Chapter 1

SYSTEM ANALYSIS

1.1 Existing System

Campus management involves a variety of activities related to the efficient and effective operation of educational institutions. This can include managing academic programs, student services, and administrative functions among other things. One important aspect of campus management is the use of technology to support these activities, such as the use of etlab in the KMCT School of Business.

Etlab is a web application that allows teachers to upload and manage various types of information related to their courses, including internals, attendance records, and course diaries. The system provides a centralized platform for managing this information, which can help to reduce the need for manual effort and increase efficiency. This can be especially beneficial in educational institutions where there are large numbers of students and faculty members, and a significant amount of information to manage.

Although students cannot currently use etlab in the KMCT School of Business, the system can still provide benefits for them indirectly. For example, by making it easier for teachers to manage their courses and keep track of important information, etlab can help to ensure that students receive high-quality instruction and are able to progress through their programs more efficiently. In addition, by freeing up faculty members' time, the system may allow them to devote more attention to individual students and provide better support and guidance.

Overall, the use of technology in campus management is an important trend that is likely to continue in the future. By adopting tools like etlab, educational institutions can improve their operations and provide better experiences for students, faculty, and staff alike.

1.2 Proposed System

Edulink is a campus management system used in the KMCT School of Business that provides a centralized platform for managing various administrative tasks of the college. It automates various activities such as student admission, course registration, faculty management, attendance, internals, and other activities related to students, teachers, and staff. The system is designed to be used by both teachers and students, providing them with access to important information and tools.

In Edulink, teachers can perform various activities such as adding special classes and substituting for another teacher in case of absences. The teacher substitution feature is particularly useful in managing scheduling of substitute teachers to ensure that classes are not disrupted. The system also includes a chat box that enables interaction between tutors and students, facilitating communication and collaboration.

The centralized platform provided by Edulink reduces the need for manual effort and increases efficiency in managing various administrative tasks. This allows teachers and staff to focus on other important activities such as providing quality instruction and supporting student development. By automating administrative tasks, Edulink helps to streamline processes and improve overall campus management.

Overall, Edulink is an important mobile tool for campus management in the KMCT School of Business, providing a wide range of features and benefits for teachers, students, and staff. Its user-friendly interface and automation of administrative tasks can help to improve the quality of education and student experience, while providing easy access to important information and tools.

Main activities of System are:

Login:

The login process is typically used to grant access to the system to authorized users, such as students, faculty, staff, and administrators.

Student Information Management:

Recording and maintaining student data, such as personal information, academic records, and financial information.

Course Management:

Scheduling courses, managing course offerings, and overseeing the development and implementation of course materials.

Faculty Management:

Recording and maintaining faculty data, hiring new faculty, scheduling faculty workloads, providing support to faculty members, and ensuring that faculty members are performing their duties effectively.

Attendance and Internals Management:

Recording student attendance and internals.

Study Materials and assignment:

Study materials and assignment data can be uploaded by teachers. Students peruse reading materials and upload homework. The uploaded assignments are viewable by teachers.

Suspend Class:

Admin can suspend class for whole day and tutor can suspend class for an hour.

Substitution:

Responsible for handling the scheduling of substitute teachers in the event of a teacher absence.

1.3 Module Description

1.3.1 Student Management Module:

.A student management module in a college management system would typically include features for managing student information, such as enrollment, attendance, grades, and academic progress.This module includes features for student admission, registration, enrollment, profile management

1.3.2 Faculty Management Module:

A faculty management module in a college management system is a software component that is designed to manage various aspects of faculty members, including their personal information, employment details, teaching assignments, course schedules, and performance evaluations. It may also facilitate communication between faculty members, administrators, and students, and provide tools for managing course materials, grades, and attendance.

1.3.3 Attendance Management Module:

An attendance management module in a college management system is a software component designed to help track and manage student attendance. The module typically includes features such as student.This module includes features for attendance tracking, monitoring, and reporting.

1.3.4 Internal Mark Management Module:

This module includes features for conducting and managing internal assessments, recording student grades.

1.3.5 Communication Module:

This module includes features for enabling communication and collaboration between teachers, students, and staff, such as chat boxes,notifications.

1.4 Feasibility Study

A feasibility study is an assessment of the practicality of a proposed plan or project. A feasibility study analyzes the viability of a project to determine whether the project or venture is likely to succeed. The study is also designed to identify potential issues and problems that could arise while pursuing the project.

1.4.1 Operational Feasibility

This assessment involves undertaking a study to analyze and determine whether and how well the organization's needs can be met by completing the project. Operational feasibility studies also examine how a project plan satisfies the requirements identified in the requirements analysis phase of system development. The new system or project can be used in day-to-day life which becomes more user-friendly for all users. This system is operationally feasible as it is very easy to operate. It helps the Owner to manage the operations. Also, the customers can easily view and order the bags.

1.4.2 Technical Feasibility

Evaluate the technical aspects of the project to determine if the proposed system can be developed and implemented with the available resources and technology. This includes a review of hardware and software requirements, compatibility with existing systems, and technical limitations.

1.4.3 Economic Feasibility

This assessment typically involves a cost/ benefits analysis of the project, helping organizations determine the viability, cost, and benefits associated with a project before financial resources are allocated.

1.5 System environment

During this phase, the detailed for implementation for the software and hardware requirements for the software out and inspected the details for the implementation of my project. The hardware and software requirements for installation for the smooth functioning of this project could be configured based on the requirements needed by the components for the operating environment that the project suggests for minimum configuration for both software and hardware component.

Developer Requirement

Hardware Requirement

- Processor: Intel Core i5

- RAM: 8 GB

- Storage: 500 GB Hard disk

Software Requirement

- Operating system: Windows 10 or above

- Front end: HTML, CSS, BOOTSTRAP,Flutter

- Back end: MySQL

- Languages: Python

- IDE: Visual studio code, Pycharm,Android Studio

- Web browser: Internet Explorer/Google chrome/Firefox

User requirement

- Any Smartphone/Computer/Desktop

- Stable Internet Access

1.6 Actors and Their Roles

Admin

The administrator in this system is responsible for overseeing the system's overall functioning and ensuring that it operates efficiently and effectively.

- Login

- Change password.

- Department management.

- Batch management.

- Course management.

- Notification management.

- Add faculty.

- Assign HOD and Tutor

- Add academic calendar.

- View attendance and internals.

- Suspend class for a day.

HOD

A college's head of Department (HOD) is a senior academic administrator responsible for overseeing the academic programs and faculty within a specific department.

- Login.

- Profile management.

- Change password.

- Subject management.

- Subject allocation.

- Timetable management.

- View students.

- View attendance and internals.

- Notification management.

Tutor

A tutor is in charge of a class's overall responsibility.

- Login.

- Profile management.

- Change password.

- View class allocations.

- Students management.

- View students.

- Chat with students.

- Attendance and internals management.

- Notification management.

- Suspend periods.

Teacher

A teacher in a college management system refers to an individual who is responsible for delivering educational content to students in a formal setting. Teachers play a critical role in shaping students' knowledge, skills, and attitudes, and are instrumental in helping students achieve their academic goals.

- Login.

- Profile management.

- Change password.

- View timetable.

- View assigned subjects.

- View students.

- Attendance and internals management.

- Upload study materials.

- Upload assignment details.

- View assignment details.

- Add substitution.

- Add special class.

Students

- Login.

- Profile management.

- Change password.

- View attendance and Internals.

- Request for medical leave.

- View timetable.

- View notification.

- View study materials.

- View assignment details.

- Upload assignments.

- Chat with tutor.

Chapter 2

METHODOLOGY

2.1 Introduction

The Agile methodology is used for this project. Agile software development refers to several methods for creating software in which end users, customers, and self-organizing, cross-functional teams work together to produce requirements and solutions. It promotes flexible and quick responses to change, as well as adaptive planning, evolutionary development, early delivery, and continuous improvement. It is a method for project management that involves constant communication and iterative development. These principles and the frameworks for putting them into practice, such as Scrum, Kanban, Extreme Programming (XP), and the Adaptive Project Framework, are now referred to as "agile" (APF). One thing that separates Agile from other approaches to software development is the focus on the people doing the work and how they work together. Solutions evolve through collaboration between self-organizing cross-functional teams utilizing the appropriate practices for their context.

2.2   Uml Diagrams

2.2.1   Use case Diagram
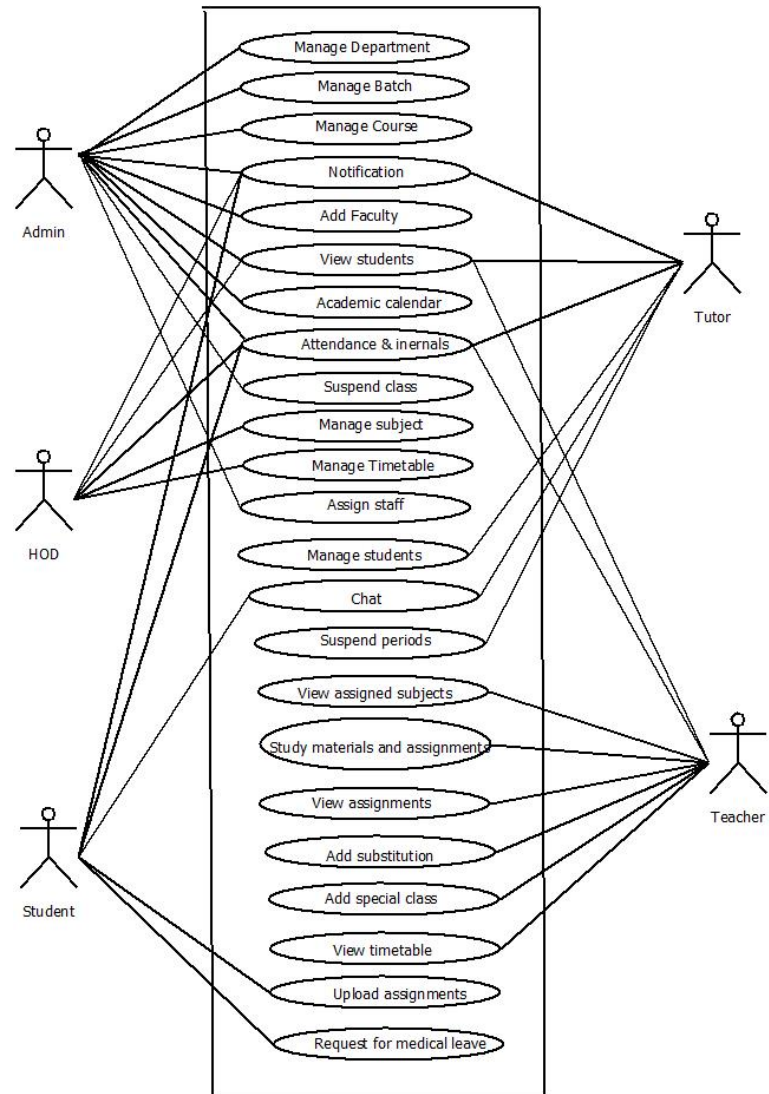
Figure 2.1: Use case diagram

2.2.2 Class Diagram
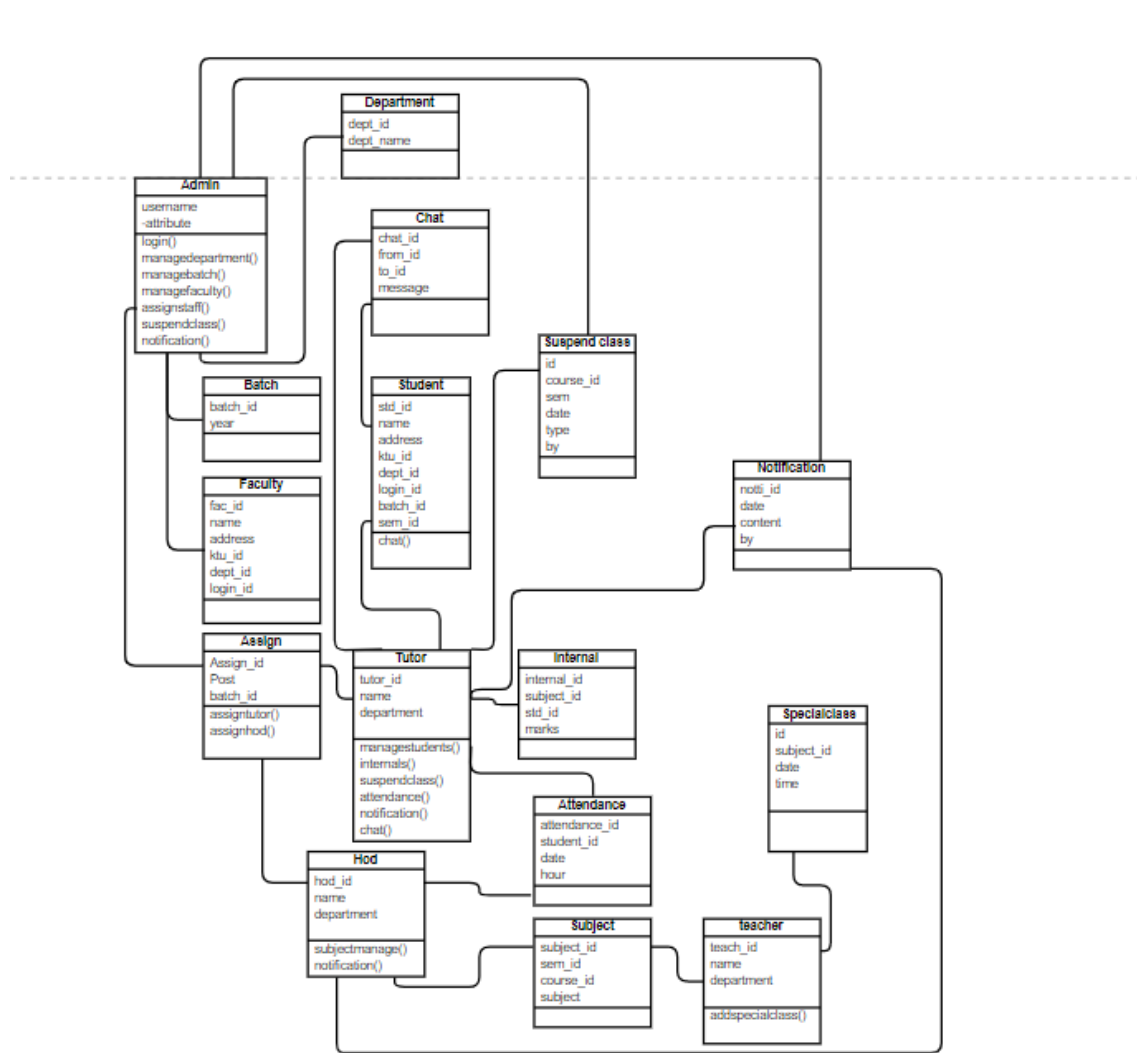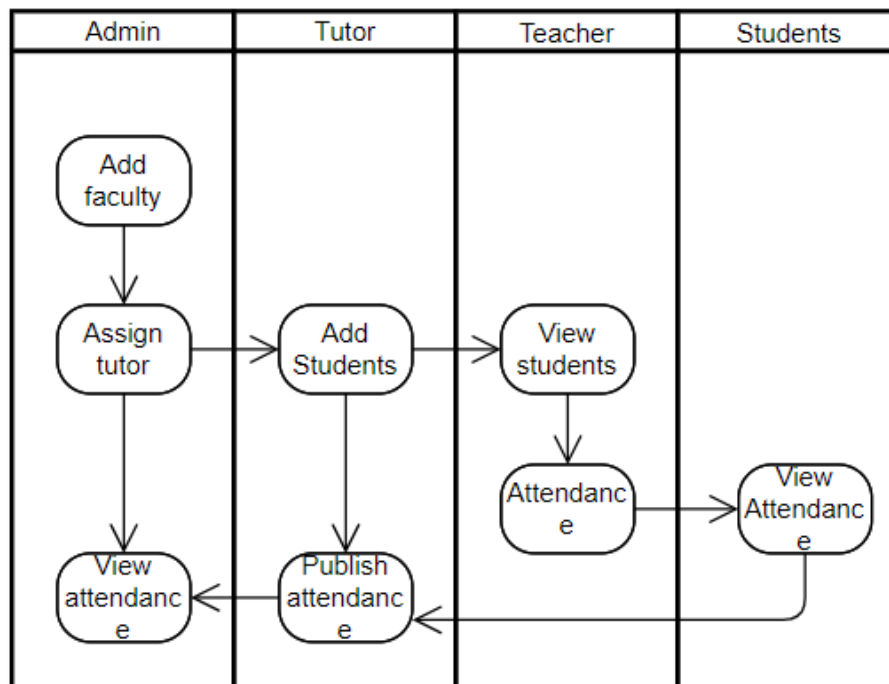

Figure 2.2: Class Diagram

2.2.3 Activity Diagram

Figure 2.3: Activity Diagram

2.3 User Story

User story ID	As a <Type of Users >	I want to <Perform some task >	So that I can <Achieve some goal >
1	Admin	Login	Admin access the system
2	Admin	Department Management	Can add, view, update, and delete departments.
3	Admin	Course Management	Can add, view, update, and delete courses.
4	Admin	Batch Management	Can add, view, update, and delete batches.
5	Admin	Add Faculty	Can add faculties.
6	Admin	Assign Hod ,Tutor	Can assign HOD and Tuor.
7	Admin	Academic calendar	Can add, view, update, and delete the academic calendar.
8	HOD, Tutor, Teacher, Students	Login	All users can log in to the system.
9	HOD, Teacher, Tutor, Students	Profile management	All users can manage their profile.
10	HOD	Subject Management	Manage subjects and allocate subjects for tutors.
11	HOD	Timetable Management	Manage timetables for all classes.

User Story

User story ID	As a <Type of Users >	I want to <Perform some task >	So that I can <Achieve some goal >
12	Tutor	View allocated class	Tutor can view the allocated class for them.
13	Tutor	Student Management	Tutor can add, delete, update, and view all students.
14	Tutor	View assigned subjects	Tutor can view assigned subjects for them.
15	Teacher	View students	Teacher can view all students.
16	Teacher	View assigned subjects	Teacher can view assigned subjects for them.
17	Teacher	View timetable	Teacher can view timetables.
18	Teacher	Academic calendar	Can View academic calendar.
19	Teacher	Add substitution	Can add substitution for periods.
20	Student	View timetable	Student can view timetables.
21	Student	Academic calendar	Can View academic calendar.

User Story

User story ID	As a <Type of Users >	I want to <Perform some task >	So that I can <Achieve some goal >
22	Teacher	Attendance Management	Can view and manage attendance.
23	Teacher	Internals Management	Can View and manage internals.
24	Tutor	Publish attendance and internals	Can publish attendance. and internals
25	HOD	View students	Can View students
26	HOD	Attendance and Internals	Hod view attendance , internals.
27	Students	Attendance and Internals	Can View Attendance and Internals.
28	Students	Request for medical leave	Can upload medical leave certificates.
29	Admin	Attendance and Internals	Can View Attendance and Internals.
30	Teacher	Study materials	Can upload study materials.
31	Students	Study materials	Can view study materials.
32	Teacher	Assignment	Can upload assignment details and view assignments submitted.
33	Students	Assignment	Can view assignment details and upload assignments.

User Story

User story ID	As a <Type of Users >	I want to <Perform some task >	So that I can <Achieve some goal >
34	Admin,HOD, Teacher,Tutor, Students	Notification	Can send and view notifications.
35	Tutor	Chat	Can chat with students.
36	Students	Chat	Can chat with tutors.
37	Admin	Suspend class	Can suspend class for a day.
38	Tutor	Suspend class	Can suspend class for periods.
39	Teacher	Special class	Can add special classes.
40	Students	Special class	Can view special classes.

2.4 Database design

2.4.1 Login

The Login table contains the login id and password, and an already registered user can log in to the account.

Name	Type	Constraint	Description
Login_id	Int	Primary key	Login id for user.
Username	Varbinary(20)	Notnull	Users username.
Password	Varbinary(20)	Notnull	User account password
Type	Varchar(20)	Notnull	Type of user.

Table 2.1: Login table

2.4.2 Department

The table contains the details of the department.

Name	Type	Constraint	Description
Dept_id	Int	Primary key	Departments id .
Deptname	Varchar(20)	Notnull	Department names.

Table 2.2: Department table

2.4.3 Faculty

The table contains the details of the faculty.

Name	Type	Constraint	Description
Faculty_id	Int	Primary key	Faculty id for user.
Ktu_id	Varchar(20)	Notnull	Username.
Login_id	Int	Foreign key	Login id for Faculty .
Firstname	Varchar(20)	Notnull	First name of faculty
Lastname	Varchar(20)	Notnull	Last name of faculty.
Photo	Varchar(50)	Notnull	Photo of faculty.
Housename	Varchar(20)	Notnull	Housename of faculty.
Place	Varchar(20)	Notnull	Place of faculty.
Post	Varchar(20)	Notnull	Post of faculty.
Pin	Varchar(20)	Notnull	Pin of faculty.
District	Varchar(20)	Notnull	District of faculty.
Email	Varbinary(20)	Notnull	Email id of faculty.
Ph_no	Varchar(20)	Notnull	Phone number of faculty.
DOB	Varchar(20)	Notnull	Date of birth of faculty.
Certificate	blob	Notnull	Certifictaes uploaded.
Dept_id	Int	Foreign key	Departments id.

Table 2.3: Faculty table

2.4.4 Student

The table contains details of students.

Name	Type	Constraint	Description
Student_id	Int	Primary key	students id.
Ktu_id	Varchar(20)	Notnull	Username.
Login_id	Int	Foreign key	Login id for user.
Firstname	Varchar(20)	Notnull	First name of students
Lastname	Varchar(20)	Notnull	Last name of students.
Photo	Varchar(50)	Notnull	Photo of students.
Housename	Varchar(20)	Notnull	Housename of students.
Place	VarcharVarchar(20)	Notnull	Place of students.
Post	Varchar(20)	Notnull	Post of students.
Pin	Varchar(20)	Notnull	Pin of students.
District	Varchar(20)	Notnull	District of students.
Email	Varbinary(20)	Notnull	Email id of students.
Ph_no	Varchar(20)	Notnull	Phone number of students.
DOB	Varchar(20)	Notnull	Date of birth of students.
Certificate	Blob	Notnull	Certifictaes uploaded.
Course_id	Int	Foreign key	Course id.
Dept_id	Int	Foreign key	Departments id.
Batch_id	Int	Foreign key	Batch id.
Sem_id	Int	Foreign key	Semester id.

Table 2.4: Student table

2.4.5 Course

The table contains the details of the Course.

Name	Type	Constraint	Description
Course_id	Int	Primary key	Course id .
Coursename	Varchar(50)	Notnull	Name of the courses .
Dept_id	Int	Foreign key	Departments id .
Sem_id	varchar(20)	Notnull	semester.

Table 2.5: Course table

2.4.6 Semester

The table contains the details of the Semester.

Name	Type	Constraint	Description
Sem_id	Int	Primary key	Batch id .
Semester	Varchar(50)	Notnull	semesters .

Table 2.6: Semester table

2.4.7 Batch

The table contains the details of the Batch.

Name	Type	Constraint	Description
Batch_id	Int	Primary key	Batch id .
Year	Varchar(50)	Notnull	Year of the batch .
Course_id	Int	Foreign key	Course id .

Table 2.7: Batch table

2.4.8 Assign Staff

The table contains the details assigned staff,hod and tutor .

Name	Type	Constraint	Description
Assign_id	Int	Primary key	Id for assign .
Batch_id	Int	Foreign key	Batch id .
Post	Varchar(20)	Notnull	The post assigned to staff.

Table 2.8: Assign table

2.4.9 Subject

The table contains the details of the subjects .

Name	Type	Constraint	Description
Subject_id	Int	Primary key	Subject id .
Subject	Varchar(50)	Notnull	Name of the subjects .
Syllabus	Varchar(50)	Notnull	Syllabus of the subjects .
Course_id	Int	Foreign key	The course which subject belongs.
Sem_id	Int	Foreign key	Semester id .

Table 2.9: Subject Allocation table

2.4.10 Subject Allocation

The table contains the details of the subjects allocated for staff.

Name	Type	Constraint	Description
Sub_id	Int	Primary key	Departments id .
Subject_id	Int	Foreign key	Subject id .
subject	Varchar(50)	Notnull	subject which is allocated .
Faculty_id	Int	Foreign key	Faculty id .

Table 2.10: Subject Allocation table

2.4.11 Timetable

The table contains timetable details.

Name	Type	Constraint	Description
Time_id	Int	Primary key	Timetable id .
subject_id	Int	Foreign key	subject id .
Day	Varchar(50)	Notnull	timetable day .
Hour	Varchar(50)	Notnull	The hours in timetable .

Table 2.11: Timetable table

2.4.12 Internal

The table contains internal details.

Name	Type	Constraint	Description
Internal_id	Int	Primary key	Internals id .
subject_id	Int	Foreign key	subject id .
student_id	Int	Foreign key	student id .
attend_id	Int	Foreign key	Attendance id .
assignment_id	Int	Foreign key	assignment id .
series_id	Int	Foreign key	series exam id .
Mark	Varchar(50)	Notnull	Internal marks of students .

Table 2.12: Internal table

2.4.13 Attendance

The table contains Attendance details.

Name	Type	Constraint	Description
attend_id	Int	Primary key	Attendance id .
student_id	Int	Foreign key	student id .
Date	Varchar(50)	Notnull	Date in which attendance marked .
Hour	Varchar(50)	Notnull	The period in which attendance marked .
Mark	Varchar(50)	Notnull	The internal mark from attendance.

Table 2.13: Attendance table

2.4.14 Assignment details

The table contains details of the Study Materials.

Name	Type	Constraint	Description
assignment_id	Int	Primary key	material id .
subject_id	Int	Foreign key	subject id .
faculty_id	Int	Foreign key	faculty id .
assignment_name	Varchar(50)	Notnull	Topic for assignments.
Date	Varchar(50)	Notnull	Submission date for assignments.
Mark	Varchar(50)	Notnull	Marks obtained for assignments.

Table 2.14: Assignment details

2.4.15 Series Exam

The table contains the details of the series exam.

Name	Type	Constraint	Description
series_id	Int	Primary key	series exam id .
subject_id	Int	Foreign key	subject id .
Date	Varchar(50)	Notnull	Date in which exams conducted.
Mark	Varchar(50)	Notnull	Marks obtained for exams.

Table 2.15: Series Exam

2.4.16 Study Materials

The table contains details of the Study Materials.

Name	Type	Constraint	Description
material_id	Int	Primary key	material id .
subject_id	Int	Foreign key	subject id .
Content	Blob	Notnull	contents in the study material.

Table 2.16: Study Materials

2.4.17 Chat

The table contains details of the Chats.

Name	Type	Constraint	Description
chat_id	Int	Primary key	chat id .
from_id	Int	Notnll	from id of the chat.
to_id	Int	Notnull	to id of the chat .
Date	Varchar(50)	Notnull	date in which message send.
Message	Varchar(50)	Notnull	the content of the message.
Reply	Varchar(50)	Notnull	the reply of the message.

Table 2.17: Chat

2.4.18 Notification

The table contains details of the Notifications.

Name	Type	Constraint	Description
note_id	Int	Primary key	Notifications id .
Date	Varchar(50)	Notnull	date in which message send.
Content	Varchar(50)	Notnull	the content of the message.
By	Varchar(50)	Notnull	who sends notification.

Table 2.18: Notification

2.4.19 Suspended class

The table contains suspended class details.

Name	Type	Constraint	Description
suspend_id	Int	Primary key	Suspended class id .
Course_id	Int	Foreign key	Course id .
Date	Varchar(50)	Notnull	Date of class suspended .
Sem	Varchar(50)	Notnull	Semester details .
Hour	Varchar(50)	Notnull	which hour the class suspended .
Type	Varchar(50)	Notnull	full day or an hour .
Sus_by	Varchar(50)	Notnull	suspended by admin or hod .
Reason	Varchar(50)	Notnull	Reason for class suspension .

Table 2.19: Suspended class

2.4.20 Special class

The table contains Special class details.
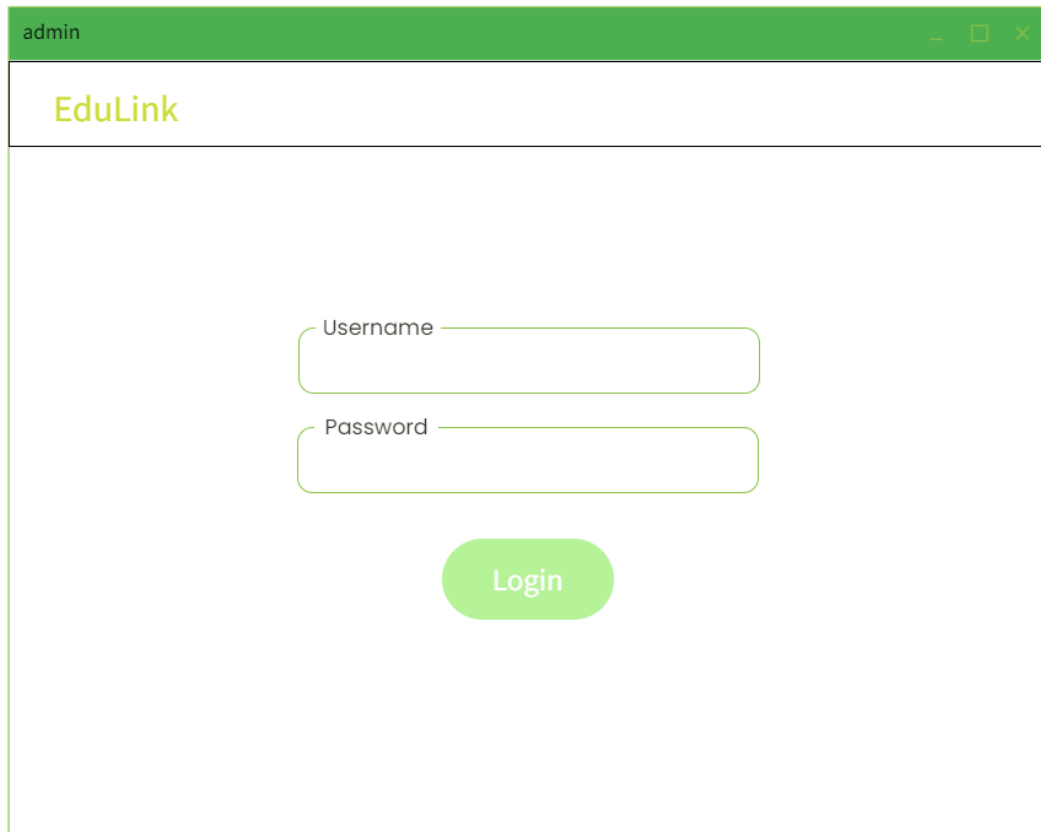
Name	Type	Constraint	Description
spl_id	Int	Primary key	Suspended class id .
Subject_id	Int	Foreign key	subject id .
Date	Varchar(50)	Notnull	Date of class .
Time	Varchar(50)	Notnull	Time of the class .

Table 2.20: Special class

2.5 UserInterfaceDesign

2.5.1 Login

Login page for admin

Figure 2.4: Login

2.5.2 Department Management

Figure 2.5: DepartmentManagement

2.5.3   Batch_Management
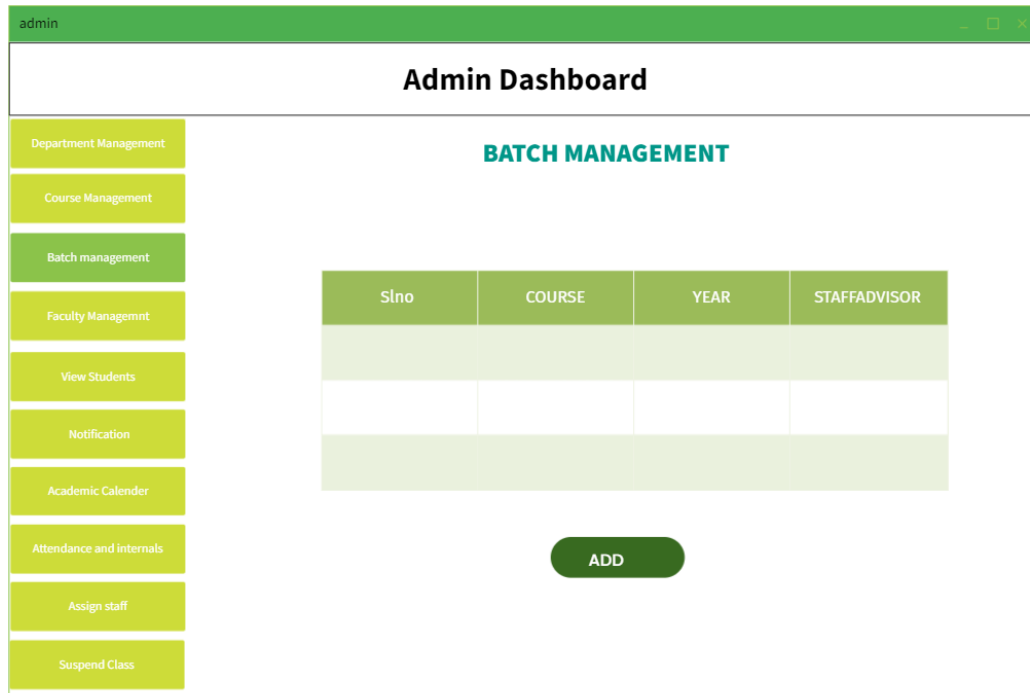
Figure 2.6: Batch_Management

2.5.4 View_Students

Figure 2.7: View_Students

2.5.5 View_Faculty

Figure 2.8: View_Faculty

2.5.6 Assign_Staff

Figure 2.9: Assign_Staff

2.5.7 User Login

Figure 2.10: Login

2.5.8   HOD
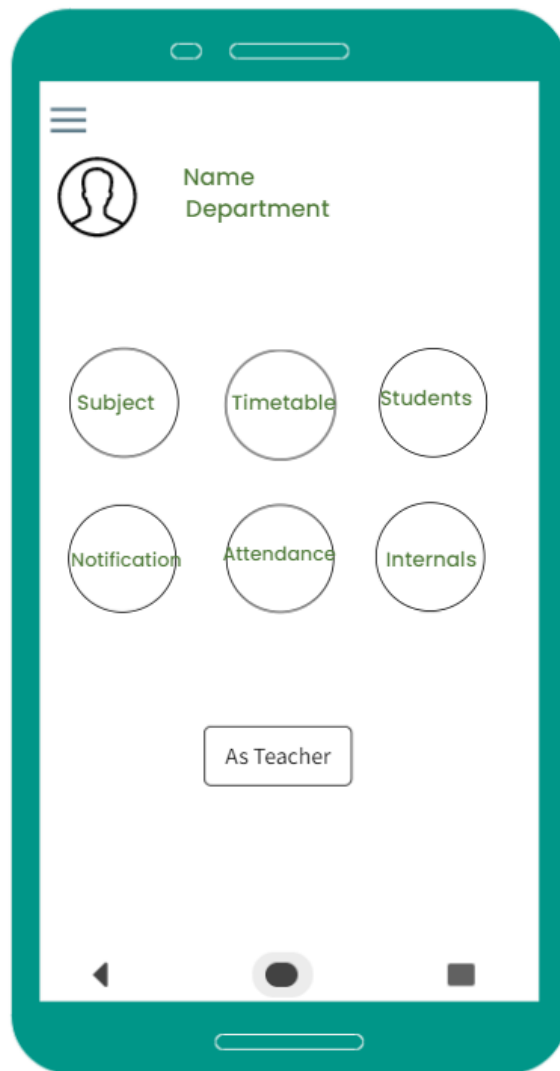
Figure 2.11: hod

2.5.9 MenuBar
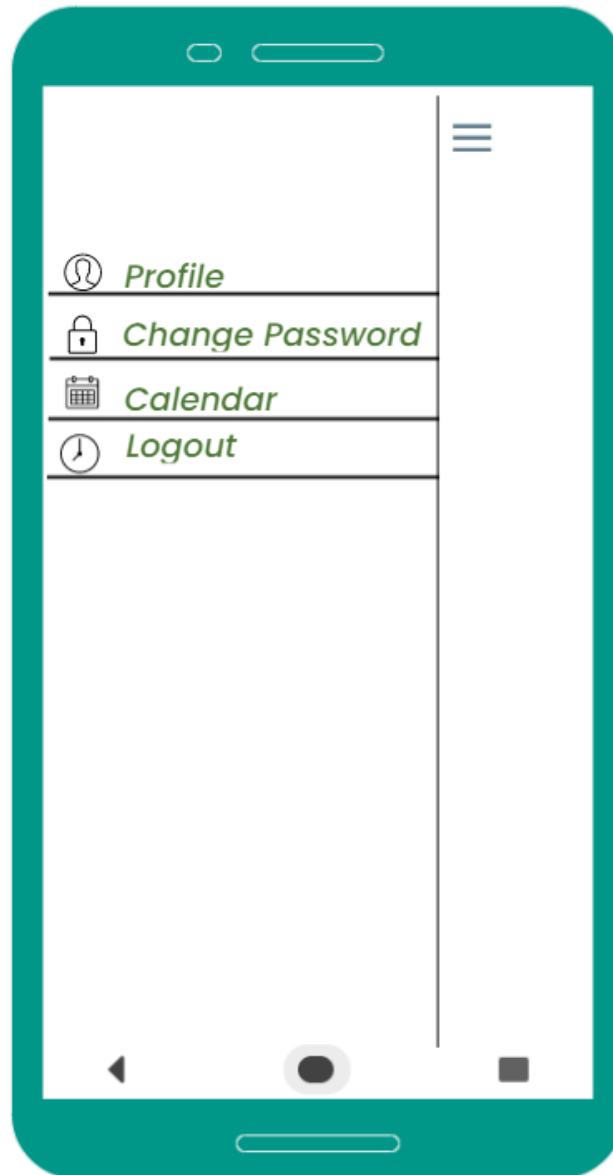
Figure 2.12: MenuBar

2.5.10 Tutor
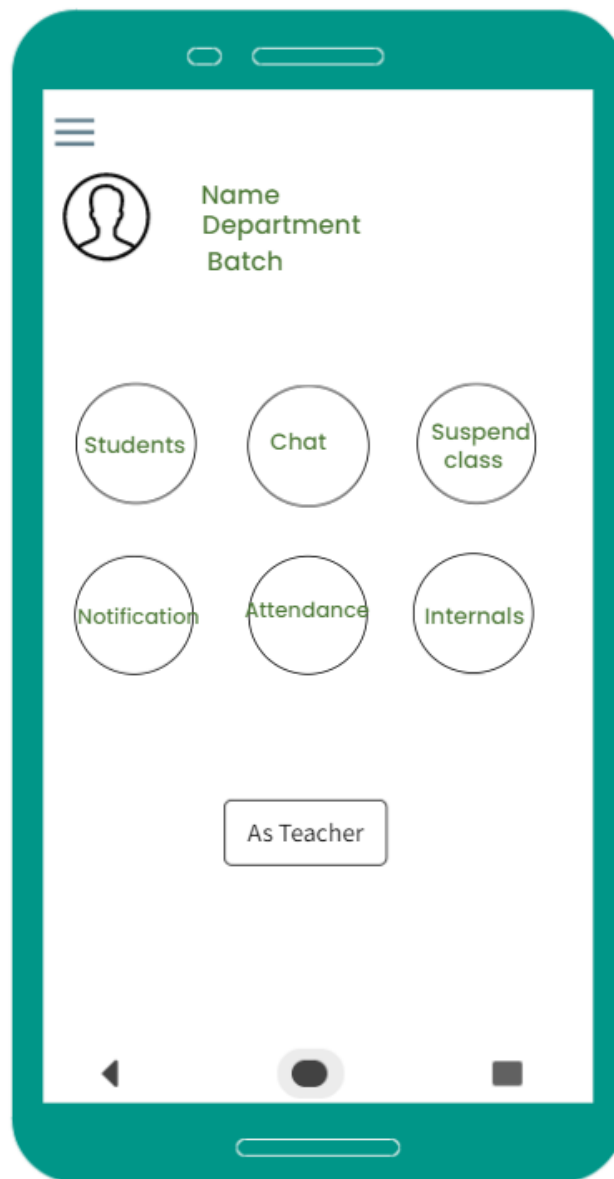
Figure 2.13: Tutor

2.5.11 Teacher
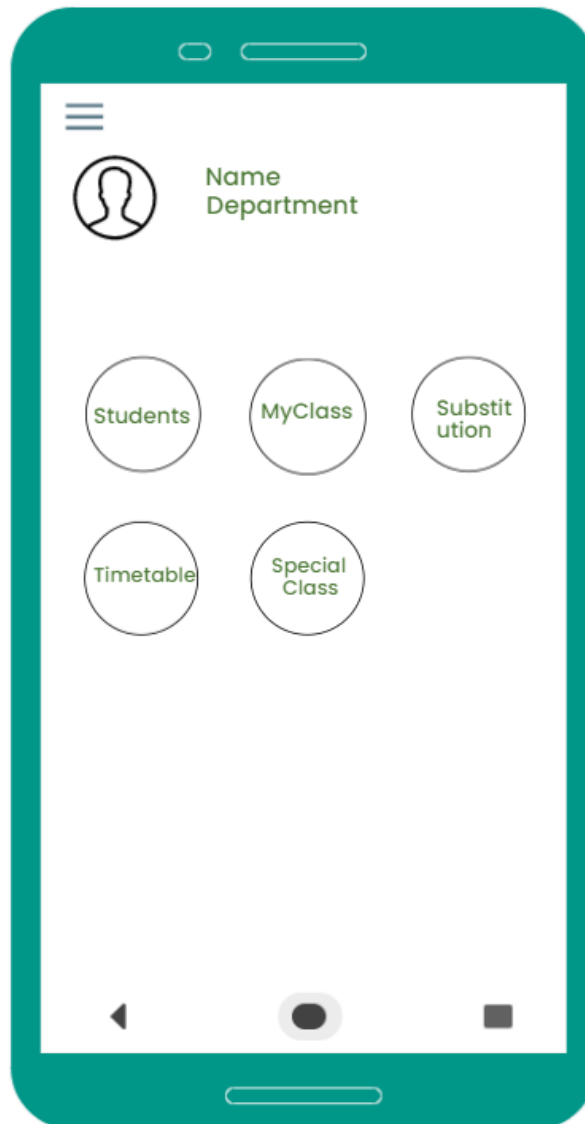
Figure 2.14: Teacher

2.5.12 Student
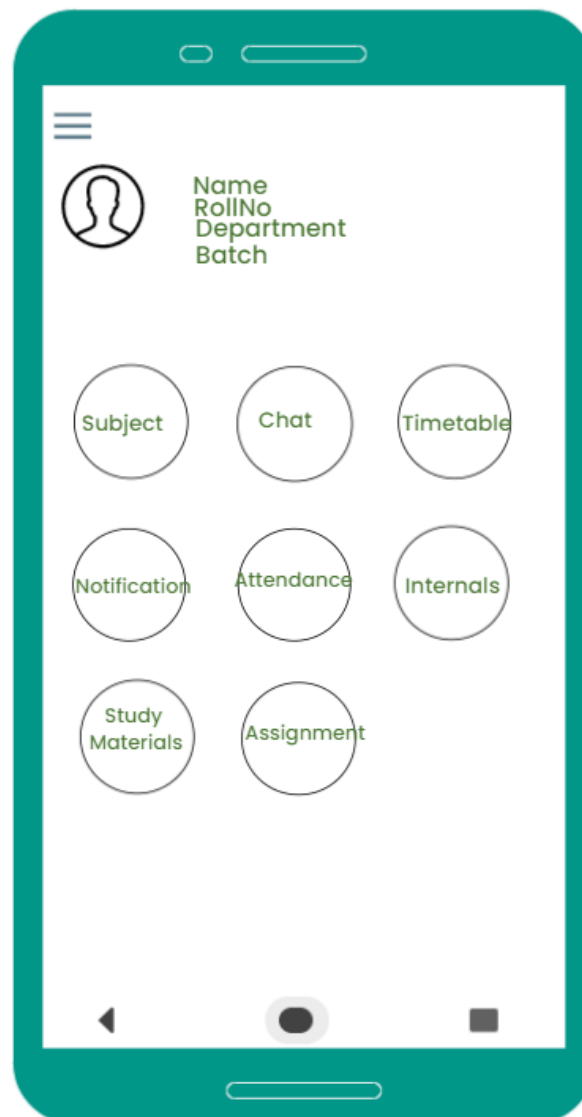
Figure 2.15: Student

2.5.13 Subjects

Students view subjects and syllabus in semester wise.
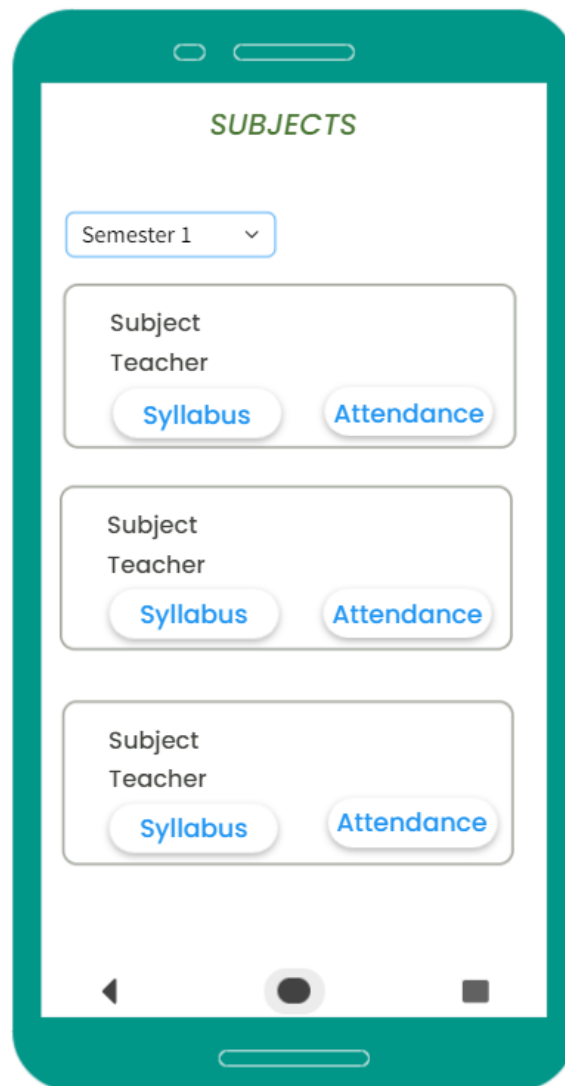
Figure 2.16: Subjects

2.5.14 Chat

Chat is for students and tutors to communicate each other.
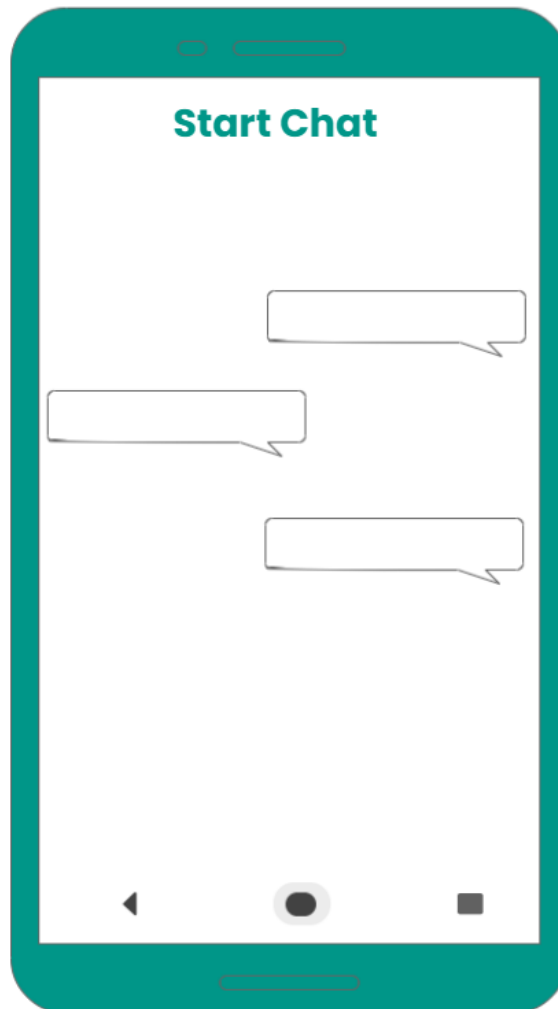
Figure 2.17: Chat

2.5.15 Timetable

Students view the timetable and special class details.

Figure 2.18: Timetable

2.5.16 Notification

Notification for all users
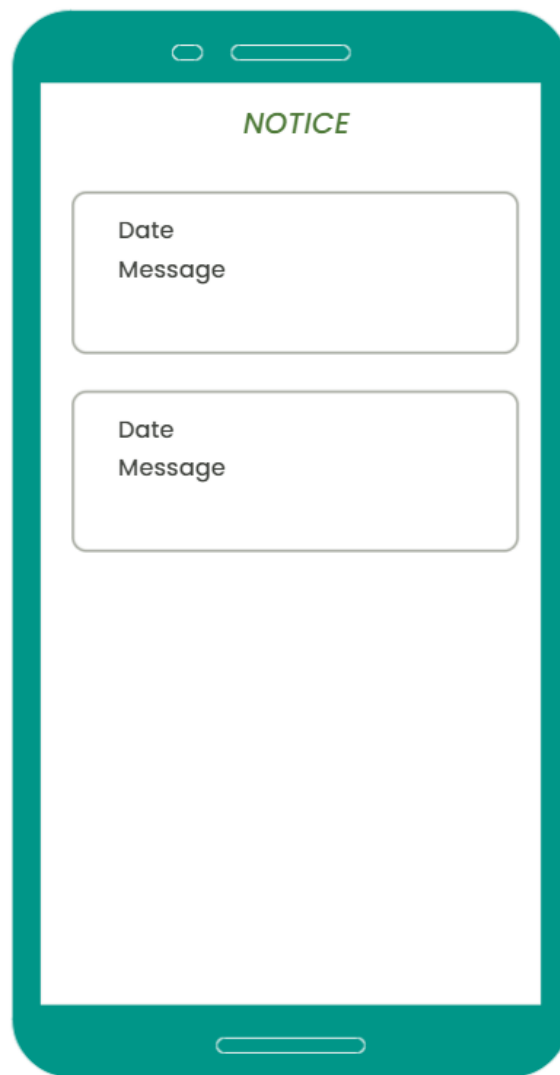
Figure 2.19: Notification

2.5.17 Study_Materials

Students can view and download study materials.
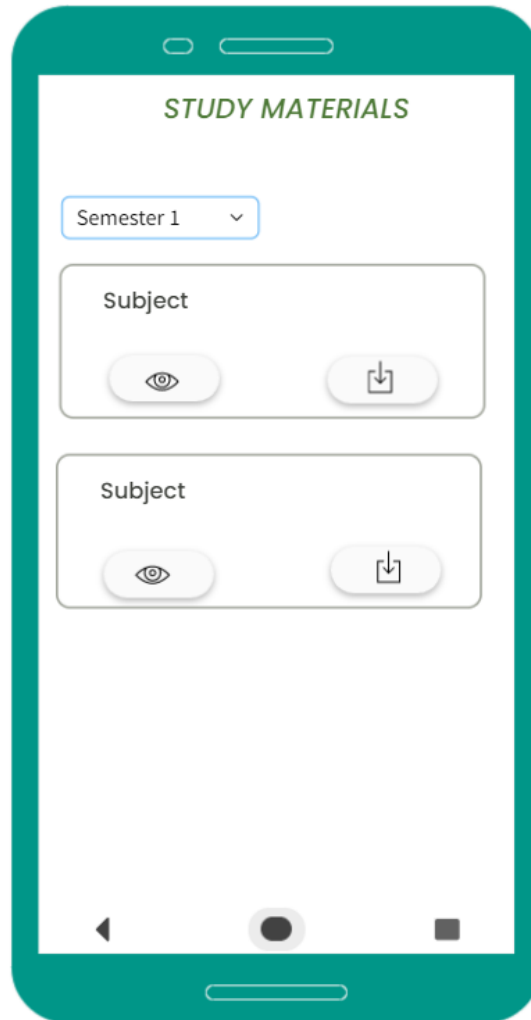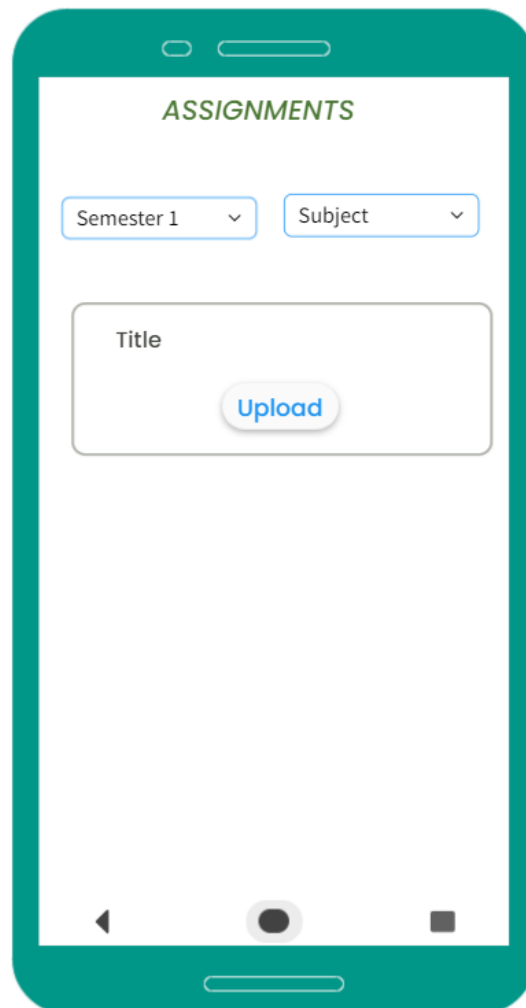
Figure 2.20: Study Materials

2.5.18 Assignments

Students can view and upload assignments.

Figure 2.21: Assignments

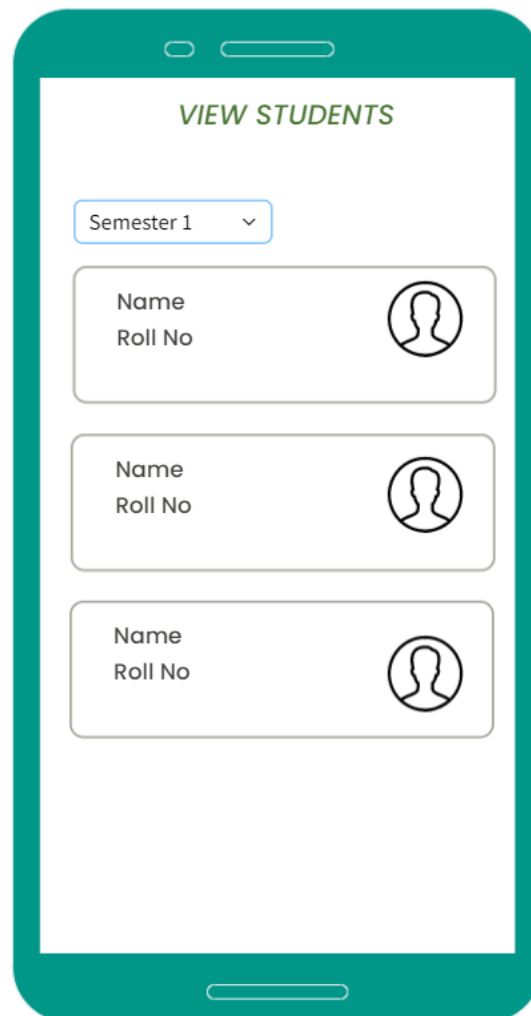### 2.5.19 View Students

Teachers view all students.

Figure 2.22: View students

2.5.20 My_Class

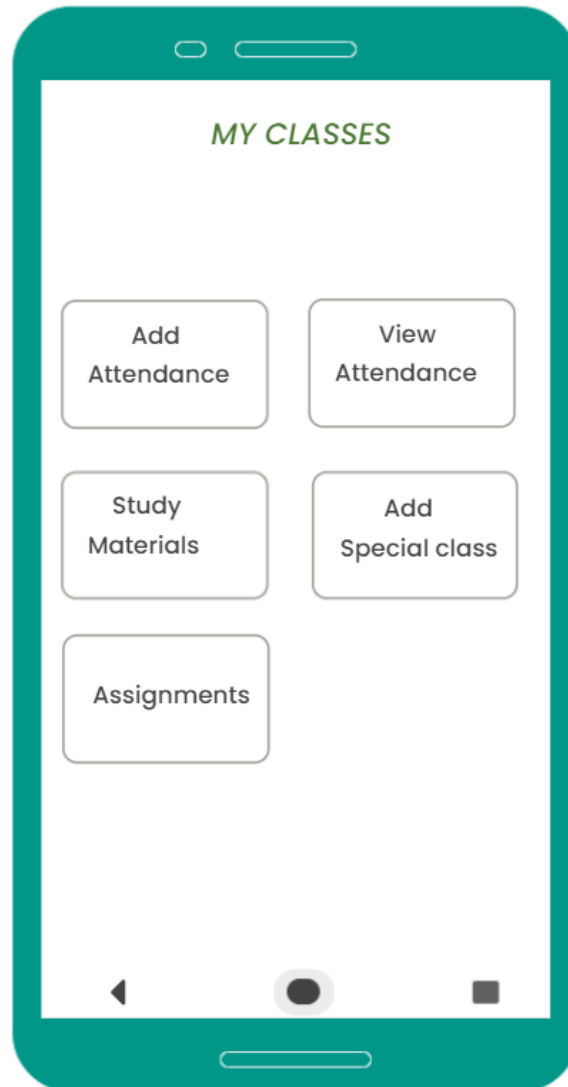Teachers view their class ,add attendace,upload study materials,assignments etc.

Figure 2.23: My class for teacher