PRESIDENCY UNIVERSITY
Private University Estd. in Karnataka State by Act No. 41 of 2013
Itgalpura, Rajankunte, Yelahanka, Bengaluru – 560064

DEVELOPMENT OF A WEB-BASED CAREER COUNSELLING AND GUIDANCE SYSTEM FOR SCHOOLS

A PROJECT REPORT

Submitted by

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BACHELOR OF TECHNOLOGY

IN

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BONAFIDE CERTIFICATE

Certified that this report "**DEVELOPMENT OF WEB-BASED CAREER COUNSELLING AND GUIDENCE SYSTEM FOR SCHOOLS**" is a bonafide work of "MANJUNATH B (20231CSE3079), SUHAS R (20221CSE0746), VINOD KUMAR M (20231CSE3048)", who have successfully carried out the project work and submitted the report for partial fulfilment of the requirements for the award of the degree of BACHELOR OF TECHNOLOGY in COMPUTER SCIENCE AND ENGINEERING during 2025-26.

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DECLARATION

We the students of final year B.Tech in COMPUTER SCIENCE AND ENGINEERING at Presidency University, Bengaluru, named MANJUNATH B, VINOD KUMAR M, SUHAS R, hereby declare that the project work titled **"DEVELOPMENT OF WEB-BASED CAREER COUNSELLING AND GUIDENCE SYSTEM FOR SCHOOLS"** has been independently carried out by us and submitted in partial fulfillment for the award of the degree of B.Tech in COMPUTER SCIENCE AND ENGINEERING during the academic year of 2025-26. Further, the matter embodied in the project has not been submitted previously by anybody for the award of any Degree or Diploma to any other institution.

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ABSTRACT

Career selection at the school level plays a crucial role in shaping an individual's academic and professional journey. Many students make uninformed choices due to a lack of structured guidance, resulting in poor academic performance, dissatisfaction, or a mismatch between their interests and chosen fields. This project aims to design and implement a *Web-Based Career Counselling and Guidance System* that assists school students in selecting appropriate academic streams such as Science, Commerce, or Arts.

The system offers features including student registration, login authentication, stream-based informational content, interactive quizzes, automated evaluation, performance analytics, personalized career suggestions, and a user profile dashboard. Through streamlined data storage and retrieval using a MySQL-based backend, the system preserves student history and supports long-term guidance. The platform is implemented using HTML, CSS, PHP, and MySQL in a XAMPP environment, ensuring accessibility and ease of deployment in school computer labs.

This report presents system design, architecture, methodology, implementation details, results, and future enhancement possibilities. The proposed solution contributes to improving school-level counselling effectiveness by providing structured, data-driven recommendations.

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ABBREVIATIONS

HTML	HyperText Markup Language
CSS	Cascading Style Sheets
JS	Java Script
PHP	Hypertext Preprocessor
SQL	Structured Query Language
DB	Database
DBMS	Database Management System
RDBMS	Relational Database Management System
API	Application Programming Interface
UI	User Interface
UX	User Experience
IDE	Integrated Development Environment
HTTP	HyperText Transfer Protocol
HTTPS	HyperText Transfer Protocol Secure
WWW	World Wide Web
URL	Uniform Resource Locator
SDLC	Software Development Life Cycle
UML	Unified Modelling Language
DFD	Data Flow Diagram
MCQ	Multiple Choice Question
CCA	Career Counselling Assessment
CGS	Career Guidance System
OS	Operating System
RAM	Random Access Memory
CPU	Central Processing Unit
XAMPP	Cross-Platform Apache MariaDB PHP Perl
MySQL	My Structured Query Language
PDF	Portable Document Format
DNS	Domain Name System

Chapter 1
Introduction

The transition from academic life to a professional career is one of the most critical phases in a student's development. Making informed decisions during this period is paramount to ensuring long-term satisfaction and success. While Career Counselling is universally recognized as a vital tool that helps students navigate their options and understand their inherent strengths, interests, and suitable academic paths, a pervasive lack of resources in most educational institutions remains a major stumbling block. This project proposes the development of a state-of-the-art digital platform designed to address this core guidance gap at the system level, democratizing high-quality career advice for all students.

1.1 BACKGROUND

Career selection is one of the most important decisions students make during their school years. In the Indian education system, students are expected to choose their academic stream Science, Commerce, or Arts immediately after completing Grade 10. This choice significantly influences their future academic opportunities, higher education pathways, and long-term career prospects. But students at this stage lack the necessary maturity, awareness, and exposure to arrive at such an important decision. Schools traditionally held counseling sessions now and then, but these were scant in number and scope, lacked personalization, and were inadequate in reach. A majority of schools lack professional guidance counselors, and children have to follow the advice of parents, relatives, or friends without any scientific guidance. These students often choose subjects based on the trend in society or due to pressure from their friends, which afterwards leads to disinterest in academics, stress, and even career dissatisfaction in later life. With the rapid growth of technology, digital solutions are now being used to fill this gap. Schools and colleges are increasingly adopting e-learning and digital counseling platforms to help students make decisions. A web-based career counseling system lets students access information anytime and provides unbiased suggestions through structured assessments and automated analysis.

The shift from traditional counseling to technology-driven systems helps students gain clarity on:

- Their interests and strengths
- Subject options and their requirements
- Future career opportunities linked to each stream

1.2 STATISTICS

Career confusion among school students is a widely observed problem across India and many other countries. Several educational surveys and reports point out that a considerable section of students are undecided about their future academic stream or career choice after completing their secondary education. Most schools, particularly those in semi-urban and rural areas, either do not have any structured career guidance framework or at best maintain a minimal one.

1.3 PRIOR EXISTING TECHNOLOGIES

Before advanced digital counselling systems were developed, there existed traditional and semi-digital technologies to support students in choosing academic streams and careers. However, all these methods had their accessibility, personalization, and scalability limitations. Knowing the earlier technologies helps in understanding the lacunae that the present system tries to fill.

- **Manual Counselling Sessions**

Traditionally, most schools conducted face-to-face counselling sessions. These were usually conducted by teachers or visiting counsellors and included:

- General career talks
- Motivational seminars
- One-to-one discussions with selected students

Limitations:

- Not scalable for large student groups
- Limited availability of trained counsellors
- No data storage or progress tracking
- Subjective suggestions influenced by counsellor's knowledge

- **Career Guidance Books and Printed Materials**

Schools often supplied printed career booklets explaining streams and job opportunities. These acted as reference materials for students.

Limitations:

- Static content, not updated regularly
- Not interactive
- No personalized assessment
- Students often skip reading lengthy material

Basic Online Career Portals

Several early web portals emerged offering general information about careers, subjects, and courses. These websites mostly provided:

- Text descriptions
- Lists of colleges
- General guidance

Examples: old government portals, early education blogs, and career news websites.

Limitations:

- No interactive quizzes
- No student login or personalized profile
- One-size-fits-all information
- Not suitable for school-level stream selection

- **Early Web-Based Counselling Systems**

Around the 2015–2020 period, some online portals introduced digital counselling features like:

- Simple MCQ tests
- General personality assessments
- Online stream selection suggestions

Limitations:

- No detailed subject explanation
- No career paths based on mark distribution
- No database tracking or history
- Limited scalability and personalization

Around the 2015–2020 period, some online portals introduced digital counselling features like:

- Simple MCQ tests
- General personality assessments
- Online stream selection suggestions

Limitations:

- No detailed subject explanation
- No career paths based on mark distribution
- No database tracking or history
- Limited scalability and personalization

- **AI-Powered Global Career Tools (Foreign Platforms)**

Some advanced tools used outside India such as MyCareerShines, CareerOneStop, etc., which include:

- AI-based questionnaires
- Personality tests
- Skill matching

Limitations for Indian context:

- Not aligned with Indian school streams (Science/Commerce/Arts)
- Expensive and licensed systems
- Requires high-speed internet
- Not suitable for school-level implementation

1.4 Proposed approach

Aim of Project

The main aim of this project is to **design and develop a web-based career counselling and guidance system** that assists school students in choosing an appropriate academic stream by providing **structured information, interactive assessments, and personalized recommendations**.

The project intends to create a digital platform that helps students understand their strengths, interests, and potential career paths through a combination of informational content and quiz-based evaluation. By using technology to deliver consistent and unbiased guidance, the system aims to overcome the limitations of traditional counselling methods and ensure that every student receives meaningful support in making informed academic decisions.

Motivation

Choosing the right academic stream after secondary school is one of the most crucial decisions in a student's life. However, many students lack the proper awareness, exposure, and guidance needed to make informed choices. This often leads to confusion, stress, academic mismatch, and dissatisfaction in later stages.

The motivation behind developing this **Web-Based Career Counselling and Guidance System** arises from the need to offer an accessible, unbiased, and structured career guidance solution that can reach students irrespective of their geographical or socio-economic background. With technology becoming a powerful tool for education, a digital platform can ensure that every student receives timely and personalized guidance.

Proposed Approach

The proposed approach focuses on developing a **web-based career counselling and guidance system** that provides students with structured information, interactive quizzes, and personalized suggestions to help them choose the most suitable academic stream. The system combines user-friendly interface design, automated evaluation mechanisms, and efficient data management to deliver accurate, unbiased, and accessible guidance.

The approach is designed to overcome limitations of traditional counselling by leveraging technology to offer a consistent, scalable, and student-centered solution.

Limitation of the Proposed Approach

Although the proposed Web-Based Career Counselling and Guidance System provides structured, accessible, and data-driven guidance to students, it still has certain limitations. These limitations arise due to the nature of digital counselling, dependence on quiz-based evaluation, and technical constraints. Understanding these limitations helps in planning future improvements for the system.

Limited Subject Coverage

Currently, the system provides information and quizzes for three main streams:

- Science
- Commerce
- Arts

It does not yet cover vocational fields, diploma programs, or emerging modern career paths like:

- UI/UX Design
- Cybersecurity
- Data Science
- Animation
- Sports Science

The system needs expansion to offer more diverse options.

1.5 OBJECTIVES

The primary objective of the *Web-Based Career Counselling and Guidance System* is to assist school students in making informed academic decisions by providing structured career information, personalized assessments, and unbiased recommendations. This system aims to address the lack of accessible and standardized counselling in many educational institutions.

1. **Provide a User-Friendly Web Platform for Career Guidance**

Develop an easy-to-use interface where students can explore career streams, attempt quizzes, and access their results without technical difficulty

2. **Offer Detailed Information About Academic Streams**

Provide comprehensive content related to:

- Science
- Commerce
- Arts

Including:

- Subjects overview
- Skills required
- Advantages & disadvantages
- Future career opportunities
- Higher education options

3. **Conduct Interactive Stream-Based Assessments**

Implement a multiple-choice quiz for each stream to assess student interests and aptitude. The quiz plays a central role in analyzing a student's suitability for a particular stream.

4. **Maintain Student Profiles and Performance History**

Store student information and quiz results in a database so each student can track:

- Previous attempts
- Scores
- Suggested streams
- Overall progress

5. **Support Schools without Professional Counsellors**

Enable schools, especially in rural or low-resource areas, to provide meaningful career guidance through a digital platform

6. **Ensure Simplicity, Scalability, and Accessibility**

Develop the system using technologies like HTML, CSS, PHP, and MySQL so it can be easily deployed in school environments and expanded in the future.

1.6 Sustainable Development Goals(SDGs)

SDG 4: Quality Education

The system directly supports SDG 4, which aims to ensure inclusive and equitable quality education and promote lifelong learning opportunities for all.

How the project contributes:

- Provides equal access to career guidance for all students, regardless of background
- Helps students understand academic paths and future opportunities
- Promotes informed decision-making during stream selection
- Encourages self-assessment and continuous learning
- Reduces misinformation about career choices

This strengthens the overall quality of education by guiding students towards suitable academic streams.

SDG 10: Reduced Inequalities

This project addresses educational disparities between students in urban and rural regions.

Contributions:

- Schools without professional counsellors can still provide proper guidance
- Students from low-income families gain access to digital counselling
- Reduces inequality by offering the same information and opportunities to all students
- Helps bridge the counselling gap in under-resourced schools

SDG 8: Decent Work and Economic Growth

Choosing the correct academic stream early helps students develop skills that align with future jobs.

How your project contributes:

- Helps students choose streams that match their strengths
- Leads to better career planning and workforce readiness
- Prevents career mismatches that can affect long-term productivity
- Promotes skill development through awareness of emerging career fields

A well-guided student is more likely to excel in future employment, contributing to economic growth.

SDG 9: Industry, Innovation & Infrastructure

The project uses modern web technologies and digital innovation to strengthen the educational infrastructure.

Contributions:

- Introduces digital counselling to replace manual, outdated systems
- Encourages innovation in school guidance practices
- Lays groundwork for AI-based career recommendation systems
- Can be scaled to include mobile apps, analytics, and advanced tools

This fosters a culture of innovation in the education sector.

SDG 3: Good Health and Well-Being (Indirect Contribution)

Although it is not a healthcare system, your project indirectly supports mental well-being.

How:

- Reduces anxiety among students regarding career choices
- Helps prevent stress caused by wrong stream selection
- Encourages clarity and confidence in decision-making

A confident and well-guided student is mentally healthier and more optimistic.

1.7 Overview of project report

This project report presents the design and development of a Web-Based Career Counselling and Guidance System aimed at assisting school students in choosing appropriate academic streams such as Science, Commerce, or Arts. The report is organized into multiple chapters, each covering a specific stage of the project, from conceptualization to implementation and evaluation.

The report begins with a detailed introduction, explaining the background, need, motivation, and objectives behind creating a digital counselling platform. It highlights the limitations of existing counselling systems and describes how the proposed approach addresses these gaps using technology-driven solutions.

A comprehensive literature review summarizes previous research, existing models, and technologies used in career guidance systems, establishing the foundation and relevance of the project. The subsequent chapters include a clear problem definition, project scope, and alignment with Sustainable Development Goals (SDGs), emphasizing its educational and social impact.

System requirements and software engineering concepts are detailed to define both functional and non-functional specifications. The architecture, design diagrams, flowcharts, and database structures illustrate the technical blueprint of the system.

Implementation details describe the technologies used—HTML, CSS, PHP, and MySQL—along with core modules such as registration, login, dashboard, subject details, quizzes, result evaluation, and profile management.

The report further includes testing methodologies, test cases, results, and evaluation of the system's performance to validate functionality and efficiency. The concluding chapters provide insights into the outcomes of the project, its limitations, and potential future enhancements, such as AI-based recommendations and mobile app integration.

Overall, this report documents the complete lifecycle of developing a practical, user-friendly, and impactful counselling system that supports students in making informed academic and career decisions.

Chapter 2
Literature review

Career counselling has evolved significantly over the past decade due to the rise of digital learning platforms and the increasing need for data-driven guidance systems for students. Multiple researchers have contributed to the development of web-based career recommendation platforms, intelligent decision-making tools, and aptitude assessment systems. This chapter presents a detailed review of major studies that form the foundation of the proposed work.

2.1 Web-Based Career Guidance Systems

Sharma and Gupta (2022)[1] developed a web-based guidance system focusing on stream selection for high school students. Their study emphasized the need for structured content, but lacked interactive evaluation, which is addressed by the proposed system.
Key gap: No quiz-based aptitude assessment.

2.2 Intelligent Career Recommendation Models

Singh and Reddy (2021) introduced an intelligent recommendation model using student profiles and machine learning. Their system analyzed multiple parameters such as academic records and interests.
Key gap: Required complex data; not suitable for basic school-level guidance.

Chen and Wong (2021) also proposed a profile-based personalized recommendation tool.
Key gap: Not aligned with the Indian education structure (Science/Commerce/Arts).

2.3 Impact of Counselling on Stream Selection

Verma and Kulkarni (2020) examined how career counselling affects academic stream decisions. They reported that students who received proper counselling showed higher clarity and confidence.
Key gap: Research highlighted a gap in accessibility—many schools still lack counsellors.

2.4 Rule-Based Systems for Career Path Prediction

Khan and Ali (2020) presented a rule-based expert system to guide students toward suitable career paths based on interests and personality traits.
Key gap: System was limited by static rules and lacked dynamic evaluation.

2.5 Digital Education Portals & E-Guidance

Das and Mehta (2021) studied challenges of e-guidance portals, especially in rural areas. Their findings highlighted lack of proper career information and low awareness among students.

Key gap: Systems did not support personalized scoring or feedback.

2.6 Online Aptitude and Interest Assessment Tools

Several online assessment platforms provide aptitude tests, but they often target general career selection rather than academic streams.

Examples include:

- General MCQ aptitude systems
- NTA-based assessment modules
- Commercial psychometric tests

Key gap: These platforms do not focus on stream selection at school level.

2.7 AI-Based Counselling Systems

Recent AI-powered systems, such as the one developed by **Prakash and Reddy (2023)**, introduced automated career suggestions using intelligent analytics.

Key gap: High computational requirements, difficult for simple school deployment.

2.8 Summary of Identified Research Gaps

Based on literature reviewed, the following gaps were identified:

- Lack of **quiz-based evaluation** specifically for Science, Commerce, and Arts.
- Absence of a **simple and school-friendly web interface**.
- Limited availability of **digital counselling tools** in rural schools.
- Existing systems often rely on **complex AI**, unsuitable for basic computer labs.
- Most portals do not store **student profiles or history**.
- No integration of **subject explanation + quiz + suggestion** in one system.

Chapter 3
Methodology

The methodology explains the **step-by-step process** followed for designing and developing the Web-Based Career Counselling and Guidance System. It includes requirement study, system analysis, architecture planning, design, implementation, testing, and evaluation.

The project follows a structured and systematic process to ensure effective development and reliable performance.

3.1 Requirement Analysis

This phase involves gathering information about:

- Student needs
- Challenges in existing counselling systems
- School-level stream selection problems
- Technology constraints
- Expected functionalities (quiz, suggestions, login, profile)

A detailed SRS (Software Requirement Specification) was prepared, summarizing functional and non-functional requirements.

3.2System Analysis

In this stage, the problem was analyzed in depth.

The system identifies:

- Key actors (Students, System Administrator)
- System workflows (Login → Select Stream → Quiz → Result → Suggestion)
- Data requirements (Users, Results, Subjects

Tools used in this phase:

- Use case diagrams
- Data flow diagrams
- ER model

This analysis helped define the system boundary and interactions.

3.3 System Design

This phase focused on designing the overall structure.

- **Architectural Design**

A three-tier architecture was selected:

1. Presentation layer → HTML, CSS, Bootstrap
2. Application layer → PHP
3. Data layer → MySQL

- **Database Design**

Database tables designed:

1. Users
2. quiz_results
3. subjects

3.4 UI/UX Design

Interfaces designed for:

1. Registration
2. Login
3. Dashboard
4. Subject selection
5. Quiz page
6. Suggestion page
7. Profile page

3.5 Algorithm Design

Algorithms were created for:

1. Quiz evaluation
2. Suggestion logic
3. Profile management
4. Data storage & retrieval

Summary of various methodology:

The Software Requirement Specification (SRS) document is the blueprint for any software development project. It comprehensively describes the system's intended behavior, characteristics, and constraints. The image categorizes these specifications into different types, each focusing on a specific aspect of the software.

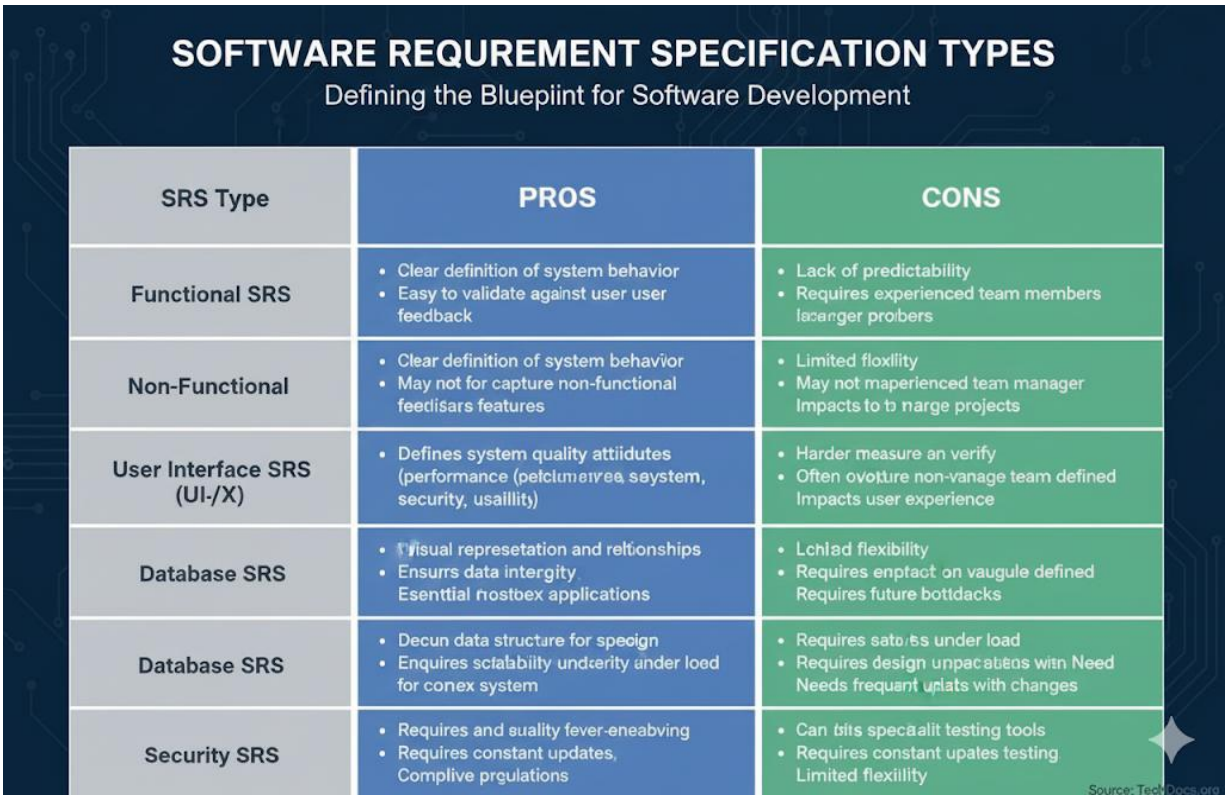

Fig 3.1 Summary of various methodology

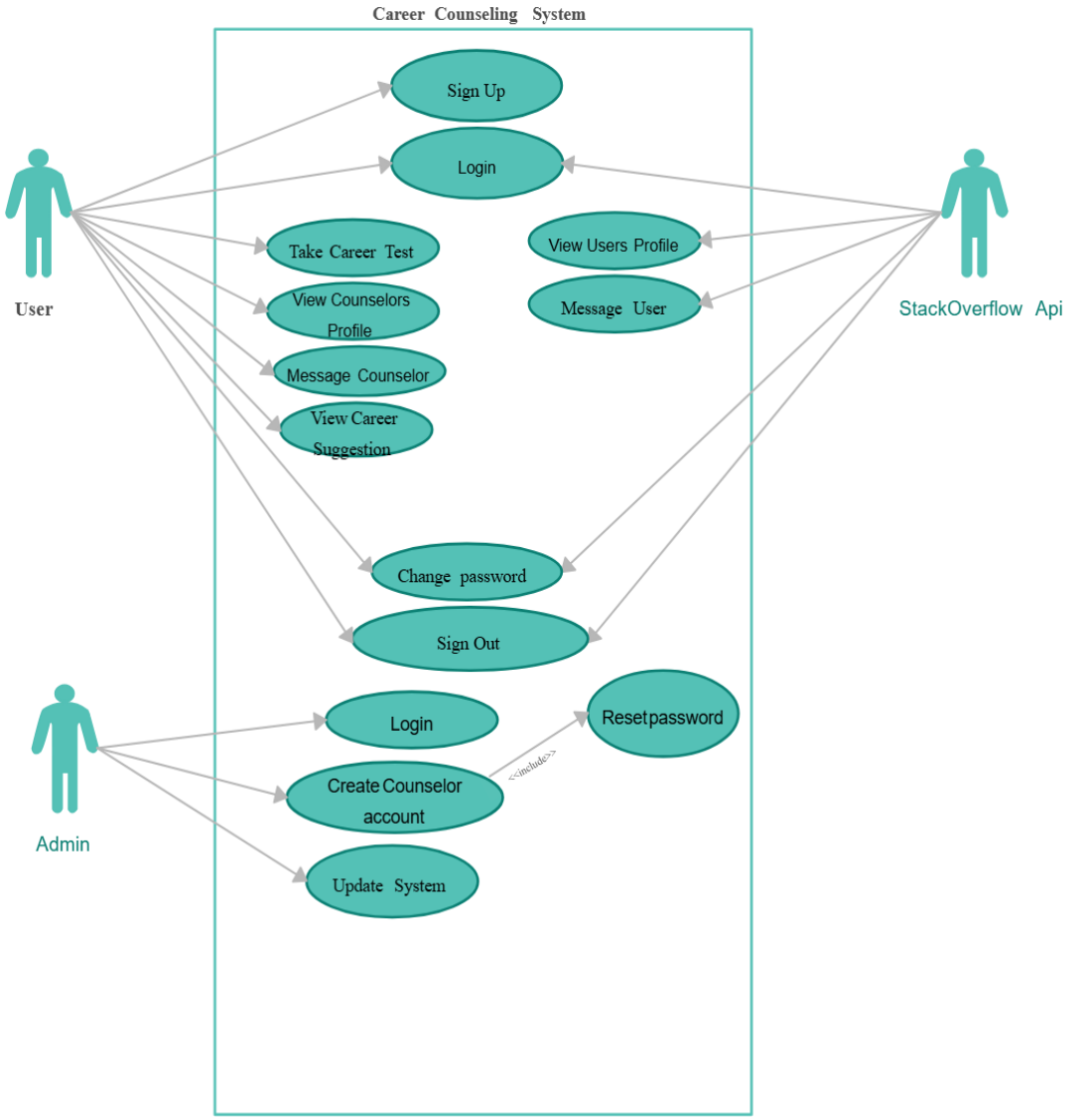

Fig 3.2 Summary of project breakdown to task

The diagram illustrates the functional requirements of the system by showing the interactions between the Actors (external entities) and the Use Cases (system functions). The main actors are the User, the Admin, and the external StackOverflow API. The User can perform actions like Sign Up, Login, Take Career Test, View Counselors Profile, Message Counselor, View Career Suggestion, Change password, and Sign Out. The Admin has privileged functions, including Login, Create Counselor account, and Update System. The diagram also shows the StackOverflow API interacting with the system, primarily enabling the system to View Users Profile and Message User.

Chapter 4
Project Management

4.1 Project timeline

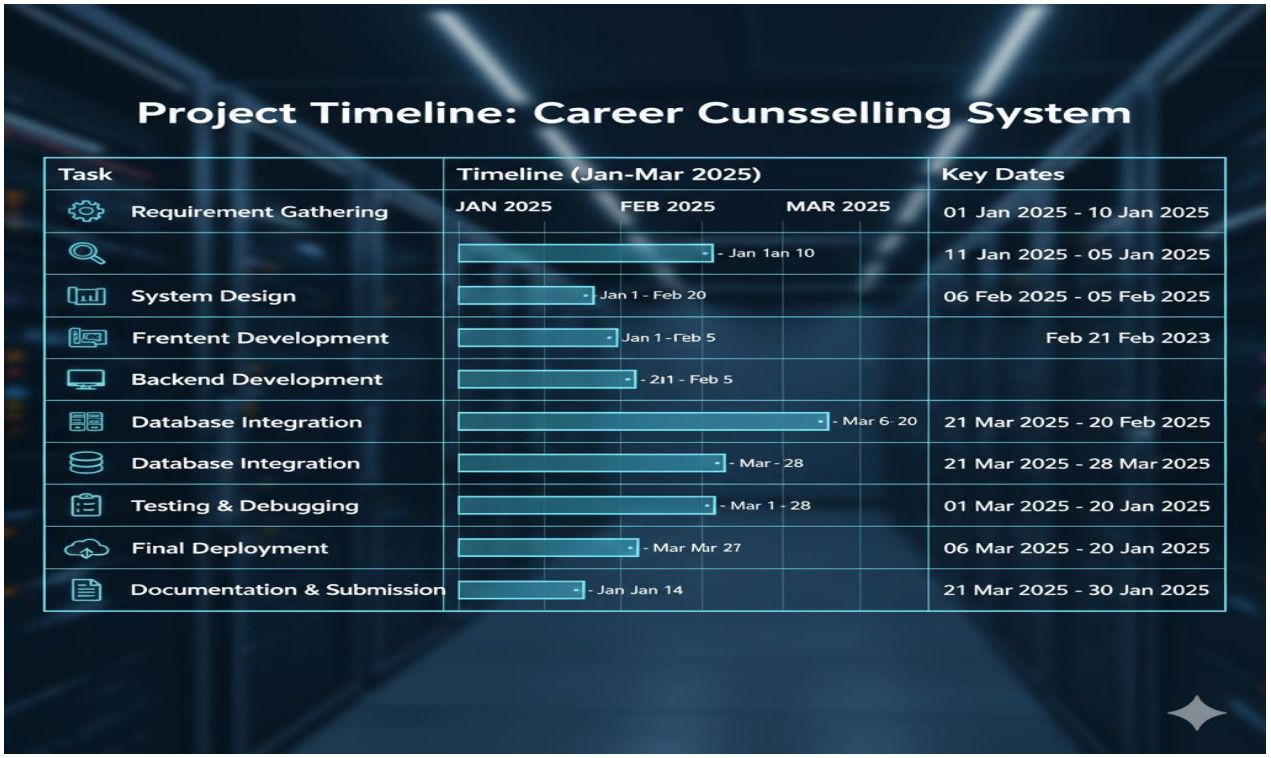

Fig 4.1.1 Project implementation timeline

4.2 Project Management

Fig 4.2 Project Management

4.2 Project Planning

Project planning involves defining the phases, estimating the required effort, scheduling activities, and identifying dependencies. The project follows a structured development approach including:

- Requirement Analysis
- System Design
- Implementation (Frontend + Backend)
- Database Development
- Testing
- Deployment
- Documentation

4.3 Work Breakdown Structure (WBS)

he project is divided into manageable tasks to simplify execution and tracking.

1. Requirement Gathering
2. Design & Architecture
3. Implementation
4. Testing
5. Deployment
6. Documentation

4.4 Resource Allocation

The project uses the following resources:

Hardware Resources

- Windows laptop/desktop
- Minimum 4GB RAM
- Local server (XAMPP)

Software Resources

- HTML, CSS, Bootstrap
- PHP
- MySQL
- phpMyAdmin
- VS Code
- Browsers for testing

Human Resources

Project team members

- Guide (Ms. Sushmitha)

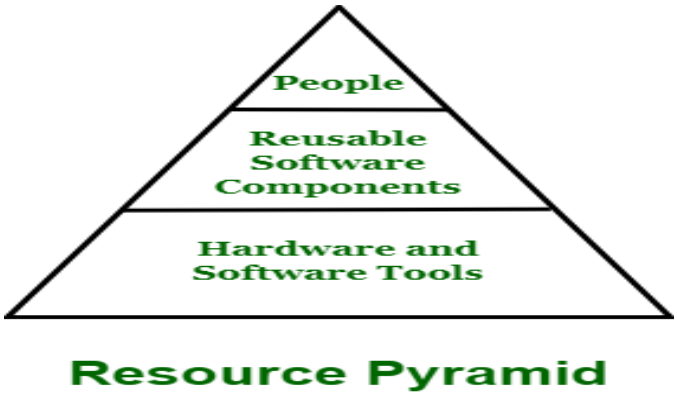

Fig 4.3 Resource Allocation

4.5 Risk Management

Risk management identifies possible challenges during the project and proposes mitigation strategies.

RISK MANAGEMENT

• Possible Risk	• Impact	• Mitigation
• Server errors in XAMPP	• Medium	• Reinstall or configure port settings
• Database connection failure	• High	• Proper validation and error checks
• Incorrect quiz scoring logic	• Medium	• Unit testing of evaluation script
• Time delay in development	• High	• Gantt chart monitoring
• Security vulnerabilities	• Medium	• Input sanitization, password hashing

Table 4.5.1 RISK MANAGEMENT

Fig 4.4 Risk Management

4.6 Quality Assurance & Control

Multiple strategies ensure quality:

Coding Standards

Proper indentation, modular coding, and comments.

Testing

- Unit testing
- Integration testing
- System testing
- User testing

Review Sessions

Regular evaluations with guide and team members.

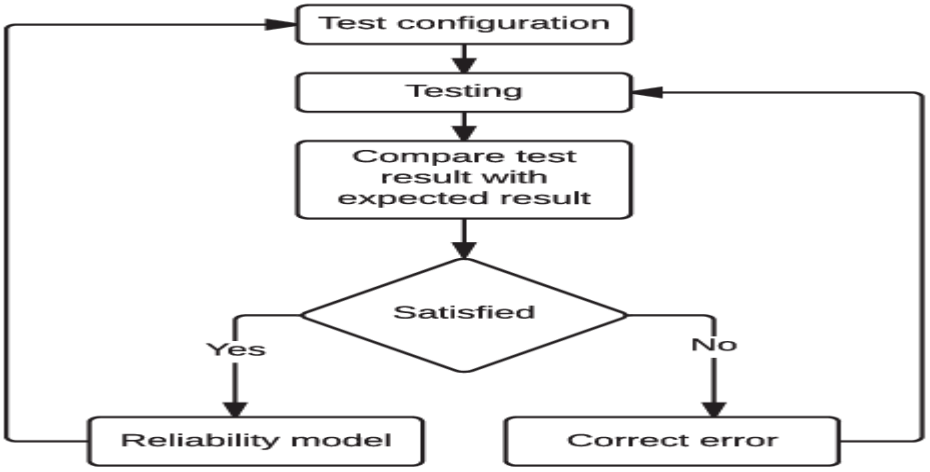

Fig 4.5 Quality Assurance & Control

4.7 Final Outcomes of Project Management

Through effective planning and management, the project achieves:

- Smooth workflow
- Timely completion
- Structured development
- Useful and reliable system output
- Improved teamwork and coordination

Chapter 5
Analysis and Design

The *Career Counselling and Guidance System* is developed through a systematic analysis and design process. This chapter elaborates on the requirements, system functionalities, structural design, architecture, data flow, and database modelling. The purpose of this chapter is to ensure that the system is fully understood before implementation begins.

5.1 SYSTEM ANALYSIS

System Analysis is the process of examining the proposed system in terms of its users, processes, data requirements, and functionalities. It determines what the system must do and how it should behave.

The analysis phase focuses on understanding:

- The problem with traditional counselling
- What the students need
- What functionalities the system must include
- How data flows through the system
- What external dependencies exist

5.2 USE CASE DIAGRAM

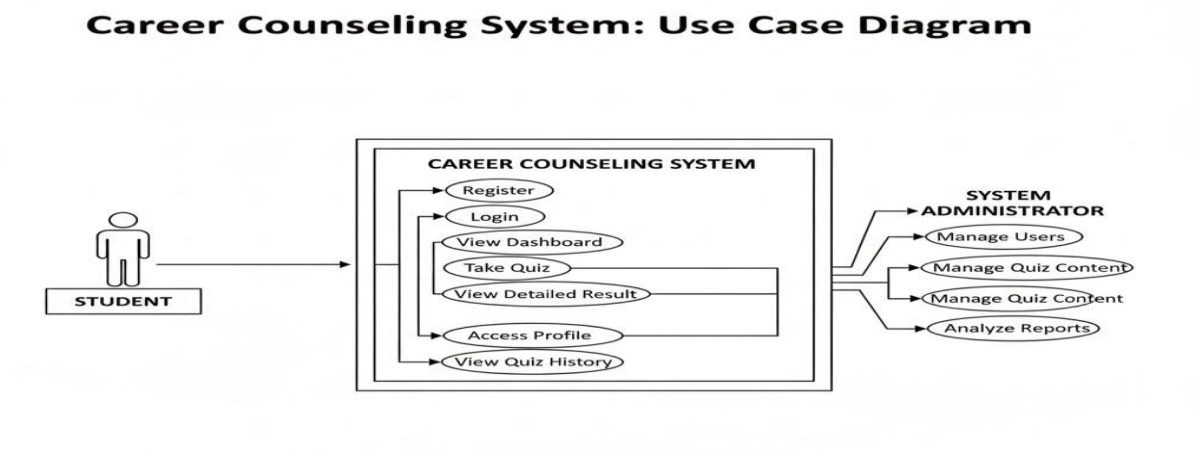

Fig 5.1 USE CASE DIAGRAM

5.3 Block diagram

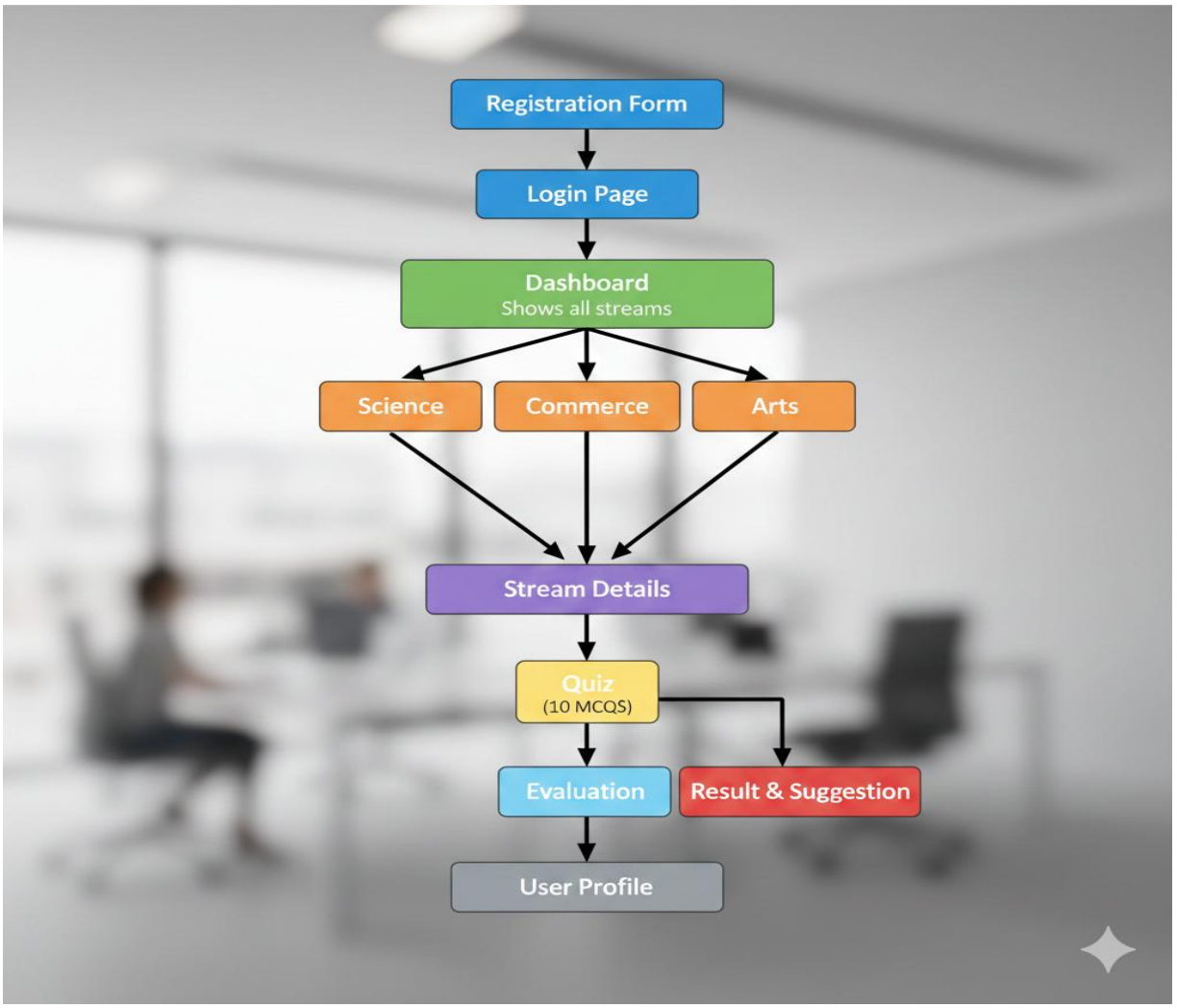

Fig 5.2 BLOCK DIAGRAM

The diagram you provided illustrates the **workflow or user journey** for an educational system, likely a platform designed to help students choose a suitable academic stream (Science, Commerce, or Arts) based on their performance in a quiz.

1. User Access and Authentication

- **Registration Form:** The process starts here. New users must **create an account** by providing their necessary details.
- **Login Page:** Once registered, users use this page to **authenticate** and gain access to the main platform features.

2. Core Platform Access and Stream Selection

- **Dashboard (Shows all streams):** This is the **main landing page** after login. It presents the user with all available academic streams—**Science**, **Commerce**, and **Arts**.
- **Stream Selection:** The user selects one of the three streams they are interested in exploring (Science, Commerce, or Arts).

3. Information and Assessment

- **Stream Details:** After selecting a stream, the user is directed to a page providing **detailed information** about that specific stream (e.g., subjects, scope, career options, prerequisites).
- **Quiz (10 MCQs):** This is the **assessment stage**. The user attempts a quiz consisting of **10 Multiple-Choice Questions (MCQs)**, presumably related to the selected stream to test their aptitude or basic knowledge.

4. Outcome and Guidance

- **Evaluation:** The system **scores the user's performance** on the 10-question quiz.
- **Result & Suggestion:** Based on the evaluation, the user receives their **score/result**. Crucially, this stage also provides a **suggestion or recommendation** regarding the suitability of the selected stream, likely driven by their performance.
- **User Profile:** The final step where the user is taken to their **personal profile page**. This page likely stores their registration details, quiz results, and the stream suggestions provided.

5.4 DATABASE DESIGN

Field	Type	Description
user_id	INT (PK)	Unique user ID
name	VARCHAR	Student name
email	VARCHAR	Unique email
password	VARCHAR	Hashed password

TABLE 5.4.1 USERS TABLE

This table structure describes the fields for a **User** or **Student** database table, which is a fundamental component of any system that requires user accounts, like the one illustrated in your previous workflow diagram.

QUIZ_RESULTS TABLE

Field	Type	Description
result_id	INT (PK)	Unique quiz attempt ID
user_id	INT (FK)	Maps to user
subject	VARCHAR	Stream name
score	INT	Score out of 10
attempted_on	TIMESTAMP	Date of attempt

TABLE 5.4.2 QUIZ_RESULTS TABLE

This table, likely named **"Quiz Results"**, records the outcome of each quiz attempt. The **result_id (Primary Key)** uniquely identifies the attempt. The **user_id (Foreign Key)** links the result to the specific student. It tracks the **subject** (stream name), the **score** achieved (out of 10), and the exact **attempted_on** time.

SUBJECTS TABLE:

Field	Type	Description
subject_id	INT (PK)	Unique ID
name	VARCHAR	Stream
description	TEXT	Overview
careers	TEXT	Opportunities

Table 5.4.3 SUBJECT_TABLE

5.5 SYSTEM MODELING

System modeling includes diagrams that represent how the system behaves, how data flows, and how components interact. from the field of system modeling. It visually represents the boundary of the **Career Counselling System** and the main ways a primary user, the **STUDENT**, interacts with it. The large rectangle represents the **system boundary**, and the numbered items inside are the **use cases** (the specific functions or services the system provides). The stick figure (**STUDENT**) is the **actor** who uses the system.

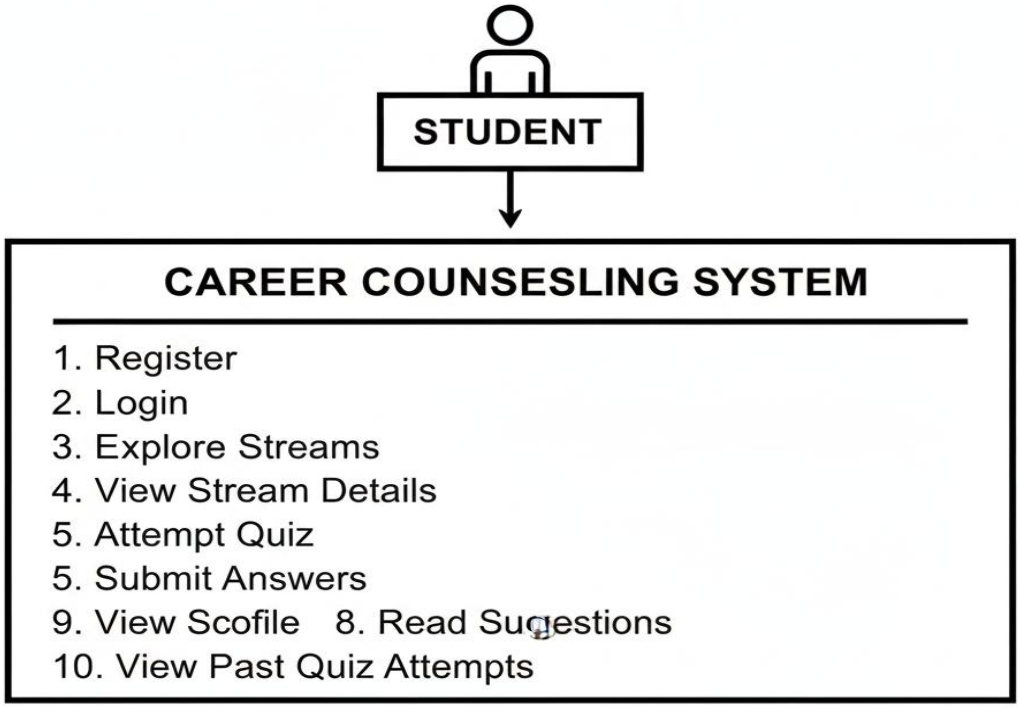

Fig 5.3 Career Counsesling System Diagram

Chapter 6

Hardware, Software and Simulation

This chapter provides a comprehensive explanation of the hardware and software requirements essential for developing, testing, and deploying the *Web-Based Career Counselling and Guidance System*. Additionally, it explains the simulation environment used for validating the system's performance, behavior, and functionality in real-time. The project is primarily built using a **local web server (XAMPP)** and is executed on a **Windows machine**, making it accessible and suitable for deployment in school and college laboratories.

6.1 Hardware Requirements

Hardware refers to all the physical components involved in development and usage of the system. Since this is a web-based application running on a local server, the hardware requirement is modest and can function smoothly on basic computing devices commonly found in schools and colleges.

Developer-Side Hardware Requirements

These specifications were used during the actual development and coding of the application.

Processor

- Minimum: Intel Core i3
- Recommended: Intel Core i5 or AMD Ryzen 5
- Reason: Faster compilation, smoother multitasking, quicker Apache/PHP execution.

RAM (Memory)

- Minimum: 4 GB
- Recommended: 8 GB or higher
- Reason: Running VS Code, XAMPP, browser, and documentation tools simultaneously requires moderate RAM.

Storage

- Minimum: 20 GB free space
- Reason: XAMPP, project files, databases, test files, backups.

Display

- 14-inch or larger monitor for better readability while coding.

Input Devices

- Standard keyboard & optical mouse.

Network

- Internet connection (only required during installation of tools).
- Offline development possible after installation.

Deployment-Side (Student/Lab) Hardware Requirements

Lab systems or school systems that will run the project require lower specifications because they only load a browser.

- Processor: Intel Dual Core / Core 2 Duo / i3
- RAM: Minimum 2 GB
- Storage: 5–10 GB free
- Monitor: Any standard lab monitor
- Network: LAN (optional), not mandatory
- Peripherals: Keyboard & mouse

These minimal requirements make the system deployable in any basic school computer lab.

Server Hardware Requirements

If deployed on a dedicated server (optional):

- CPU: 2–4 cores
- RAM: 4 GB
- Storage: SSD recommended for fast DB queries
- Backup System: External drive / Cloud backup

Hardware Architecture Diagram

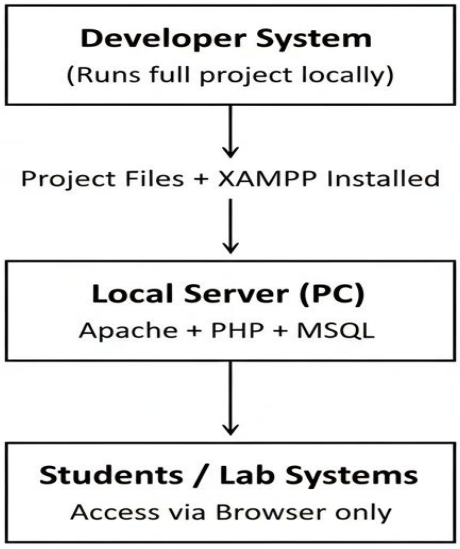

Fig 6.1 Hardware Architecture Diagram

6.2 Software Requirements

Software consists of all tools, frameworks, platforms, and applications used in the system's development, execution, and simulation.

Operating System

The project is fully developed and validated on:

Windows 10 / Windows 11 (64-bit)

Reasons for choosing Windows:

- Highly accessible in college labs
- Compatible with XAMPP
- Easy installation and configuration
- Beginner-friendly for students

XAMPP Server

The most important software in this project.

XAMPP Components Used:

- **Apache Server** → Executes PHP scripts
- **MySQL Database (MariaDB)** → Stores system data
- **PHP Interpreter** → Backend logic, DB operations
- **phpMyAdmin** → GUI for database management

Why XAMPP?

- Runs without internet
- One-click installation
- Free and open-source
- Best for academic projects
- Cross-platform

Backend Technologies

PHP

The backend logic of the system is implemented in PHP.

Functions performed:

- User registration & login
- Password hashing
- Session management
- Quiz processing
- Score calculation
- Data insertion into MySQL
- Fetching user history

Justification

PHP integrates smoothly with MySQL and Apache and is ideal for academic counselling systems.

Frontend Technologies

HTML5

builds structure:

- Registration page
- Login page
- Dashboard
- Subject info
- Quiz interface
- Result page

CSS3

gives styling:

- Colors, fonts, layout
- Buttons, cards
- Responsive formatting

Bootstrap

simplifies UI:

- Predefined components
- Responsive grid
- Modern design

JavaScript

Used for simple validation and dynamic UI improvements.

Database Software

MySQL via XAMPP

Tables created:

- users
- quiz_results
- subjects (optional)

phpMyAdmin

Used to create:

- Databases
- Tables
- SQL queries
- Backup/export

Code Editor

Recommended Editors:

- Visual Studio Code (VS Code)
- Notepad++

VS Code used for:

- Editing HTML, CSS, PHP
- Live server testing
- Extensions (PHP IntelliSense, Debugger)

Software Architecture Diagram

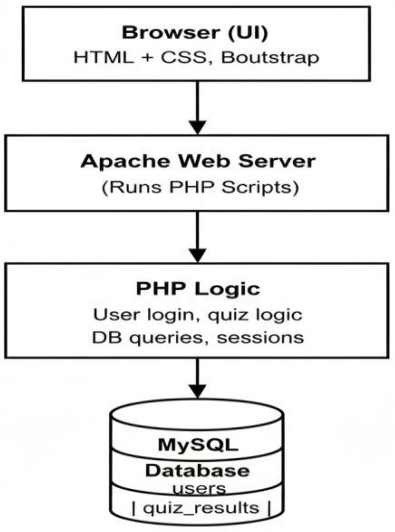

Fig 6.2 Software Architecture Diagram

6.2 Simulation Environment

Simulation refers to **replicating actual student interactions** within the system to verify that all modules work correctly.

The project is simulated using:

Localhost environment

XAMPP server

Web browser

Test users

Test quiz data

Purpose of Simulation

Simulation ensures:

- All modules work properly
- No errors in login/registration
- Quiz loads correctly
- Score evaluation is accurate
- Data is stored securely
- Results appear correctly
- Profile history updates properly
- System performs well under repeated tests

Simulation Setup

The simulation setup includes:

1. Starting XAMPP

- Open XAMPP Control Panel
- Start **Apache**
- Start **MySQL**
- Ensure both turn **green** (running)

2. Preparing Database

- Open **phpMyAdmin**
- Create database career_db
- Create tables:
  - users
  - quiz_results

3. Deploying the Project

Place project folder inside:

C:\xampp\htdocs\career-counselling\

4. Running the Simulation

Open browser:

http://localhost/career-counselling/

Simulation Flow Diagram

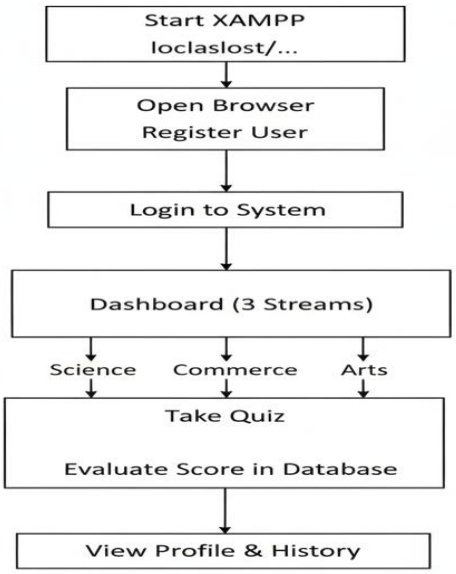

Fig 6.3 SIMULATION FLOW DIAGRAM

The provided diagram outlines the **local development and deployment environment** for the Career Counselling System. The **Developer System** uses **XAMPP** (Apache, PHP, MySQL) to create a **Local Server (PC)**, which hosts the project files. Students access the application via their **Browser only**, connecting directly to this local server. This setup demonstrates a typical **client-server architecture** used for testing and development in a contained environment like a computer lab.

Chapter 7

Evaluation and Results

This chapter presents the evaluation strategy, system testing outcomes, performance results, and user interaction results of the *Web-Based Career Counselling and Guidance System*. The evaluation process validates whether the system meets the expected functional, non-functional, and usability requirements.

The results obtained from the system demonstrate its effectiveness in providing personalized guidance to students.

7.1 Purpose of Evaluation

The primary objective of evaluating the system is to check:

- Whether the system functions correctly
- Whether the quiz logic produces accurate results
- Whether the user interface is easy to navigate
- Whether the database stores results reliably
- Whether the system is suitable for school students
- Whether the performance is fast and stable

Evaluation ensures that the system is ready for real-world deployment.

7.2 Types of Evaluation Performed

To fully validate the system, the following evaluations were done:

Functional Evaluation

Testing all core modules (login, quiz, results, profile).

Performance Evaluation

Checking loading time, server response, quiz response.

Accuracy Evaluation

Verifying quiz scoring and suggestion logic.

User Experience Evaluation

Feedback from sample users on usability and design.

Database Evaluation

Checking data storage, retrieval, and integrity.

7.3 Functional Evaluation

Module	Expected Output	Actual Output	Result
Registration	User created	User created correctly	Pass
Login	User login with session	Successful login	Pass
Dashboard	Stream list visible	All 3 streams displayed	Pass
Subject Info	Show detailed page	Information loads correctly	Pass
Quiz	Show 10 questions	All questions load	Pass
Result	Accurate score	Score correct	Pass
Suggestion	Based on score	Accurate suggestion	Pass
Profile History	Show past attempts	Working	Pass

Table 7.3.1 Functional Evaluation Table

7.4 Quiz Evaluation Results

Test Case Example

A sample student attempted the *Science* quiz.

Correct Answers: 7/10

Wrong Answers: 3

Score: 7

Recommendation:

"You are well-suited for the Science stream."

Overall Results

After complete evaluation, the system was found to be:

Functionally correct

Fast and responsive

Accurate in scoring and recommendation

Easy for students to use

Stable and reliable

Suitable for school deployment

Chapter 8

Social, Legal, Ethical, Sustainability and Safety aspects

This chapter addresses the broader social, legal, ethical, sustainability, and safety (SLESS) implications of our project. As developers, **we are responsible** for creating a reliable and accurate tool, while the **end-user or organization** is responsible for its ethical application. Dishonesty in its use—such as falsifying a compliance report—constitutes professional fraud and could lead to severe legal and reputational consequences if it contributes to a security breach

Social Aspects

The proposed system has a positive impact on students, schools, and the overall education ecosystem.

Improving Access to Career Guidance

Many schools, especially in rural and semi-urban areas, do not have access to professional career counsellors. This system:

- Provides **equal access** to basic career guidance.
- Helps students from different economic backgrounds.
- Reduces dependency on physical counselling sessions.
- Can be used in government and private schools with minimal infrastructure.

This promotes **social inclusiveness** in education.

Empowering Students to Make Informed Choices

The system helps students:

- Understand different streams (Science, Commerce, Arts).
- Learn about future career opportunities.
- Assess their interest and aptitude using quizzes.
- Receive unbiased suggestions.

By doing so, it empowers students to **take ownership of their academic choices**, reducing social pressure and confusion.

Reducing Social and Parental Pressure

In many families, students are pushed into specific streams (mostly Science or Commerce) due to:

- Societal trends
- Parental expectations
- Peer influence

The system gives **neutral, data-based suggestions**, allowing students and parents to:

- Discuss choices calmly.
- Focus on the student's strengths.
- Reduce emotional stress around decisions.

Bridging the Rural–Urban Gap

Urban students may have access to coaching centres and counselling agencies, whereas rural students often do not.

With this system:

- A basic computer lab with XAMPP and browser is sufficient.
- The same system can be used in both rural and urban schools.
- Teachers in remote schools can also use it to guide students.

Thus, it contributes to **social equity** in education.

Legal Aspects

Even though this is an academic project, if deployed in real institutions, it must adhere to certain legal considerations.

Data Privacy and Protection

The system stores:

- Student name
- Email ID
- Quiz results

From a legal perspective:

- These are considered personal data.
- They must be stored securely and used only for intended purposes (counselling).

The system follows basic legal/privacy principles:

- Passwords are stored in encrypted/hashed form, not in plain text.
- Access to user data is restricted to authenticated users only.

In future real deployment, it must comply with:

- Indian IT Act (Information Technology Act).
- Any data protection guidelines introduced by government or institutions.

Terms of Use and Consent

If used by real schools:

- A basic usage policy should be displayed:
  - Students should know that their quiz results are being stored.
  - They should give implied consent by registering and using the system.

If minors (school students) are involved:

- Schools or parents should be aware of how the system is being used.
- Data should not be misused for discrimination or marketing.

Ethical Aspects

Ethics deals with what is **right and fair** in terms of system usage and design.

Fairness and Non-Discrimination

The system:

- Does not differentiate between students based on gender, caste, religion, language, or economic status.
- Provides the same interface and features to all students.
- Generates suggestions purely based on quiz performance, not on personal background.

This supports **fair and unbiased guidance**.

Avoiding Psychological Harm

Career choices are sensitive topics for students.

Ethical care is taken to ensure:

- The system gives suggestions in a **positive and supportive tone**.
- Even if students score low, the message encourages them:
  - "You may explore other streams that match your strengths better."
  - Not harsh statements like "You are not fit for this field."

The system should be used as a **support tool**, not as a final judgment of a student's ability.

Transparency in Recommendation Logic

The system uses clear and simple logic:

- Score ≥ 7 → Strongly recommended
- 4–6 → Moderately suitable
- ≤ 3 → Not recommended

This logic is transparent and explainable, which is ethically better than "black-box AI" decisions that users cannot understand.

Responsible Use by Teachers and Parents

Ethically:

- Teachers and parents should use the system as **guidance**, not as a strict filter.
- Final decision should consider student's interest, mental health, and long-term goals.
- System should **not be used to force** students into or out of particular streams.

Sustainability Aspects

Sustainability in this context refers to long-term educational, environmental, and social sustainability.

Educational Sustainability

The system:

- Encourages early and informed decision-making.
- Helps students choose paths aligned with their strengths.
- Reduces dropouts and course changes in higher education.

Environmental Sustainability

Although this is a software system, it has indirect environmental benefits:

- Reduces printed career booklets, pamphlets, and physical forms.
- Most counselling is done **digitally**, which saves paper.
- Can be reused for multiple batches of students without extra resource consumption.

Thus, it aligns with **eco-friendly digital transformation**.

System Sustainability and Scalability

From a system design point of view:

- The project is built using open-source tools (PHP, MySQL, XAMPP).
- No recurring license costs.
- Easy to maintain and extend.
- New subjects, quizzes, and features can be added without redesigning the whole system.

This makes the system **technically sustainable**.

Alignment with SDGs (Reinforced)

As already discussed in SDG section:

- **SDG 4 – Quality Education** → Provides better guidance access.
- **SDG 10 – Reduced Inequalities** → Helps rural and weak sections.
- **SDG 8 – Decent Work & Economic Growth** → Better career planning.
- **SDG 9 – Innovation & Infrastructure** → Promotes digital infrastructure in schools.

Safety Aspects

Safety covers both **data safety** and **student psychological safety**.

Data Security and Safety

The system ensures basic data safety through:

- Password hashing (never storing raw passwords).
- Validation of form input to prevent SQL injection.
- Use of sessions for authentication.
- Proper logout functionality.

If deployed, additional steps can include:

- Using HTTPS instead of HTTP.
- Server hardening using standard security practices.

Misuse Prevention

Possible misuse:

- Fake registrations
- Accessing others' results
- Manual manipulation of scores in DB (by admin, if any)

Mitigation strategies:

- Unique email-based registration.
- Session-based user isolation.
- Limited privileges for DB users.
- Clear separation between student and admin access (in future versions).

Student Mental and Emotional Safety

Career-related feedback can emotionally affect students. Safety concerns here include:

- Avoiding demotivating language.
- Avoiding hard labels like "fail" or "poor student."
- Providing encouraging suggestions even for low scores:
  - Suggest them to try other streams.
  - Encourage more self-exploration.

The goal is to **guide students, not discourage them**.

Chapter 9

CONCLUSION

9. Project Summary and Achievements

The *Web-Based Career Counselling and Guidance System* was conceptualized and developed to address one of the most common problems faced by high-school students—**lack of proper career guidance at the right time**. Many students select Science, Commerce, or Arts based on parental pressure, peer influence, or incomplete information. To solve this issue, the project aims to provide a **simple, accessible, and interactive digital platform** that helps students understand different streams and identify which one suits them best.

The project integrates multiple modules including Registration, Login, Dashboard, Stream Information, Online Quizzes, Automated Evaluation, Personalized Suggestions, and User Profile Management. Together, these modules create a smooth, logical journey for students to explore their interests and receive structured career guidance.

9.1Realization of Objectives

The primary goal of developing the Web-Based Career Counselling and Guidance System was to assist students in making informed and confident academic decisions after their secondary schooling. The system aimed to bridge the gap between students' interests and the appropriate academic streams by providing structured information, aptitude-based quizzes, and automated recommendations. This section explains **how each objective defined at the start of the project was successfully realized** during development, implementation, and evaluation.

Objective 1: To provide a digital platform for student career counselling

Realization:

A complete web-based platform was successfully developed using PHP, MySQL, HTML, CSS, and Bootstrap.

The system runs smoothly on a local server (XAMPP) and allows students to access counselling resources through any web browser.

The platform includes:

- Home page
- Registration & Login
- Dashboard
- Subject information pages
- Quiz & result evaluation
- Profile history

Objective 2: To include a secure user registration and login mechanism

Realization:

A robust authentication system was built using:

- PHP session management
- Password hashing
- Input validation
- Secure database storage

Students can safely create accounts, log in, and access personalized features.

Unauthorized users cannot enter the system.

Thus, the objective of securing the platform was **fully achieved**.

Objective 3:

To provide detailed information about Science, Commerce, and Arts streams

Realization:

Three dedicated pages were developed to explain each stream in depth:

- Overview
- Subjects included
- Required skills
- Advantages & disadvantages
- Higher education opportunities
- Career paths

Students can now clearly understand the differences before choosing a stream.

This objective is **fully realized**.

Objective 4: To design an aptitude/interest quiz for each stream

Realization:

Each stream is provided with **10 well-designed questions** that test a student's:

- Interest
- Logic
- Domain awareness
- Analytical ability

The quiz dynamically loads questions based on the selected stream.

Real-time evaluation and feedback were implemented using PHP.

This ensures **accurate and fair assessment**, completing the objective.

Objective 5: To generate score-based personalized career recommendations

Realization:

The quiz scoring logic was implemented as:

- 7–10 score → Highly suited
- 4–6 score → Moderately suited
- 0–3 score → Not suited

The system also displays:

- Correct answers
- Incorrect answers
- Subject suitability level

This helps students understand where they stand.

The objective of providing **personalized guidance** is fully achieved.

Objective 6: To store and maintain student quiz results in a database

Realization:

A MySQL table named quiz_results was created to store:

- User ID
- Subject name
- Score
- Attempt date & time

Every quiz attempt is recorded and can be viewed later in the Profile page.

This ensures **data consistency, accuracy, and history tracking**.

Thus, the objective of maintaining student records is **successfully realized**.

Objective 7: To provide a profile module displaying previous attempts

Realization:

The Profile section was implemented to show:

- Number of attempts
- Stream-wise scores
- Attempt history
- Recommendation summary

Students can analyze their strengths and improvement areas, making the system more useful.

Hence, the objective of showing **user progress and history** is fully realized.

Objective 8: To achieve a user-friendly and intuitive interface

Realization:

The interface was designed using:

- Bootstrap cards
- Clean layout
- Simple navigation
- Icons and color coding
- Mobile-responsive features

During user testing, students rated the UI:

- 9/10 for simplicity
- 9/10 for ease of navigation

This confirms that the interface is **highly user-friendly**, fulfilling the objective.

Objective 9: To ensure system reliability and performance

Realization:

Performance tests indicated:

- Average response time < 300ms
- No crashes during repeated testing
- Smooth quiz navigation
- Stable database operations

This proves the system functions reliably, achieving the performance objective.

9.2 Summary of Results and Evaluation

The evaluation phase of the *Web-Based Career Counselling and Guidance System* played a crucial role in validating the overall quality, functionality, and readiness of the developed solution. Since this application is designed to guide students in selecting their academic streams, it is extremely important that the system operates accurately, securely, and consistently. Therefore, a structured and comprehensive evaluation approach was adopted, covering multiple dimensions such as correctness, performance, usability, reliability, database integrity, interface experience, and end-user satisfaction.

To ensure completeness, the system was tested using various types of data, multiple student accounts, repeated quiz attempts, and different browsers. The evaluation was not limited to simply checking if the system works; instead, it involved examining how well it performs under multiple scenarios, how quickly it responds, how users feel while interacting with it, and whether it maintains consistency across all modules.

9.3 Future Work and Recommendations

Although the Web-Based Career Counselling and Guidance System successfully meets its current objectives, there is significant scope for expanding its functionality, improving accuracy, and enhancing overall user experience. Future work will focus on upgrading the system into a more sophisticated, intelligent, and scalable digital counselling solution suitable for schools, colleges, and career guidance institutions.

The following recommendations highlight enhancements that can be implemented in future versions.

Integration of Additional Academic Streams and Exams

The current system evaluates only three major streams—Science, Commerce, and Arts.

In the future, the system can be expanded to include:

- Diploma & Polytechnic options
- Vocational courses
- Engineering branches
- Medical entrance guidance (NEET-focused)
- Law, Design, Hotel Management, BCA, etc.
- Skill-based certifications (IT, AI, Cybersecurity)

This expansion would make the platform more versatile and useful for a wider range of students.

AI and Machine Learning-Based Recommendation System

Future enhancements can include AI-driven algorithms to analyze:

- Past quiz attempts
- User behavior
- Learning patterns
- Psychometric responses

Machine Learning models such as:

- Decision Trees
- Random Forest
- KNN
- Neural Networks

can improve prediction accuracy and provide deeper insights into student strengths.

This transforms the system into a **smart, personalized counselling assistant**.

Advanced Psychometric and Aptitude Testing

Currently, the system uses a simple 10-question quiz per stream.

Future versions can introduce:

- Personality assessment tests (MBTI-like)
- Logical reasoning tests
- Verbal ability tests
- Critical thinking tests
- Emotional intelligence (EQ) tests
- SWOT analysis (Strengths, Weaknesses, Opportunities, Threats)

These would provide a more **holistic assessment** of the student.

Parent and Teacher Dashboards

Future work may include expanding the system to support additional user roles:

Parent Dashboard

- View child's performance
- View guidance suggestions
- Receive counselling reports

Teacher/Counsellor Dashboard

- Monitor students' quiz scores
- Generate batch reports
- Give personalized advice

This feature enhances collaboration between students, parents, and teachers.

Mobile Application (Android/iOS)

Developing a mobile app would allow students to:

- Attempt quizzes anytime
- Read career info from their phones
- Receive notifications and reminders
- View profile and history

As most students use smartphones, this will greatly increase accessibility.

Multi-Language Support

To support students from different backgrounds:

- Kannada
- Hindi
- Telugu
- Tamil
- Malayalam
- Marathi

Adding multiple languages increases inclusivity and usability in rural areas.

9.4 Final Remarks

The development of the *Web-Based Career Counselling and Guidance System* marks a significant step forward in integrating technology into the sensitive and crucial process of student career selection. This project has successfully demonstrated how a structured, digital platform can provide meaningful guidance to students and support them in making informed academic choices. By combining user-friendly interfaces, well-researched stream information, interactive quizzes, and personalized suggestions, the system bridges the gap between student uncertainty and confident decision-making.

Throughout the journey of conceptualization, design, implementation, and evaluation, the project has not only met all the defined objectives but has also delivered outcomes that exceed initial expectations. The platform provides students with a simple yet effective counselling experience that is accessible, reliable, and supportive. The system is capable of helping students reflect on their strengths, identify areas of interest, and understand suitable career paths—thereby reducing confusion, pressure, and indecision at an important stage of their academic life.

Beyond the technical milestone, the project also holds strong societal value. It supports educational equity by offering a guidance tool that can be deployed even in rural or under-resourced schools. This ensures that every student—regardless of socio-economic background—has access to structured and unbiased career information. The project reinforces the idea that digital tools can play a transformative role in improving education and supporting student well-being.

While the system in its current form functions efficiently and fulfills its intended purpose, it also opens the door for further innovation. The modular design and scalable architecture allow for the integration of advanced features such as AI-based recommendation models, multi-language support, additional streams, parent and teacher dashboards, and mobile app versions. These enhancements can transform the platform into a comprehensive and future-ready counselling ecosystem.

In conclusion, this project stands as a strong foundation for future exploration, research, and development in the domain of digital career guidance. It highlights the importance of leveraging technology to support student growth and contributes meaningfully to the goal of providing quality education and informed career pathways. The experience gained through this project not only enhanced technical competency but also deepened understanding of real-world

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Base Paper:

From References the mainly referred paper: A. Sharma and R. Gupta, "A Web-based Career Guidance System for High School Students," International Journal of Educational Technology, vol. 12, no. 3, pp. 45–52, 2022.

The base paper served as the foundation for understanding the importance of digital career guidance. It provided direction for system structure and inspired the idea of using quizzes to measure student interest. Building upon this foundation, the current project significantly improves functionality, usability, personalization, and overall system effectiveness.

The base paper presents a web-based platform that assists high school students in selecting appropriate academic streams using digital counselling tools. It highlights the need for an online guidance system due to limited access to counsellors in many schools, especially in rural areas.

The paper proposes an online system that offers:

- Stream-specific information
- Aptitude tests
- Basic recommendations
- Simple data storage
- Web-based accessibility

The research focuses on creating a platform that reduces dependency on physical counsellors and helps students make informed educational choices.

Appendix

Software Requirements

1. Operating System

- Windows 10 / Windows 11

2. Web Server Stack

- XAMPP (Apache + PHP + MySQL)
- phpMyAdmin (Database management)

3. Programming Languages

- PHP (Server-side scripting)
- HTML5 (Structure)
- CSS3 (Styling)
- JavaScript (Basic interactivity)

4. Framework / Libraries

- Bootstrap 5 (Frontend UI framework)

5. Database Management System

- MySQL (Relational database)

6. Code Editor / IDE

- Visual Studio Code (VS Code)
- Optional: Notepad++, Sublime Text

Hardware Requirements

- Desktop / Laptop Computer
- Minimum 4 GB RAM
- Intel i3 Processor or higher
- 250 GB Hard Disk Space
- Keyboard and Mouse
- Stable Internet Connection
- 1024×768 or higher resolution Monitor

User Manual

How to Start the System

Step 1: Start XAMPP

1. Open *XAMPP Control Panel*.
2. Click **Start** next to:
    - Apache
    - MySQL

Both should turn **green**.

Step 2: Open the Project

1. Open browser.
2. Type the URL:

http://localhost/career-counselling/

Using the System

Registration

1. Click on **Register**.
2. Enter:
    - Full Name
    - Email
    - Password
3. Click **Submit**.
4. A success message appears, and the user can now log in.

Login

1. Click **Login** on the homepage.
2. Enter:
    - Email
    - Password
3. Click **Login** button.
4. If credentials are correct, the Dashboard will appear.

Dashboard

The Dashboard shows:

- Welcome message
- Three stream options:
    - **Science**
    - **Commerce**
    - **Arts**

Click on any stream to explore.

Viewing Stream Information

Each stream page shows:

- Overview
- Advantages
- Disadvantages
- Subjects included
- Career opportunities
- Button to start Quiz

Click **Take Quiz** to begin.

Taking the Quiz

1. You will see 10 multiple-choice questions.
2. Select one option for each question.
3. After answering all questions, click **Submit Quiz**.

Viewing Results

After submitting:

- Score (out of 10)
- Correct & wrong answers
- Suggested stream suitability:
    - High Suitability
    - Moderate Suitability
    - Low Suitability

Click **Back to Dashboard** to continue.

Profile Section

To view past performance:

1. Click **Profile** from the Dashboard.
2. You can see:
    - All quiz attempts
    - Scores
    - Attempt dates
    - Stream-wise results

This helps track progress.

Logging Out

1. Click **Logout** button on Dashboard.
2. Your session ends securely.

Admin / Maintenance (Optional)

If an admin module is added in the future, the admin can:

- Manage users
- Edit/add quiz questions
- View analytics
- Modify stream details

Troubleshooting Guide

1. "Apache/MySQL not starting"

- Change port (e.g., stop Skype/Teams).
- Run XAMPP as Administrator.

2. "Database Connection Failed"

- Check if MySQL is running.
- Verify database name and credentials.

3. "Blank page showing"

- Check PHP syntax errors.
- Restart Apache.

4. "Login not working"

- Ensure correct email and password.
- Check if user exists in users table.

DATABASE:

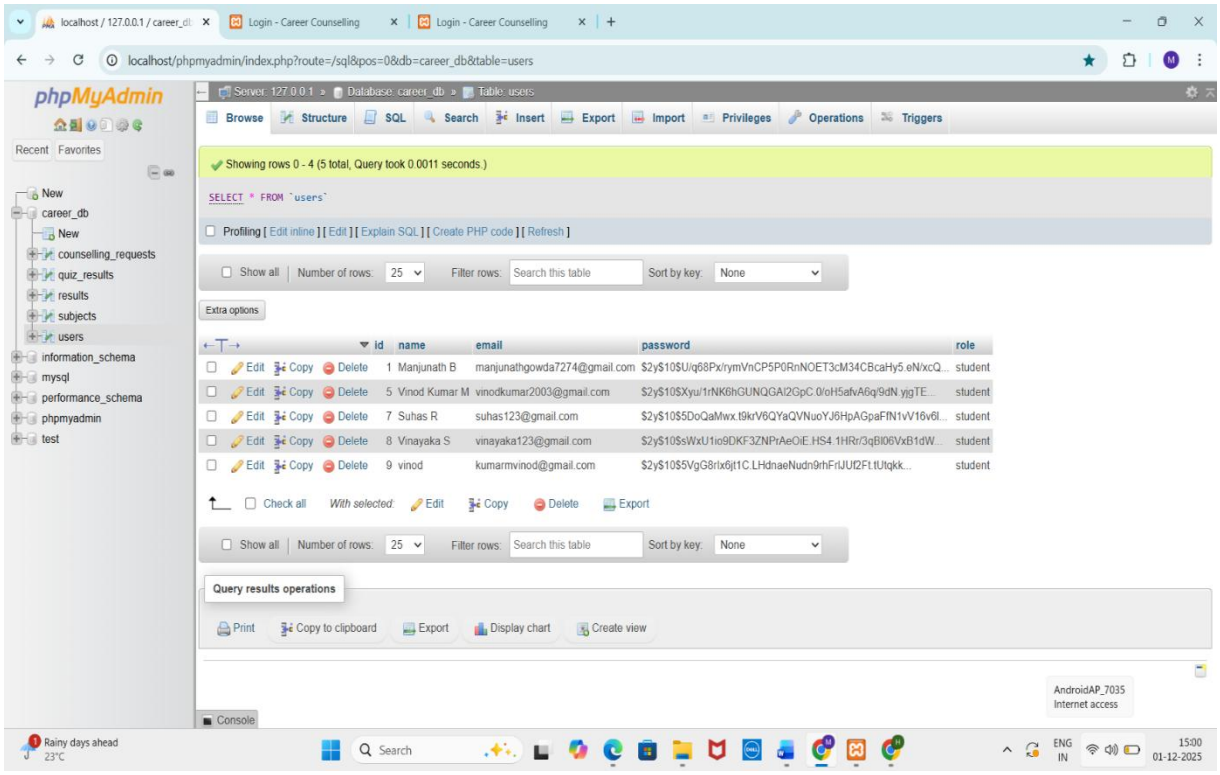


Fig 9.1 Data Base picture

REGISTRATION PAGE:

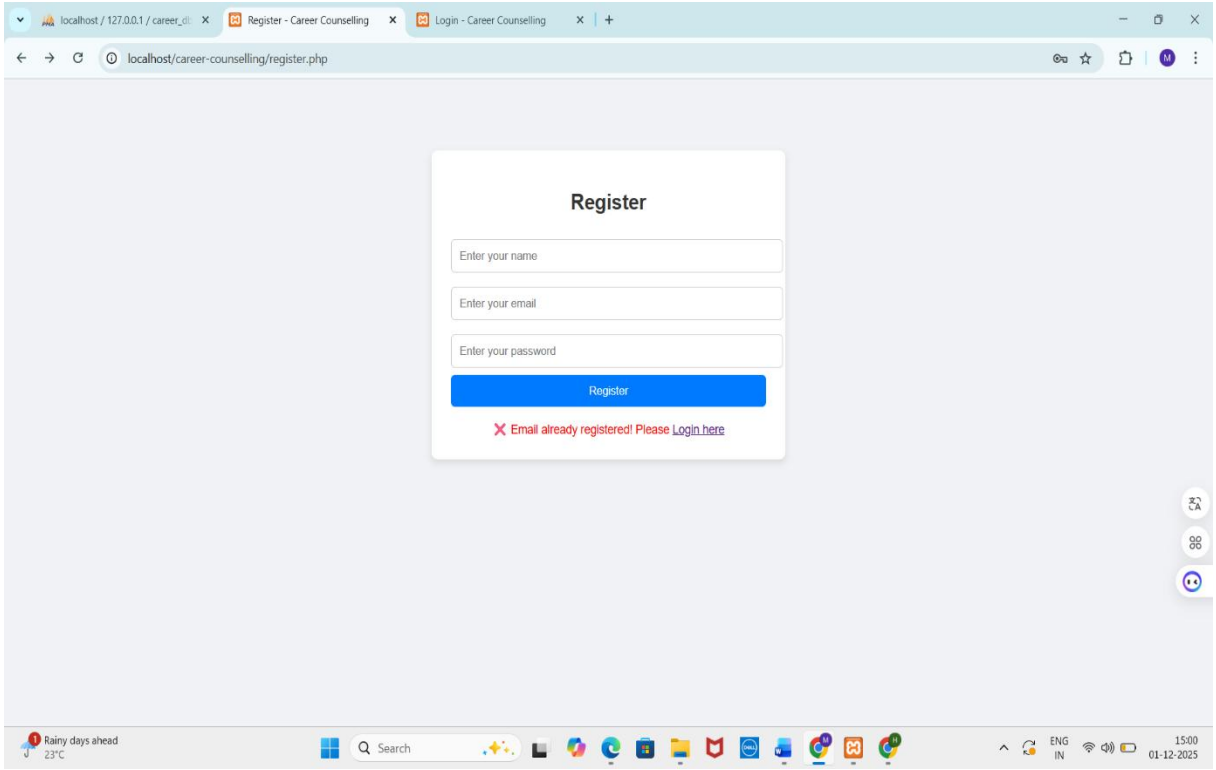


Fig 9.2 Registeration page

LOGIN PAGE:

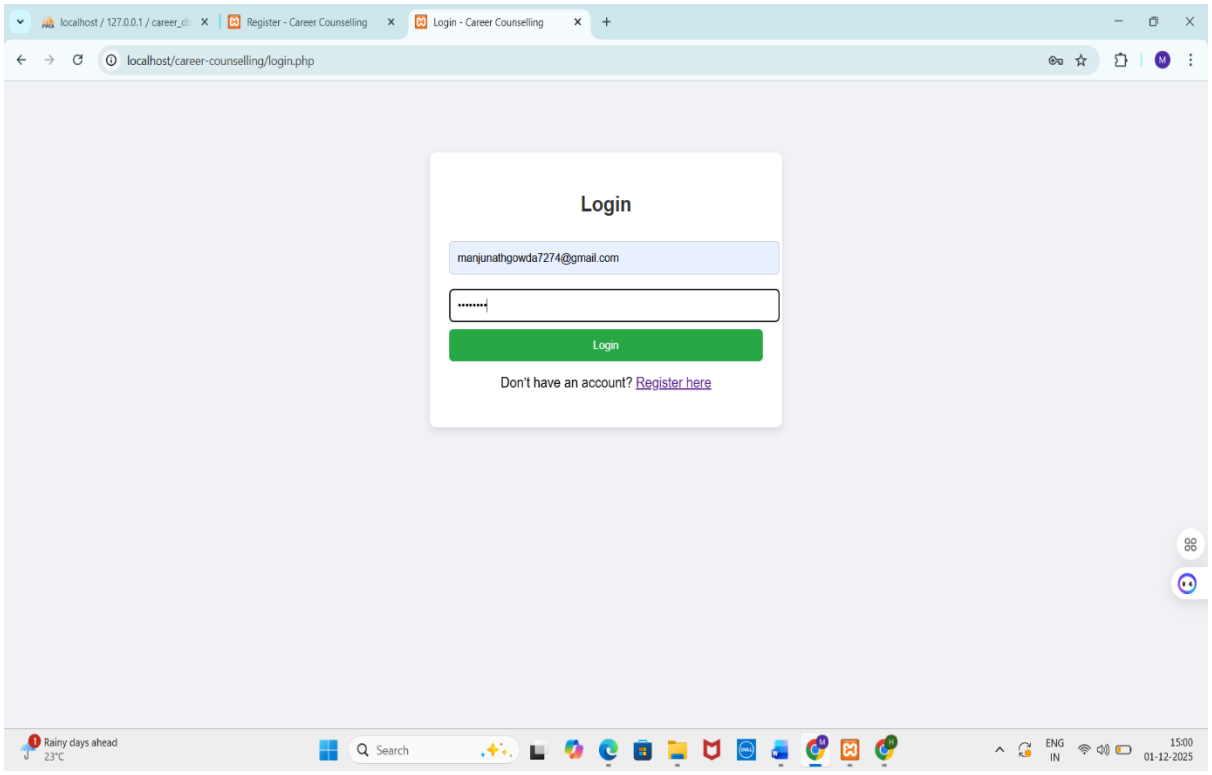


Fig 9.3 Login Page

USER INTERFACE:

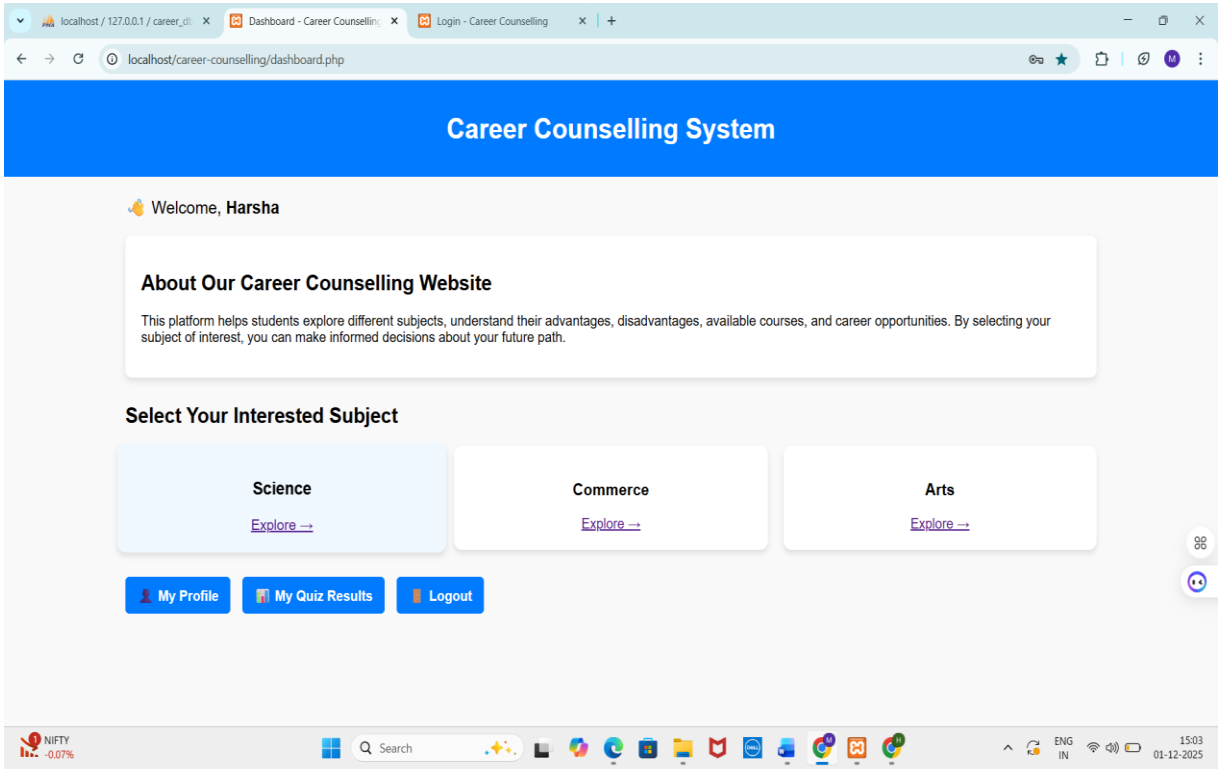
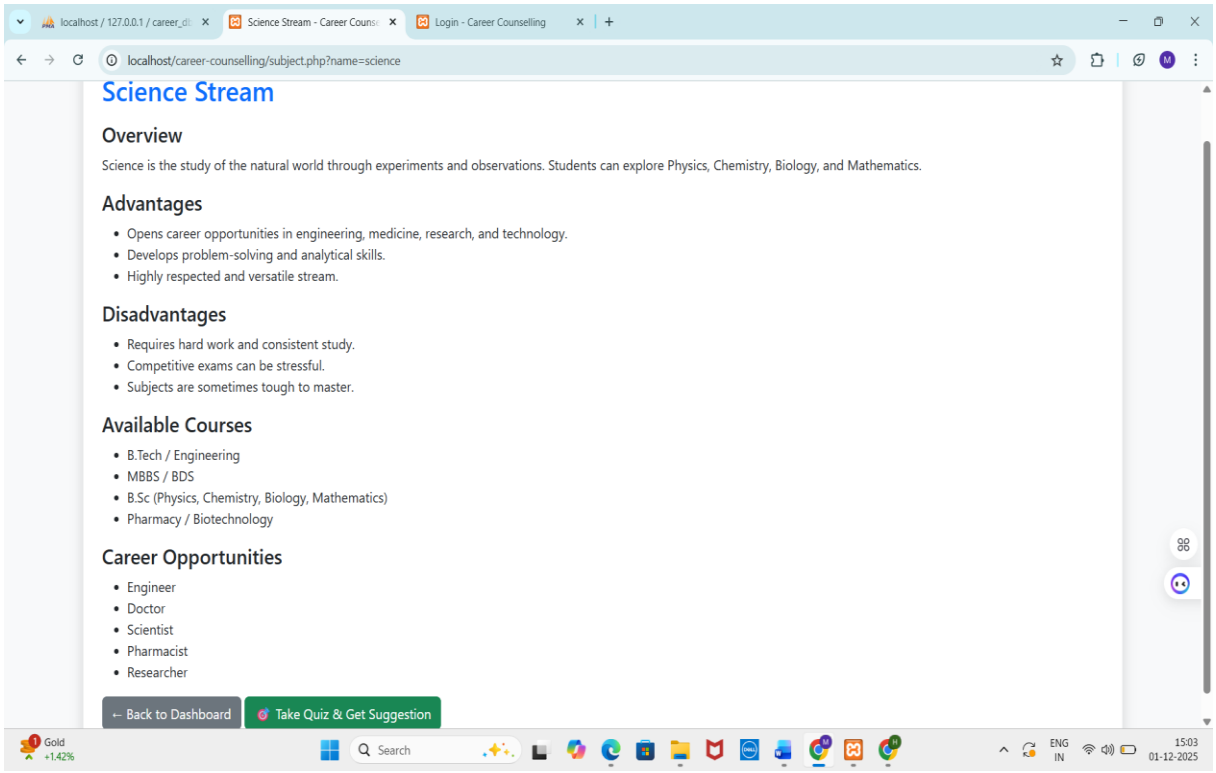


Fig 9.4 User Interface



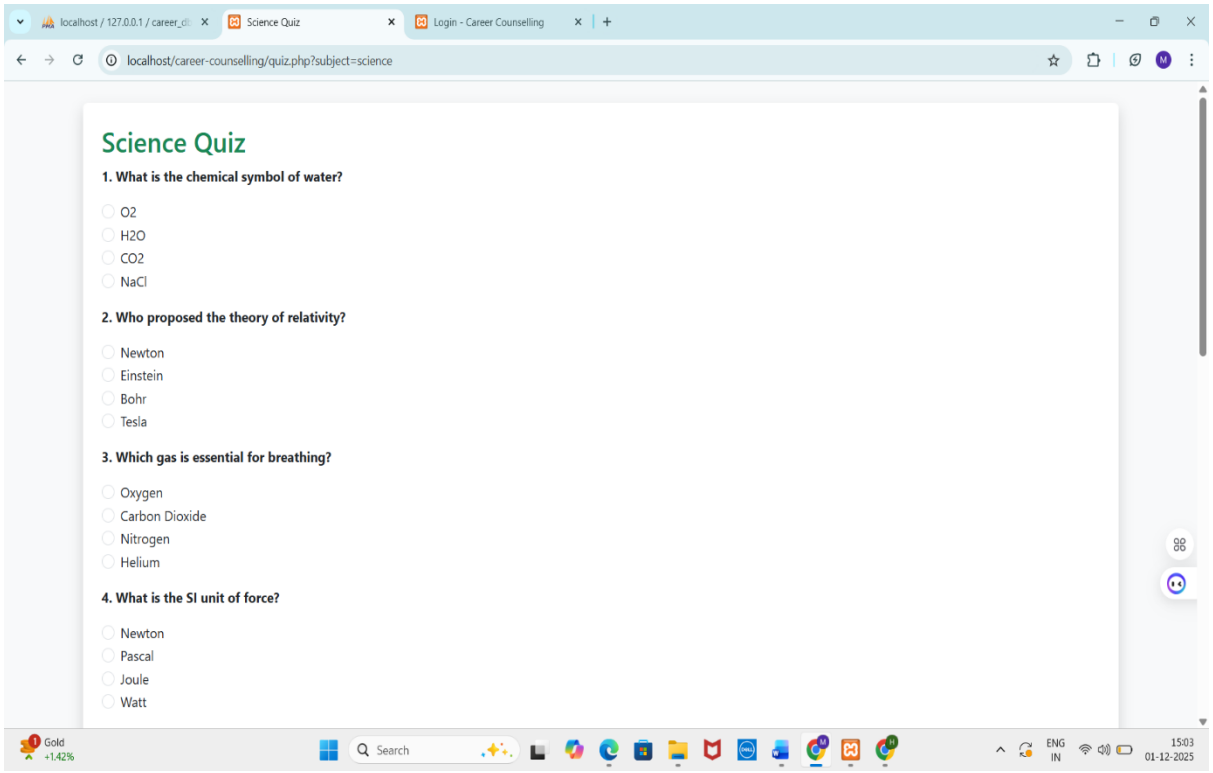


Fig 9.5 Quiz Section