info.
14. **UI** fetches detailed career info from **Database** and displays it.

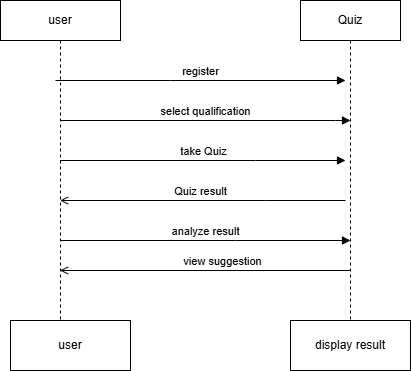


FIG 4.3: Sequence Diagram

**Example Walkthrough**

* + Suppose a user named Aman logs in and takes the quiz.
  + Aman answers that he likes math, coding, and working with data.
  + After submission, the system analyses responses, finds matches such as Data Scientist, Software Developer, and Statistician.
  + Aman clicks on "Data Scientist" and reads more details about that course.
  + Aman can save or logout.

**Summary of System Design**

|  |  |
| --- | --- |
| **Component** | **Purpose** |
| Use Case Diagram | Visualize user interactions with system modules |
| ER Diagram | Design database schema and entity relationships |
| Sequence Diagram | Show flow of actions for core functionalities |

### System Coding and Implementation

In software development, a **module** is a separate, independent unit of a system that performs a specific function. Dividing the system into modules helps make the development easier, organized, and manageable. For Career Crafts, the system is divided into various modules, each responsible for a particular functionality, ensuring smooth operation and better user experience.

#### Overview of Career Crafts Modules

Career Crafts has been designed with the following key modules:

1. **User Registration Module**
2. **User Login Module**
3. **Interest Quiz Module**
4. **Career Suggestion Module**
5. **Career Details Module**
6. **Admin Login Module**
7. **Admin Management Module**
8. **Logout Module**

#### User Registration Module

Purpose:

This module allows new users (students) to create their accounts on the Career Crafts platform. It ensures that only registered users can access personalized career guidance services.

Features:

* + - Collects user details such as name, email, password, address, gender and mobile number
    - Validates inputs to prevent errors and duplicates.
    - Stores the data securely in the database.

How it Works:

* + - The user fills out a registration form.
    - The system checks if the email is already in use.
    - If the input is valid, the user data is saved.
    - Confirmation message is sent to the user.

Example:

Imagine a student named Anjali who wants to use Career Crafts. She visits the registration page, enters her name, email, phone number, address, gender and sets a password. If the email is unique, Anjali is successfully registered and can now log in.

Real-Time Scenario:

Every time you sign up on platforms like Instagram or LinkedIn, a similar registration module verifies your information and creates your account.

response.setContentType("text/html");

String name = request.getParameter("name");

String password = request.getParameter("password"); String gender = request.getParameter("gender"); String address = request.getParameter("address"); String email = request.getParameter("email"); String mobile = request.getParameter("mobile");

stmt.setString(1, name); stmt.setString(2, password); stmt.setString(3, gender); stmt.setString(4, address); stmt.setString(5, email); stmt.setString(6, mobile); stmt.setInt(7,0);

if (rowsInserted > 0) {

out.println("<script type=\"text/javascript\">"); out.println("alert('Registration successful');"); out.println("location='login.jsp';"); out.println("</script>");

} else {

out.println("<script type=\"text/javascript\">"); out.println("alert('Registration failed. Try again');"); out.println("location='registration.jsp';"); out.println("</script>"); }

#### User Login Module

Purpose:

Allows registered users to securely access their accounts and use the platform features.

Features:

* + - Accepts email and password.
    - Validates credentials against stored data.
    - Implements security measures such as password encryption and account lockout on multiple failed attempts.

How it Works:

* + - User submits login form.
    - System compares entered credentials with database records.
    - If matched, grants access; otherwise, shows error.

Example:

Anjali enters her email and password. The system checks the database and logs her in if details are correct.

Real-Time Scenario:

Whenever you log in to your Gmail or Facebook account, the login module verifies your details before letting you in.

String email = request.getParameter("email");

String password = request.getParameter("password");

System.***out***.println("Email: " + email); System.***out***.println("Password: " + password);

String sql = "SELECT \* FROM career\_crafts WHERE email=? AND

password=?";

PreparedStatement stmt = con.prepareStatement(sql); stmt.setString(1, email);

stmt.setString(2, password);

#### Interest Quiz Module

Purpose:

This module helps identify the user’s interests and strengths by asking a series of carefully designed questions. The responses are used to recommend suitable career options.

Features:

* + - Displays multiple-choice questions.
    - Records user answers.
    - Assigns suitable suggestion based on answers.
    - Sends data for career suggestion processing.

How it Works:

* + - User starts the quiz.
    - Questions appear in sequence.
    - User selects an option per question.
    - The system saves responses for analysis.

Example:

A question might be: “Which activity do you enjoy most?” with options like “Solving puzzles,” “Helping others,” “Working with technology,” etc. Each choice corresponds to a career attribute.

Real-Time Scenario:

Similar quizzes are used in career counselling centres or personality tests to match your interests with suitable jobs.

<**h2**>Select Your Current Education Level</**h2**>

<**div** class=*"options"*>

<**a** href=*"afterssc.jsp"* class=*"option-link"*>After SSC</**a**>

<**a** href=*"afterinter.jsp"* class=*"option-link"*>After Intermediate</**a**>

<**a** href=*"afterug.jsp"* class=*"option-link"*>After Under Graduation</**a**>

</**div**>

#### Career Suggestion Module

Purpose:

Analyses quiz responses and provides personalized career recommendations to the user.

Features:

* + - Uses an algorithm to match quiz answers with career attributes.
    - Retrieves careers that best fit the user’s profile.

How it Works:

* + - Receives scored quiz data.
    - Compares scores with career profiles.
    - Filters top matching careers.
    - Sends results to the user interface.

Example:

If a user scores high in logic and technology interests, the module might suggest “Software Developer,” “Data Scientist,” and “System Analyst.”

**Real-Time Scenario:** Online platforms like LinkedIn Learning or Coursera use similar modules to recommend courses or career paths based on user preferences.

if (a >= b && a >= c && a >= d && a >= e) {

result = "Interest: Technology, logic, machines, software, and

coding.<br>" +

"Suggested Career Path:<br>" +

"- Engineering (CSE, ECE, AI/ML)<br>" + "- Software Development<br>" +

"- Robotics<br>" +

"- Data Science<br>" + "- Tech Startups<br>" +

"Entrance Exam: JEE / CET<br>" +

"<div class='button-container' style='justify-

content:center;'>" +

"<a href='2engineering.jsp' class='uniform-

button'>More Details</a>" +

"</div>";

#### Career Details Module

Purpose:

Provides detailed information about each career option suggested, helping the user make informed decisions.

Features:

* + - Displays career description, required skills, education paths..
    - Includes links to resources or courses.
    - Allows users to save careers.

How it Works:

* + - User selects a career from suggestions.
    - System fetches detailed data from the database.
    - Displays the information in a clear format.

Example:

If a user clicks on “Data Scientist,” they can see details like necessary degrees, skills such as Python and Statistics, average salary, and future demand.

**Real-Time Scenario:** Websites like Naukri.com or Glassdoor provide career insights similar to this module.

<**h1**>Explore Career Fields</**h1**>

<**div** class=*"section"*>

<**img** src=*"https://th.bing.com/th/id/R.053f03a0a73e19186399530d0c45a5c5?rik=EFno%2f2xV%2 fgcprw&riu=http%3a%2f%2ftalisengineering.com%2fwp- content%2fuploads%2f2016%2f08%2fengineering\_AdobeStock\_93366090.jpg&ehk=Iv0ugrsoZS HLakOW%2bxl3j%2bhPJ09nA5yWtLfH%2bEBX5dw%3d&risl=&pid=ImgRaw&r=0"* alt=*"Engineering"*>

<**div** class=*"content"*>

<**h2**>Engineering</**h2**>

<**p**>Engineering is about using science and innovation to design and build machines, systems, and structures.</**p**>

</**div**>

</**div**>

#### Admin Login Module

Purpose:

Allows administrators to securely log in and manage the users.

Features:

* + - Secure login with admin name and admin password.
    - Access control based on roles.

How it Works:

* + - Admin enters credentials.
    - System validates credentials.
    - Admin gets access to management dashboard.

Example:

An admin named Raj logs in to accepts the waiting users.

<%@**page** import=*"java.sql.ResultSet"*%>

<%@**page** import=*"com.kits.cse.DBConnection"*%>

<%

String name=request.getParameter("name"); String pass=request.getParameter("password");

if(name.equalsIgnoreCase("admin")&&pass.equalsIgnoreCase("admin")){ response.sendRedirect("viewusers.jsp");

}else{

response.sendRedirect("admin.jsp?msg=invalid");

}

%>

#### Admin Management Module

**Purpose:** Enables the admin to accept the waiting users to login.

Features:

* + - View and manage registered users.
    - It allows the admin to accept the waiting users.

How it Works:

* + - Admin uses dashboard interfaces.
    - Click on waiting option to allow the users to login securely.
    - Changes are saved to the database.

**Example:** Raj opens the admin dashboard then allow the waiting users to login.

**Real-Time Scenario:** Content management systems (CMS) for websites work on the same principle, allowing admins to update site.

<**tr**>

<**td**><%=sno%></**td**>

<**td**><%=set.getString("name")%></**td**>

<**td**><%=set.getString("gender")%></**td**>

<**td**><%=set.getString("address")%></**td**>

<**td**><%=set.getString("email")%></**td**>

<**td**><%=set.getString("mobile")%></**td**>

<**td**>

<%

int status=set.getInt("status"); if(status==0){

%>

<**a** href=*"authentication.jsp?email=*<%=set.getString("email")%>*"*>Waiting</**a**>

<%

}else{

%>

<**a** href=*"#"*>Accepted</**a**>

<%

}

%>

</**td**>

<**td**>

<**a** href=*"delete.jsp?email=*<%=set.getString("email")%>*"*>Delete</**a**>

</**td**>

</**tr**>

#### Logout Module

Purpose:

Securely ends the user or admin session, preventing unauthorized access.

Features:

* + - Clears session data.
    - Redirects to login or home page.

How it Works:

* + - User/admin clicks logout.
    - System invalidates session.
    - User is redirected.

Example:

After using the platform, Anjali clicks logout to secure her account.

<**div** class=*"menu"*>

<**button** class=*"nav-btn"* onclick="location.href='home.jsp'"><**i** class=*"fas fa- home"*></**i**> Home</**button**>

<**button** class=*"nav-btn"* onclick="location.href='quiz.jsp'"><**i** class=*"fas fa- brain"*></**i**> Quiz</**button**>

<**button** class=*"nav-btn"* onclick="location.href='login.jsp'"><**i** class=*"fas fa-sign-out-alt"*></**i**> Logout</**button**>

</**div**>

#### 5.10 Real-Time Examples of Modular Systems

* Social media platforms have modules for login, posting, messaging, and notifications.
* E-commerce websites divide into product management, user accounts, payments, and reviews modules.
* Mobile apps separate UI, data handling, and networking into modules.

### Testing

Testing is a critical phase in the software development life cycle to ensure that the system functions correctly, meets requirements, and is free of bugs. For "Career Crafts", testing involves verifying the accuracy of career suggestions, user login functionality, admin control, and data security.

**Types of Testing Used**

##### Unit Testing

* **Goal**: To test individual modules like login, registration, career recommendation.
* **Tools**: JUnit (for backend logic in Java)
* **Example**: Checking if the login module correctly authenticates users with valid/invalid credentials.

##### Integration Testing

* **Goal**: Ensure modules interact properly.
* **Example**: Registration → Login → Career Suggestion flow should work smoothly without data loss or error.

##### System Testing

* **Goal**: Test the complete system as a whole.
* Scenarios:
  + Admin login and access to dashboard
  + New user registration and profile setup
  + Recommendation engine generating results based on interests

##### User Acceptance Testing (UAT)

* **Goal**: Validate if the system meets the user’s expectations.
* **Conducted By**: Final-year students or academic supervisors
* **Feedback Based**: Layout, ease of use, relevance of career suggestions

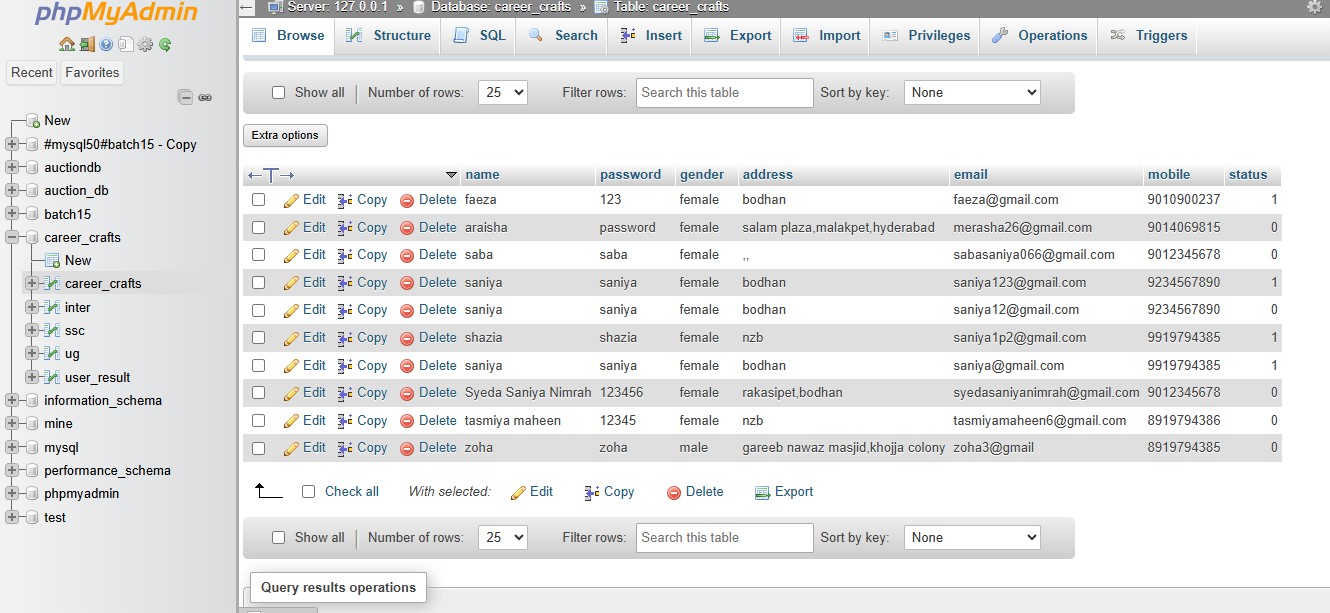
##### Performance Testing

* Ensured fast response time for career results.
* Checked for browser compatibility and mobile responsiveness.

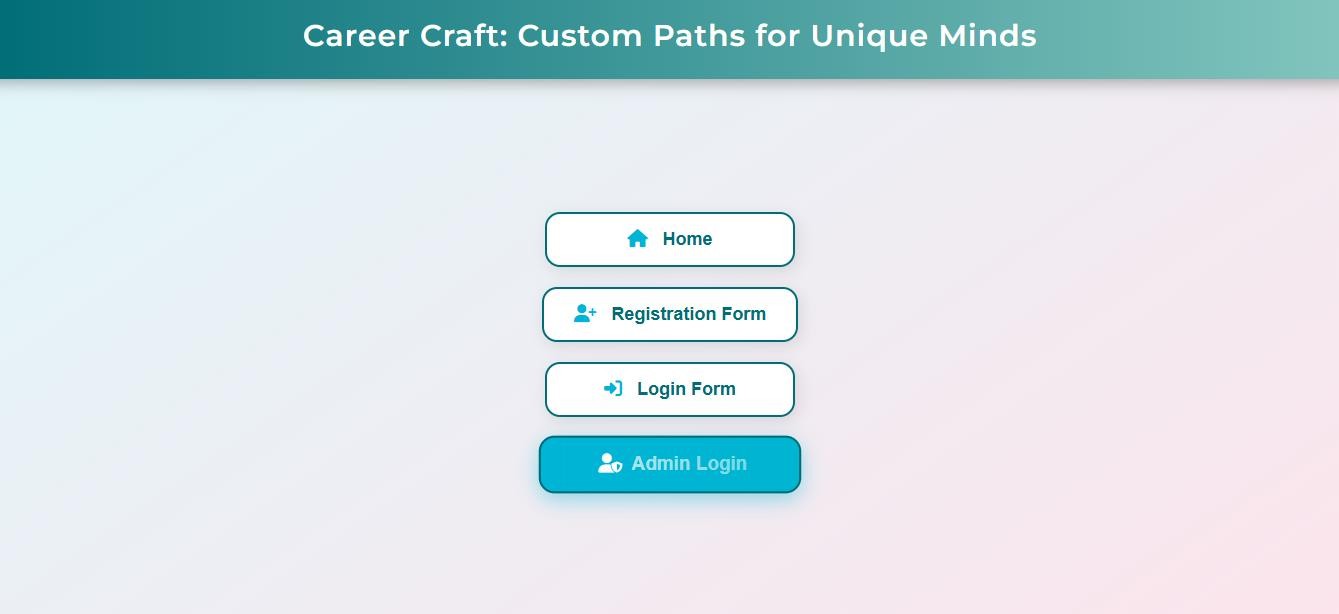
##### Security Testing

* Passwords are stored securely (e.g., hashed if implemented with backend DB).
* Admin pages are restricted to authenticated users only.

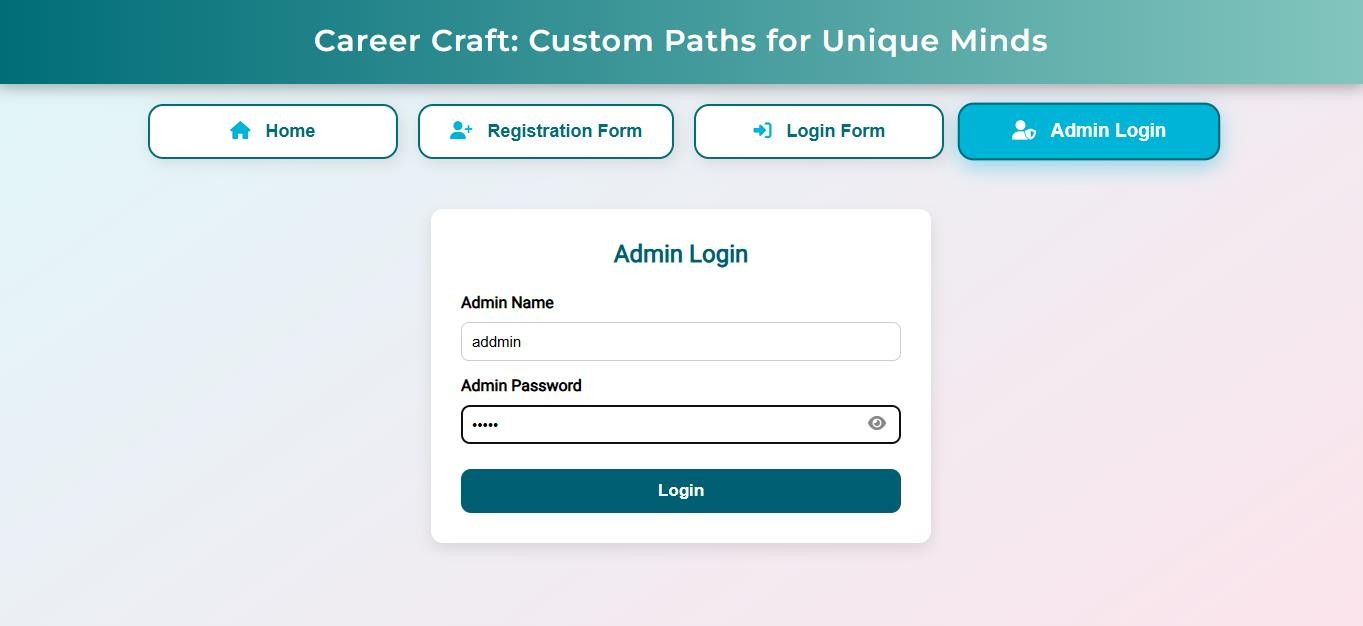
### Screen Shots of mini project

****

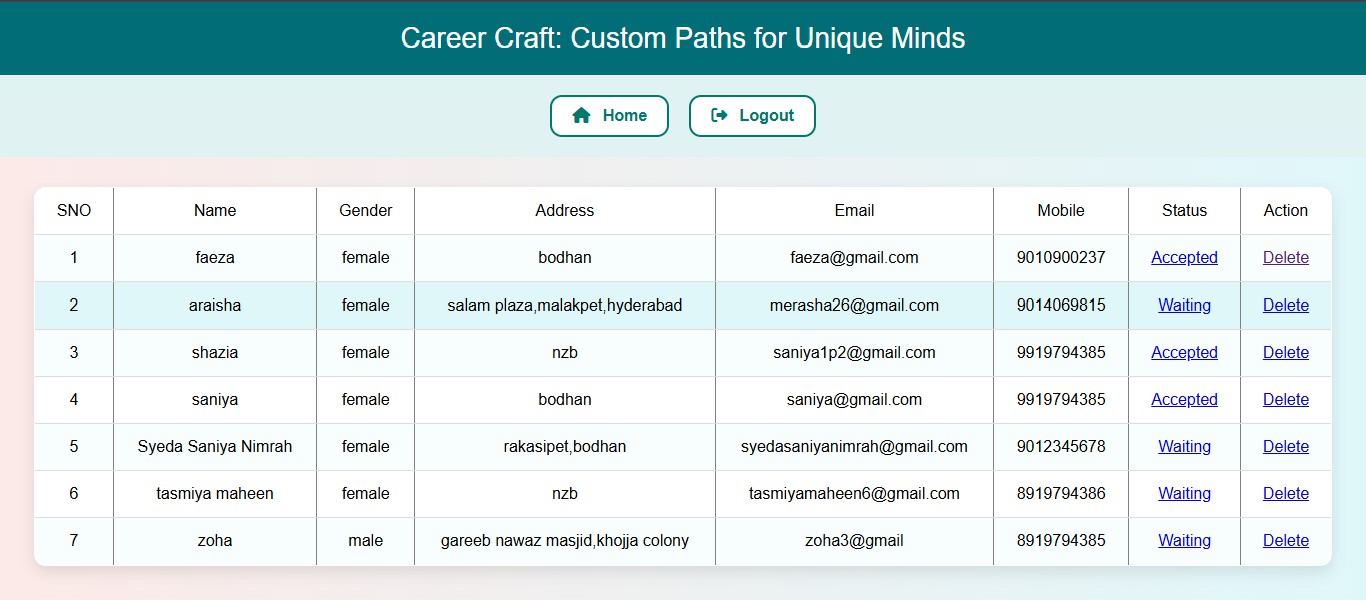
**FIG 7.1:XAMPP Server (SQL Database) Registration table**

****

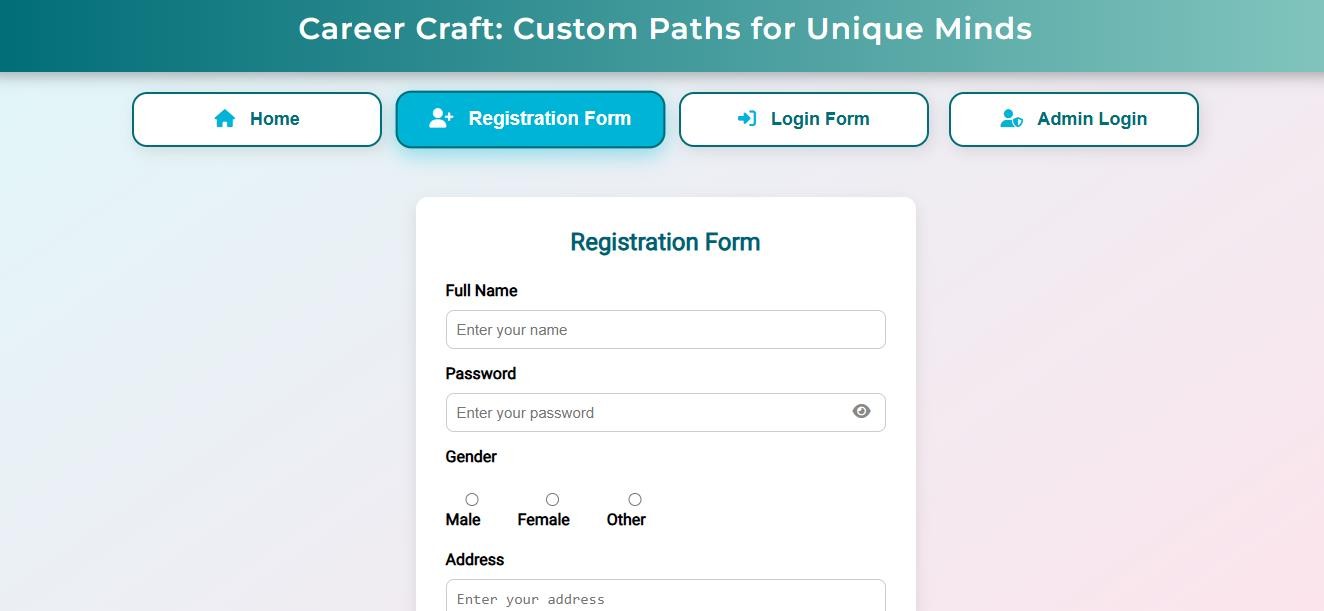
**FIG 7.2: Index page**



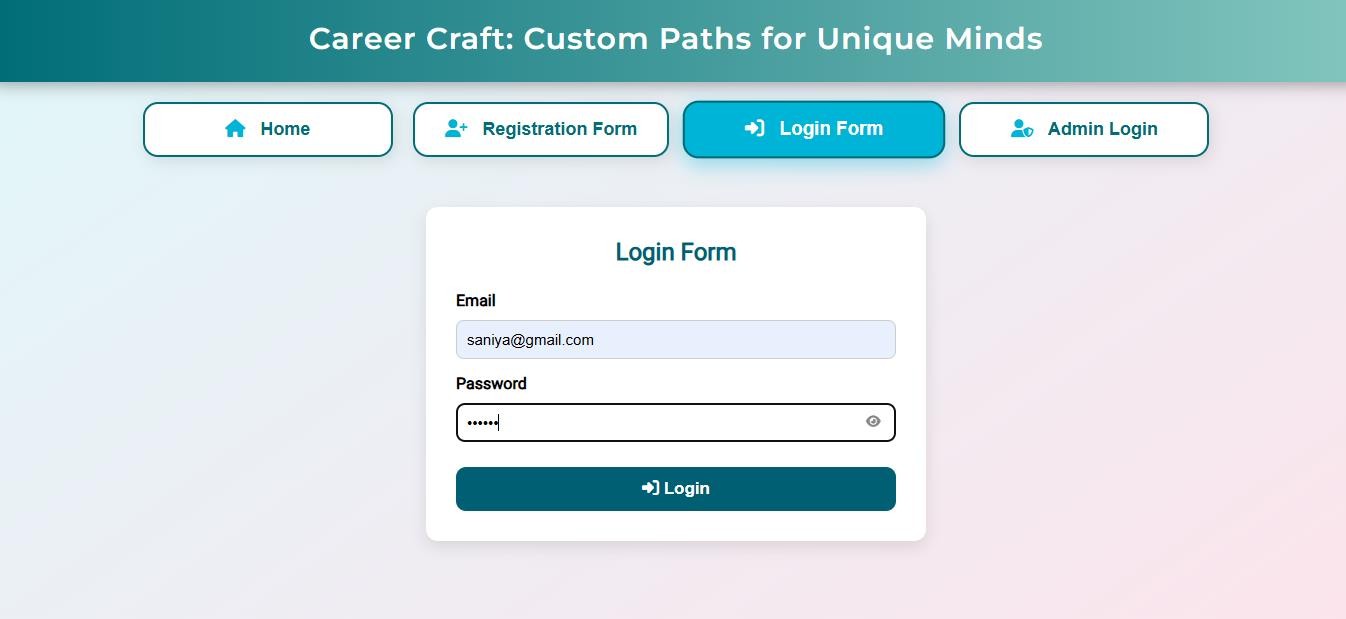
**FIG 7.3: Admin Login Page**

****

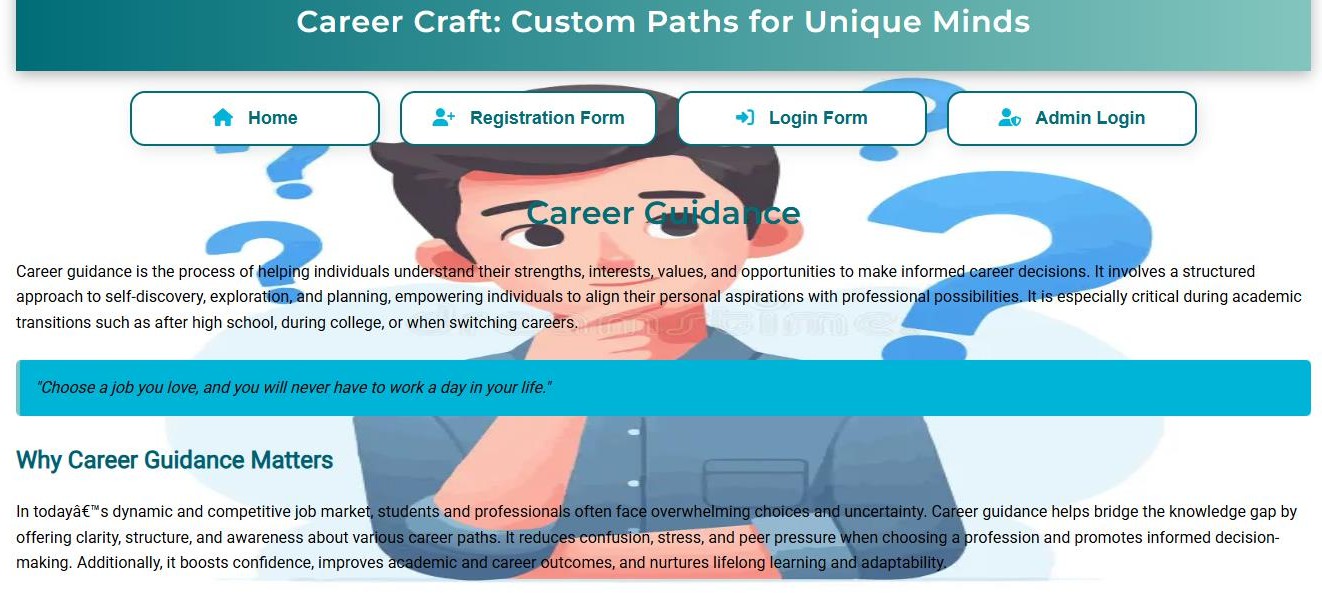
**FIG 7.4: Admin Dashboard (It allows the admin to accept or delete the users)**



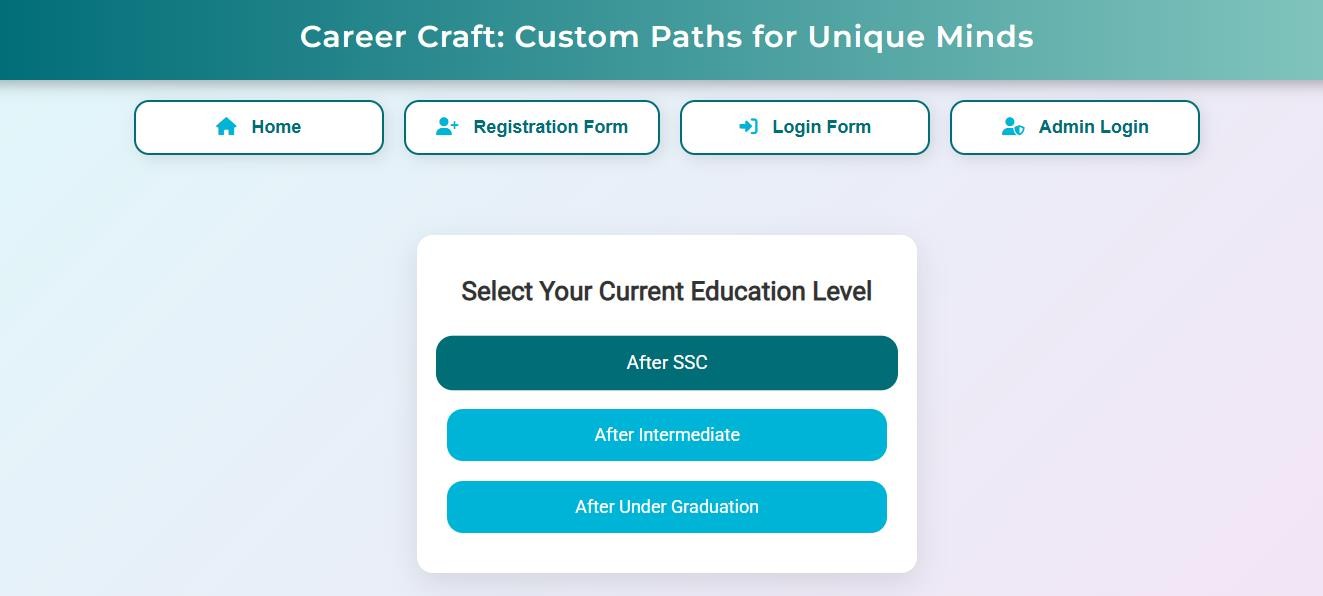
**FIG 7.5: Registration Form**

****

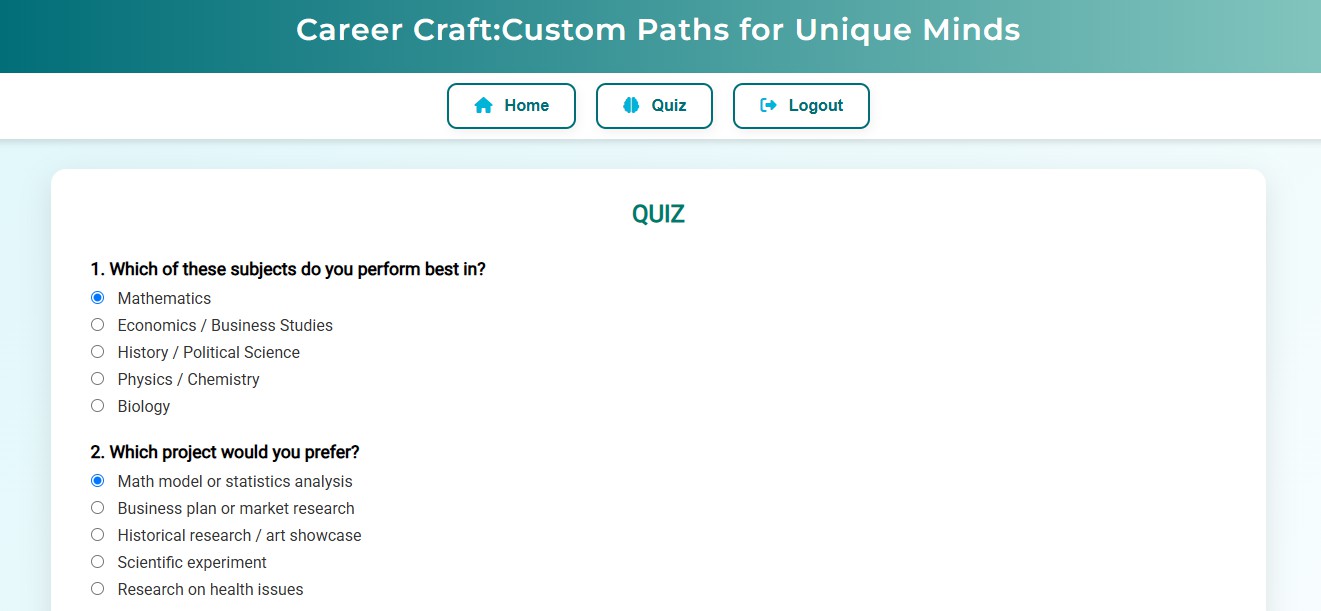
**FIG 7.6: Login Form**

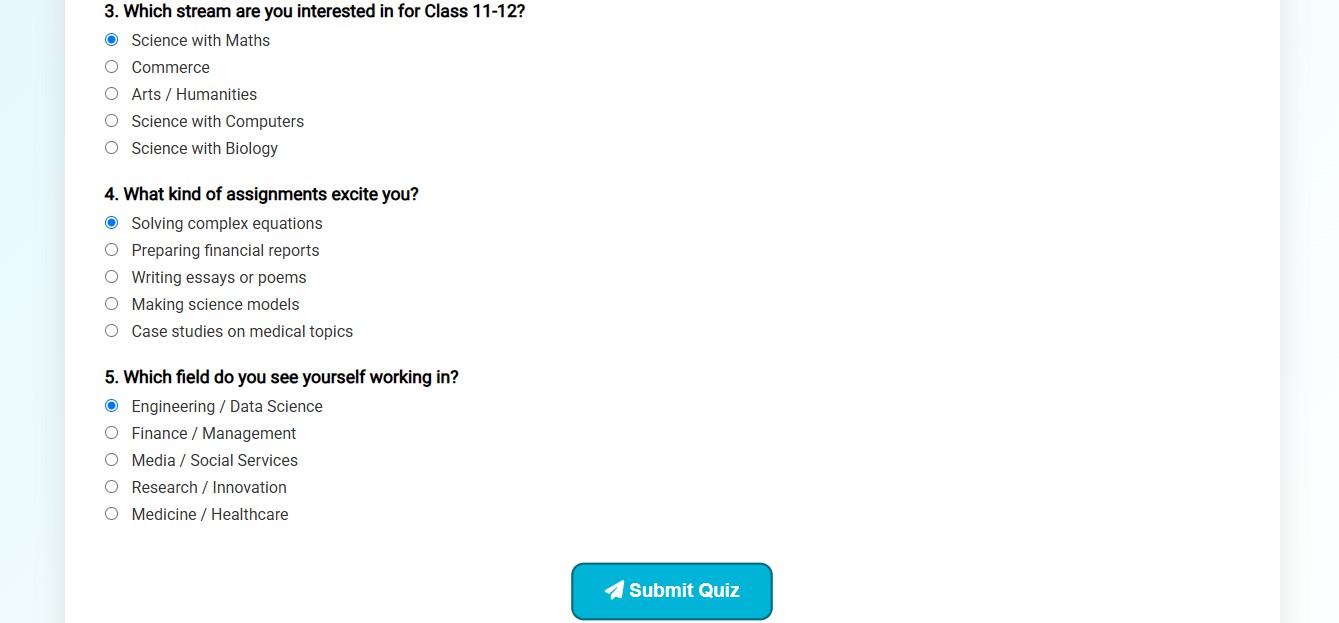


**FIG 7.7: About Page for more information on this topic**

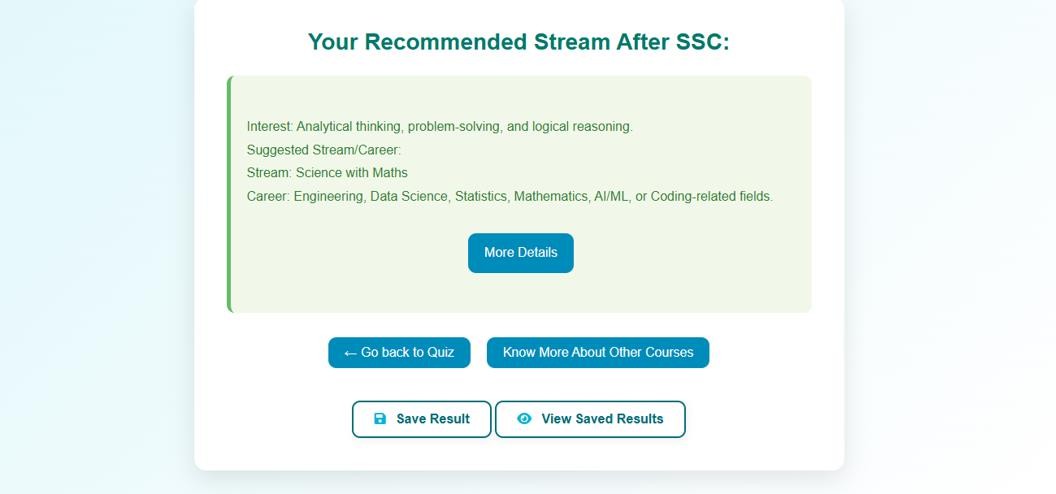
****

**FIG 7.8: Selection Of Qualification For Particular Student**



****

**FIG 7.9: Quiz Page For Selecting Answer Based On Their Interest**



**FIG 7.10: Result For Their Quiz**

****

**FIG 7.11: Exploring More About That Particular Field**

### Conclusion

The mini project **Career Crafts** has been designed and developed to serve as a comprehensive career guidance system for students and young professionals who are often confused or unsure about their future career paths. The importance of career guidance cannot be overstated, especially in today’s highly competitive and fast-changing job market. Many students face challenges in selecting a career that matches their interests, skills, and aspirations. Career Crafts addresses this issue by providing a user-friendly platform that not only identifies a user’s interests but also suggests career options tailored to their strengths and preferences.

Throughout the project, we have carefully studied the existing systems and recognized their limitations, such as lack of personalization, complexity, or incomplete career information. In contrast, Career Crafts aims to fill these gaps with a more interactive, intuitive, and informative solution.

#### Understanding the Core Purpose

The core purpose of Career Crafts is to help users discover their true interests and match them with suitable career paths. This goal is achieved through a well-designed interest quiz that collects data about the user’s likes, skills, and preferences. Using an intelligent algorithm, the system analyses this data and suggests career options that best align with the user’s profile. Unlike generic career advice, this personalized approach increases the chances that users will find careers they are genuinely passionate about and excel in.

For example, a student who enjoys problem-solving and technology might receive suggestions like software development, data science, or cybersecurity. Meanwhile, a user inclined towards creativity and communication might be recommended careers in graphic design, marketing, or journalism. This tailored guidance is invaluable for students at crossroads, enabling them to make informed decisions about their academic and professional futures.

#### Real-World Relevance and Impact

Career Crafts is not just a theoretical project; it reflects real-world needs and practical solutions. The fast pace of technological advancement and evolving industries demand that young people

remain adaptable and informed about career opportunities. Educational institutions, career counsellors, and parents can all benefit from tools like Career Crafts to assist students in their decision-making process.

In real-time, many students feel overwhelmed by the pressure to choose a career early without adequate guidance. This often leads to choices based on social influence, peer pressure, or incomplete information, resulting in dissatisfaction or frequent career changes later. By providing clear, personalized advice based on interests and data, Career Crafts empowers users to take control of their futures.

For example, a student in a rural area with limited access to career counselling can use Career Crafts online to explore various careers, learn about educational requirements, and understand job prospects, bridging the gap created by lack of resources.

#### Technical Achievements and System Design

The design and implementation of Career Crafts demonstrate several important technical achievements. The system is modular, with clearly defined components such as user registration, login, quiz processing, career suggestion, and admin management. This modularity enhances maintainability, scalability, and ease of future upgrades.

Moreover, the system’s use of algorithms to analyse quiz responses and match them with careers highlights the integration of basic artificial intelligence principles in real-world applications. This algorithmic approach improves accuracy in career suggestions, making the system smarter and more user-centric over time.

#### Learning and Skill Development

During the development of Career Crafts, many valuable skills were acquired, especially in software development, system analysis, and project management. From understanding user requirements to designing use case diagrams and database models, every step contributed to a comprehensive learning experience.

### Challenges and Future Enhancements

Like any project, Career Crafts faced some challenges. Designing an interest quiz that accurately captures diverse interests and skills required careful research and validation. Ensuring data security and privacy was also a priority, demanding proper encryption and secure session management.

However, these challenges provided opportunities to learn and innovate. Future enhancements could include integrating machine learning models to improve career recommendations based on user feedback and behaviour patterns. Adding features such as resume building, interview tips, and career path tracking would further enrich the user experience.

Moreover, the system can be expanded to include regional and international career opportunities, scholarships, and internships, making it a one-stop solution for career development.

#### Real-Time Application and Social Impact

Career Crafts has the potential to make a positive social impact, especially in communities where access to career counselling is limited. Schools and colleges can adopt this platform as a supplementary tool to traditional counselling methods. By enabling self-guided career exploration, students become more confident and motivated.

The system also supports diversity by accommodating various career fields and interests, promoting equal opportunities for all users regardless of their background. In today’s globalized world, such tools contribute to building a more skilled and satisfied workforce.

#### Final Thoughts

In conclusion, Career Crafts represents a meaningful step toward bridging the gap between students’ career aspirations and available opportunities. Its combination of user-friendly design, personalized guidance, and practical career information makes it a valuable resource in career planning.

Through this project, the importance of understanding individual interests and making data- driven career choices is highlighted. The system empowers users to explore options, gain knowledge, and take informed steps toward their professional goals.

As the project grows, it can incorporate more advanced technologies and features, continuously adapting to the needs of its users and the evolving job market.

# Future Enhancements Like

###### AI-Powered Career Guidance

* + Integrate **AI/ML algorithms** to analyze user patterns, academic performance, and preferences.
  + Provide **dynamic suggestions** based on current industry trends, market demand, and user profile.

###### Resume Builder Tool

* + Add a feature to automatically **generate resumes** based on user inputs (skills, interests, education).
  + Include different templates for different career paths.

###### Real-Time Career Counsellor Chat

* + Integrate a **live chat** feature with real career experts.
  + Users can ask questions and get personalized advice via WhatsApp, Telegram, or a built-in chatbot.

###### Integration with Job Portals

* + Connect the system with job/internship platforms like **LinkedIn, Naukri, Internshala**.
  + Show available opportunities matching user career suggestions.

###### Mobile App Version

* + Develop a **mobile application** (Android/iOS) using Flutter or React Native for better accessibility.
  + Offline quiz mode and push notifications can be added.

###### Gamification of Career Quizzes

* + Add **points, badges, levels** to make the quiz more engaging.
  + Users can track their progress and compete with peers.

###### Multilingual Support

* + Offer the system in **multiple languages** to reach rural students and non-English speakers.

###### Parental Access

* + Provide a separate login for parents to view their child’s suggested paths and progress reports.

###### Voice Input for Quiz

* + Enable voice-based interaction for visually challenged or differently abled users.

###### Periodic Updates

* + Auto-update quiz content, career fields, and trends from APIs or admin inputs to keep the system current.

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