

PROJECT REPORT
ON
ONLINE COURSE MANAGEMENT SYSTEM



DAFFODIL INTERNATIONAL UNIVERSITY
DHAKA, BANGLADESH
JULY 2020

“ONLINE COURSE MANAGEMENT SYSTEM”

BY

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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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JULY 2020

APPROVAL

This Project titled “**Online Course Management System**”, submitted by Hosneara Parvin Popy 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 08-06-2020.

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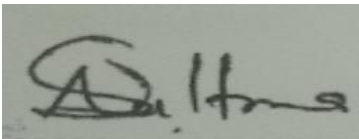
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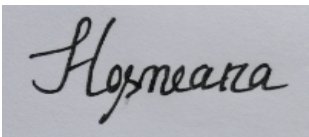
We hereby declare that, this project has been done by me under the supervision of **Naznin Sultana, Assistant Professor**, and **Department of CSE** Daffodil International University. I also declare that neither this project nor any part of this project has been submitted elsewhere for award of any degree or diploma.

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Finally, I must acknowledge with due respect the constant support and patients of our parents.

ABSTRACT

This project “Online Course Management System” is a system based on web application which is useful for students. This system mainly deals to manage the online courses for users. This application has been designed and developed a comprehensive web-based system to better support the students benefit and requirement. By using this application will make the students less wasted time, and they will be able to easily get all the studies information from their teachers. As a result, they will be able to continue their studies better. Using this platform students can submit their preferences and project or presentation group member information. Moreover, they can share their resources about the project including source code and data files using this online platform. By using this application students will be able to check if their teacher has given them a homework. And they can submit homework to their teacher through this online platform. By using this application student could ask any studies related question to their teacher. By using this application, the teacher can post anything like upload any file, lecture, picture, pdf or document for student's study purpose. Teacher can create and take any assignment through using this application. The teacher can see how many students has to the course. If there are more than a certain number of students, then the teacher can disable this course for another student. Both the students and teacher will be benefited from these functionalities and it works to run more smoothly because face-to-face meetings are not held very frequently.

TABLE OF CONTENTS

CONTENTS	PAGE
Title page	i
Approval	ii
Declaration	iii
Acknowledgement	iv
Abstract	v
Table of Contents	vi-ix
List of Figures	x-xi

CHAPTER

CHAPTER 1: INTRODUCTION 1-3

1.1 Introduction	1
1.2 Motivation	2
1.3 Goal of the Project	2
1.4 Expected of Consequence	3
1.5 Chapter Layout	3

CHAPTER

CHAPTER 2: BACKGROUND ANALYSIS 4-7

2.1 Introduction	4
2.2 Correlated work	4
2.2.1 elearn.daffodil.university	4-5
2.2.2 google classroom	5-6
2.3 Scope of The Problem	6
2.4 Challenges of This Project	7

CONTENTS	PAGE
CHAPTER	
CHAPTER 3: SYSTEM ANALYSIS & REQUIREMENT SPECIFICATION	8-9
3.1 Application Process Modelling	8
3.2 Requirement Analysis	8
3.2.1 Hardware and Software Requirements	9
3.3 Design and Model requirements	9
CHAPTER	
CHAPTER 4: SYSTEM DESIGN	10-17
4.1 Use Case Modeling	10-12
4.2 System Context Diagram	13-15
4.3 E-R diagram	16
4.4 Sequence Diagram	17
CHAPTER	
CHAPTER 5: DESIGN SPECIFICATION	18-35
5.1 Front-End Design	18-19
5.1.1 Snapshots of admin panel	19
5.1.2 Dashboard of admin panel	20
5.1.3 Create new user page of admin panel	21
5.1.4 All users list page of admin panel	22
5.1.5 Course list page of admin panel	23
5.1.6 Department list page of admin panel	24
5.2.1 Home page of Teacher panel	25

CONTENTS	PAGE
5.2.2 Classroom inside view of Teacher panel	26
5.2.3 Add course page of Teacher panel	27
5.2.4: Profile page of Teacher panel	28
5.2.5 Update profile page of Teacher panel	29
5.2.6 Account Setting page of Teacher panel	29
5.2.7 Password update page of Teacher panel	30
5.3.1 Home page of Student panel	30
5.3.2 Course enroll page of Student panel	31
5.3.3 Classroom inside view of Student panel	31
5.3.4 Profile page of Student panel	32
5.3.5 Account Setting page of Student panel	33
5.3.6 Password update page of Student panel	33
5.2 Back-end Design	34

CHAPTER

CHAPTER 6: IMPLEMENTATION & TESTING	35-37
6.1 Implementation of database	35
6.2 Implementation of Front-end Design	36
6.3 Testing Implementation	36-37

CONTENTS	PAGE
CHAPTER	
CHAPTER 7: CONCLUSION AND FUTURE SCOPE	38-39
7.1 Discussion and Conclusion	38
7.2 Outcome	38
7.3 Limitation	38
6.2 Scope of Development for Future Suggested Work	39
REFERENCE	40
PLAGIARISM RESULT	41-42

LIST OF FIGURES

FIGURES	PAGE NO
Figure 2.1: Front view of moodlle	5
Figure 2.2: Dashboard view of google classroom	6
Figure 4.1.1: Use Case Diagram of Student	10
Figure 4.1.2: Use Case Diagram of Admin	11
Figure 4.1.3: Use Case Diagram of Teacher	12
Figure 4.2.1: Level-0 Context Diagram of Course Management System	13
Figure 4.2.2: Level-1 Context Diagram of Course Management System	14
Figure 4.2.3: Level-2 Context Diagram of Course Management System	15
Figure 4.3: Entity-Relationship Diagram of Course Management System	16
Figure 4.4: Sequence Diagram of Course Management System	17
Figure 5.1.1: Login Page of Admin panel	19
Figure 5.1.2: Dashboard of Admin panel	20
Figure 5.1.3: Create new user page of Admin panel	21
Figure 5.1.4: All Users list page of Admin panel	22
Figure 5.1.5: All Course list page of Admin panel	23
Figure 5.1.6: All Department list page of Admin panel	24
Figure 5.2.1: Home page of Teacher panel	25
Figure 5.2.2: Class inside view page of Teacher panel	26
Figure 5.2.3: Add course page of Teacher panel	27
Figure 5.2.4: Profile page of Teacher panel	28
Figure 5.2.5: Update profile page of Teacher panel	29
Figure 5.2.6: Account setting page of Teacher panel	29
Figure 5.2.7: Password update page of Teacher panel	30
Figure 5.3.1: Home page of Student panel	30
Figure 5.3.2: Course enroll page of Teacher panel	31
Figure 5.3.3: Classroom inside view page of Teacher panel	31
Figure 5.3.4: Profile page of Teacher panel	32

Figure 5.3.5: Account setting page of Teacher panel	33
Figure 5.3.6: Password update page of Teacher panel	33
Figure 6.1: whole database view page of Course Management System	35

CHAPTER 1

INTRODUCTION

1.1 Introduction: The application named “Course Management System” which is a web based application. This application will be most convenient for students study purpose and they will be benefited most. Because this application have beneficial and helpful feature are exist which will be use the student. In this application there have three panel. Admin, teacher and student panel. By this application students can join their online classroom using the course code. They can see and download their class lecture from the classroom which has been provided by the teacher. The students can posting of papers and other assignments. The students can comment of any others post. They can submit their assignment in the classroom. They can see the total student of their classroom. By using this application teacher can posting of class materials such as course syllabus and handouts classroom for the students. Teacher can give any declaration of study purpose of the student. Teacher can create class work in the classroom. By using this application admin can add any department, teacher, course and others. An admin can create new user, update, edit, delete of any others content. By using this application admin can check the current state of all the portal, total student and teacher, total department, how many courses are under the department of the department everything can monitor. By using this application admin can access the all of portal.

As a result, my goal was to simplify the students study easier and move them forward.

1.2 Motivation

The total concept of that task began through a little illustration which I got from my class. I wanted to, how students can easily study while maintaining time to move forward. So, I think that there is a demand for an online system that will be helpful for the student. Then I decided to develop an application for the students. And I was interested in web development so, I starting to develop an application which is web based. I included some feature in this application, in the point of view that student will get facilities from the application it will be beneficial and preferable. From my side, this application will be helpful, easy to use and user friendly.

1.3 Goal of The Project

In order to the intention of achieving this aim I will,

- Teacher can posting of class materials such as course syllabus and handouts.
- Teacher can see who has or hasn't completed the work or submit the assignment.
- The teacher can see how many students has to the course. If there are more than a certain number of students, then the teacher can disable this course for another student.
- Teacher can added new course.
- Student can posting of papers and other assignments.
- Students can viewed or saved course-related documents to classroom.
- Students can comment of any others post.
- Student can enrolled to a course by course code.
- Every user have an email Id. When teacher posting anything in the classroom then all the students get an announcement email messages.
- It notifies students on class stream when work is assigned and due.

1.4 Expected of Consequence

This application have effective feature which will provide the users good service. So that I can fulfill following the expected consequences.

- Increases interconnection between teacher and student.
- Saves time of the students and teacher.
- Increases the quality of student's studies and learning.
- Develops student's performance.
- Reducing the barriers to student studies.
- Increases student's relationship with study.

1.5 Chapter Layout

The report have six sections that are followed by:

- Chapter 1 execute the project introduction.
- Chapter 2 includes the background part.
- Chapter 3 handle all the required specifications.
- Chapter 4 is in regard to design specifications.
- Chapter 5 relate the implementation and testing part.
- Finally, chapter 6 includes the conclusion and possible scope for the future of our project.

CHAPTER 2

BACKGROUND ANALYSIS

2.1 Introduction

The languages HTML, CSS, and JavaScript are popular languages for Front End development. HTML is used to create electronic documents that are displayed on the World Wide Web. CSS is the language that used for describing the presentation of Web pages, including colors, layout, and fonts. JavaScript used to modify website content and make it behave in different ways in response to a user's actions. Back End part is different to Front End.

In the project “Course Management System” I used HTML, CSS, and JavaScript for Front End development. The popular Laravel Framework I used for Back End development. I used XAMPP server as a local host to using MySQL database.

2.2 Correlated work

2.2.1 elearn.daffodil.university: In this application admin, teacher or student can login into the web application using their email and password which has provided from university. Student can see their profile, dashboard, enrolled courses, available courses, private files, grade, task and online users. Students can create their new account and edit profile. They can sent message both of the student and teacher. Teacher can post class materials, create task, see total course, total students in a course and many others study related works. Admin can access all the system and others work.

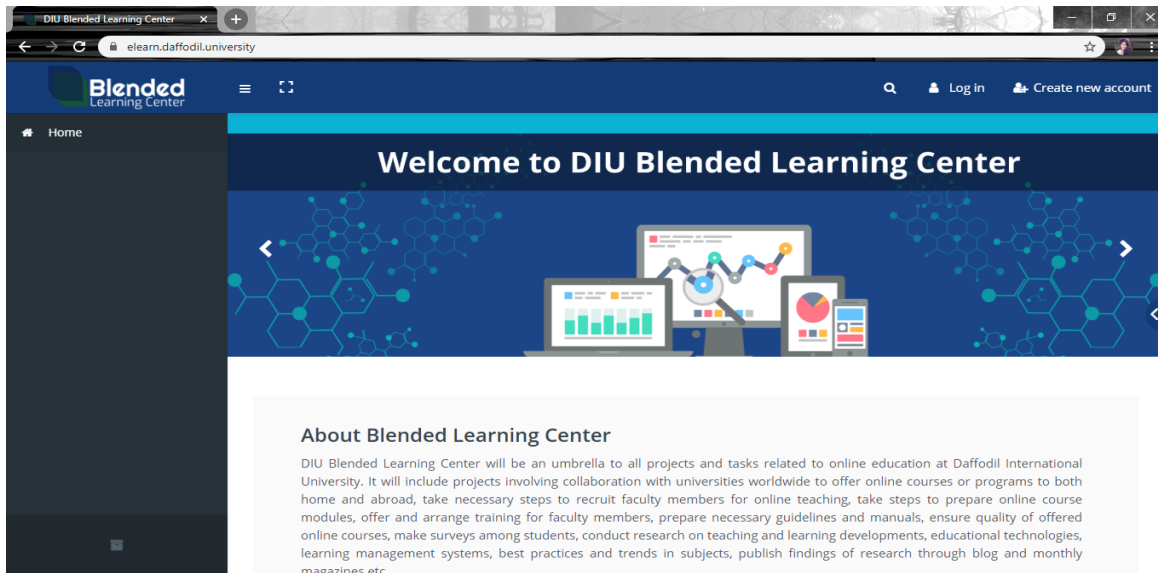


Figure 2.1: Front view of moodle.

2.2.2 google classroom:

Students can join a class through a private code, or automatically imported from a school domain. Each class creates a separate folder in the respective user's Drive, where the student can submit work to be graded by a teacher. Students can take photos and attach to assignments, share files from other apps, and access information offline. Teachers can monitor the progress for each student, and after being graded, teachers can return work along with comments.

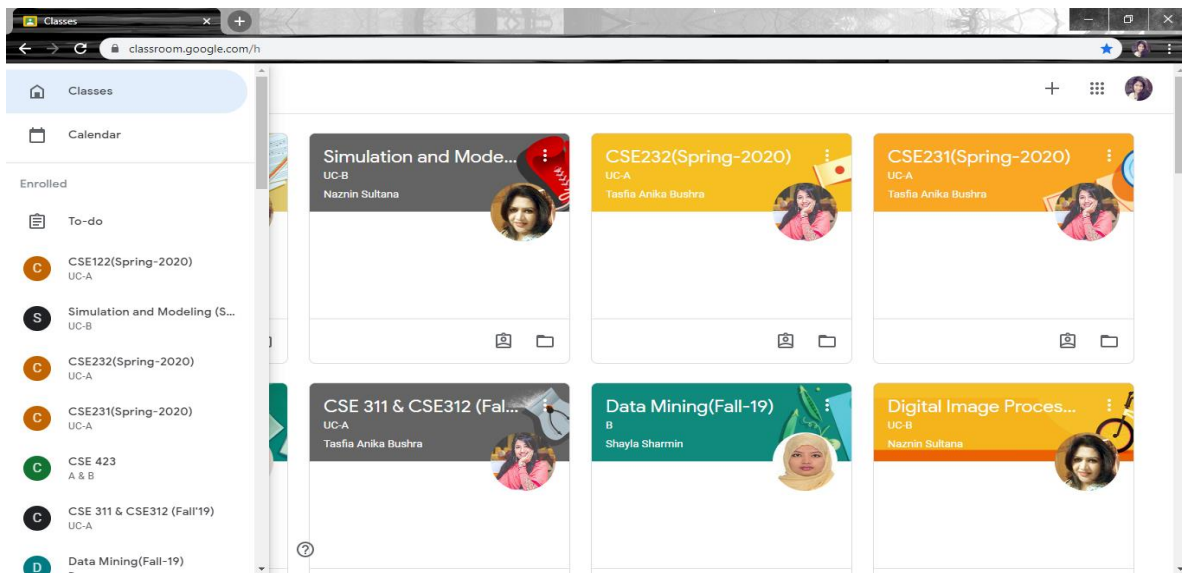


Figure 2.2: Dashboard view of google classroom.

2.3 Scope of The Problem

- Using this project student can see and save their class materials, see total member of a course, total enrolled courses. They can also post study related file, photo and document. Teacher can post class materials, create task, create new course, see the total member of a course and total course number.
- In this project I have worked and focus on main some features. This project can't show the students grade sheet.
- This project will only be applicable for Educational institutions.

2.4 Challenges of This Project

This projects have many challenges. The main challenges of my projects is assure security. The other challenges are given there:

- Efficiency should be maintained.
- user interface(UI) design should be suitable.
- Exact data must be maintained.
- Database conjunction and data passing should be maintained.
- Approval should be maintained.
- Reactivity should be maintained.
- Accurate contract should be maintained.

CHAPTER 3

SYSTEM ANALYSIS & REQUIREMENT SPECIFICATION

3.1 Application Process Modelling

This application process modeling presents the entire system's whole working procedure. The method can represent all thoughts of a process. At first, I have to make sure the requirement and application process, when I start the development process. So, I build many diagrams to fulfill my requirement. The diagrams will be like E-R diagram, use case diagram, block diagram, context diagram.

3.2 Requirement Analysis

For software requirement

- Admin panel, Teacher panel, Student panel
- User friendly
- Time amenities
- Impressibility
- Easily suitable for any device
- Login System for Admin panel, Teacher panel, Student panel

An admin can login directly to the system but teacher and student cannot login directly. The user can login using their email and password which is established for them.

3.2.1 Hardware and Software Requirements

Hardware Requirements:

- Storage: Minimum 1.5GB Storage.
- Ram: 4GB.
- Laptop, Desktop & all types of Smart Phone.

Software Requirement:

- Language: Laravel Framework.
- For Design: HTML, CSS, JSON, and Java Script.
- Database: XAMPP SQL Server
- Platform: Sublime, Brackets
- Operating System: Windows, Linux

3.3 Design and Model requirements

This system has three types of panel, Admin panel, Teacher Panel and Student panel. If user want to proper output then the database design would have be perfectible and systematic way. The system has various part for data storage where the information could be sort by systematic way.

CHAPTER 4

SYSTEM DESIGN

4.1 Use Case Modeling

A use case model describes different types of user interacts and their activities into a system. It is also a list of action which done by the user. The number of elements like as: An actor, an event, a use case. The major component is the actor.

I have three actors in my projects, they are:

- Admin
- Student/User
- Teacher

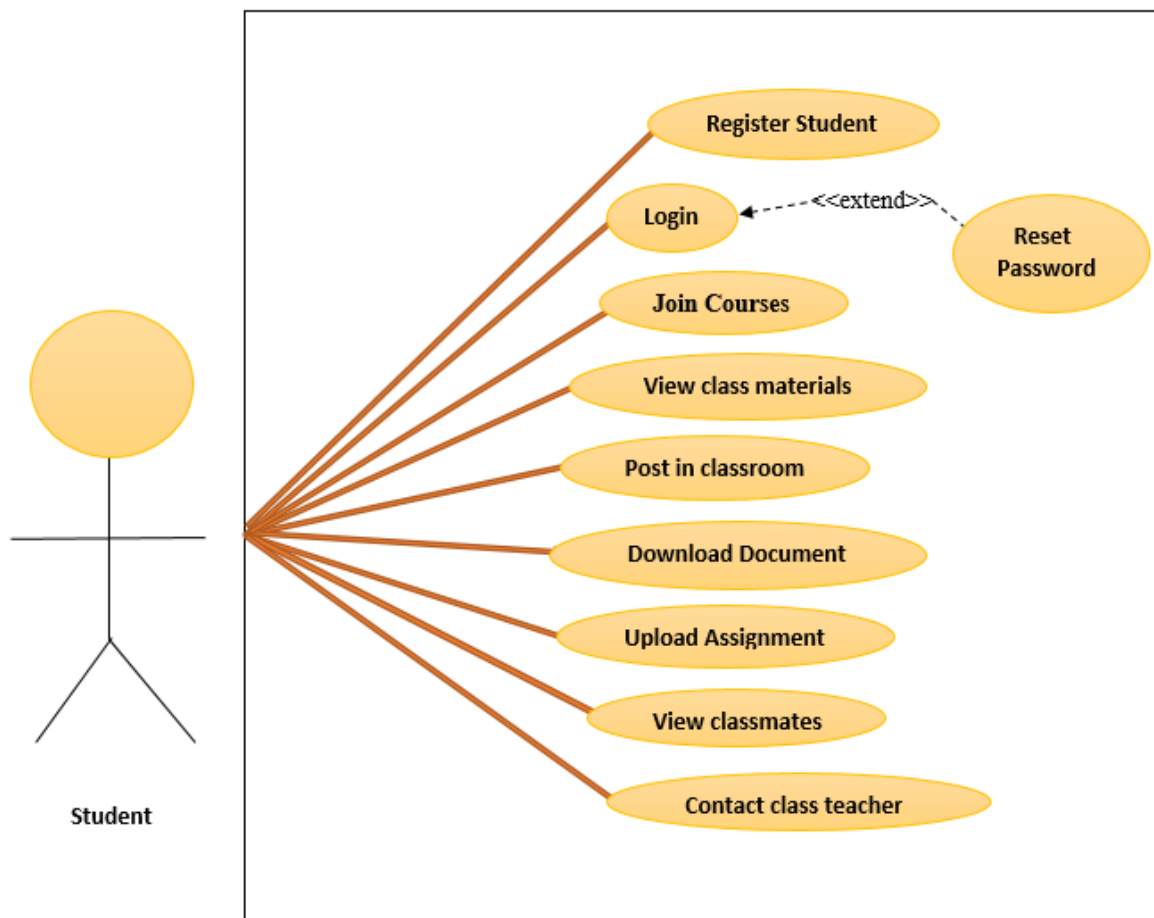


Figure 4.1.1: Use Case Diagram of Student

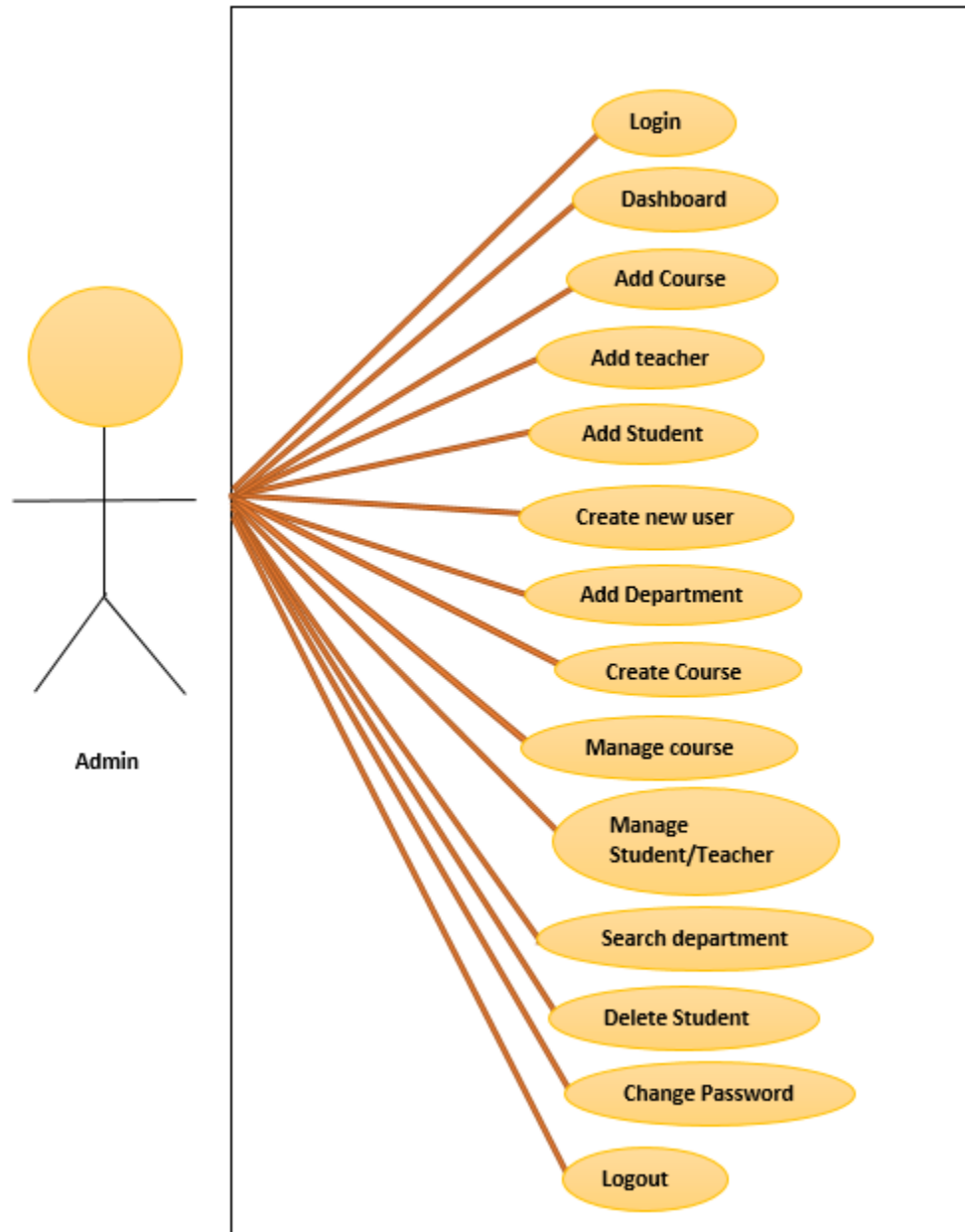


Figure 4.1.2: Use Case Diagram of Admin

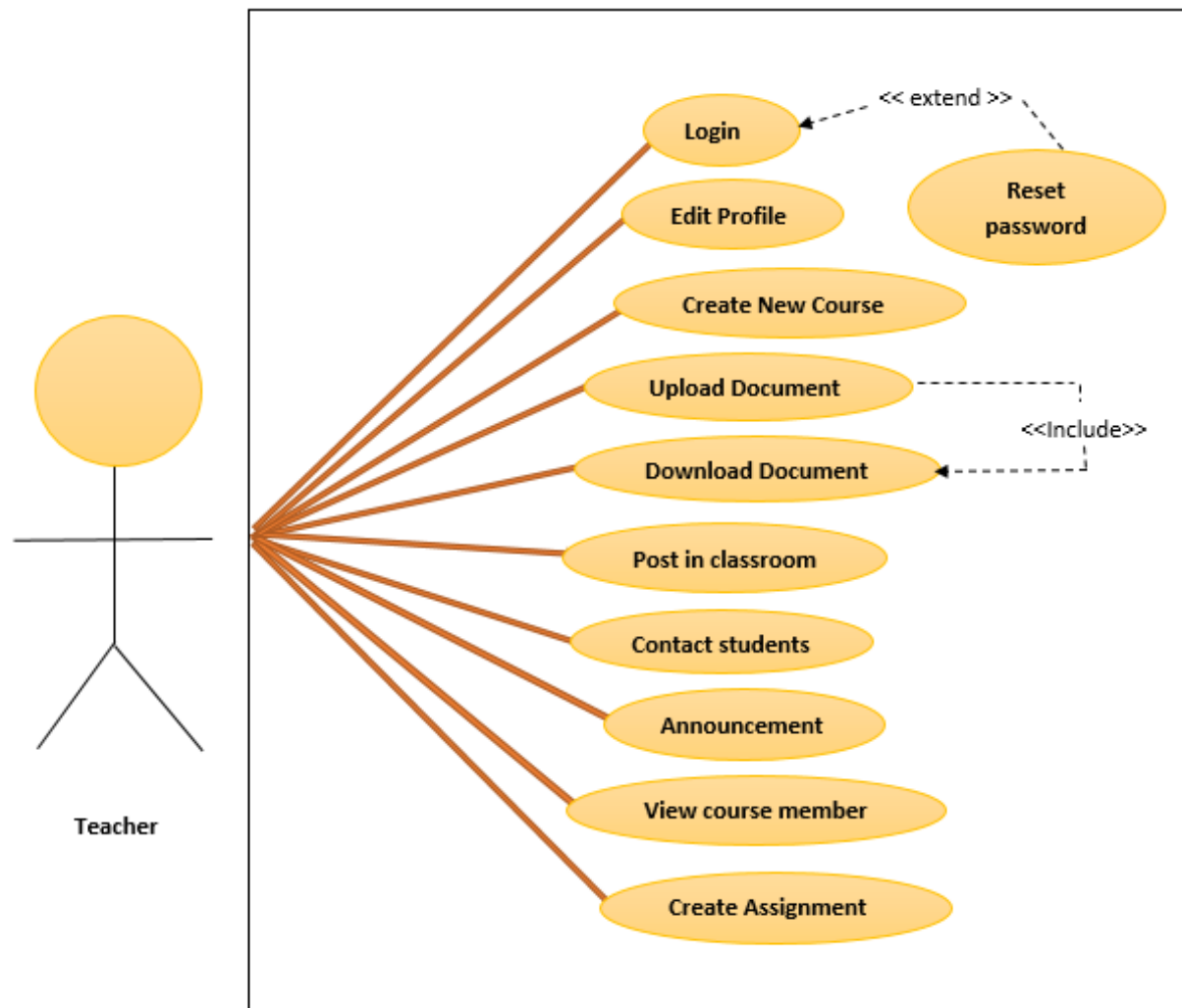


Figure 4.1.3: Use Case Diagram of Teacher

4.2 System Context Diagram

A Context Diagram is the highest level of data flow diagram. It represents the flows of information between the system and all external entities that may have interact with a system. The entire software system is shown as a single process.

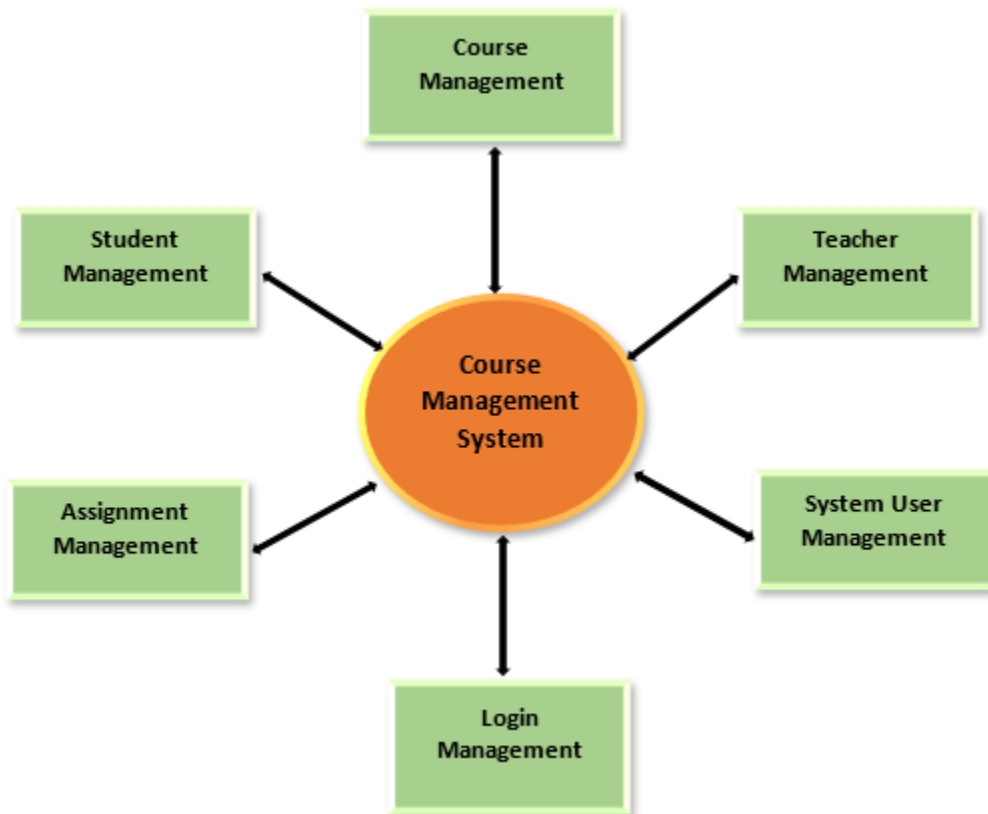


Figure 4.2.1: Level-0 Context Diagram of Course Management System

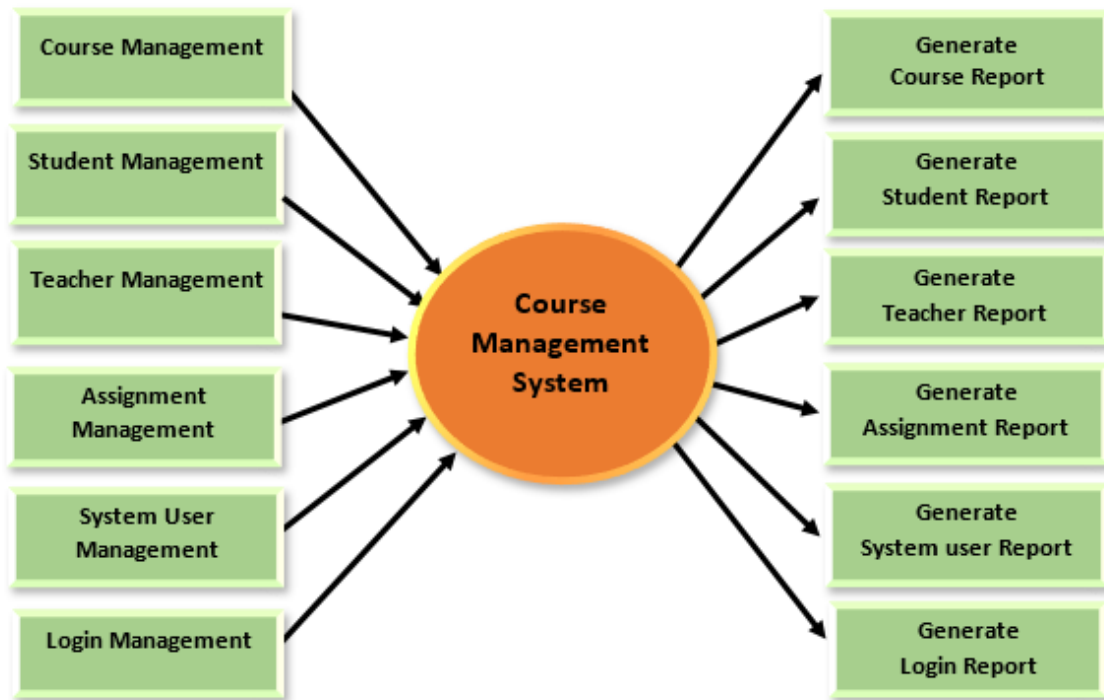


Figure 4.2.2: Level-1 Context Diagram of Course Management System

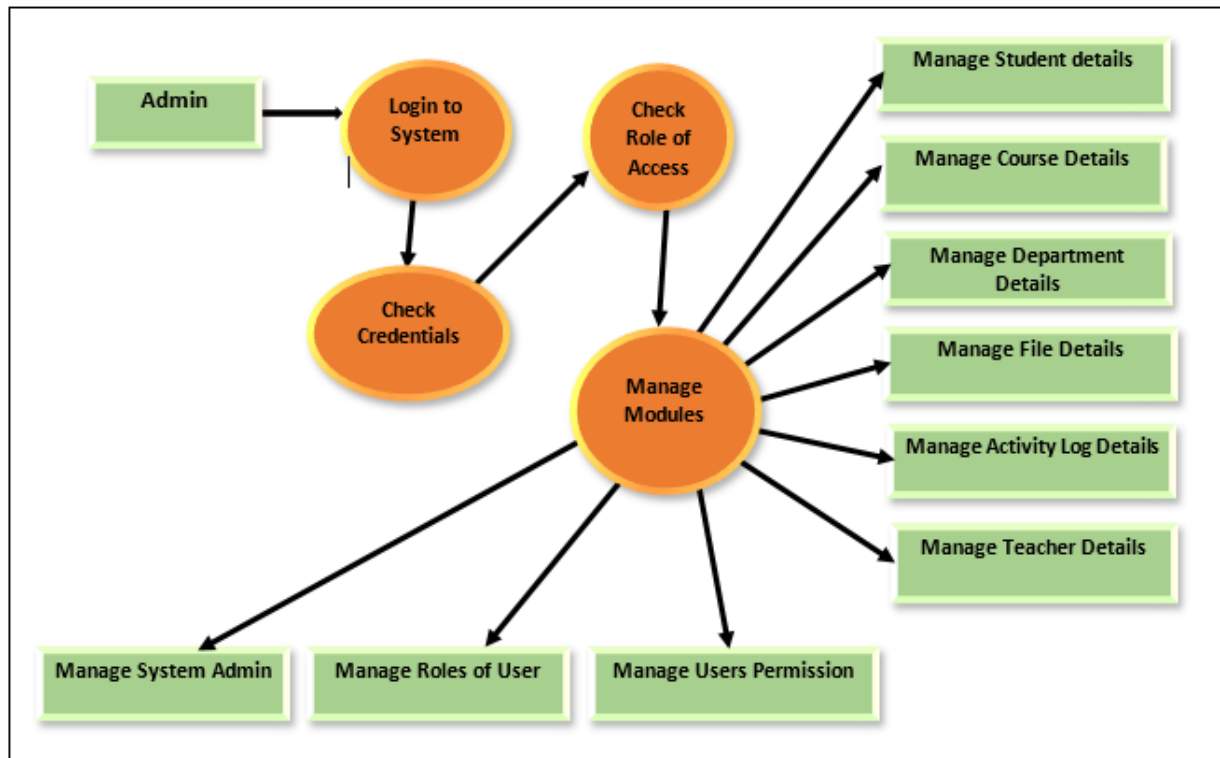


Figure 4.2.3: Level-2 Context Diagram of Course Management System

4.3 E-R diagram

E-R diagram is entity relationship diagram which can describes interrelated things of interest in a specific domain of knowledge.

E-R diagrams of this system are given below.

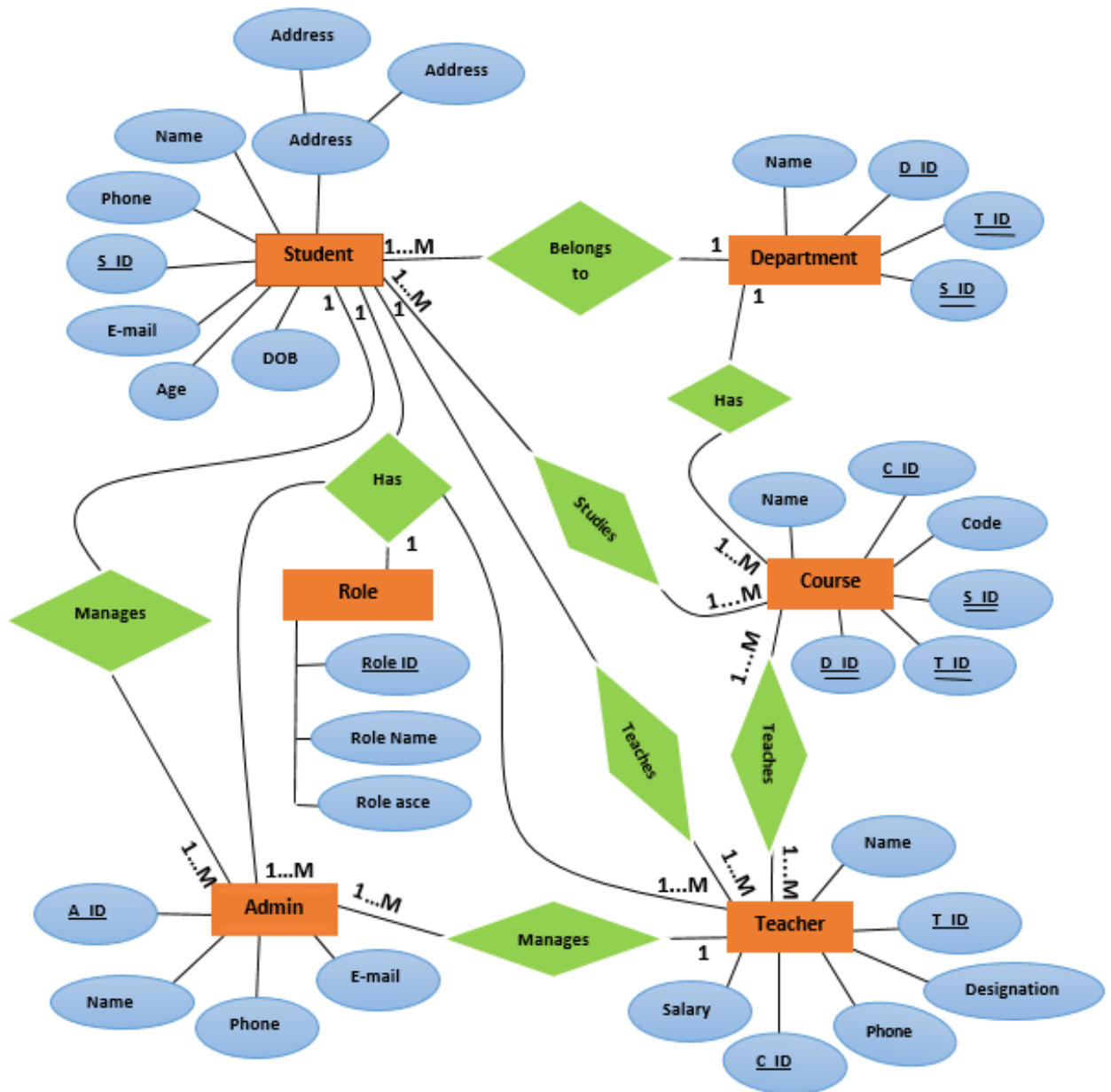


Figure 4.3: Entity-Relationship Diagram.

4.4 Sequence Diagram

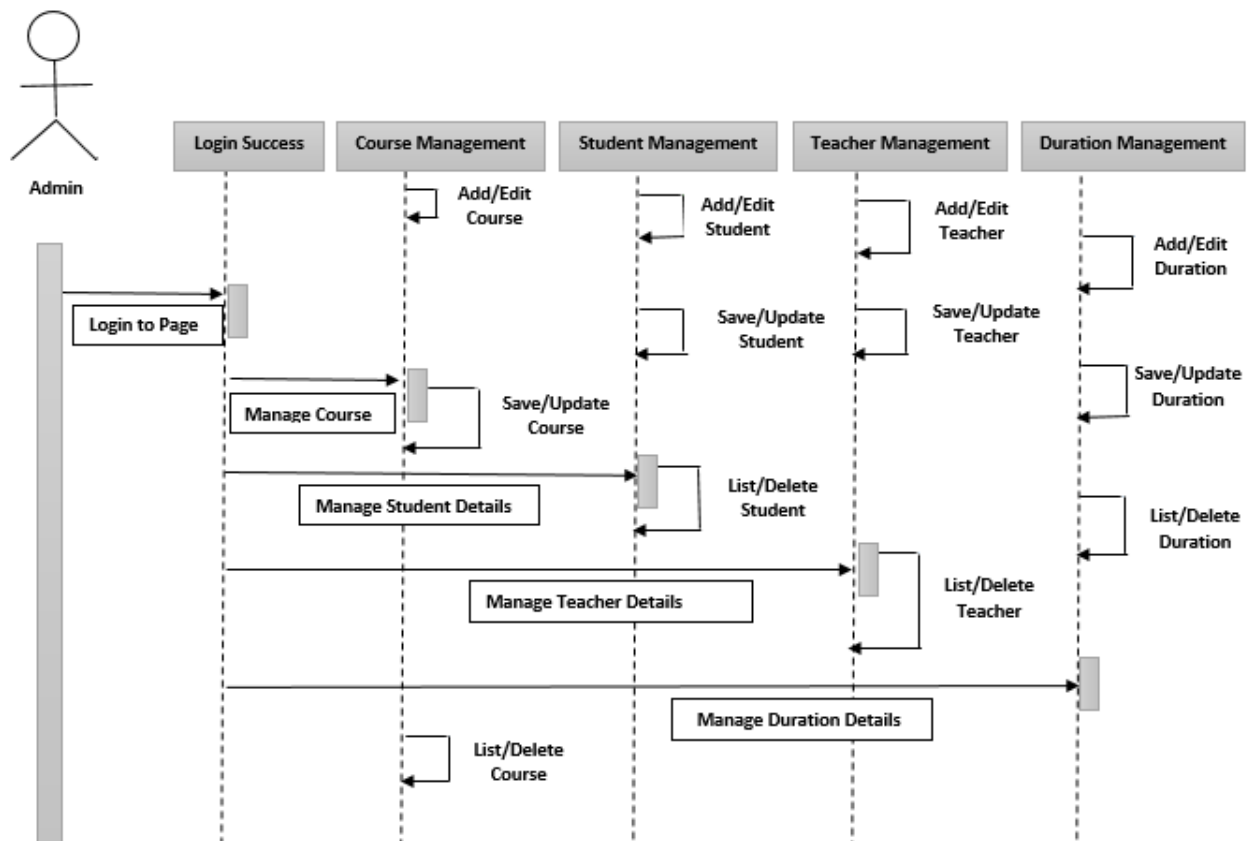


Figure 4.4: Sequence Diagram

CHAPTER 5

DESIGN SPECIFICATION

5.1 Front-End Design:

Front-end design is a very important part of a website that converts data into graphical interface. This front-end design created by the special language like HTML, CSS, and presentational JavaScript. It makes up the user interface correctly. There are several tools and platform like Notepad++, Sublime Text that can be used to develop the front end design of a website and understanding which tools are best fit for inelastic task which marks the difference between developing a hacked site or scalable site.

HTML: HTML full form is Hyper Text Markup Language. It is the backbone of any website development process, without which a web page doesn't exist. The Hypertext means that text will be links, termed hyperlinks and embedded in it. When a user clicks on a word or a phrase that has a hypertext, it will brings another web page correctly. A markup language indicates that text can be turned into images, tables, links, and other representations. It is the HTML code that provides an overall framework of how the site will be look.

CSS: CSS full form is Cascading Style Sheets. Its controls the presentation aspect of the site and allows to have its own unique look. CSS does this work by maintaining style sheets which sit on top of other style rules and are triggered based on other inputs. It will be rely on such as device screen size and resolution.

JavaScript: JavaScript is the language which is event-based that is used to transform a static HTML page into a dynamic page. The JavaScript code can be use the Document Object Model (DOM), provided by HTML, to manipulate a web page that response to events, like user input. There are used many techniques that is called AJAX, this code can be also actively retrieves content from the web and also made react to server side events as well as, adding a truly dynamic nature to web page experience.

I have attached some of our designs below:

5.1 Snapshots of admin panel:

This is the login page for admin. To login the user email and password will be used.

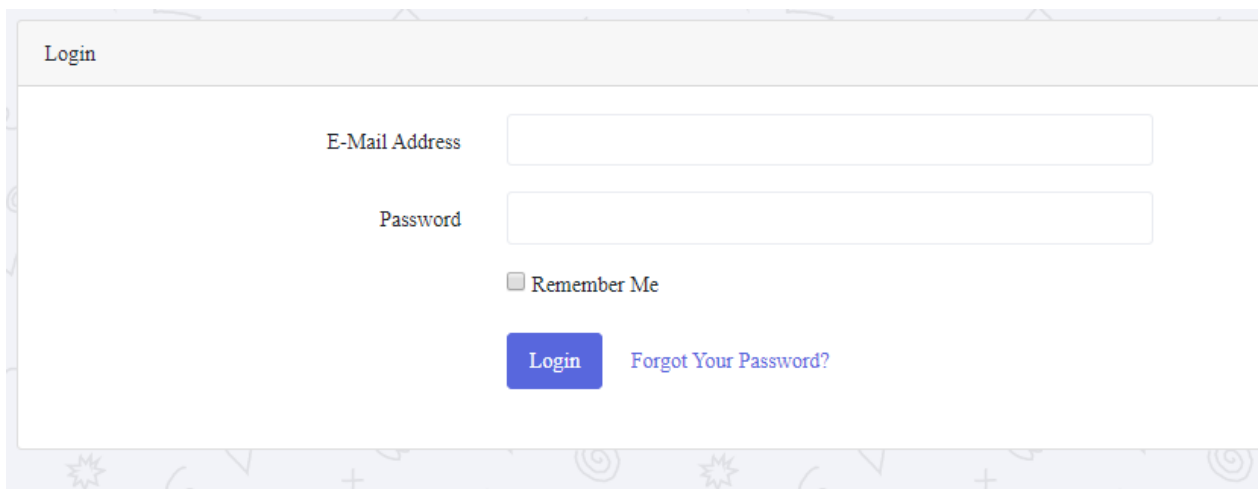
The image shows a web browser window displaying a login page. The page has a light gray header with the word "Login" in a dark font. Below the header, there are two input fields: "E-Mail Address" and "Password". The "E-Mail Address" field is a simple text box, while the "Password" field is a text box with a small eye icon on the right side. Below the "Password" field, there is a checkbox labeled "Remember Me". At the bottom of the form, there is a blue "Login" button and a link that says "Forgot Your Password?". The background of the page is white, and the browser window has a light blue border.

Figure 5.1.1: Login page of Admin panel

5.1 Snapshots of admin panel dashboard:

This page is also for admin panel .Here admin can see the whole system of update data.

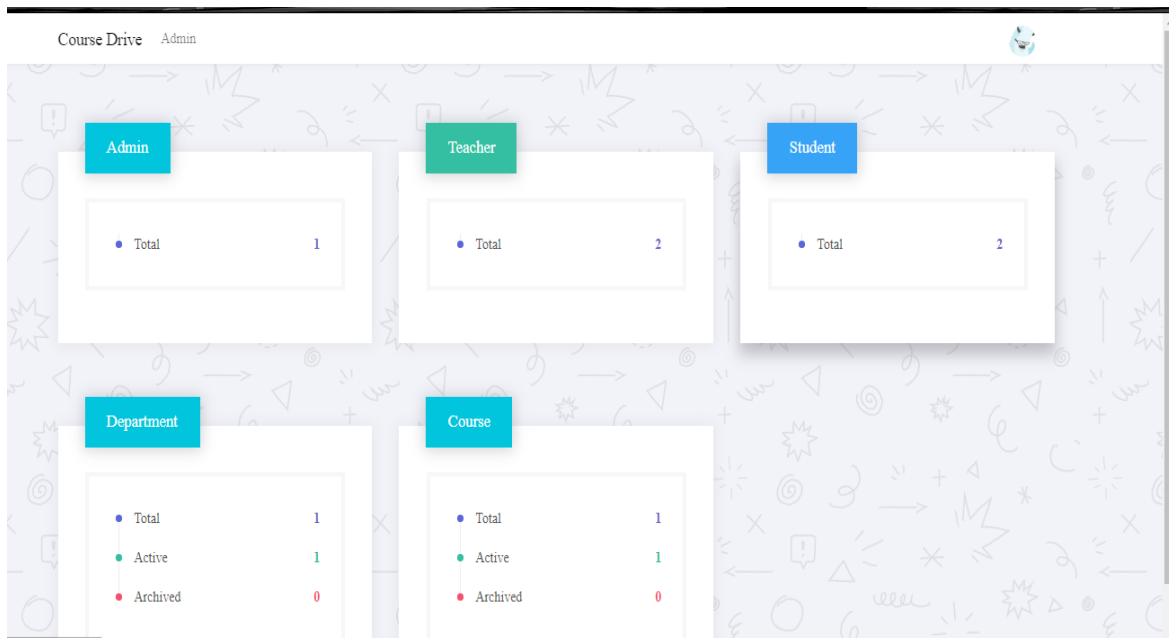
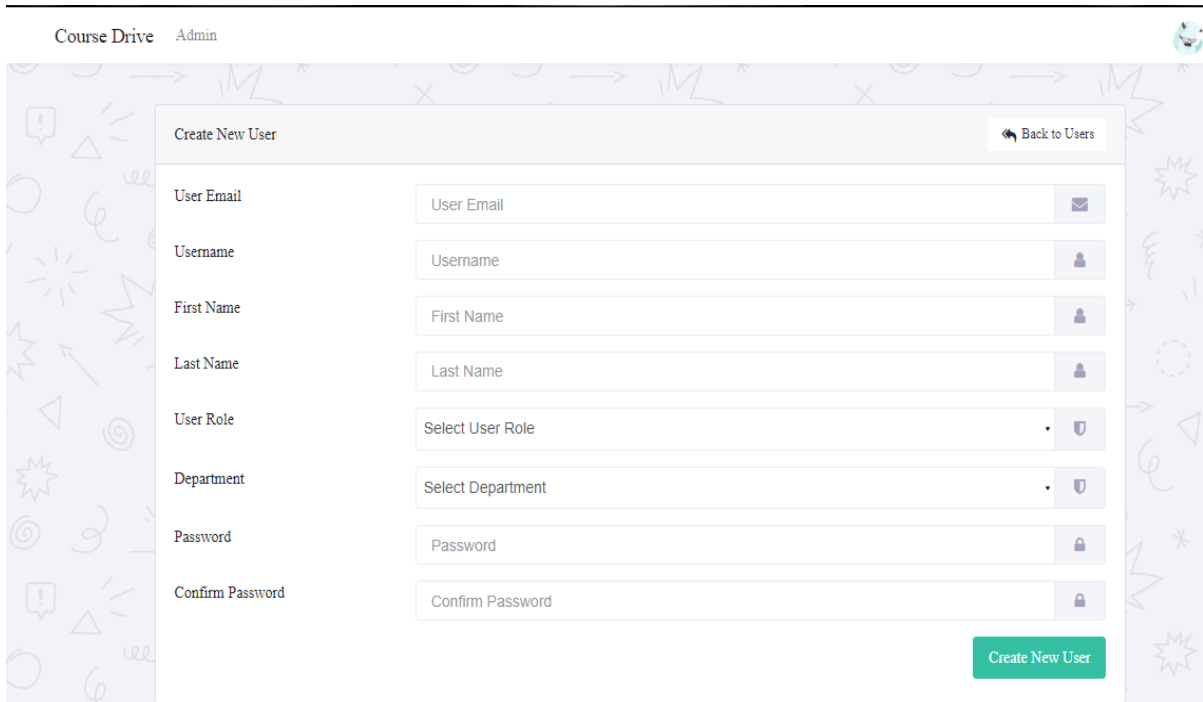


Figure 5.1.2: Dashboard of admin panel

5.1 Create new user page of admin panel:

Here admin can add users to both new teachers and students.



The screenshot displays the 'Create New User' interface within the 'Course Drive Admin' panel. The page has a light blue background with a pattern of geometric shapes. The form is titled 'Create New User' and includes a 'Back to Users' link in the top right corner. The form fields are as follows:

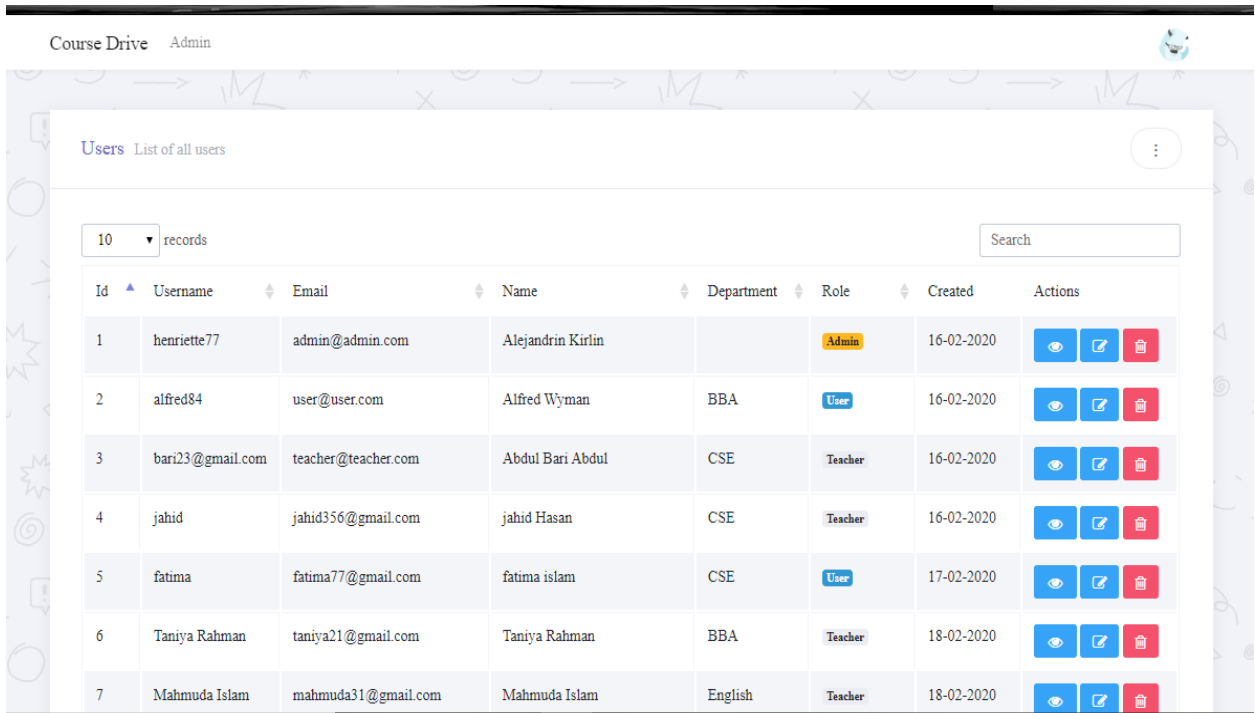
Field Label	Input Type	Icon
User Email	Text	Email
Username	Text	User
First Name	Text	User
Last Name	Text	User
User Role	Dropdown	Shield
Department	Dropdown	Shield
Password	Text	Lock
Confirm Password	Text	Lock

A green 'Create New User' button is located at the bottom right of the form.

Figure 5.1.3: Create new user page of admin panel

5.1 All users list page of admin panel:

Here admin can see all of users list.



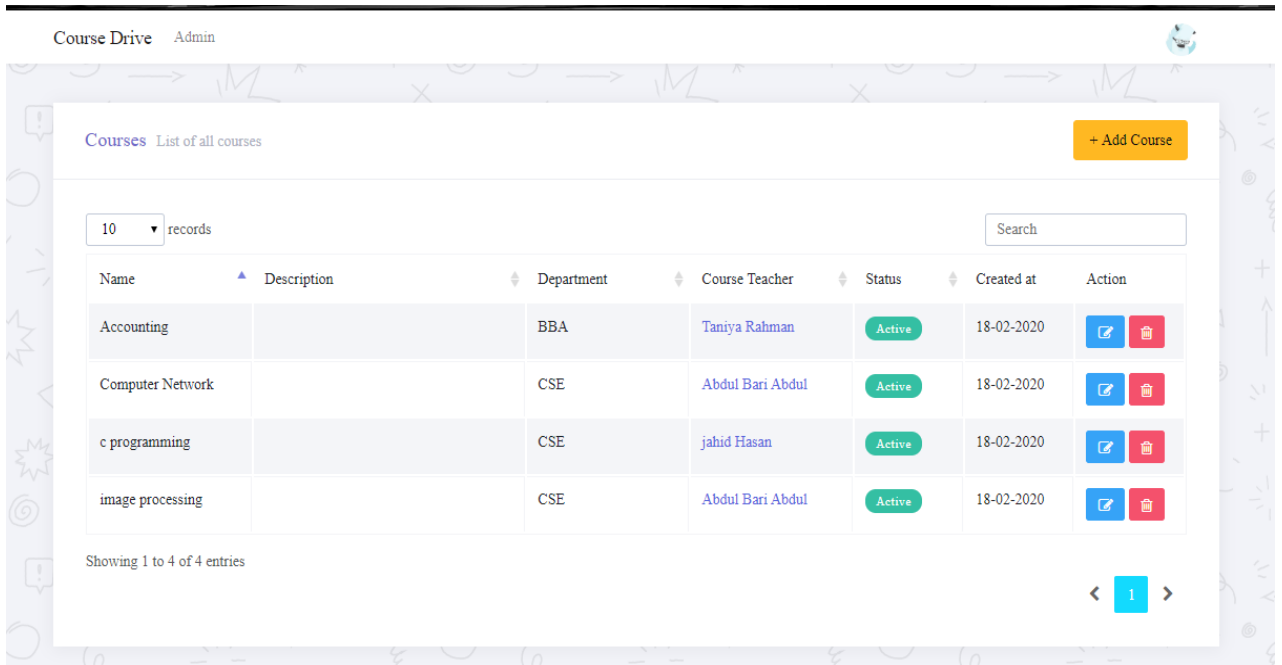
The screenshot displays the 'Users' page in an admin panel. The page title is 'Users List of all users'. It features a table with 7 rows of user data. The table columns are: Id, Username, Email, Name, Department, Role, Created, and Actions. The 'Role' column contains labels like 'Admin', 'User', and 'Teacher'. The 'Actions' column contains icons for viewing, editing, and deleting each user record.

Id	Username	Email	Name	Department	Role	Created	Actions
1	henriette77	admin@admin.com	Alejandrin Kirlin		Admin	16-02-2020	
2	alfred84	user@user.com	Alfred Wyman	BBA	User	16-02-2020	
3	bari23@gmail.com	teacher@teacher.com	Abdul Bari Abdul	CSE	Teacher	16-02-2020	
4	jahid	jahid356@gmail.com	jahid Hasan	CSE	Teacher	16-02-2020	
5	fatima	fatima77@gmail.com	fatima islam	CSE	User	17-02-2020	
6	Taniya Rahman	taniya21@gmail.com	Taniya Rahman	BBA	Teacher	18-02-2020	
7	Mahmuda Islam	mahmuda31@gmail.com	Mahmuda Islam	English	Teacher	18-02-2020	

Figure 5.1.4: All users list page of admin panel

5.1 Course list page of admin panel:

Here admin can search and see all list of course.



Course Drive Admin

Courses List of all courses + Add Course

10 records Search

Name	Description	Department	Course Teacher	Status	Created at	Action
Accounting		BBA	Taniya Rahman	Active	18-02-2020	 
Computer Network		CSE	Abdul Bari Abdul	Active	18-02-2020	 
c programming		CSE	jahid Hasan	Active	18-02-2020	 
image processing		CSE	Abdul Bari Abdul	Active	18-02-2020	 

Showing 1 to 4 of 4 entries

< 1 >

Figure 5.1.5: All Course list page of admin panel

5.1 Department list page of admin panel:

Here admin can search and see all department list.

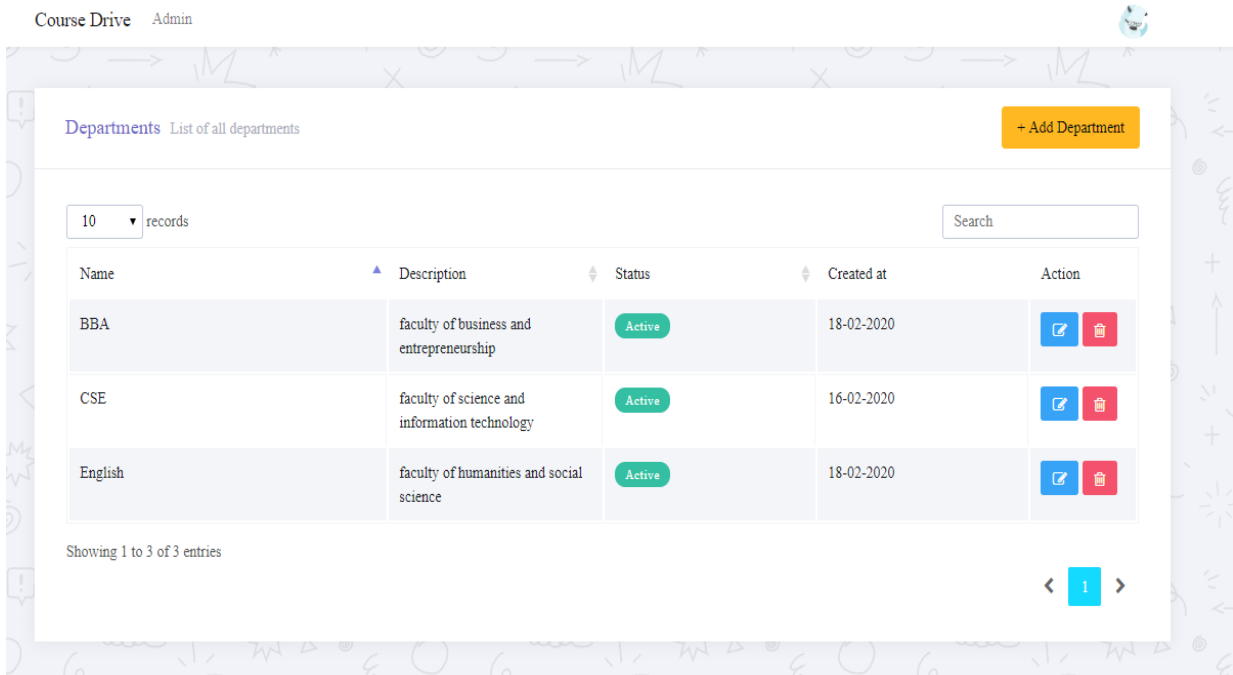


Figure 5.1.6: All Department list page of admin panel

5.1 Home page of Teacher panel:

Here teacher can see the total course which he took.

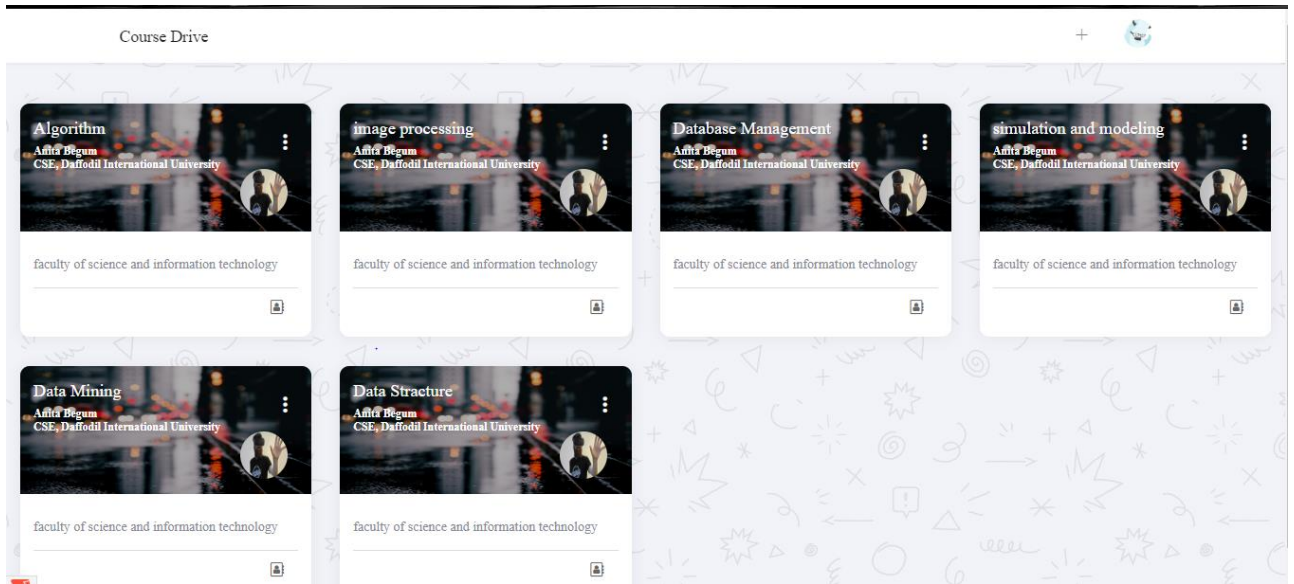


Figure 5.2.1: Home page of Teacher panel

5.1 Classroom inside view of Teacher panel:

This is the teacher's class view. Here teacher can post class materials, downloads, see total members, take assignment.

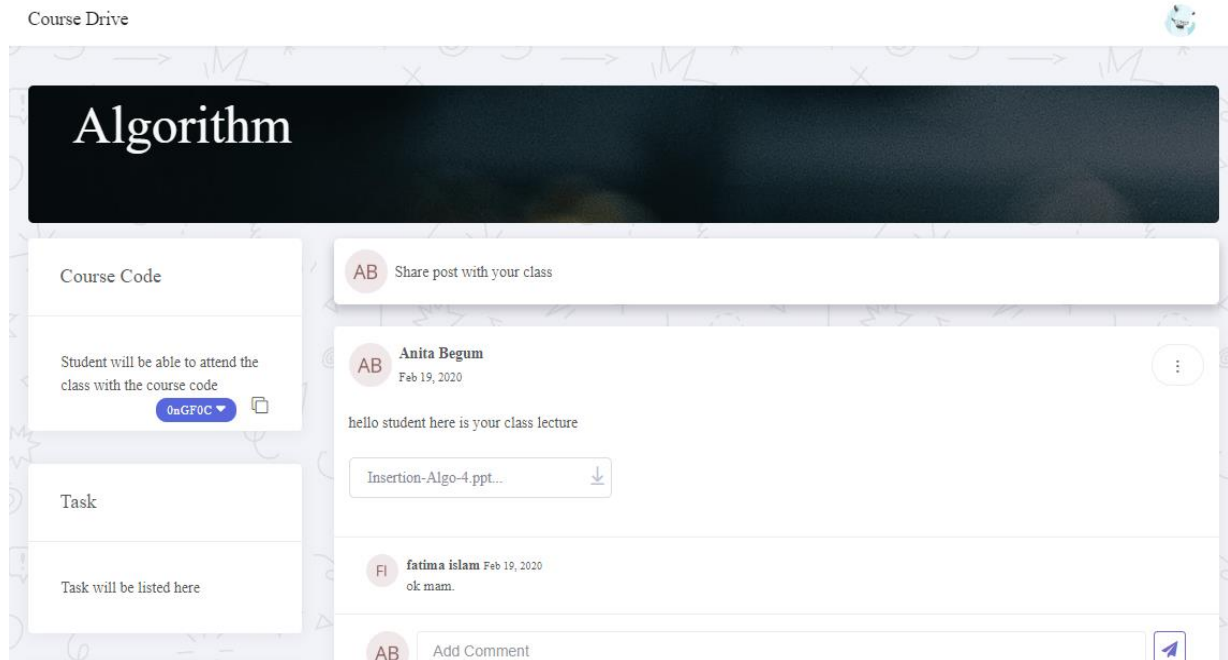
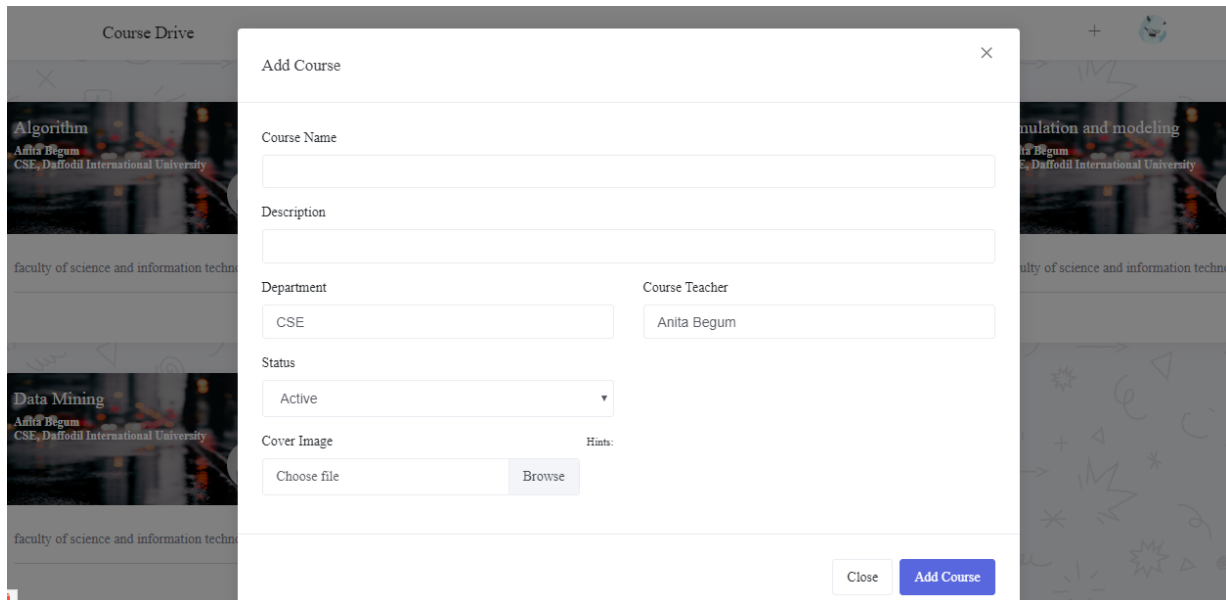


Figure 5.2.2: Class inside view page of Teacher panel

5.1 Add course page of Teacher panel:

Here teacher can add new course which he took for teaches.



The screenshot shows a web application interface with a modal window titled "Add Course". The background is a blurred view of a "Course Drive" page with course cards for "Algorithm" and "Data Mining", both by Anita Begum, CSE, Daffodil International University. The modal form contains the following fields:

- Course Name:** A text input field.
- Description:** A text input field.
- Department:** A text input field containing "CSE".
- Course Teacher:** A text input field containing "Anita Begum".
- Status:** A dropdown menu with "Active" selected.
- Cover Image:** A section with a "Choose file" button and a "Browse" button.
- Hints:** A label next to the "Browse" button.

At the bottom right of the modal, there are two buttons: "Close" and "Add Course".

Figure 5.2.3: Add course page of Teacher panel

5.1 Profile page of Teacher panel:

This is teacher's profile. Here teacher can edit/update her profile information.

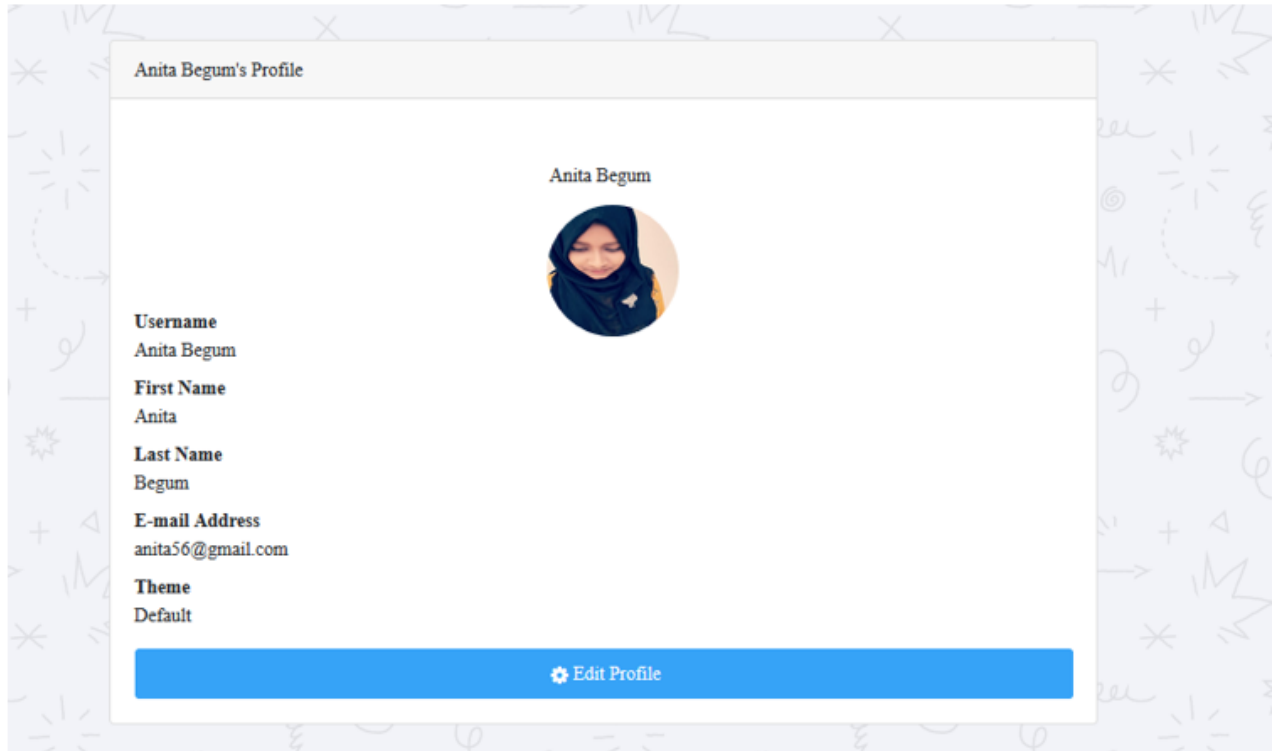


Figure 5.2.4: Profile page of Teacher panel

5.1 Update profile page of Teacher panel:

Here teacher can edit/update her profile information.

Course Drive

Profile Settings

Account Settings

Account Administration



Drop files here to upload

Use GravatarUse My Image

Your theme:
Default

Your location:
Uttara,Dhaka

Your bio:
Enter your bio

Figure 5.2.5: Update profile page of Teacher panel

5.1 Account Setting page of Teacher panel:

Here teacher can edit/update her profile information.

Course Drive

Profile Settings

Account Settings

Account Administration

Username	Anita Begum
User Email	anita56@gmail.com
First Name	Anita
Last Name	Begum

Save Changes

Figure 5.2.6: Account setting page of Teacher panel

5.1 Password update page of Teacher panel:

Here teacher can edit/update her password information.

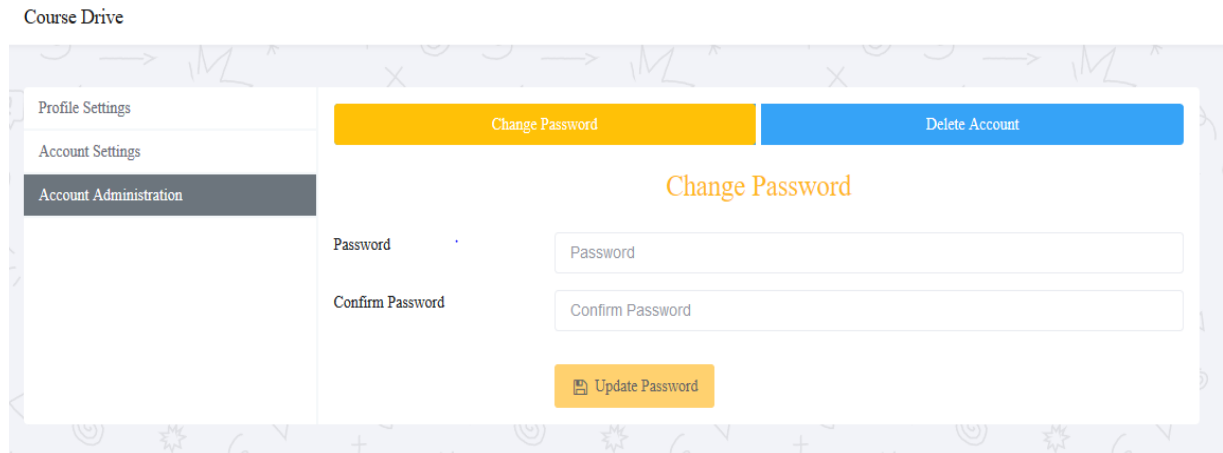


Figure 5.2.7: Password update page of Teacher panel

5.1 Home page of Student panel:

Here student can see the total course which she took.

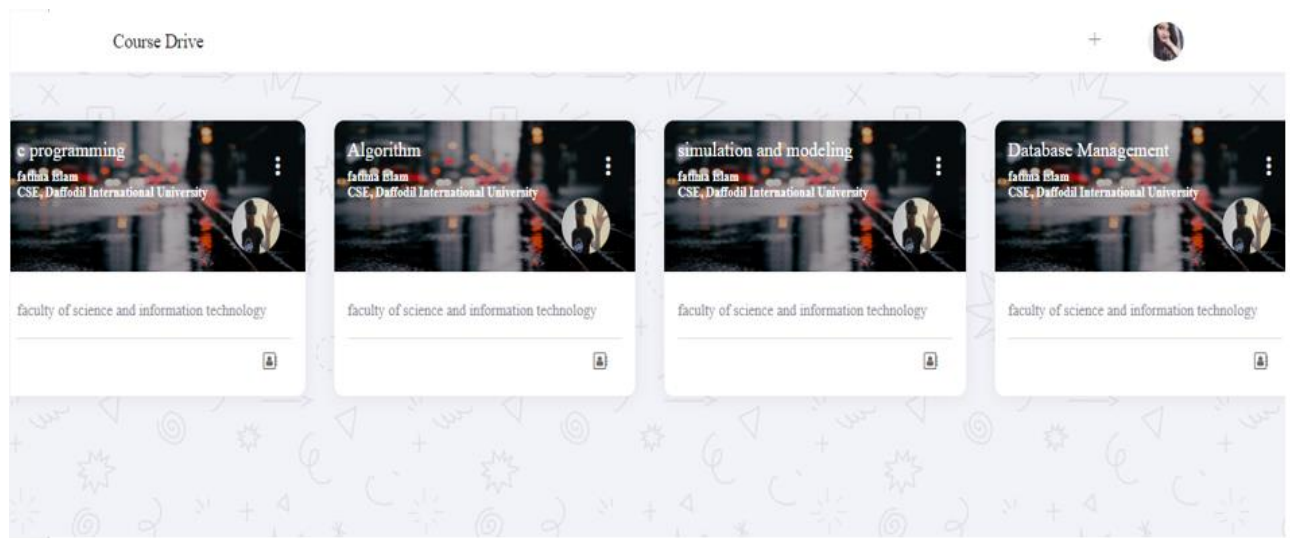


Figure 5.3.1: Home page of Student panel

5.1 Course enroll page of Student panel:

Here student can join/enroll the new course using course code which is given by teacher.

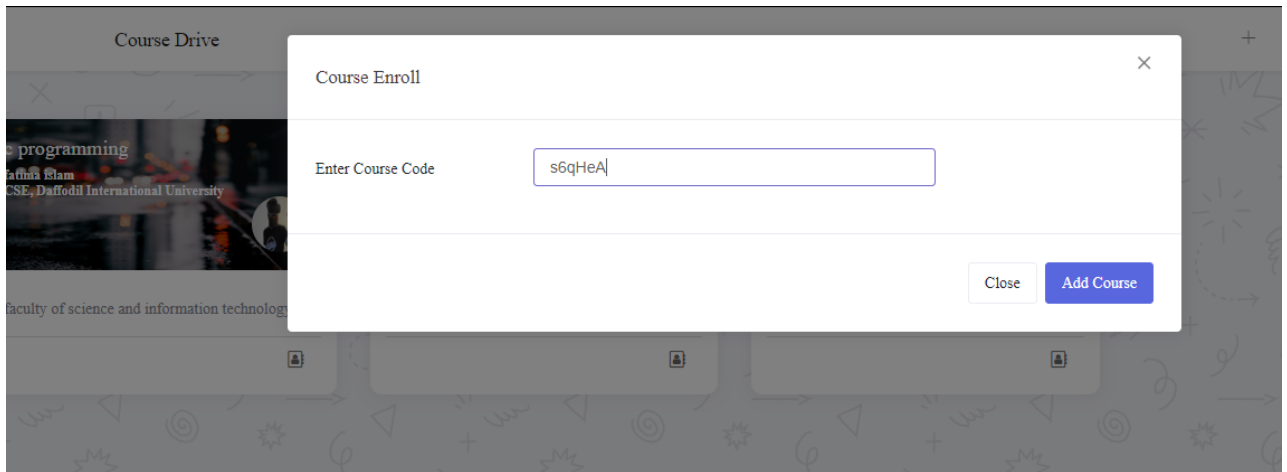


Figure 5.3.2: Course enroll page of Student panel

5.1 Classroom inside view of Student panel:

This is the Students class view. Here Student can submit assignment, downloads study materials, see total members, post group name and comment in post.

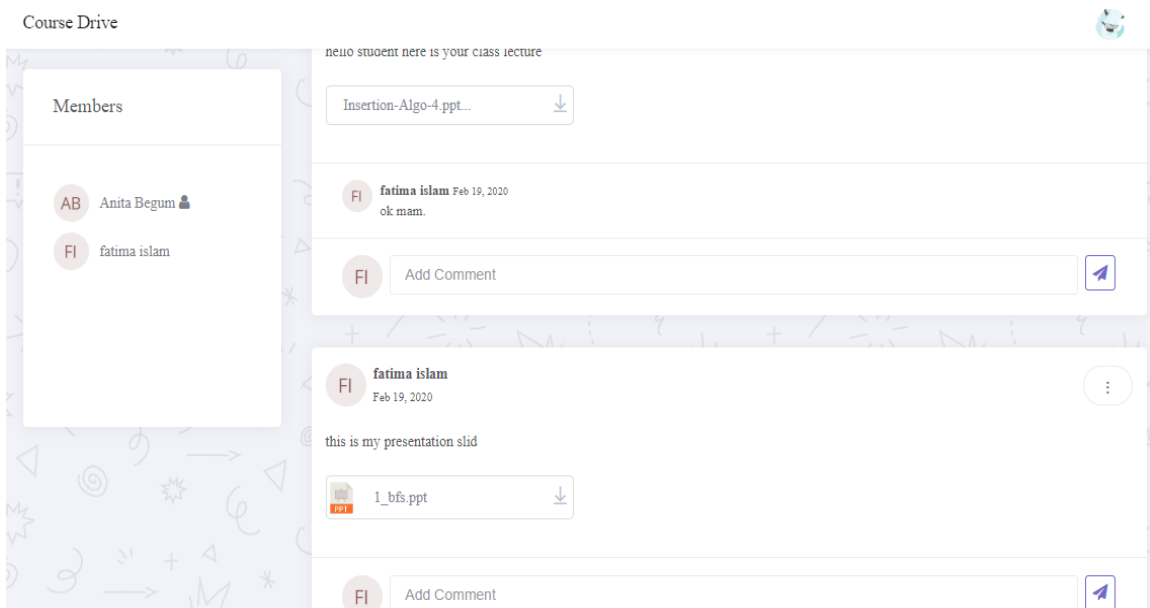


Figure 5.3.3: Classroom inside view of Student panel

5.1 Profile page of Student panel:

This is teacher's profile. Here teacher can edit/update her profile information.

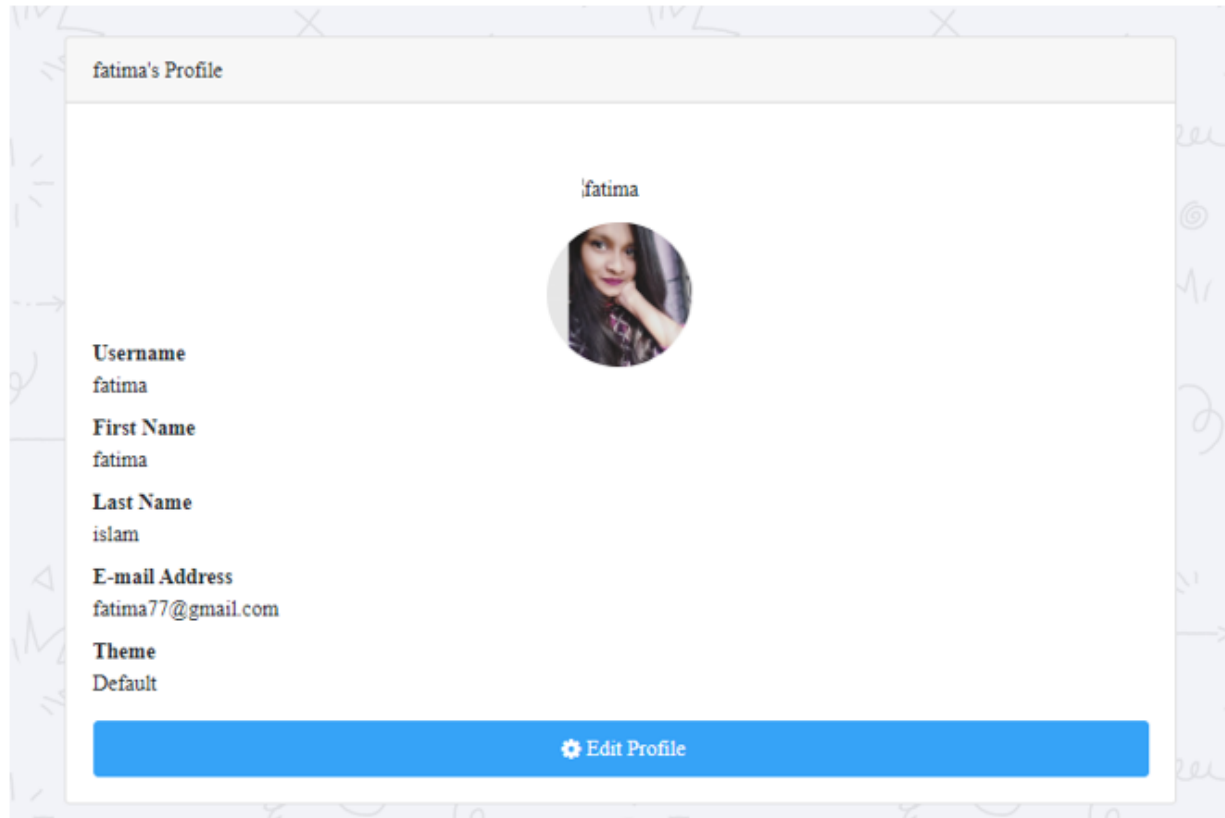


Figure 5.3.4: Profile page of Student panel

5.1 Account Setting page of Student panel:

Here student can edit/update her profile information.

Course Drive

Profile Settings	Username	fatima	
Account Settings	User Email	fatima77@gmail.com	
Account Administration	First Name	fatima	
	Last Name	islam	

Save Changes

Figure 5.3.5: Account setting page of Student panel

5.1 Password update page of Student panel:

Here student can edit/update her password information.

Course Drive

Profile Settings	Change Password	Delete Account
Account Settings	Change Password	
Account Administration	Password	
	Confirm Password	

Update Password

Figure 5.3.6: Password update page of Student page

5.2 Back-end Design

For the back-end design and development I used Laravel Framework. Laravel is open-source PHP web framework that is server-side programming language. It is used for the backend side of web development. This framework following the model-view-controller architectural pattern. I used this framework because it's easy to creating web application with an easy to use syntax, routing, authentication, sessions and catching. The back-end design is a terminology that receives the client's request and holds the logic to send a response back to the client.

Many of the languages used to build up the back-end design. SQL, PHP, Java, Python, Ruby and JavaScript. Finally, back-end design is the main fact of a website, if it doesn't work properly then the whole system will be failed.

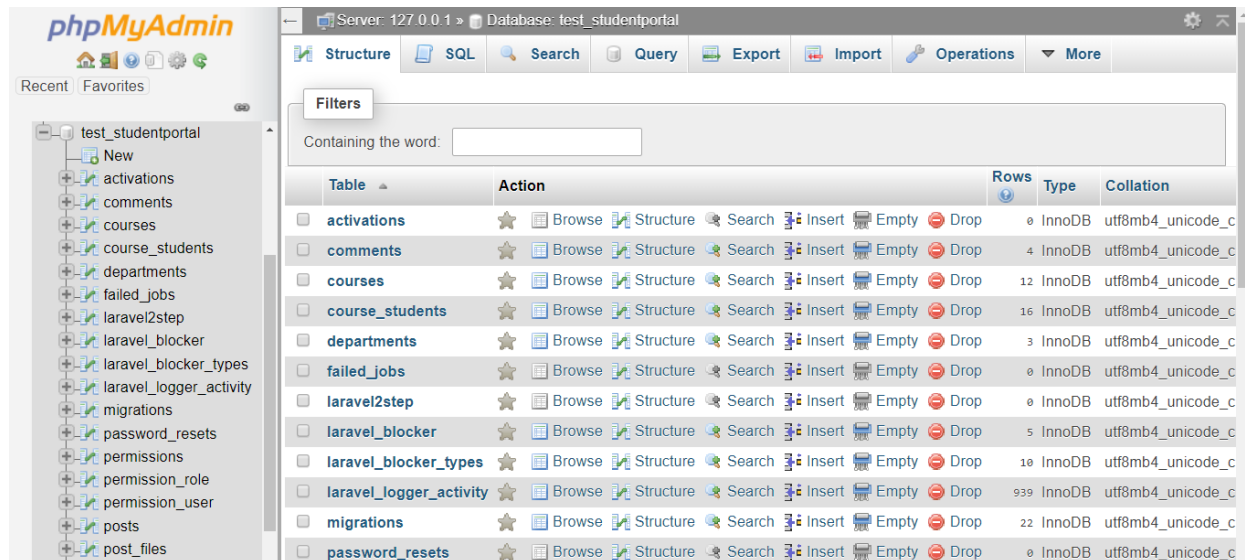
CHAPTER 6

IMPLEMENTATION & TESTING

6.1 Implementation of database

Database is morally the central part of the project. So, maintenance the database is immensely important and main part of our system. This database contains the collection of information which helps to access the data, manage and update. This information is organized logically so that it can be recuperated easily. Here I have used relational model where I can see if a user has permission to put the data directly. There have many database MySQL is also select by many popular websites for it user friendliness MySQL is popular user friendly.

There I have some tables in my DBMS given below:



The screenshot displays the phpMyAdmin interface for a database named 'test_studentportal'. The left sidebar shows a tree view of the database's structure, including tables like 'activations', 'comments', 'courses', 'course_students', 'departments', 'failed_jobs', 'laravel2step', 'laravel_blocker', 'laravel_blocker_types', 'laravel_logger_activity', 'migrations', 'password_resets', 'permissions', 'permission_role', 'permission_user', 'posts', and 'post_files'. The main panel shows the 'Structure' tab, which lists all tables in the database. Each table entry includes a star icon, a 'Browse' button, and a set of icons for 'Structure', 'Search', 'Insert', 'Empty', and 'Drop'. The table names are listed in the 'Table' column, and the 'Rows' column shows the number of rows for each table. The 'Type' and 'Collation' columns are also visible.

Table	Action	Rows	Type	Collation
activations	Browse Structure Search Insert Empty Drop	0	InnoDB	utf8mb4_unicode_c
comments	Browse Structure Search Insert Empty Drop	4	InnoDB	utf8mb4_unicode_c
courses	Browse Structure Search Insert Empty Drop	12	InnoDB	utf8mb4_unicode_c
course_students	Browse Structure Search Insert Empty Drop	16	InnoDB	utf8mb4_unicode_c
departments	Browse Structure Search Insert Empty Drop	3	InnoDB	utf8mb4_unicode_c
failed_jobs	Browse Structure Search Insert Empty Drop	0	InnoDB	utf8mb4_unicode_c
laravel2step	Browse Structure Search Insert Empty Drop	0	InnoDB	utf8mb4_unicode_c
laravel_blocker	Browse Structure Search Insert Empty Drop	5	InnoDB	utf8mb4_unicode_c
laravel_blocker_types	Browse Structure Search Insert Empty Drop	10	InnoDB	utf8mb4_unicode_c
laravel_logger_activity	Browse Structure Search Insert Empty Drop	939	InnoDB	utf8mb4_unicode_c
migrations	Browse Structure Search Insert Empty Drop	22	InnoDB	utf8mb4_unicode_c
password_resets	Browse Structure Search Insert Empty Drop	0	InnoDB	utf8mb4_unicode_c

Figure 6.1: whole database view

6.2 Implementation of Front-end Design

Front-end design have to be easy so that every user can access without any inconvenience. My intent was so that the ordinary people get access to easily. In this day of technology, we're using many devices like, smart phone, laptop, notebook, tablets form where everyone is using internet.

For this reason, I intended to make the website responsive so that the user has not to face any difficulties to browse from anywhere anytime. And I used HTML, CSS and JavaScript to make my website User Interface (UI). Implementation of interaction is important for any project development. Because, my project is a web based project, so I have to work with a lot of data. Many resources are used for this purpose. So I have to take care of this implementation part very unreservedly. So, I followed some rules for implementing the front-end design:

- I have three types of users: Admin, Teacher and Student.
- Every Teacher and Student has to be registered user for using this website.
- Teacher and Student can login using their registered account.

6.3 Testing Implementation

It is the process of testing implementation.to technology specification. This process serves the dual purpose of verifying that the specification is implement conform to the specification. This process helps to improve the quality and interoperability of implementations. The development of quality test materials helps enhance the quality of specification.

A web-based system needs to be checked completely from end-to-end before it goes live for end users. By performing website testing, an organization can make sure that the web-based system is functioning properly and can be accepted by real-time users. The UI design and functionality are the captains of website testing.

There I have some steps for testing implementation:

- 1) Functionality testing
- 2) Usability testing
- 3) Interface testing
- 4) Compatibility testing
- 5) Performance testing
- 6) Security testing

CHAPTER 7

CONCLUSION AND FUTURE SCOPE

7.1 Discussion and Conclusion

Although my ambition was to achieve a complete system that will have a highly accuracy. I have managed to develop a system and a guideline to on how an application can be developed for course management system based on web. I have face with many errors and fixed it. I designed this application interface is simply and well organized so that the user can easily cooperate with it. I tried to improve its accuracy and keep it acceptable by user. I tried my best for best result and keep user friendly. And I hope the user will be benefitted.

7.2 Outcome

- I learned how to architect a web application.
- Doing this project I got to know about many new things and I did a proper use of internet.
- And I learned how to complete the work according to the plan.

7.3 Limitation

- There have no major limitation in this project. I finished the project as I supervised but if there are other user requirements then this will be developed according to the requirements.
- User can't modify any types of data in this application.

6.2 Scope of Development for Future Suggested Work

The system has been developed with future development possibilities in consideration. I hope I could promote the system and reduce the limitation of the system.

This project also has the future scope of enhancement such as:

- More attractive user interface to make it more user friendly.
- Can add more feature.
- The reliability of the web application can be increase.
- I intend to implement an artificial intelligence.

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