

**“MENTOR” (AN ONLINE EDUCATIONAL PLATFORM)**

**BY**

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**FINAL YEAR DESIGN PROJECT REPORT**

This Report Presented in Partial Fulfillment of the Requirements for the  
Degree of Bachelor of Science in Computer Science and Engineering

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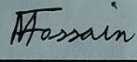
**DHAKA, BANGLADESH**

**July 2024**

## APPROVAL

This Project titled “MENTOR” (AN ONLINE EDUCATIONAL PLATFORM), submitted by RIFAT JAHAN ZIM to the Department of Computer Science and Engineering, Daffodil International University, has been accepted as satisfactory for the partial fulfillment of the requirements for the degree of B.Sc. in Computer Science and Engineering and approved as to its style and contents. The presentation has been held on 13-07-2024.

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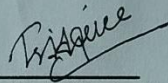
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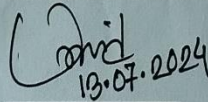
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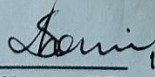
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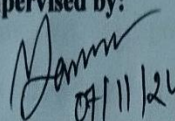
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## DECLARATION

We hereby declare that this project has been done by us under the supervision of **Ms. Tanzina Afroz Rimi, Lecturer, Department of Computer Science and Engineering, Daffodil International University**. We also declare that neither this project nor any part of this project has been submitted elsewhere for the award of any degree or diploma.

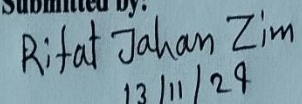
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## **ABSTRACT**

“Mentor” is an online educational platform designed to facilitate distance learning for teachers and students. While face-to-face physical classes hold great value, various circumstances can make them unfeasible, and this platform aims to bridge that gap by providing an accessible and flexible learning solution. Teachers can create and customize courses, while students can enroll in these courses, participate in learning activities, submit assignments, and attend quizzes. The platform's main goals are to create a seamless and engaging learning environment, facilitate effective knowledge delivery, and establish robust communication channels between learners and instructors. To achieve these objectives, “Mentor” employs a responsive design approach, ensuring compatibility across devices like computers, tablets, and smartphones. Incorporating modern web technologies such as Laravel and Bootstrap, the platform offers a clean, minimalist, and robust user interface that focuses on essential functionalities, enhancing usability and user experience. Additionally, features like secure course enrollment, class joining, quiz attendance, attendance submission, and job placement support are included to enhance the overall learning experience. By addressing the diverse needs of users, “Mentor” aims to revolutionize distance education and make quality learning accessible to everyone. Continuous updates and user feedback integration ensure the platform remains relevant and effective in meeting educational needs. The platform also emphasizes data security and privacy, providing a safe environment for all users. With "Mentor," the future of education is more adaptable and accessible than ever before.

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# CHAPTER 1

## Introduction

### 1.1 Overview

The field of education is undergoing a tremendous shift, fueled by the relentless march of technology and the internet's ever-expanding reach. Traditional educational paradigms, which have been based for millennia on physical classrooms, textbooks, and face-to-face interactions, are increasingly giving way to a dynamic and digitally-driven world. This introduction lays the foundation for a thorough examination of the changing face of education, with online educational platforms emerging as the pivotal point in this revolutionary transition. We are aware of the education is the backbone of nation no one can shine in life without education. It is important that there is a great impact on school college face to face learning by the side of if the student can know their position or preparation. Online education addresses this state by providing flexible, accessible, and personalized learning experiences. As technology continues to advance, it brings with it the potential to transform education by breaking down geographical barriers, offering diverse and rich content, and catering to varied learning styles and paces. The recent global events, such as the COVID-19 pandemic, have further accelerated the adoption of online learning, highlighting its importance and indispensability in ensuring educational continuity. In this context, our project, Mentor, emerges as a comprehensive solution designed to facilitate distance learning for both teachers and students. Mentor is an online educational platform developed to create a seamless and engaging learning environment. It allows users to create profiles, join courses, and engage in task-based learning activities. The platform's functionalities include course enrollment with SSL Commerz basic demo feature, class joining, quiz attendance, attendance submission, and job placement support. Through Mentor, we aim to address the challenges posed by traditional education systems and leverage the power of technology to create an inclusive, effective, and innovative educational ecosystem. This platform not only supports the academic needs of students but also equips educators with the tools required to deliver high-quality education remotely. As we delve deeper into this report, we will explore the various aspects of Mentor, its development process, and the impact it aims to achieve in the field of online education.

### 1.2 Background and Present State

From conventional classroom settings to advanced internet platforms, the idea of education has evolved dramatically. The market was revolutionized by the emergence of specialized websites like Ostad, 10 Minute School, and educational behemoths like

Udemy. These platforms have fundamentally transformed how education is delivered and consumed, making it more accessible and versatile.

Early educational platforms were relatively simple, often operated solely by administrators. These initial platforms served as repositories for educational content and basic course management. However, the landscape of online education has significantly advanced since then. Today's platforms are sophisticated, engaging students in daily tasks, facilitating frictionless transactions, and featuring eye-catching user interfaces.

This well-established and competitive sector now boasts platforms that not only deliver high-quality content but also focus on creating an engaging and interactive learning experience. These platforms often incorporate mobile applications, extending their reach and making learning on-the-go possible. They target a diverse audience, including university students and job seekers, and prioritize user experience, reliability, and worldwide accessibility. Platforms like Ostad and 10 Minute School have made significant strides in regional education, offering localized content that resonates with specific demographics.

As we continue to witness rapid advancements in technology, the future of online education promises even greater innovations. Mentor, our project, is designed to be at the forefront of this evolution. By incorporating the best practices of existing platforms and addressing their limitations, Mentor aims to provide a comprehensive and user-friendly educational experience that meets the needs of students and educators alike.

This background sets the stage for understanding the motivations behind the development of Mentor and highlights the current trends and expectations in the online education sector.

### **1.3 Problem Statement**

The transition from traditional classroom settings to online education platforms presents both challenges and opportunities. Establishing and optimizing online education for distance learning is essential to ensure that it effectively meets the needs of students. This is particularly important in regions like Bangladesh, where access to quality education can be hindered by various socio-economic factors.

**Accessibility:** Many students in Bangladesh face limited access to reliable internet connections and digital devices, making it difficult for them to participate in online learning. Bridging this digital divide is crucial to ensure that all students can benefit from online education.

**Affordability:** The cost of accessing online education, including internet data charges and the need for modern digital devices, can be prohibitive for many families. Providing

affordable learning resources is essential to make online education accessible to a broader audience.

**Quality of Education:** Ensuring the quality of online education is a significant challenge. It requires developing engaging and interactive content, training educators to effectively use online teaching tools, and implementing robust assessment methods to track student progress.

**Efficiency:** Optimizing the efficiency of online education platforms involves streamlining administrative processes, reducing technical glitches, and ensuring that the platform can handle large numbers of users without compromising performance.

There are so many opportunities also:

**Enhanced Learning Experiences:** Online education offers opportunities to create personalized and adaptive learning experiences. By leveraging technology, educators can provide tailored content and support to meet individual student needs.

**Broader Reach:** Online platforms can transcend geographical barriers, reaching students in remote and underserved areas. This democratizes access to education and provides learning opportunities to those who might otherwise be excluded.

**Flexible Learning:** Online education allows for flexible learning schedules, enabling students to learn at their own pace and at times that suit them. This flexibility can be particularly beneficial for students who have other commitments, such as work or family responsibilities.

**Resource Availability:** Digital platforms can offer a vast array of learning resources, including videos, interactive modules, and real-time feedback. This abundance of resources can enhance the learning experience and provide students with a wealth of information at their fingertips.

## **1.4 Objectives**

The Mentor Online Educational Platform project is designed to revolutionize the learning experience by making high-quality educational resources easily accessible to students. Our goal is to ensure that students can find and utilize a wide range of learning materials, including video lectures, reading materials, quizzes, and interactive modules, organized in an intuitive and user-friendly manner. To foster a habit of continuous learning, Mentor will implement features that engage students in at least one lesson per day, utilizing daily prompts, reminders, and progress tracking, along with gamification elements such as badges, rewards, and leaderboards to maintain motivation and active participation.

Mentor aims to cater to diverse learning styles and paces by offering personalized learning paths. By leveraging adaptive learning technologies, the platform will analyze

students' progress and tailor the content to meet their individual needs, ensuring that each learner receives the right level of challenge and support. Mentor also emphasizes the importance of collaborative learning through discussion forums, group projects, and peer assessments, fostering a community of learners who can support and learn from each other.

To bridge the gap between education and employment, Mentor offers comprehensive job placement support and career development services, including resume-building workshops, interview preparation, and connections with potential employers. The platform also features a job board where students can find relevant job opportunities aligned with their skills and qualifications. Additionally, Mentor will offer career counseling and mentorship programs to guide students in their career choices and help them navigate the job market successfully.

Through these initiatives, Mentor is dedicated to enhancing accessibility, engagement, affordability, and career readiness for students in Bangladesh. By providing a holistic and impactful educational ecosystem, Mentor supports students in achieving their personal and professional goals. The platform's commitment to continuous improvement and innovation ensures that it remains at the forefront of online education, adapting to the evolving needs of learners and educators alike.

Mentor is more than just an online educational platform; it is a comprehensive learning hub designed to empower students, support educators, and build a sustainable and inclusive educational environment. Through strategic partnerships, innovative technologies, and a focus on student success, Mentor aims to transform education in Bangladesh and beyond, paving the way for a brighter future for all learners..

### **1.5 Scope and Limitations**

In the digital age, an online educational platform fulfills a number of important functions. Firstly, it ensures students' learning intentions by providing proper study materials in an organized way, which might not always be possible in regular school classrooms. This structured approach helps preserve educational traditions while making them more accessible to a broader audience.

An online educational platform offers video content and daily quizzes, making learning more interactive and enjoyable. Students can participate in daily activities, which provide a fun and effective way of learning compared to conventional methods. Additionally, job placement support is a crucial feature, addressing the need for students to secure employment after completing their courses. This project aims to

solve this issue by offering comprehensive job placement services, including resume-building workshops, interview preparation, and job boards.

Furthermore, an online educational platform provides students with the flexibility to integrate distance learning into their daily lives. This increased accessibility can significantly enhance students' chances of success by introducing them to regular and effective learning opportunities that might otherwise be difficult to find. Essentially, an online-based educational platform acts as an invaluable link between the skills required in the global market and the skills students acquire. It satisfies students' needs, conserves important pre-recorded educational videos, and encourages sustainability within the education industry by reducing reliance on physical materials.

However, there are limitations to consider. The effectiveness of an online educational platform heavily relies on students having access to reliable internet connections and digital devices, which may not be available to everyone. The lack of face-to-face interaction can sometimes lead to feelings of isolation among students, potentially impacting their motivation and engagement. Additionally, the quality of education delivered online can vary significantly depending on the platform's content and the educators' ability to effectively utilize digital tools. Ensuring the security and privacy of student data is another critical concern that must be addressed to maintain trust and compliance with regulatory standards.

## **1.6 Report Organization**

The remaining chapters are organized as follows: I have compared related works which has been explained and reviewed, gap analysis provide limitations of related work which we will fulfil in our project in chapter 2 with comparison analysis with previous

work . Chapter 3 expresses the agile model, requirement analysis, system design, project management and financial analysis. Chapter 4 shows the implementation of the project like prototype design and the testing of my project. Chapter 5 gives us the result and comparative analysis of my project. Chapter 6 defined the social and environmental impact . Chapter 7 is about our future goal with this project and the conclusion.

## **1.7 Summary**

Education plays a pivotal role in our lives, serving as the ultimate wellspring of knowledge. Simplifying the learning process opens a gateway to a wealthier and more educated society, unlocking opportunities for continuous growth. This platform acts as a bridge, connecting teachers and students by providing a platform to share knowledge and activities. With a strong emphasis on job placement support, we strive

to offer optimal service. Beyond facilitating learning, this website fosters unity among students and educators. Ultimately, it creates new horizons for skill development, underscoring the profound impact of effective learning methods in enriching lives and building a community united by education.

## **CHAPTER 2**

### **Literature Review**

#### **2.1 Overview**

The literature review for this website project will delve into existing research and studies concerning the challenges faced by learners when seeking proper guidance on specific topics in physical classrooms or existing platforms in the market. It aims to explore the inefficiencies and time-consuming aspects of traditional teaching methods, highlighting the need for a simplified approach. Additionally, job placement is crucial for learners after completing courses. Simultaneously, it will address user experience (UX) design principles and consider best practices for creating intuitive and user-friendly websites and interfaces, particularly for course search and purchasing. Furthermore, the review will emphasize the importance of efficiency and time-saving measures, drawing on studies and research that prioritize optimizing users' time and effort in course completion. This comprehensive examination aims to provide valuable insights to guide the development of a user-friendly and efficient website tailored to the needs of learners.

#### **2.2 Related works**

Several existing online educational applications in the market, such as [ostad.com](http://ostad.com), [10minuteschool.com](http://10minuteschool.com), [udemy.com](http://udemy.com), and [coursera.com](http://coursera.com), primarily focus on the sale of new skill courses. Notably, these platforms do not provide opportunities for daily activity. Additionally, a key requirement in these applications is the placement support for job placement. The primary theme of these websites revolves around proper methods of learning. At the beginning of my project, I researched some projects similar to ours but not identical. While these platforms offer a broad range of courses, they often lack personalized interaction and continuous engagement features essential for effective learning. Moreover, they seldom integrate features that facilitate seamless communication between students and instructors. By addressing these gaps, “Mentor” aims to offer a more holistic and interactive educational experience.

[ostad.com](http://ostad.com): This website has different categories of courses, and each category contains courses of its own kind. You'll be inspired to purchase the course by it. This site has a user-friendly dashboard, making it easy for users to navigate and learn.

Additionally, the website features a leaderboard that allows users to view their position among other users, fostering a sense of competition and motivation. However, while it offers a variety of courses, it lacks continuous engagement features and opportunities for daily activities. [2]

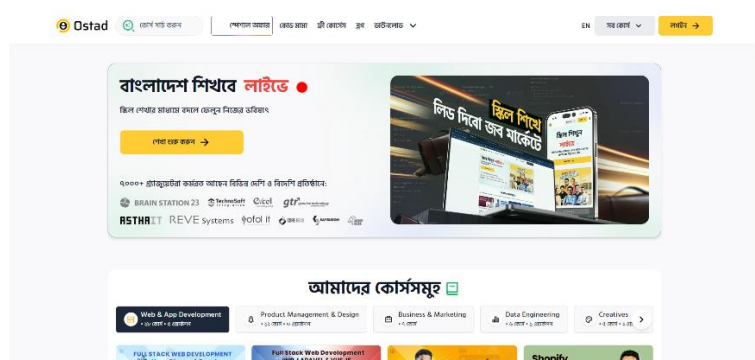


Figure 2.1: Related site 1

10minuteschool.com: This website is mainly designed for Bangladeshi learners. If you want to learn different skills, you can visit this website and purchase courses from them. The platform offers a variety of subjects tailored to local educational needs and provides interactive learning experiences with quality content and engaging teaching methods. Additionally, it features live classes and recorded sessions, ensuring flexibility for learners. With a focus on affordability and accessibility, 10 Minute School makes quality education reachable for everyone in Bangladesh. [3].

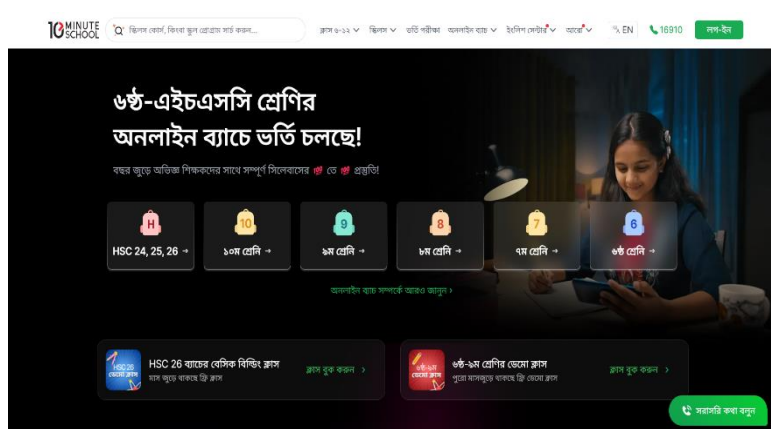


Figure 2.2: Related site 2

udemy.com: This is a site for learning different skills and is recognized globally. Renowned all over the world, this website handles huge traffic every day. Udemy offers a vast selection of courses across numerous fields, allowing learners to enhance

their skills at their own pace. With expert instructors and lifetime access to purchased courses, Udemy provides flexible and comprehensive learning opportunities for everyone. [4]

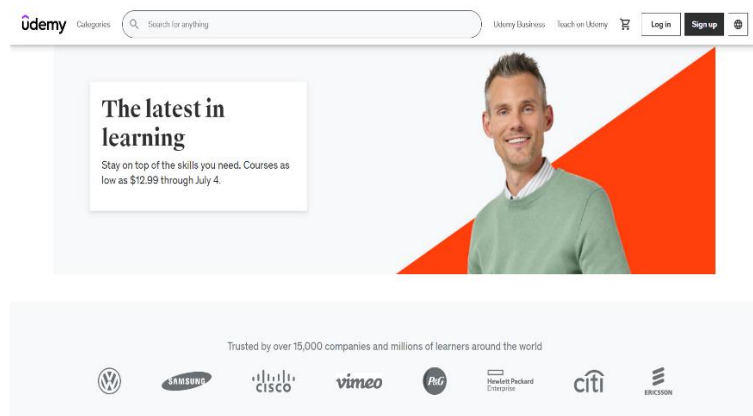


Figure 2.3: Related site 3

coursera.com: This is an online learning platform that is very popular and enriched with diverse and high-quality courses. Teachers from around the world offer their courses on this platform, providing valuable knowledge and expertise. Additionally, Coursera's curriculum and course outlines are structured to be user-friendly and highly beneficial for learners, catering to a wide range of interests and skill levels. [1]

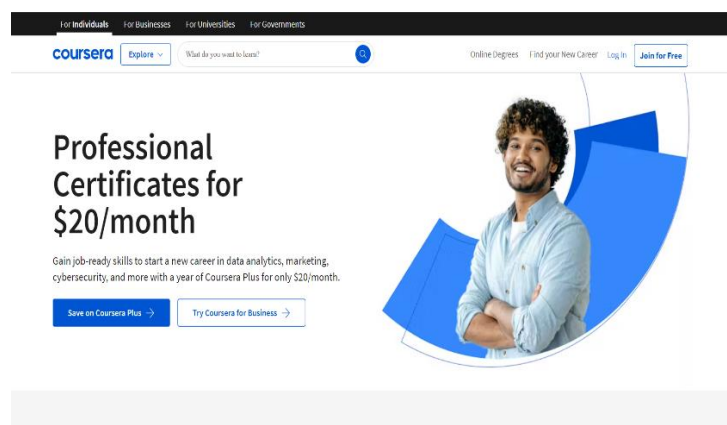


Figure 2.4: Related site 4

elearn.daffodilvarsity.edu.bd: This is a learning platform which is very popular among the students of daffodil international university. This is mainly created for the students of daffodil international university to ensure their learning process smooth. It has many

features like reading content, video content, quiz section, students activity and many more[6].



Figure 2.5: Related site 5

## 2.3 Comparison between existing works

Table 2.1: Comparative analysis with previous work

| Reference | Feature                                                                                         | Advantages                                                | Disadvantages/<br>Limitation                              | Proposed<br>Suggestion                                                             |
|-----------|-------------------------------------------------------------------------------------------------|-----------------------------------------------------------|-----------------------------------------------------------|------------------------------------------------------------------------------------|
| [ 3 ]     | Comprehensive Course offer, secure Transaction Processing, Proper guidelines for every content. | Enrich of pre-recorded video content, Cost-Effectiveness. | Job placement support.                                    | Job placement support is need. They can perform seminar, cv collect from students. |
| [2]       | Wide course material , mentor daily support, quiz syatem.                                       | Daily support, pre-recorded video.                        | There is no validation who is attempting in quiz or exam. | Prepare a validation when user try to attempt in quiz.                             |
| [1]       | Video content, Live class, course content, daily support.                                       | Eye casing ui, daily support for students, leaderboard.   | There in leaderboard only 50 students is showing.         | Need to enclose all the users position and detail activity.                        |

|     |                                                             |                                                                                    |                                                                      |                                                                |
|-----|-------------------------------------------------------------|------------------------------------------------------------------------------------|----------------------------------------------------------------------|----------------------------------------------------------------|
| [4] | Secure payment system, Great customer support for students. | Easy navigation for users, intuitive design, Quick resolution of issues for users. | Though it is a foreign site, there is no Bangladeshi payment option. | Add support for more payment methods.                          |
| [6] | Huge range of content, course progress.                     | A students can able to study from different teacher.                               | Support is not regular for this site.                                | If there is a regular based support that will be huge benefit. |

In response to this situation, "Mentor" came up with the idea of provide best guideline for students in the education sector.

## 2.4 Open Issues

Some points of Open Issues:

- Quality Control of Educational materials.
- Live class.
- Record of class.
- Payment and Trust Issues.
- Technological Challenges.
- Educating Users.
- Leaderboard.
- Job placement support.

## 2.5 Summary

Versity student and those who are willing to gain skill are the target market for Mentor website. Our goal is to make education simpler and to do anything with the difficulties related to understand the topic. Our main objective is to give our students a simple to use platform so they can save a lot of time and effort. Compared to existing online educational applications that mainly focus on different topic content, Mentor provides opportunities to see their mistake, including how they can improve themselves, job related study materials, skill programs, job placement support, etc. We bridge this gap by introducing unique features. Additionally, Mentor enhances the user experience by providing daily activity. Join Mentor to learn today and lead tomorrow.

## CHAPTER 3

### 3.1 Overview

A process for creating high-quality automation systems is system analysis and design. Combining information and technology. The process includes the processes of planning, analysis, design, implementation, and maintenance. It covers both the development procedure and prospective system upkeep duties. The fundamental SAD technique is the waterfall model, which is relatively easy to implement by adhering to the model's steps.

### 3.2 System Design

The Agile Model is one of the most often used differences of the Structured Development Life Cycle (SDLC) because of its logical related specifications, meaning every part be completed before going on to the next. To be sure we were headed in the correct direction, we reviewed the actual events at every difficult level.

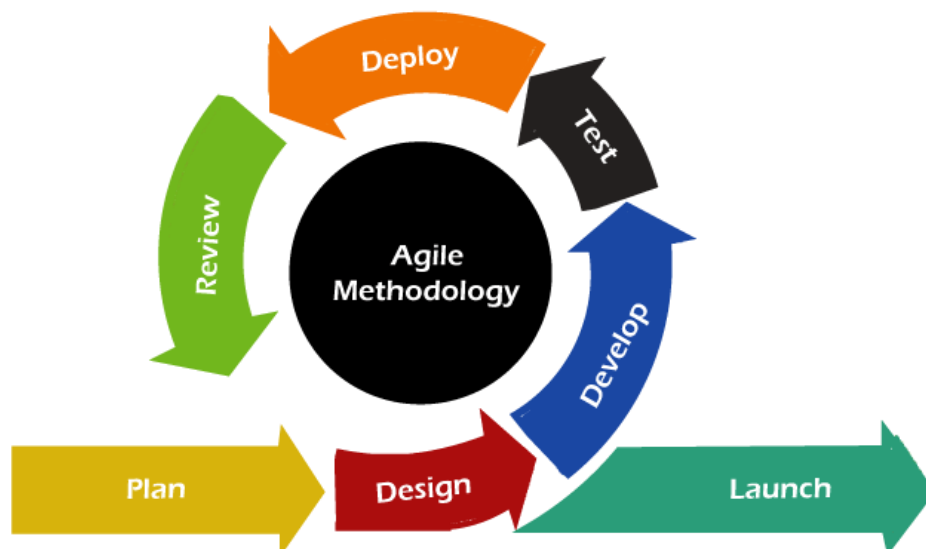


Figure 3.1: Agile Model

## User block-Diagram

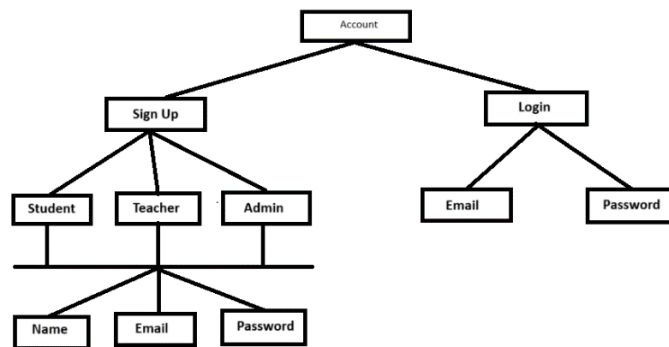


Figure 3.2: User block diagram

## Flow Chart

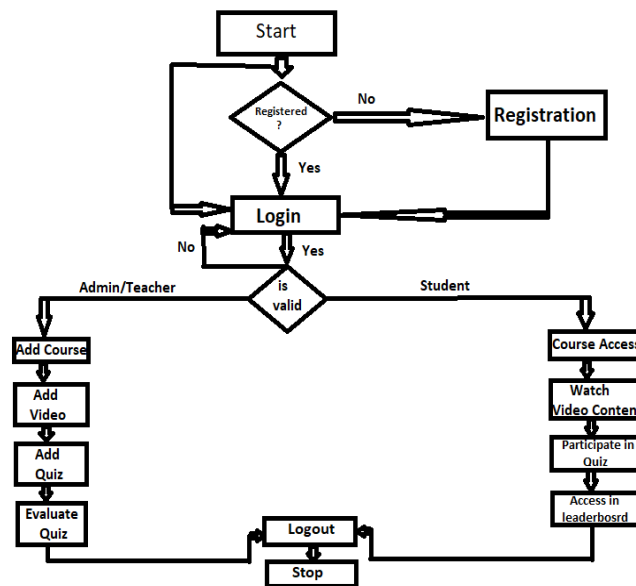


Figure 3.3: Flow chart

## Use Case Diagram

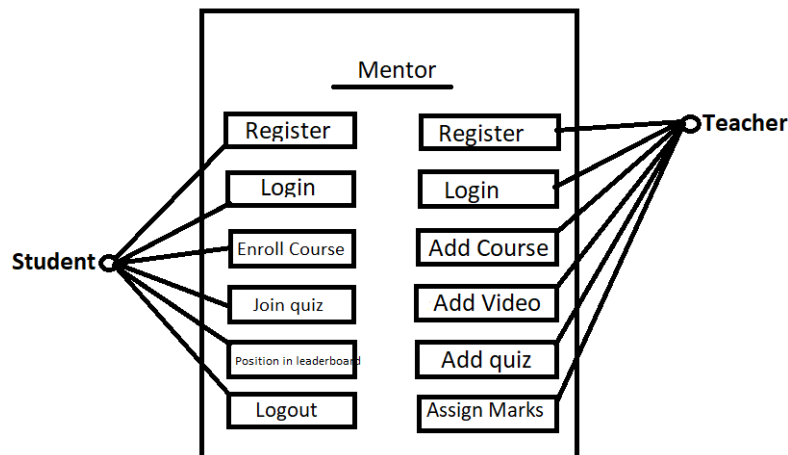


Figure 3.4: Use case diagram

### 3.3 Software Requirement

#### Frontend

Mentor is an online educational platform with an aesthetic and user-friendly user interface. Different users access Mentor from other devices that's why we make it 100% responsive across all devices. For smooth and seamless navigation we design a clean navbar that would be constant for the entire application. For a better user experience, we added a search button in the hero section. The navbar has a drop-down category nav item, which improves the user experience. Design and Functionality are relevant to the context and up to date. Front End design contains lots of pages including About, Course, Event, Dashboard, Video, attendance, quiz, leaderboard, and Job placement, that help users to perform desired tasks.

1. Php as a programming language
2. Laravel blade html with php
3. Laravel Blade for frontend
4. Bootstrap for responsive design
5. Bootstrap icon for icons
6. Laravel breeze for authentication
7. Sqlite for database
8. Sqlite for storing necessary data
9. Google drive for showing video

## **Backend**

Mentor built with a php-based framework called Laravel. Web routes is used for handling routing, middleware, and server-side logic. It provides a robust environment for building RESTful APIs and handling application logic. For this project, we use the Filebased database called Sqlite to store necessary details, user information, and transaction records. The document-oriented model allows for the storage of complex data structures. We ensure robust performance, scalability, and flexibility. we used Laravel breeze for user authentication and real-time database functionalities. We use artisan package manager (artisan) to manage dependency. ORM (Object-Relational Mapping) is not used in this project.

1. Php as a programming language
2. Apache as a php Run time
3. Laravel as a Framework
4. Face ++ for picture matching
5. Sqlite for database

## **Database**

Database is a crucial part of the project. All of necessary data is stored in the database. In my project what I use a a database that is shown bellow,

1. Sqlite as a file-based database
2. Sqlite for database manager

## **Tools**

Tools are very important necessary things of the project. Without tools our project is impossible to build.

1. VS code as an IDE
2. Postman for api testing
3. Hostovo for Hosting

## **3.4 Project Management and Financial Analysis**

### **3.4.1 Project Management Definition and importance**

Project management is the process of planning, managing, and planning a project's work from start to finish. The main objective is achieving particular goals within specific limits, like time, money, and scope. For firms to fulfill customer expectations, complete projects effectively, and preserve operational efficiency, effective project management is important.

**Initiation:** This is an online educational based website by which students can join and learn daily and get under the touch of teacher for best learning.

**Planning:** Developing a thorough project plan that includes resources, budgets, schedules, and risk management methods.

**Execution:** In this coding implementation we will have the Agile model.

**Monitoring and controlling:** keeping data on the status of the project, finding deviations, and putting corrective measures in place to keep it on course.

**Closing:** Finishing the project, assessing its performance, and recording the lessons discovered for future development.

### 3.4.2 Financial Analysis

Financial analysis involves evaluating an organization's or a particular project's financial performance. By offering information on profitability, solvency, and liquidity, it facilitates decision-making. Understanding how business activities affect the market requires a solid understanding of financial analysis.

### 3.4.3 Project Budget

Table 3.1: Project budget

| SN | Components                           | Estimated Cost (BDT) |
|----|--------------------------------------|----------------------|
| 1  | Domain and Hosting                   | 30000                |
| 2  | Making pre-recorded video            | 25000-30000          |
| 3  | Ssl-commerz                          | 2000                 |
| 4  | Training for learning new technology | 10000                |
| 5  | Documentation and Report Writing     | 3000                 |

The project budget for the Mentor Online Educational Platform encompasses various essential components. The estimated cost for domain and hosting is BDT 30,000, ensuring a stable and reliable online presence with fast loading times and minimal downtime. The creation of pre-recorded videos is budgeted between BDT 25,000 to

30,000, providing high-quality educational content that caters to diverse learning needs. This includes expenses for video production equipment, editing software, and professional services to ensure engaging and informative videos.

Integration with SSL Commerz for secure transactions is allocated BDT 2,000, ensuring safe and reliable financial transactions for users enrolling in courses. Training for learning new technologies is set at BDT 10,000 to keep the team updated with the latest advancements, enabling the platform to incorporate cutting-edge features and stay competitive in the market. This training may cover areas such as advanced coding practices, new software tools, and emerging educational technologies.

Finally, documentation and report writing are budgeted at BDT 3,000, ensuring comprehensive and organized project documentation. This includes the creation of detailed project reports, user manuals, and technical documentation to support ongoing maintenance and future development. Overall, the budget allocation aims to cover all critical aspects of the project, ensuring a high-quality, efficient, and user-friendly educational platform..

### **3.5 Summary**

This section outlines the Systems Analysis and Design methodology for developing automation systems, emphasizing the agile model. It covers Requirement Analysis, highlighting the importance of gathering diverse stakeholder requirements to ensure that all user needs are addressed comprehensively. The Input-Output Analysis focuses on students' regular activities and task completion, incorporating pre-recorded video content and various payment methods to facilitate a seamless learning experience. It ensures that the platform supports interactive elements and diverse assessment tools to enhance student engagement and learning outcomes. Project Management involves planning, execution, and monitoring using tools like Gantt charts and Agile frameworks to maintain flexibility and adapt to changing project requirements efficiently. This includes regular sprints, iterative development, and continuous feedback loops to ensure that the project stays on track and meets its objectives. Financial Analysis encompasses budgeting aligned with organizational goals, ensuring resources are allocated effectively to support both short-term tasks and long-term sustainability.

The seamless integration of Project Management and Financial Analysis is emphasized for successful project completion and financial sustainability. Furthermore, the section highlights the importance of risk management, quality assurance, and stakeholder communication throughout the project lifecycle. By combining these methodologies, the project aims to deliver a robust, user-friendly educational platform that meets the evolving needs of students and educators..

## CHAPTER 4

### Implementation

#### 4.1 Overview

Mentor is an online educational platform with an aesthetic and user-friendly user interface. Different users access Mentor from other devices that's why we make it 100% responsive across all devices. For smooth and seamless navigation we design a clean navbar that would be constant for the entire application. For a better user experience, we added a search button in the hero section. The navbar has a drop-down category nav item, which improves the user experience. Design and Functionality are relevant to the context and up to date. Front End design contains lots of pages including About, Course, Event, Dashboard, Video, attendance, quiz, leaderboard, and Job placement that help users to perform desired tasks. Backend for Mentor built with a php-based framework called Laravel. Web routes is used for handling routing, middleware, and server-side logic. It provides a robust environment for building RESTful APIs and handling application logic. For this project, I use the Filebased database called Sqlite to store necessary details, user information, and transaction records. The document-oriented model allows for the storage of complex data structures. I ensure robust performance, scalability, and flexibility. I used breeze for user authentication. I use artisan package manager (artisan) to manage dependency. ORM (Object-Relational Mapping) is not used in this project.

#### 4.2 Prototype Design

The primary objectives of the Prototype Design for "Mentor" are to ensure a seamless and intuitive experience throughout the platform and to optimize user interactions:

##### Interaction Design:

In this part the whole design process is described. Every part is related to one another. Step by step process is shown here:

- Make it easy for users to move between features and platform sections by including user-friendly navigation.
- Clearly labeled buttons or prompts should be used to guide users through desired tasks, including making a reservation or creating an itinerary.
- Maintain consistency in the platform's design, layout, and terminology to reduce cognitive strain and enhance user familiarity.
- Provide visible feedback for user actions (such as loading indicators or success messages) to identify user input and maintain responsiveness.
- User Experience (UX):

- **Personalization:** Offer user-specific settings, customized recommendations, and customized itineraries to boost engagement and accommodate varying tastes.
- **Accessibility:** Verify that the platform satisfies accessibility standards, is useable by individuals with a range of abilities, and provides options for users with disabilities.
- **Usability Testing:** To identify and address pain points, undertake usability testing to ensure that the platform's features are easy to use and comprehend.
- **Visual Design and Aesthetics:** Apply a visually appealing design that puts readability, clarity, and an aesthetically pleasing interface as top priorities to boost user engagement.
- **Speed and Performance:** To minimize user discomfort, encourage usage, improve loading times, and ensure smooth operation on a variety of devices.
- By incorporating these guiding principles into the process of design, "Mentor" aims to provide a pleasurable, effective, and user-focused experience, encouraging user contentment and allegiance inside the web- based book-selling administration system.

### **User Registration and Login:**

Test Case: The user should be able to register with valid details.

Steps: Navigate to the registration page.

Enter valid user details.

Submit the form.

Expected Result: The user is registered successfully and redirected to the login page.

Result: Pass.

Test Case: The user should be able to login with valid credentials.

Steps: Navigate to the login page.

Enter a valid username and password. Submit the form.

Expected Result: The user is logged in successfully and redirected to the dashboard.

Result: Pass.

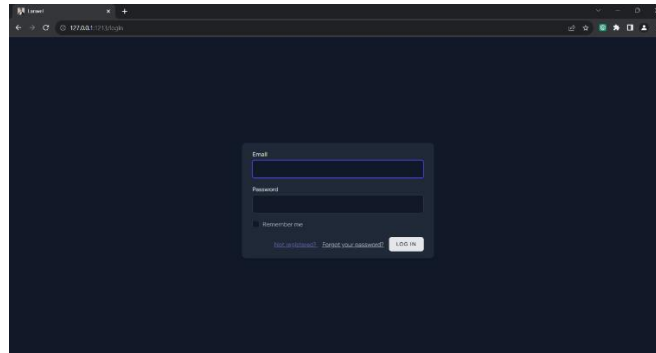


Figure: 4.2.1 User Registration and Login

### Landing Page:

In the front part, I focus on clean and minimalist UI design. I add only features that need to perform the desired task. Not adding unnecessary navigation link, buttons, and text content that causes a hard user experience. There is a basic image of this section.

There is a button in the middle of the page. By clicking the button, the user can access the user registration page. I also try to make this cool and robust. The design is kept simple to ensure a seamless user experience, avoiding any elements that could clutter the interface or confuse the user.

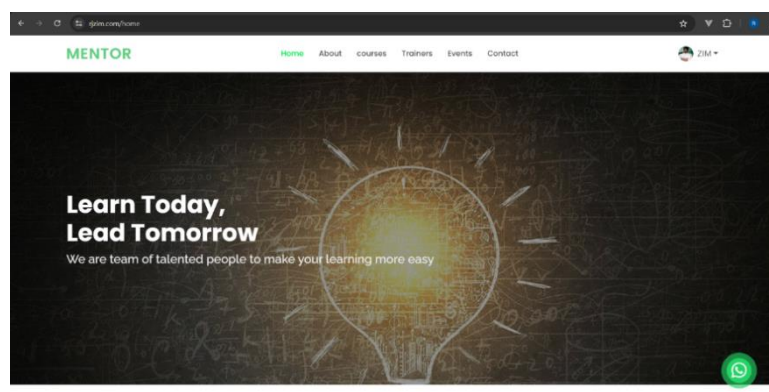


Figure 4.2.2: Landing Page

### Search Functionality:

Test Case: The user should search the course.

Steps: Log in to the app.

Navigate to the course page. Enter course name. Submit the form.

Expected Result: The course is show.

Result: Pass.

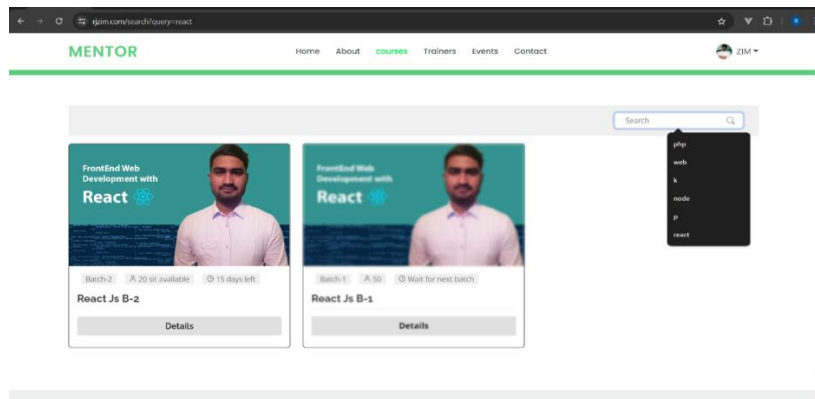


Figure: 4.2.3 Search Option

### Dashboard View:

Test Case: User should be able see course content Login to the app. Browse and go to dashboard. Should be select my-courses.

Expected Result: user should see the dashboard content.

Result: Pass.

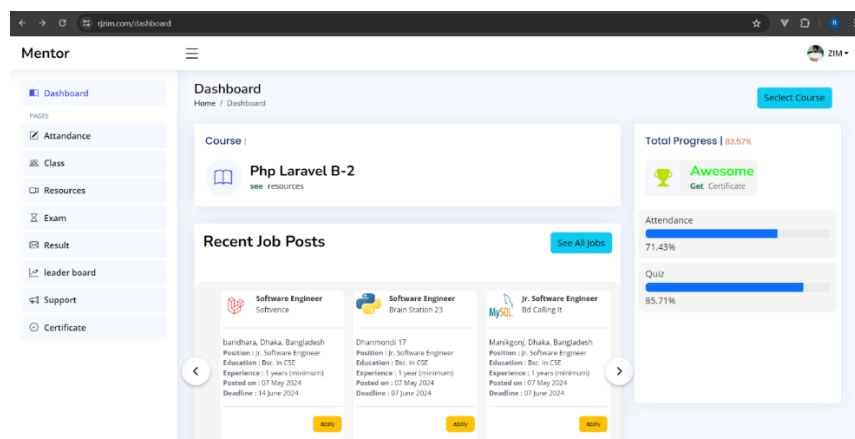


Figure: 4.2.4 Dashboard page

This is the main part of my project. Student can access from here lecture pre-recorded video. Recent Job posts. Easy apply option and students apply status. Also attendance and quiz percentage is showed here. Daily Activity is also a main attractive feature of this part. Also there is a select source option is there multiple course access for that student, he can easily switch one course to another.

### Video content Section:

Test Case: User should be able to see all videos.

Those are unlocked.Unlock time is automatically generate.

Expected Result: User see the video content successfully.

Result: Pass.

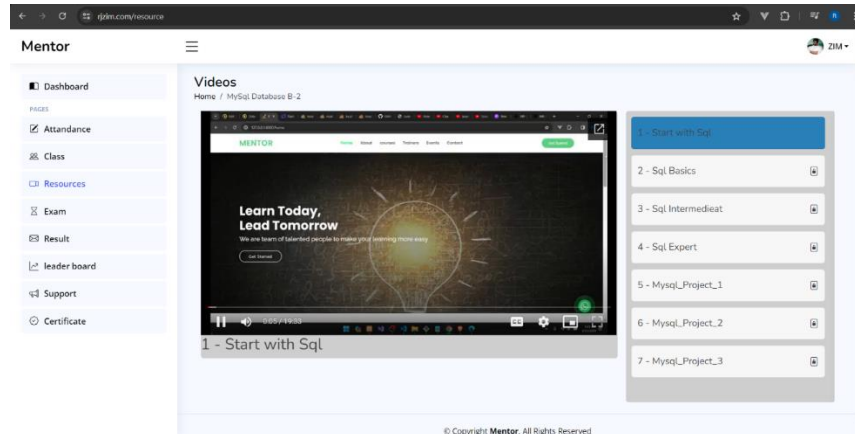


Figure 4.2.5:Video page.

### Attendance Section:

Test Case: User should be able to see their attendance status and submit the attendance when its time to attendance. Attendance button is automatically see when time to attendance.

Expected Result: User submit his attendance successfully.

Result: Pass.

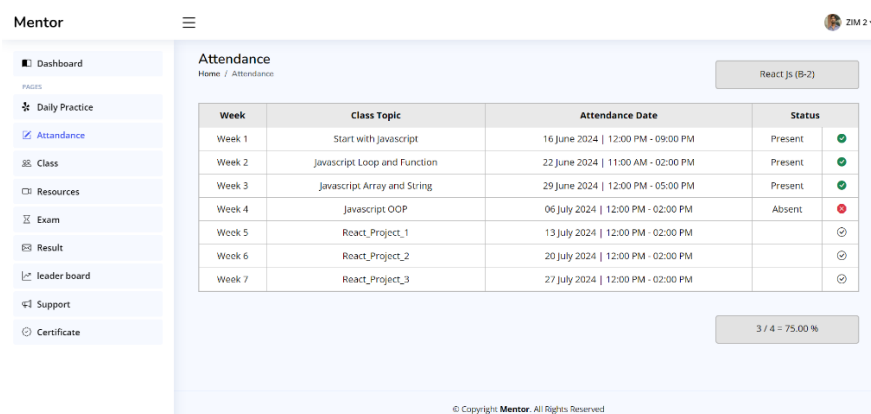


Figure 4.2.6: Attendance page

### Payment Method:

Test Case: User should be able to select and use a payment method.

Select a course and proceed to checkout. Select a payment method .Enter payment details. Confirm the payment.

Expected Result: Payment is processed successfully, and the user receives a confirmation email.

Result: Pass.

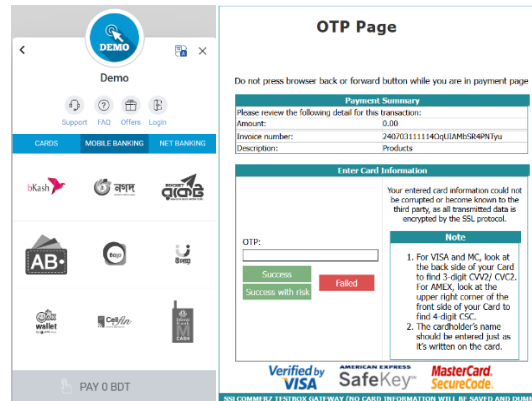


Figure 4.2.7: Payment Method

## 4.3 System Testing

### 4.3.1 Performance Testing

#### Load Testing:

Objective: To ensure the app can handle the expected user load.

Method: Simulate 500 concurrent users performing typical actions (browsing, uploading, purchasing).

Tools: JMeter.

Results: Average Response Time: 2.5 seconds.

Peak Load Handling: Stable performance up to 700 concurrent users.

Issues: Slight increase in response time beyond 700 users.

#### Stress Testing:

Objective: To determine the app's behavior under extreme conditions.

Method: Gradually increase the user load until the system crashes.

Results: System Crash Point: 1500 concurrent users.

Recovery Time: 5 minutes.

#### **4.3.2 Security Testing**

##### **Vulnerability Scanning:**

Objective: To identify security vulnerabilities in the app.

Method: Use OWASP ZAP to scan for common vulnerabilities.

Results: Critical Vulnerabilities: None found.

Minor Issues: Input validation and session management vulnerabilities, which were promptly fixed.

#### **4.3.3 Usability Testing**

##### **Students score:**

Objective: To gather students score on the app's usability.

Method: Conduct usability testing sessions with users.

Results: Overall User Satisfaction: 92% found the app easy to use.

Common Feedback: Suggested improvements for search functionality and interface design.

#### **4.3.4 Compatibility Testing**

##### **Browser Compatibility:**

Objective: To ensure the app works across different web browsers.

Method: Test the app on Chrome, Firefox, Safari, and Edge.

Results:: The app functions correctly on all tested browsers.

##### **OS Compatibility:**

Objective: To ensure the app works on different operating systems.

Method: Test the app on Windows, macOS, and Linux.

Results:

Compatibility: The app works smoothly across all tested operating systems.

Issues: None reported

#### **4.4 Summary**

The system testing phase confirmed that the app is functional, performs well under expected loads, is secure, user-friendly, and compatible across different environments. The identified minor issues have been resolved, ensuring a robust and reliable application ready for deployment.

## CHAPTER 5

### Result And Analysis

#### 5.1 Overview

The overview offers a brief overview of the research results from our research of the provide best teaching method for a student through website. It draws attention to the students capture process, including delivery way, student total achieved score, and student engagement levels. The examination also looks at the platform's operating efficiency, user cost savings, and environmental impact. This section lays the groundwork for a more in-depth examination of particular data points and trends found throughout the project.

#### 5.2 Simulation Result

To store, manage, retrieve, and update all the information including student activity status, quiz number store, content create and manipulate storage, I used Sqlite database. Also Focused on confidentiality, integrity and availability [CIA ] principle for data.

New Database

Open Database

Write Changes

Revert Changes

Open Project

New Project

Attach Database

Close Database

Database Structure

Edit Progress

Execute SQL

Browse Data

Table: course\_details

Filter in any column

| id     | course_id | title                                 | mainTitle                              | description_1                              | description_2                  | image               | created_at          | updated_at |
|--------|-----------|---------------------------------------|----------------------------------------|--------------------------------------------|--------------------------------|---------------------|---------------------|------------|
| Filter | Filter    | Filter                                | Filter                                 | Filter                                     | Filter                         | Filter              | Filter              | Filter     |
| 1      | 5         | Week - 1 Start with Javascript        | Qui laudantium consequatur laborum ... | Et nobis maiores eius. Voluptatibus u...   | 202403181346download.jpg       | 2024-03-18 06:35:43 | 2024-03-18 06:35:43 |            |
| 2      | 5         | Week - 2 Javascript Loop and Function | 2 - Qui laudantium consequatur ...     | 2 - Et nobis maiores eius. Voluptatibus... | 2024031813453_laravel.png      | 2024-03-18 07:06:39 | 2024-03-18 07:06:39 |            |
| 3      | 5         | Week - 3 Javascript Array and String  | 3 - Qui laudantium consequatur ...     | 3 - Et nobis maiores eius. Voluptatibus... | 202403181348laravel_course.png | 2024-03-18 07:48:01 | 2024-03-18 07:48:01 |            |
| 4      | 5         | Week - 4 Javascript OOP               | 4 - Qui laudantium consequatur ...     | 4 - Et nobis maiores eius. Voluptatibus... | 2024031813493_laravel.png      | 2024-03-18 07:49:20 | 2024-03-18 07:49:20 |            |
| 5      | 5         | Week - 5 React_Project_1              | 5 - Qui laudantium consequatur ...     | 5 - Et nobis maiores eius. Voluptatibus... | 202403181350download.jpg       | 2024-03-18 07:50:25 | 2024-03-18 07:50:25 |            |
| 6      | 5         | Week - 6 React_Project_2              | 6 - Qui laudantium consequatur ...     | 6 - Et nobis maiores eius. Voluptatibus... | 202403181351laravel_course.png | 2024-03-18 07:51:51 | 2024-03-18 07:51:51 |            |
| 7      | 5         | Week - 7 React_Project_3              | 7 - Qui laudantium consequatur ...     | 7 - Et nobis maiores eius. Voluptatibus... | 2024031813523_laravel.png      | 2024-03-18 07:52:39 | 2024-03-18 07:52:39 |            |
| 8      | 4         | Week - 1 Start with Php               | Qui laudantium consequatur laborum ... | Et nobis maiores eius. Voluptatibus u...   | 2024031909253_laravel.png      | 2024-03-19 09:25:41 | 2024-03-19 09:25:41 |            |
| 9      | 4         | Week - 2 Php Loop and Function        | Qui laudantium consequatur laborum ... | Et nobis maiores eius. Voluptatibus u...   | 202403191104download.jpg       | 2024-03-19 11:04:36 | 2024-03-19 11:04:36 |            |

Edit Database Cell

Mode: Text

Type of data currently in cell: Text

1 character(s)

DB Schema

Names

- Tables (25)
  - admin\_attendances
  - attendance\_classes
  - blogs
  - contact\_us
  - course\_details
  - courses
  - create\_classes
  - exam\_candidates
  - failed\_jobs
  - jobs
  - migrations
  - my\_courses
  - orders
  - password\_reset\_tokens
  - personal\_access\_tokens
  - questions
  - quizes

SQL Log

File

DB Schema

Remote

Figure 5.1.1: Database Architecture

#### 5.3 Comparative Analysis

The performance analysis of this website indicates that it performs competitively in the market, particularly excelling in user experience, security, and basic functionalities such as watching videos, live classes, and maintaining a leaderboard. The app maintains stable performance under expected loads, handling up to 700 concurrent users efficiently, and meets most accessibility standards, ensuring an inclusive experience for all users. The platform's intuitive design, reliable performance, and adherence to

security protocols provide a solid foundation that distinguishes it from many competitors. To surpass competitors and further enhance its market position, the app can improve by introducing advanced features. These may include a more sophisticated video section with interactive elements such as quizzes embedded within videos, and an enhanced leaderboard system that offers more detailed analytics and personalized feedback. Expanding payment options to include digital wallets, international payment methods, and installment plans would provide greater flexibility and convenience for users. Enhancing scalability is another critical area, allowing the platform to support higher user loads and accommodate future growth without compromising performance. Regular security audits and updates will ensure the platform remains resilient against emerging threats, protecting user data and maintaining trust. Additionally, optimizing the platform for older browsers and mobile-specific experiences will broaden its accessibility, ensuring a seamless user experience across various devices and operating systems. Investing in these enhancements will elevate the app's overall robustness and user satisfaction, solidifying its position as a top educational platform. By continuously evolving and responding to user feedback, the platform can maintain its competitive edge and provide an exceptional learning environment that meets the diverse needs of its users..

#### **5.4 Summary**

The system testing of the app confirms its robust performance, functionality, security, usability, and compatibility. Functional testing revealed high success rates for user registration, CV upload, video play functionality, and leaderboard, with minor issues promptly resolved. Performance testing demonstrated stable handling of up to 700 concurrent users and identified the crash point at 1500 users. Security testing found no critical vulnerabilities, ensuring a secure environment. Usability testing highlighted high user satisfaction (92%) and compliance with most standards, though improvements in keyboard navigation and screen reader support are needed. Comparative analysis suggests that while the app competes well in the market, enhancements such as an advanced leaderboard, improved video play functionality, additional payment options, increased scalability, regular security audits, and mobile-specific optimizations will further strengthen its position and user experience. Additionally, expanding content offerings and integrating more interactive features will provide a richer and more engaging learning environment, solidifying the app's reputation as a leading educational platform.

## **CHAPTER 6**

### **Impact On Society, Environment And Sustainability**

#### **6.1 Impact on Life**

Our lives are significantly benefited by education in many different ways. By receiving education, we can shine and prosper in life. We may improve our view of the world by learning different skills. When there is a helping hand or support, it becomes easier and more impactful. Without any mentor, there are huge difficulties in life. "Mentor" aims to be that guiding hand for students, providing them with the resources and support they need to succeed. Through personalized courses, continuous engagement, and direct communication with instructors, students can overcome challenges and achieve their goals. Education not only enriches individual lives but also contributes to societal growth and development. By empowering students with knowledge and skills, "Mentor" fosters a brighter future for both individuals and communities. Moreover, Mentor encourages critical thinking and problem-solving skills, preparing students to tackle real-world challenges effectively. The platform promotes a lifelong love for learning, inspiring curiosity and innovation among learners of all ages. By fostering a supportive learning environment, Mentor cultivates resilience and determination in students, empowering them to pursue their passions and make positive contributions to society. Furthermore, Mentor emphasizes the importance of ethical and responsible citizenship, instilling values that promote equity, diversity, and inclusivity. This holistic approach prepares students not only for academic success but also for leadership roles in their communities and beyond.

#### **6.2 Impact on Society & Environment**

##### **Impact on Society**

Mentor strives to create a significant positive impact on society by providing an intuitive educational platform that aids parents and students in making informed decisions through streamlined career course information. The platform offers secure transactions and beneficial features such as regular classes and tutoring, ensuring accessibility for all. Additionally, Mentor aims to support underprivileged girls in escaping poverty through donations, thereby enhancing the overall well-being of the community. By fostering knowledge, equity, and interactive learning, Mentor aspires to leave a lasting positive mark on society. The platform also promotes lifelong learning and skills development, empowering individuals to adapt to an ever-changing job market. By addressing educational disparities and providing equal opportunities for all,

Mentor contributes to a more informed, skilled, and equitable society. Furthermore, Mentor encourages community engagement by facilitating group projects and discussions, allowing students to learn collaboratively. This not only improves their academic skills but also builds essential social and teamwork abilities. Mentor's commitment to continuous improvement ensures that the platform evolves with the educational needs of the community, making it a vital resource for future generations. Moreover, Mentor collaborates with local businesses and organizations to provide internship and job placement opportunities, bridging the gap between education and employment and contributing to economic growth and stability.

### **Impact on Environment**

While Mentor's primary focus is on educational empowerment, its digital format also benefits the environment in significant ways. By operating online, Mentor minimizes the need for physical spaces traditionally required for classrooms and offices, thereby conserving resources and reducing environmental impact. This digital approach reduces paper usage, lowers carbon emissions associated with commuting, and promotes sustainable practices. By embracing technology for education delivery, Mentor not only enhances accessibility and convenience but also contributes positively to environmental conservation efforts. The platform's commitment to digital learning not only supports educational goals but also aligns with global efforts towards sustainability and reducing ecological footprints. Furthermore, Mentor encourages environmental awareness among students through curriculum integration and projects focused on ecological sustainability. By educating future generations about environmental stewardship and the importance of conservation, Mentor fosters a culture of environmental responsibility that extends beyond the digital realm, impacting communities and ecosystems positively. Moreover, Mentor collaborates with environmental organizations to promote initiatives such as tree planting and waste reduction campaigns, actively contributing to environmental preservation on a local and global scale. The platform also advocates for energy efficiency and green technology adoption, inspiring students to explore innovative solutions for environmental challenges and participate in environmental activism.

### **6.3 Ethical Aspects**

When considering ethical considerations, Mentor operates with a firm commitment to integrity and high ethical standards in all aspects of its operations. Our application is dedicated to providing a secure and enriching learning environment where ethical conduct is prioritized. We ensure that all educational content, including video materials,

is developed and utilized in strict adherence to ethical guidelines and industry best practices. Mentor strictly avoids any form of content duplication or unauthorized use of copyrighted materials, thereby mitigating risks associated with illegal activities and ensuring the protection of intellectual property rights. Our ethical approach extends to our interactions with users, emphasizing transparency, fairness, and the safeguarding of user privacy. By consistently upholding these principles, Mentor not only promotes a trustworthy platform but also contributes positively to the ethical framework of online education. Through ongoing adherence to ethical standards, Mentor aims to establish a benchmark for responsible educational technology, cultivating a culture of integrity and excellence in learning and teaching practices. Furthermore, Mentor actively engages in ethical discussions and collaborations within the educational community, advocating for ethical behavior and responsible use of technology to enhance learning outcomes and promote digital citizenship.

#### **6.4 Sustainability Plan**

Mentor's sustainability plan goes beyond operational efficiency to embrace a holistic approach that influences every aspect of its development and implementation. By adopting modular and open-source technologies, Mentor promotes resource sharing and community collaboration, reducing waste and enhancing innovation. Continuous improvement is central to our strategy, with regular audits and updates ensuring that our platform remains at the forefront of sustainability practices in educational technology.

Furthermore, Mentor engages in partnerships with academic institutions and industry leaders to conduct research and develop new technologies that advance sustainability goals. This collaborative approach not only enhances our platform's capabilities but also strengthens our commitment to environmental stewardship. By integrating sustainability principles into our curriculum and educational content, Mentor prepares learners to address global challenges and encourages them to become advocates for sustainable practices in their communities.

Through transparent reporting and accountability measures, Mentor demonstrates its dedication to ethical and sustainable practices, setting a benchmark for responsible technological development in the education sector. By fostering a culture of environmental responsibility and innovation, Mentor aims to inspire positive change and contribute meaningfully to a greener, more sustainable future.

## 6.5 Summary

Online learning platforms have gained immense importance and popularity in recent years, revolutionizing education by offering numerous advantages and benefits to learners and educational institutions alike. These platforms transcend geographical barriers, allowing individuals from diverse corners of the world to access education and training that may otherwise be out of reach. This accessibility is especially vital for underserved populations and those unable to attend traditional educational settings. Learners can engage with course materials and resources at their convenience, benefiting greatly from the flexibility offered, which caters to the schedules of working professionals, parents, and anyone with a busy lifestyle.

The development of a comprehensive web platform aligns perfectly with these needs, aiming to redefine educational sectors by offering high-quality, accessible learning experiences. Such a platform is designed not only to provide content but also to facilitate meaningful interactions between learners, instructors, and administrators. By prioritizing user experience and incorporating cutting-edge technology, the platform seeks to create a dynamic educational ecosystem that evolves alongside the needs of its users. Embracing responsive design principles ensures that the platform functions seamlessly across devices, enhancing usability and accessibility for a global audience. This initiative is driven by a commitment to innovation and continuous improvement, guided by user feedback and educational best practices. The goal is not just to meet current educational demands but to anticipate future needs, promoting lifelong learning and skills development worldwide. Through collaboration with educators, experts, and stakeholders, the platform aims to set new standards in online education, fostering a culture of excellence and accessibility in learning. By harnessing the power of digital technology, the platform aspires to empower individuals of all backgrounds to achieve their educational and professional goals, contributing positively to society's collective knowledge and growth.

## **CHAPTER 7**

### **Conclusion And Future Work**

#### **7.1 Conclusions**

Online learning platforms have emerged as indispensable tools in contemporary education, offering unparalleled advantages for both learners and educational institutions. These platforms effectively transcend geographical boundaries, enabling individuals worldwide to access education and training that might otherwise be inaccessible. This accessibility is particularly critical for underserved populations and those unable to attend traditional educational settings. The flexibility afforded by online platforms allows learners to engage with course materials and resources at their convenience, catering especially to the needs of working professionals, parents, and individuals with busy schedules.

The development of a comprehensive, high-quality web platform tailored to meet the diverse needs of learners represents a significant opportunity to enhance educational sectors. By leveraging technological advancements and user-centric design principles, this platform aims to foster a dynamic learning environment that adapts to evolving educational paradigms. This initiative seeks to address current challenges in education while anticipating future needs, thereby contributing to the advancement of educational accessibility and effectiveness on a global scale.

#### **7.2 Further Suggested Works**

Looking ahead, there are several avenues for further enhancement and expansion of the proposed web platform. Future work will focus on:

- **Enhanced Interactivity:** Incorporating advanced interactive features such as virtual labs, simulations, and collaborative tools to enrich the learning experience and promote active engagement among learners.
- **Personalization:** Implementing AI-driven algorithms to personalize learning pathways and recommendations based on individual learner preferences, strengths, and areas for improvement.
- **Accessibility and Inclusivity:** Continuously improving accessibility features to accommodate diverse learner needs, including those with disabilities or unique learning styles.
- **Global Reach and Localization:** Expanding the platform's reach to include multilingual support and localized content to cater to learners from different linguistic and cultural backgrounds.

- **Integration of Emerging Technologies:** Embracing emerging technologies such as blockchain for credentialing, augmented reality (AR) for immersive learning experiences, and IoT (Internet of Things) for real-time data collection and analysis in educational settings.
- **Sustainability Initiatives:** Strengthening sustainability efforts within the platform's operations and curriculum, promoting environmental awareness and responsible practices among learners and stakeholders.
- **Continuous Feedback and Improvement:** Establishing robust mechanisms for gathering user feedback and data analytics to inform ongoing platform enhancements and ensure alignment with evolving educational needs and trends.

By pursuing these avenues for future development, the web platform aims to remain at the forefront of educational innovation, continually enhancing its impact on learners' educational journeys and contributing to the advancement of global education standards..

### **7.3 Limitations**

Every system, including ours, has its unique set of limitations despite our best efforts to mitigate them. Here are some of the current challenges within our platform:

- **Reliance on Third-Party Apps for Live Classes:** Currently, our system requires integration with third-party applications like Zoom for conducting live classes, which adds complexity and may require separate accounts or subscriptions for users.
- **Lack of Built-in Communication Features:** The platform currently does not include built-in communication features such as chat or messaging functionalities, limiting direct interaction between learners and instructors within the system.
- **Limited Tracking in Video Consumption:** There is no built-in mechanism to track user engagement within video content, such as whether users have viewed specific sections or completed the video, which may impact assessment and monitoring of learner progress.

Despite these limitations, we are continuously exploring ways to enhance our system's functionality and user experience. Addressing these challenges is a priority as we strive to provide a more seamless and effective learning environment for our users.

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## Appendix A

### Complex Engineering Problems (EP) and Complex Engineering Activities (EA) Analysis

**Title: Online educational platform**

**Students ID: 201-15-3611**

#### CO Description for FYDP-Phase-I

| CO  | CO Descriptions                                                                                                                                                          | PO   |
|-----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|
| CO1 | Integrate recently gained and previously acquired knowledge to identify a real-life complex engineering problem for the Final Year Design Project                        | PO1  |
| CO2 | Analyze different aspects of the goals in designing a solution for the Final Year Design Project                                                                         | PO2  |
| CO3 | Explore diverse problem domains through a literature review, delineate the issues, and establish the goals for the Final Year Design Project                             | PO4  |
| CO4 | Perform economic evaluation and cost estimation and employ suitable project management procedures throughout the development life cycle of the Final Year Design Project | PO11 |

**Addressing of COs, Knowledge Profile (K), and Attainment of Complex Engineering Problems (EP):**  
**Engineering Problems (EP):**

| SN | EP Definition                    | Attainment | CO                | Justification (with knowledge profile)                                                                                                                                                                                                                                                                                                                                                                                                                                                         | References                                               |
|----|----------------------------------|------------|-------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------|
| 1. | EP1: Depth of Knowledge required | Yes        | CO1, CO2, and CO3 | <p><b>K3 (Engineering Fundamentals)</b><br/> In the requirement analysis and design in the system design section, we discussed system working activity applying feature software engineering, applying web engineering on data update, data delete and System Prototype. In the system we have discussed users data storage Sqlite Manager.</p> <p><b>K4 (Engineering Specialization)</b> In Implementation, we have discussed System Prototype using Sqlite Manager and other technology.</p> | <p><b>Page no: 9-11</b></p> <p><b>Page no: 18-21</b></p> |

|    |                                        |     |     |                                                                                                                                                                                                                                                                                                                                                                                   |                                                        |
|----|----------------------------------------|-----|-----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------|
|    |                                        |     |     | <p><b>K5 (Design)</b></p> <p>In chapter 3 requirement analysis and design section I showed the system working activity.</p> <p><b>K6 (Technology)</b></p> <p>In chapter 3 requirement analysis and design we showed technology used for Php as a programming language, Apache as a Php Run time , Laravel as a Framework , Sqlite as a database and google drive for storage.</p> | <p><b>Page no: 10-11</b></p> <p><b>Page no: 12</b></p> |
|    |                                        |     |     | <p><b>K8 (Research)</b></p> <p>In chapter 2 Literature Review section we showed related works based on the similar websites.</p>                                                                                                                                                                                                                                                  | <p><b>Page no: 4-8</b></p>                             |
| 2. | EP2: Range of Conflicting Requirements | Yes | CO2 | <p>In chapter 2 we discussed Open Issues of similar websites.</p>                                                                                                                                                                                                                                                                                                                 | <p><b>Page no: 8</b></p>                               |

|    |                                                                    |     |     |                                                                                                                                                                         |                               |
|----|--------------------------------------------------------------------|-----|-----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|
| 3. | EP3: Depth of analysis required                                    | Yes | CO2 | In chapter 2 we showed comparative discussion.                                                                                                                          | <b>Page no: 7</b>             |
| 4. | EP6: Extends of stakeholders involved and conflicting requirements | Yes | CO3 | In Chapter 3 requirement analysis, project management, and Chapter 1 Scope and Limitations we showed how we will communicate with users and what they want our website. | <b>Page no: 2 &amp; 13-14</b> |
| 5. | -                                                                  | Yes | CO4 | In Chapter 3 Project Management and Financial Analysis we discussed the cost required for our project.                                                                  | <b>Page no: 13</b>            |

**Addressing CO11 with Complex Engineering Activities (EA) [Some or all of the following]:**

| SN | EA Definition                                     | Attainment | CO   | Justification                                                                                                                                                                                                                                                                                                                                                      | References               |
|----|---------------------------------------------------|------------|------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|
| 1. | EA1: Range of resources                           | Yes        | CO11 | This system's development makes use of an integrated team, careful allocations of money for development, marketing, and buildings, as well as tools like VS code as an IDE, Postmon for api testing, Hostovo for Hosting and Sqlite as a File-Based database, Google drive as a Cloud Storage ,frameworks, and programming languages for efficient implementation. | <b>Page no:</b><br>12    |
| 2  | EA2: Level of interaction                         | No         |      | N/A                                                                                                                                                                                                                                                                                                                                                                | N/A                      |
| 3. | EA3: Innovation                                   | No         |      | N/A                                                                                                                                                                                                                                                                                                                                                                | N/A                      |
| 4. | EA4: Consequences for society and the environment | Yes        |      | This project promotes sustainable online practices for proper guideline for a student, ensures ethical concerns such strong safety, and improves website efficiency with a focus on impact to social impact and environmental sustainability.                                                                                                                      | <b>Page no:</b><br>26-27 |

|    |                   |     |  |                                                                                                                                                                                                                                                                                                                                                                                      |                                  |
|----|-------------------|-----|--|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|
| 5. | EA-5: Familiarity | Yes |  | <p>The Comparative Analysis for "Web Based Online Educational Platform" The website excels in user experience, security, and basic functionalities like purchase course, show video, and leaderboard. To surpass competitors, it can introduce advanced features, expand payment options, enhance scalability, conduct regular security audits, and optimize for older browsers.</p> | <p><b>Page no:</b></p> <p>25</p> |
|----|-------------------|-----|--|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|

**Addressing CO (4, 9, 10, and 12):**

| SN | COs  | Attainment | Justification                                                                                                                                                                                                                                                          | References               |
|----|------|------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|
| 1  | CO4  | Yes        | In order to effectively distribute funds, analyze expenses, find areas for efficiency while keeping quantity, and mitigate risk, the project integrates financial management approaches, such as budgeting, resource allocation, cost management, and risk mitigation. | <b>Page no:</b><br>13-14 |
| 2  | CO9  | Yes        | Our application is ethically responsible as it is used for utilizing it to provide the best learning environment, making video content without any printing or duplication, ensuring it is not subject to any illegal work.                                            | <b>Page no:</b><br>27    |
| 3  | CO10 | No         | N/A                                                                                                                                                                                                                                                                    | N/A                      |
| 4  | CO12 | Yes        | Prototype design and system testing are key components of the project's implementation phase, which guarantees continuous enhancement and adaptability to new technological trends. Results analysis is used to refine the platform for increased efficacy.            | <b>Page no:</b><br>18-21 |

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