

A
Mini Project Report
on
Eduquest: Comprehensive Exam Preparation Hub
Submitted in fulfillment of the requirements for the degree
Second Year Engineering – Computer Science Engineering (Data Science)

by

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CERTIFICATE

This to certify that the Mini Project report on ‘**Eduquest**’ has been submitted by **Yash Shinde (23107020), Atharva Barve (23107072), Shubham Khade (23107013), Manish Sharma (23107058)** who are Bonafide students of A. P. Shah Institute of Technology, Thane as a partial fulfillment of the requirement for the degree in **Computer Science Engineering (Data Science)**, during the academic year **2024-2025** in the satisfactory manner as per the curriculum laid down by University of Mumbai.

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Chapter 1

Introduction

EduQuest is an innovative platform that redefines how students prepare for exams and enhance their learning journey. It offers a comprehensive and intuitive solution for students of all levels, making the process of accessing study materials, taking practice tests, and tracking progress both seamless and efficient. From the initial stages of subject revision to the final steps of exam readiness, the system provides a user-friendly interface tailored to various academic needs. The platform's extensive database includes a wide range of quizzes, mock exams, and personalized study resources, allowing students to learn with confidence and precision.

Users can explore a variety of study materials, including expert-curated notes, interactive quizzes, and full-length mock exams. Whether it's mastering a complex math concept or revising key historical events, EduQuest ensures that every aspect of exam preparation aligns with the user's learning style and goals. Its intelligent recommendation system guides students through a structured learning path, helping them identify strengths and areas for improvement.

Beyond its core learning features, EduQuest excels in study management, allowing students to plan and organize their study schedules effortlessly. The platform integrates subject-wise progress tracking, personalized study reminders, and performance analytics into a cohesive dashboard, making it easy to stay on track. Learners can monitor their improvements over time, adjust study plans as needed, and receive timely insights on their performance. By centralizing all aspects of exam preparation, EduQuest transforms the often-stressful process of studying into an engaging and efficient experience, empowering students to achieve academic success with confidence.

1.1. Purpose

The primary purpose of EduQuest is to streamline and automate the entire process of exam preparation and learning management. By integrating various educational resources such as practice quizzes, mock tests, study materials, and progress tracking into a single platform, the system provides students with a seamless and efficient learning experience. This centralized access to multiple study tools not only simplifies the preparation process but also enhances learning outcomes and student engagement.

Additionally, the system leverages user performance data, learning patterns, and subject preferences to offer personalized study recommendations, ensuring that each learner receives tailored resources suited to their strengths and improvement areas. By optimizing the study process through data-driven insights and interactive tools, EduQuest empowers students to prepare effectively, stay organized, and achieve academic success with confidence.

1.2. Problem Statement

The field of education and exam preparation is vast and complex, involving multiple components such as subject revision, practice tests, progress tracking, and time management. Many students struggle to prepare effectively due to a lack of structured study plans, difficulty in accessing quality resources, and the overwhelming task of managing multiple learning tools. Currently, students face numerous challenges, such as the hassle of searching for relevant study materials, taking practice tests on different platforms, and tracking their progress manually. The process of organizing an efficient study routine can be overwhelming due to the fragmentation of learning resources across multiple platforms.

EduQuest seeks to revolutionize the way students prepare for exams by providing a one-stop solution for all their study needs. By consolidating essential features such as personalized quizzes, mock tests, study resources, and performance analytics into a single platform, EduQuest simplifies the entire learning process. By addressing these key challenges, the system enhances convenience, efficiency, and engagement, allowing students to focus on effective learning and academic success rather than struggling with disorganized study methods.

1.3. Objectives

The objectives of the EduQuest project are to provide a seamless platform for students to plan, practice, and manage all aspects of their exam preparation. It aims to simplify the learning process by offering a comprehensive database of study materials, quizzes, and mock tests, along with a user-friendly interface that enhances accessibility and engagement.

The project also seeks to improve study efficiency by integrating features such as progress tracking, personalized recommendations, and study schedule management, ensuring that students can organize their learning journey effectively. By offering a structured and interactive approach to exam preparation, EduQuest empowers students to stay on track, monitor their performance, and achieve academic success with confidence.

1.4. Scope

EduQuest serves students, educators, academic institutions, and lifelong learners, providing a comprehensive and interactive approach to exam preparation. The platform is designed to meet the unique needs of different users by offering personalized study materials, quizzes, mock exams, progress tracking, and performance analytics to enhance learning efficiency.

1. Students:-

Students, including school and college learners preparing for exams and competitive exam aspirants, can benefit from a user-friendly interface that simplifies the learning process. Features such as customized quizzes, interactive learning modules, and study reminders help students stay organized and motivated. Additionally, performance tracking and AI-based recommendations allow them to focus on weak areas and improve their exam readiness.

2. Educators:-

Educators, including teachers, tutors, and academic mentors, can use the platform to create and manage quizzes, assign practice tests, and monitor student progress. The system enables them to provide personalized feedback, analyze learning patterns, and enhance student engagement through an intuitive digital learning experience.

3. Academic Institutions:-

Academic institutions, such as schools, colleges, and coaching centers, can integrate EduQuest to streamline exam preparation for students. With features like bulk quiz

creation, centralized progress tracking, and performance analytics, institutions can ensure structured learning, monitor student success rates, and enhance overall academic outcomes.

4. Lifelong Learners and Competitive Exam Aspirants:-

Lifelong learners seeking continuous skill development and candidates preparing for competitive exams (e.g., GATE, NEET, IIT-JEE, UPSC, etc.) can benefit from tailored study plans, full-length mock exams, and adaptive learning tools. The platform provides AI-driven recommendations to optimize study strategies, ensuring efficient and focused learning.

By catering to diverse learning needs, EduQuest transforms the exam preparation experience, making it more structured, interactive, and accessible for students, educators, and institutions alike.

Chapter 2

Proposed System

The proposed system, "EduQuest," is designed to be a comprehensive exam preparation platform that caters to the diverse needs of students, educators, academic institutions, and lifelong learners. By integrating various learning resources such as quizzes, mock tests, study materials, and progress tracking, the system aims to streamline the entire exam preparation process and provide a seamless user experience.

With features like personalized study recommendations, real-time performance analytics, and structured learning plans, EduQuest seeks to become the go-to solution for all exam preparation needs, empowering students to learn efficiently, track their progress, and achieve academic success with confidence.

2.1. Features and Functionality

EduQuest is a comprehensive learning management platform designed to streamline and automate the entire exam preparation and study process. It offers a wide range of features and functionalities to cater to the diverse needs of students, educators, and academic institutions.

1. User Interface:-

EduQuest provides an intuitive dashboard with a user-friendly interface, enabling easy navigation and quick access to key functionalities such as quizzes, study materials, progress tracking, and performance analytics.

2. Study and Assessment Management:-

Students can access customized learning plans, take personalized quizzes, and attempt mock tests tailored to their specific subjects and exam patterns. The system also allows educators to create and manage assessments efficiently.

3. Student Performance Tracking and Analytics:-

EduQuest stores and analyzes student performance data, learning progress, and strengths/weaknesses to provide personalized recommendations for focused learning.

4. Content and Resource Management:-

The platform helps manage study resources, digital textbooks, and learning materials, allowing seamless integration with external educational databases and APIs for the latest syllabus updates.

5. Study Planner and Time Management:-

EduQuest features an automated study planner, allowing students to schedule study sessions, set reminders, and receive daily study goals to stay organized and improve time management.

Chapter 3

Project Outcome

The successful implementation of EduQuest has yielded significant benefits for both students and educators. The project has resulted in improved learning efficiency, enhanced student performance, reduced academic workload, and centralized exam preparation management. By automating assessments, tracking progress, and providing a structured learning approach, the system has streamlined the study process, leading to better academic outcomes and time management. Additionally, EduQuest enables data-driven insights, allowing educators to personalize learning strategies and students to optimize their study plans for success.

1. Better Learning Efficiency:-

- **Faster Study Process:** Automation of quizzes, mock tests, and personalized study plans reduces manual effort and enhances learning speed.
- **Centralized Resources:** All study materials, test results, and progress reports are stored in one place, improving accessibility and reducing redundancy.

2. Improved Academic Performance:-

- **Personalized Learning Paths:** AI-driven recommendations help students focus on weak areas, leading to better exam scores.
- **Adaptive Testing:** Tailored assessments adjust difficulty levels based on student performance, enhancing skill development.

3. Reduced Educator Workload:-

- **Automated Assessments:** Educators can create and manage quizzes easily, reducing manual grading efforts.
- **Enhanced Collaboration:** Integrated tools allow teachers to provide feedback and monitor student progress efficiently.

4. Centralized Exam Preparation Management:-

- **Comprehensive Study Planner:** Students can organize their schedules, set reminders, and track their study goals in one platform.
- **Seamless Exam Readiness:** With all learning materials, progress reports, and test results in one place, students can prepare effectively and stay on track.

Chapter 4

Software Requirements

To develop and deploy the **Eduquest: Comprehensive learning application** , the following software requirements are essential:

1. Python:-

Python is a high-level, interpreted programming language known for its simplicity and readability. It is widely used across various fields such as web development, data science, artificial intelligence, and automation. Python's clear syntax makes it an excellent choice for beginners, while its versatility and powerful libraries make it a go-to for experienced developers. It supports multiple programming paradigms, including object-oriented, procedural, and functional programming. Python's large standard library and cross-platform compatibility further enhance its appeal, allowing developers to write efficient and maintainable code for a wide range of applications.

2. Tkinter:-

Tkinter is a Python library for building graphical user interfaces (GUIs) with simple and interactive elements. It is built on the Tk toolkit and comes pre-installed with most Python distributions. Tkinter allows developers to quickly create cross-platform desktop applications with minimal code.

3. Graphical User Interface Framework

Java Swing is the primary GUI toolkit used to design the graphical user interface of the project. It offers lightweight, platform-independent components like forms, buttons, text fields, labels, tables, and menus.

4. Database Management System (DBMS)

MySQL is an open-source relational database management system used for data storage in this project. It provides a fast, secure, and scalable solution for managing data, including student and mentor information.

5. Python Database Connectivity :-

Python provides various libraries and modules for database connectivity, allowing developers to interact with databases like **MySQL**, **SQLite**, **PostgreSQL**, and **MongoDB**. Popular libraries such as **sqlite3**, **SQLAlchemy**, and **PyMySQL** enable easy execution of SQL queries, data retrieval, and management of database records. With Python's database connectivity features, developers can efficiently integrate and manage databases in their applications..

Chapter 5

Project Design

Effective project design for EduQuest emphasizes creating intuitive and engaging interfaces that enhance the learning experience. The diagram outlines various user journeys, showcasing the paths users might take based on their interactions with the platform and how the system handles any potential errors to ensure a seamless experience.

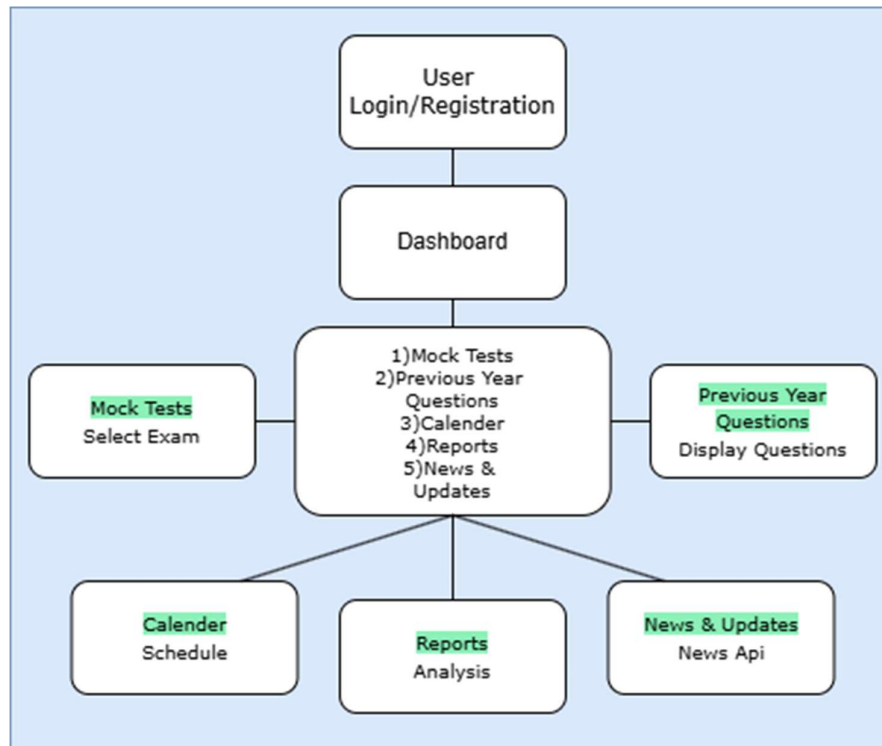


Figure 5.1: Project Design

The successful implementation of "EduQuest" has streamlined the learning experience for students and enhanced engagement across educational categories. By automating key functionalities, such as mock tests, previous year questions (PYQ), and exam updates, the platform has significantly reduced manual effort, allowing students to focus on their preparation. The centralized storage of questions and answers ensures consistency and easy access to information, minimizing redundancies and enhancing efficiency.

The inclusion of features like a dashboard, exam countdown, and subject-specific question banks has made it easier for learners to organize their study plans and track their progress. Additionally, functionalities like resetting forgotten passwords and user account management ensure a seamless user experience.

"EduQuest" also provides detailed report analysis and time tracking during mock tests, enabling students to understand their strengths and areas for improvement. This targeted feedback mechanism contributes to better performance and more effective exam preparation.

Overall, "EduQuest" has transformed the educational process by providing a centralized, intuitive platform for students. By addressing user needs through automation and effective design, the project showcases how technology can simplify complex learning workflows and deliver impactful outcomes.

Chapter 6

Project Scheduling

Project scheduling is a crucial aspect of effective educational platform management, ensuring timely completion of tasks and structured learning progress. In "EduQuest," a well-defined scheduling system helps students navigate through exam preparation, including mock tests, subject-wise learning, and performance tracking.

To visualize this schedule, an interactive study planner or progress tracker can be employed, providing a structured representation of learning milestones, test schedules, and subject-wise completion rates. Additionally, these visual tools help illustrate the study breakdown structure and the relationships between different learning activities, ensuring efficient exam preparation and progress monitoring.

The detailed explanation of the scheduling and progress tracking system is provided in Figure no. 6.1

Smartsheet **T** see details about each task as well as project dependencies.

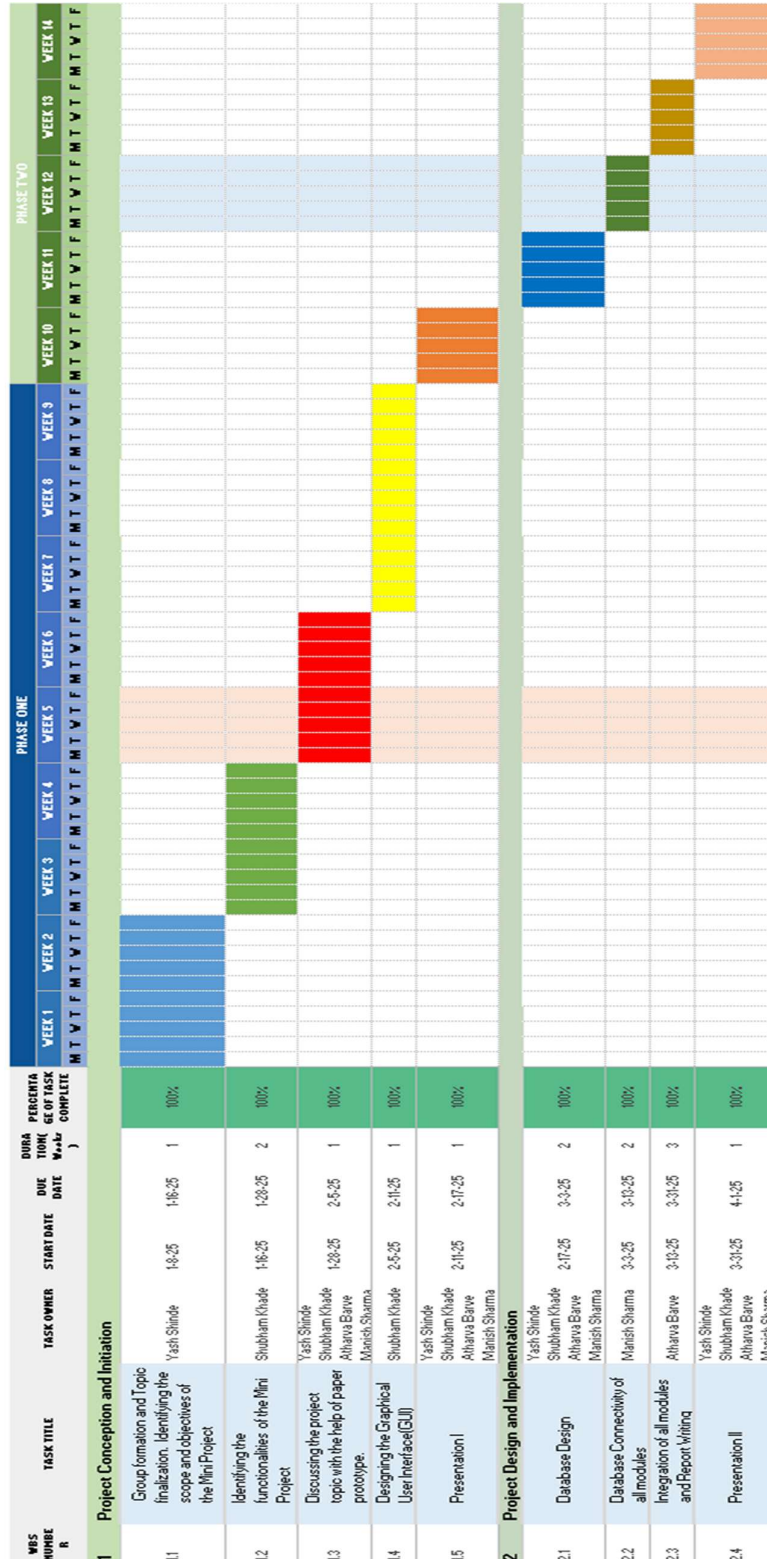
A Gantt chart's visual timeline allows you to **SmartSheet T** see details about each task as well as project dependencies.

INSTITUTE & DEPARTMENT N: AP SHAH INSTITUTE OF TECHNOLOGY (CSE-Data Science)

DATE: 10-8-24

PROJECT TITLE: Eduquest: Comprehensive exam preparation Hub

PROJECT GUIDE: Dipali Gat



The project conception and initiation phase for *EduQuest* was executed by the end of the month around 1/04/25. The initiation phase included several sub-tasks such as group formation and topic finalization, which were completed during the first week of project initialization.

The group was formed with four members: Yash Shinde, Atharva Barve, Shubham Khade, and Manish Sharma, and the finalized topic was EduQuest - An Exam Preparation System. The following week was dedicated to identifying the scope and objectives of the project.

The next sub-task was to identify the key functionalities of *EduQuest*, which was completed by Yash Shinde, Atharva Barve, Shubham Khade, and Manish Sharma over a span of one week from 08/01/25 to 16/01/25.

The discussion of the project topic, supported by a paper prototype, was completed with equal contributions from all four members within one week, from 28/01/25 to 05/02/25.

The Database Connectivity for the Python application was developed by Yash Shinde, Atharva Barve, Shubham Khade, and Manish Sharma between 3/03/25 and 13/03/25. The integration of all GUI pages and MySQL connectivity, along with report writing, was successfully completed by the same team from 31/03/25 to 01/04/25.

Finally, the preparation of the final presentation was completed collaboratively by all four team members in the final stages of the project.

Chapter 7

Result

The project results in a streamlined exam preparation platform, where new users can easily register, and existing users can log in to access various study resources. Users can select exam categories, attempt mock tests, review previous year questions (PYQs), and track their progress through report analysis. The platform also provides exam updates and countdowns, ensuring a comprehensive learning experience for students preparing for competitive exams.

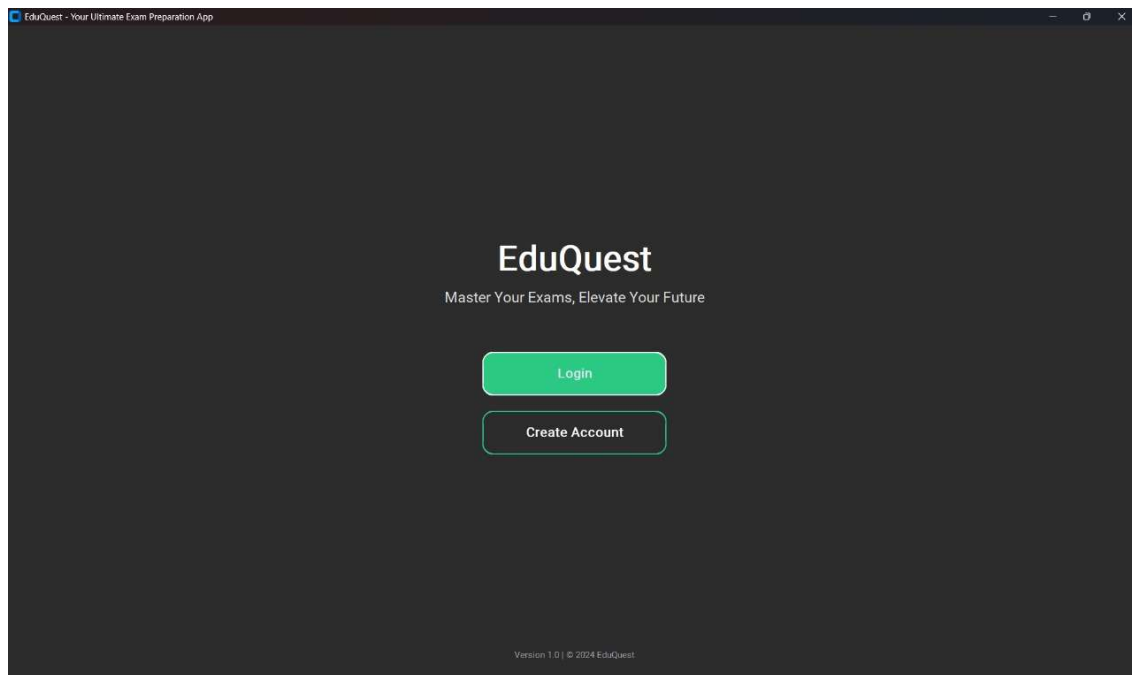


Figure 7.1: Home Page

In figure 7.1 displays the initial interface for the "EduQuest - Your Ultimate Exam Preparation App." This screen serves as the gateway for users to access the application's features. It presents a clean and focused design, offering two primary pathways: "Login" for existing users to access their accounts and "Create Account" for new users to register and begin their exam preparation journey. This entry point is designed to be straightforward, allowing both returning and first-time users to easily navigate to the appropriate section based on their existing status with the application.

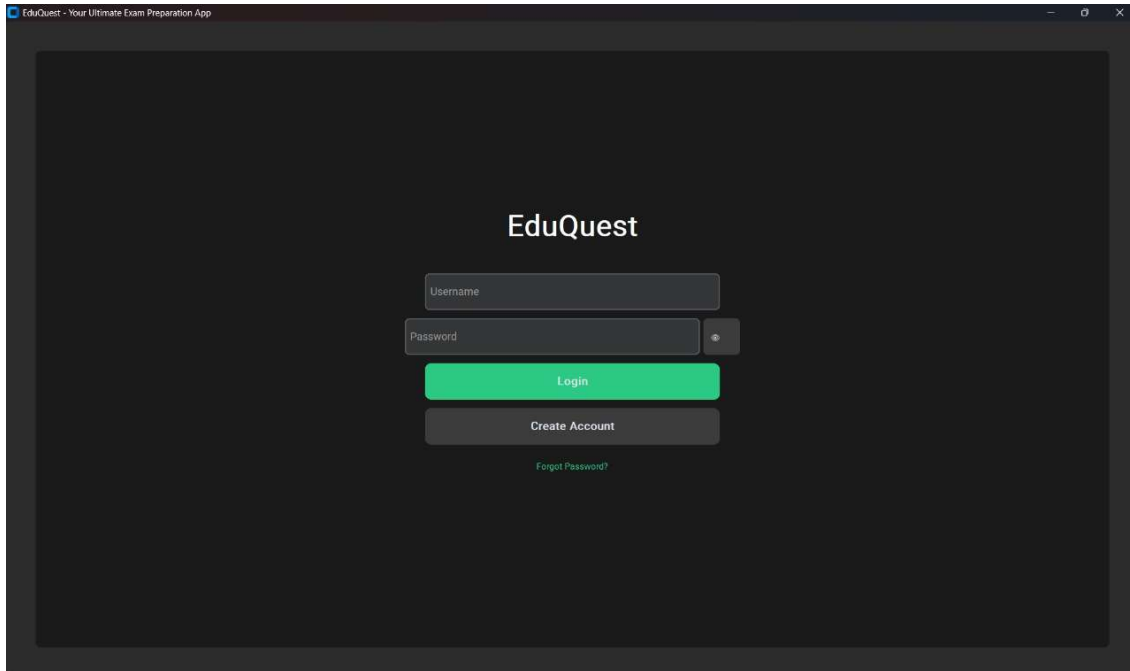


Figure 7.2: Sign in page

In figure 7.2 illustrates the login interface for the "EduQuest - Your Ultimate Exam Preparation App." This screen is designed to allow existing users to securely access their accounts. It features fields for entering their "Username" and "Password," along with a "Login" button to initiate the sign-in process. Additionally, the interface provides alternative options for new users to "Create Account" and for returning users who may have forgotten their credentials to use the "Forgot Password?" functionality. This page prioritizes secure access while also offering pathways for new user registration and account recovery.

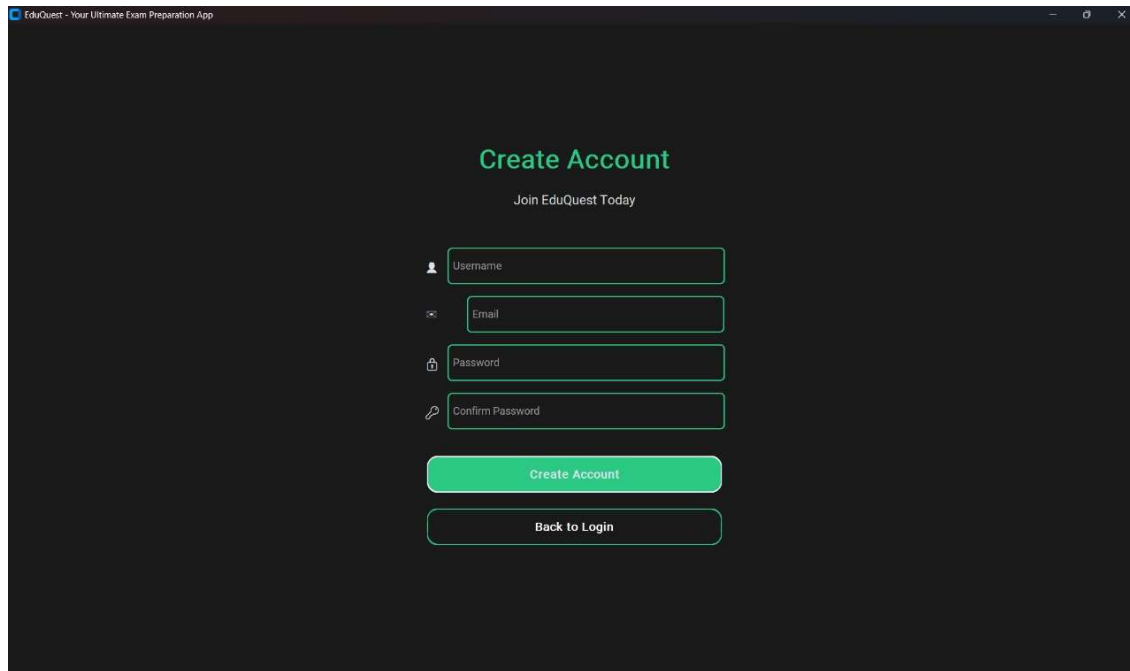


Figure 7.3: Registration page

In figure 7.3 displays the "Create Account" interface for the "EduQuest - Your Ultimate Exam Preparation App." This screen is designed for new users to register and join the platform. It requires users to input their desired "Username," "Email address," "Password," and "Confirm Password" to ensure accuracy. A prominent "Create Account" button initiates the registration process. Additionally, a "Back to Login" button is provided for users who may have arrived at this screen in error or already have an account. This page focuses on gathering necessary user information for account creation in a clear and user-friendly manner.

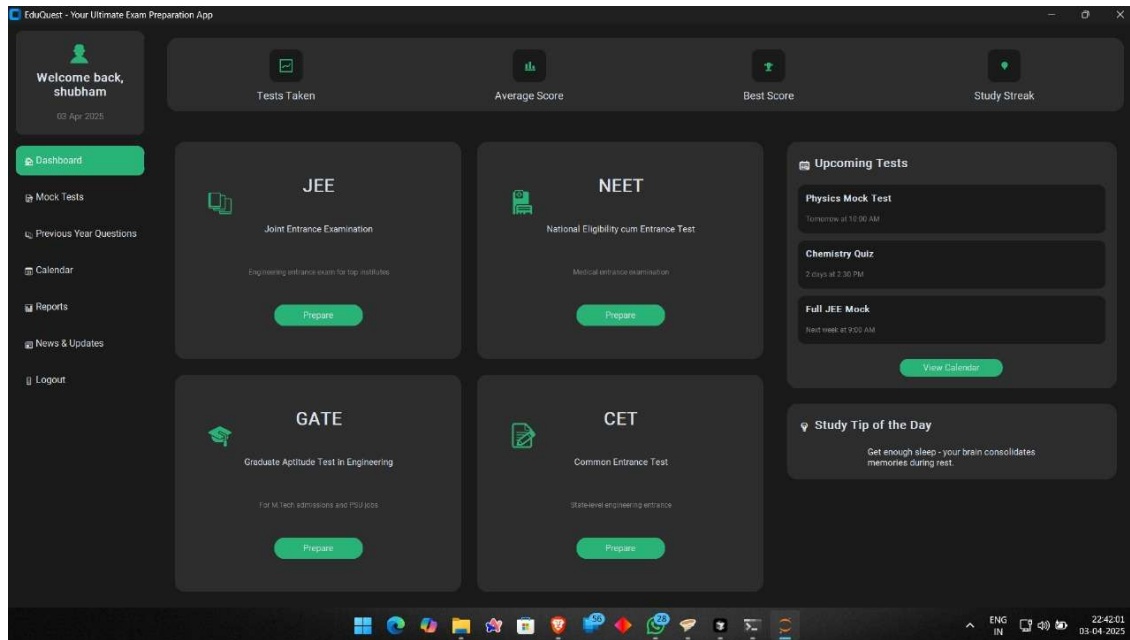


Figure 7.4: Main page

In figure 7.4 displays the dashboard interface of the "EduQuest - Your Ultimate Exam Preparation App." This screen serves as the central hub for users after logging in. It provides a personalized welcome message and a quick overview of the user's progress, including the number of "Tests Taken," "Average Score," "Best Score," and "Study Streak." Below this summary, the dashboard highlights key exam categories such as "JEE," "NEET," "GATE," and "CET," each with a brief description and a "Start Preparation" button. On the right side, a "Latest Exam News" section keeps users informed about relevant updates and articles. The dashboard is designed to provide users with an immediate snapshot of their performance and easy access to preparation resources and important information.

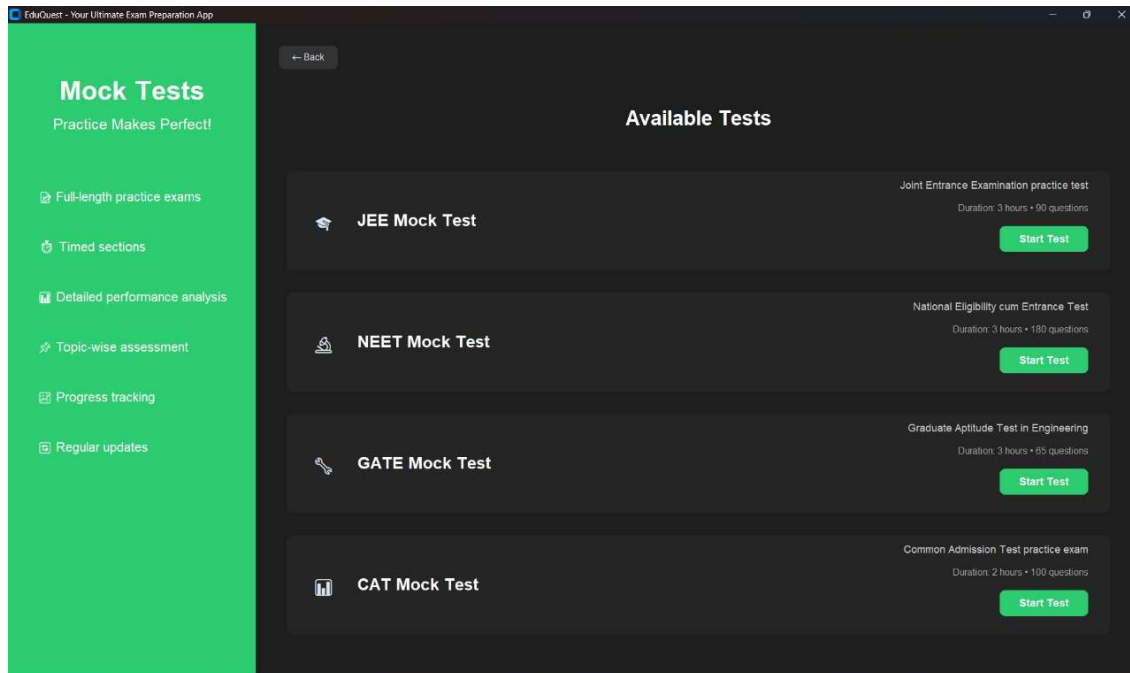


Figure 7.5: Mock Test Page

In figure 7.5 displays the "Mock Tests" section of the "EduQuest - Your Ultimate Exam Preparation App." This screen provides users with access to practice examinations. On the left, a green panel highlights the benefits of mock tests, such as "Full-length practice exams," "Timed sections," "Detailed performance analysis," "Topic-wise assessment," "Progress tracking," and "Regular updates." The main part of the screen, under the heading "Available Tests," lists the different mock tests available, including "JEE Mock Test," "NEET Mock Test," "GATE Mock Test," and "CAT Mock Test." Each test listing includes its duration and the number of questions, along with a "Start Test" button. This interface is designed to allow users to practice for their exams under simulated conditions and track their progress.

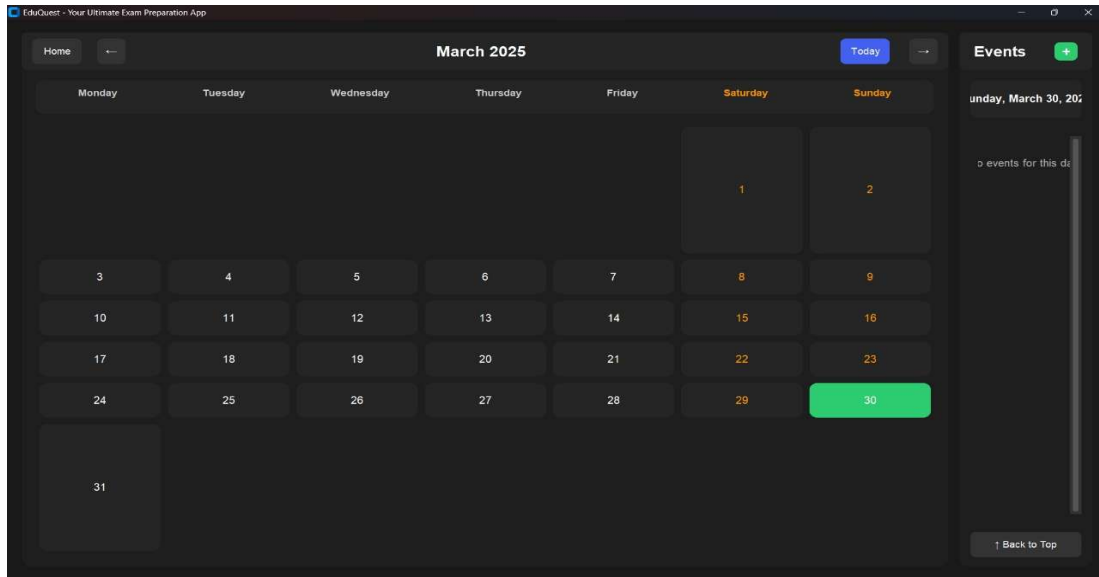


Figure 7.6: Calendar Page

In figure 7.6 displays the calendar interface within the "EduQuest - Your Ultimate Exam Preparation App." This screen is set to "March 2025" and highlights "Sunday, March 30," indicating the current date. The calendar grid shows the days of the week from Monday to Sunday, with the dates for March 2025. The current day, March 30th, is visually emphasized with a green background. On the right side, an "Events" section is visible, although it currently indicates "No events for this day." This calendar likely allows users to schedule and view exam-related events or study plans within the application.

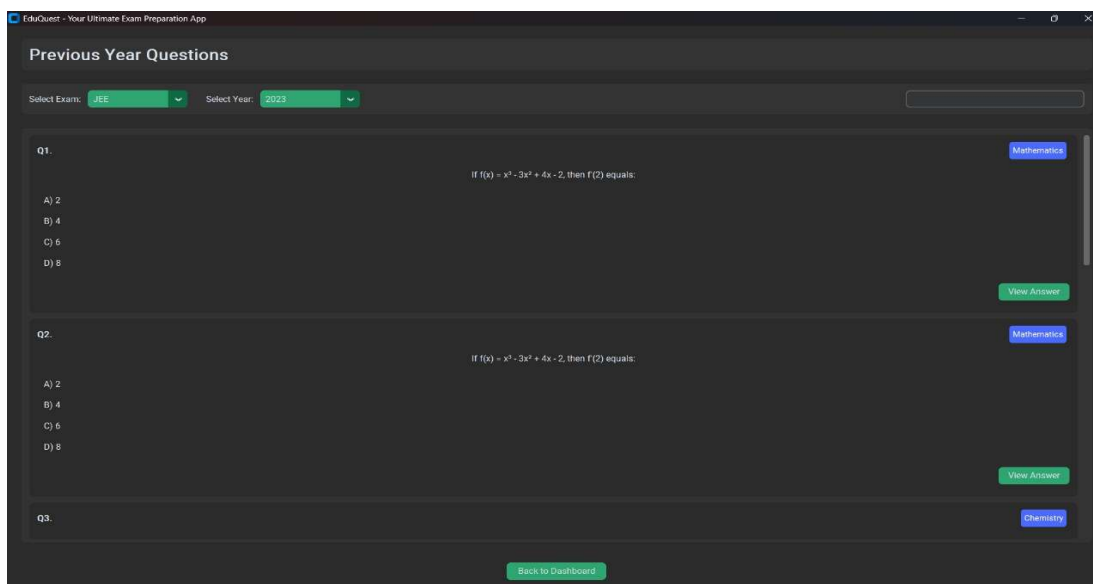


Figure 7.7: Previous Year Questions Page

In figure 7.7 shows the "Previous Year Questions" interface of the "EduQuest - Your Ultimate Exam Preparation App." This screen allows users to access and practice questions from past examinations. At the top, there are dropdown menus to "Select Exam" (with "JEE" selected) and "Select Year" (with "2023" selected), enabling users to filter questions based on the specific exam and year they are interested in. Below the filters, the interface displays individual questions. Each question includes the question text, multiple-choice options (A, B, C, D), and a "View Answer" button. The subject of each question (e.g., "Mathematics," "Chemistry") is also indicated. At the bottom, a "Back to Dashboard" button allows users to return to the main dashboard. This section is designed to help users familiarize themselves with the format and difficulty of previous exams.

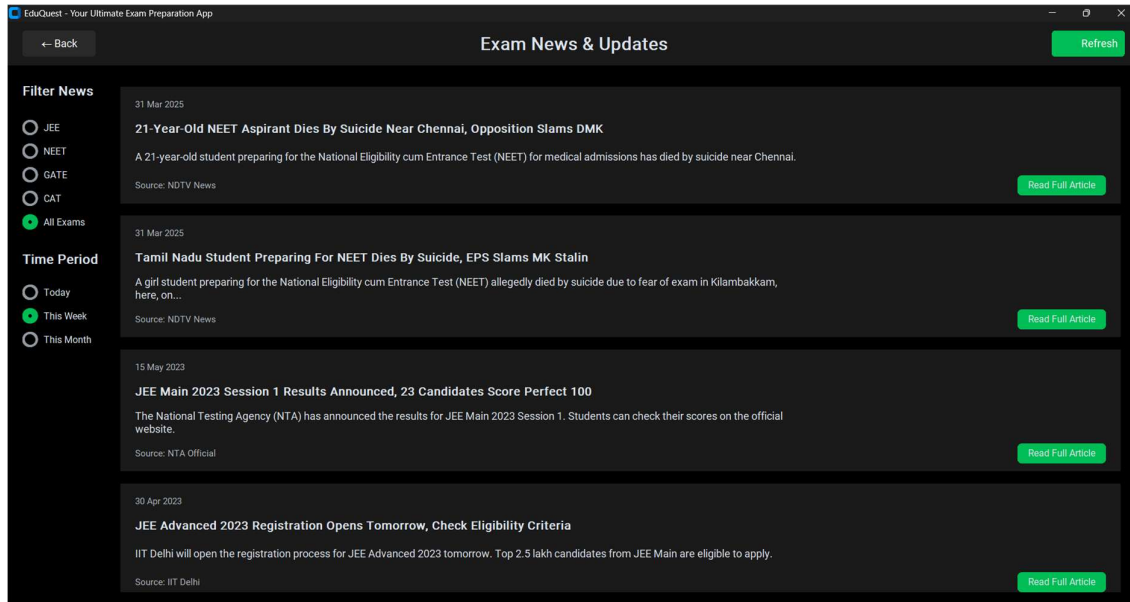


Figure 7.8: News & update page

In figure 7.8 displays the "Exam News & Updates" section of the "EduQuest - Your Ultimate Exam Preparation App." This screen provides users with relevant news and announcements related to various exams. On the left, a "Filter News" section allows users to narrow down the news feed by exam type (JEE, NEET, GATE, CAT, All Exams) and time period (Today, This Week, This Month). The main part of the screen displays news articles with headlines, brief summaries, sources, and publication dates. A "Refresh" button is located at the top right, likely to update the news feed with the latest information. This section aims to keep users informed about important updates and developments in the exam landscape.

Chapter 8

Conclusion

Education is a fundamental pillar of development, and with the increasing demand for efficient learning systems, there is a need for innovative solutions to enhance exam preparation. The proposed project on **EduQuest** aims to bridge the gap between students and effective exam preparation by offering a platform that provides access to relevant study materials, quizzes, mock exams, and progress tracking tools. The project also introduces modern technology used in developing web-based applications and client-server technology, which are essential for the future of educational solutions.

The goal of this project is to help students manage their exam preparation more effectively. It simplifies the learning process for both students and educators by streamlining tasks such as creating quizzes, tracking progress, and offering personalized study recommendations. EduQuest is designed as a standalone platform to enhance the study experience, providing a centralized system that allows users to access resources, manage schedules, and assess performance, making exam preparation more organized and efficient.

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