Web-Based
Student Management System
for Alpha Institute

ITE 3962 - Project 2021S2

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Introduction to Company

Alpha Institute of Higher Education is home to all A/L stream students. They provide service throughout the year targeting A/L exams.

Currently, Alpha institute has over 20 teachers lecturing every week. There are approximately 200 students currently enrolled in this institution. A steady increase in numbers can be observed month after month.

Problem in brief

Private tutoring is growing rapidly in Sri Lanka. Each year, Alpha Institute enrols a greater number of students .This particular institute uses a manual student management system to keep running.

It is frustrating for the institute's staff and students to spend their time on something that could have been solved with a solution.

At Alpha Institute, student management faces a number of challenges,

- manual monitoring of student payments
- time-consuming process
- Increase in paper usage
- Prone to error
- Less safe and secure
- Decrease Productivity of Employees
- Limited Access to Reports and Data

Solution in brief

A web-based student management system that tracks profiles, payments, and fees. It keeps track of all profile, student, fee, and profile-related information.

In addition, timetable management,complaints management and attendance management are included in this system.

Aim

- To reduce paper expenses by 90% over the next year.
- To Increase overall brand awareness all over Gampaha city.
- To develop a web application to address the alpha institute student management system using cloud and web technologies.

Literature Review

To evaluate the important functions, Tuition Class Fees Management System and eSkooly Online School Management Software have been selected as similar systems.

Features	System 1 – CFMS [3]	System 2 - eskooly [4]	Proposed System
Attendance Management	Yes	Yes	Yes
Fee Management	Yes	Yes	Yes
Student Profile Management	Yes	Yes	Yes
LearningMaterialManagement	Yes	Yes	No
Parant Communication (alerts)	Yes	No	No
Report Generation	Yes	Yes	Yes
Salary Calculation	Yes	No	No
Timetable Management	Yes	No	Yes
Complaint Management	No	No	Yes
Ratings and Reviews	No	No	Yes
Cloud Based	Yes	Yes	Yes
Live classes	No	Yes	No
Infographics & Animations	Yes	Yes	Yes

CFMS

CFMS is a comprehensive tuition class management system that offers a wide range of features, including scheduling, invoicing, and student management.

It has a user-friendly interface and integrates with other tools such as SMS gateways. Due to its cloud-based nature, this software is very portable and can be accessed through a variety of devices. CFMS give Access the system from multiple devices at the same time.

This system focuses on administrative operations of a tuition class institution.it doesn’t include student side of the system.

It can be expensive for small tuition classes. Ideal for medium or large-scale institutions who are well established and have the budget to fully purchase the system.

eSkooly

eSkooly is a completely free online school management software. It has features like Managing students, staff, timetable, exams, class test, attendance, fees collection, accounts, etc.

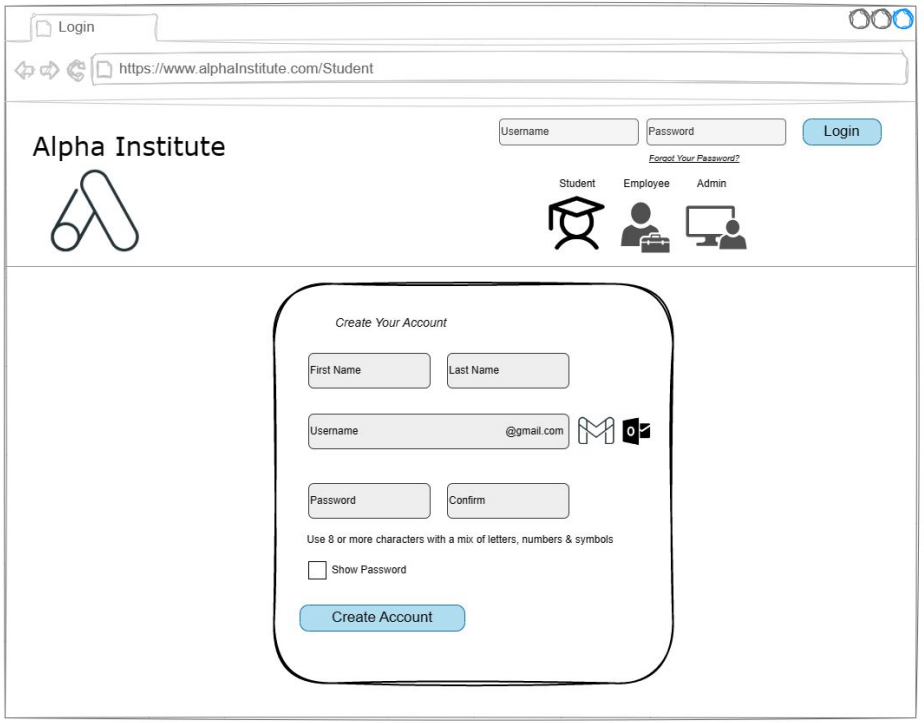
eSkooly also cloud based application, can access it from anywhere, anytime using any device. It has Admin Portal, Students/Parents Portal, Employees Portal. An admin portal with full controls, separate portals for Management staff, Accountant, Teachers, Parents, and Students.

It has messaging and file sharing option which can allow real-time chat with every individual associated with institution

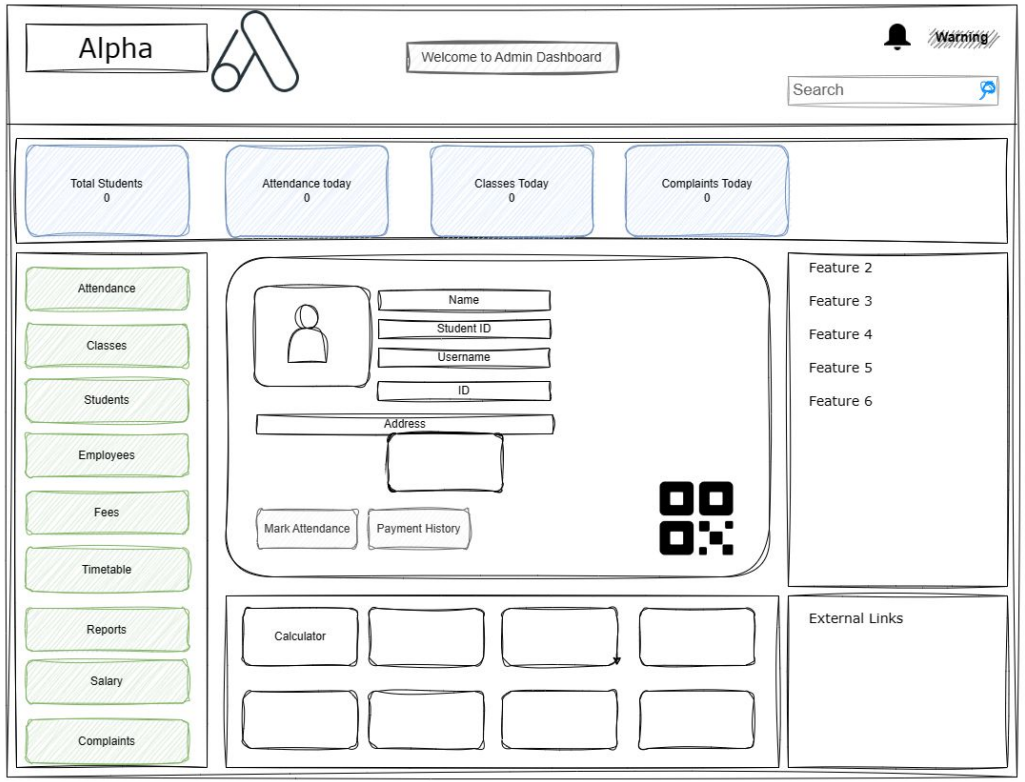
Users can download and install free mobile application via google play or apple app store and desktop version for Windows, MacOS, and Linux via eskoly website. Free online live classes option is also available on the system.

Sample Interfaces of the System

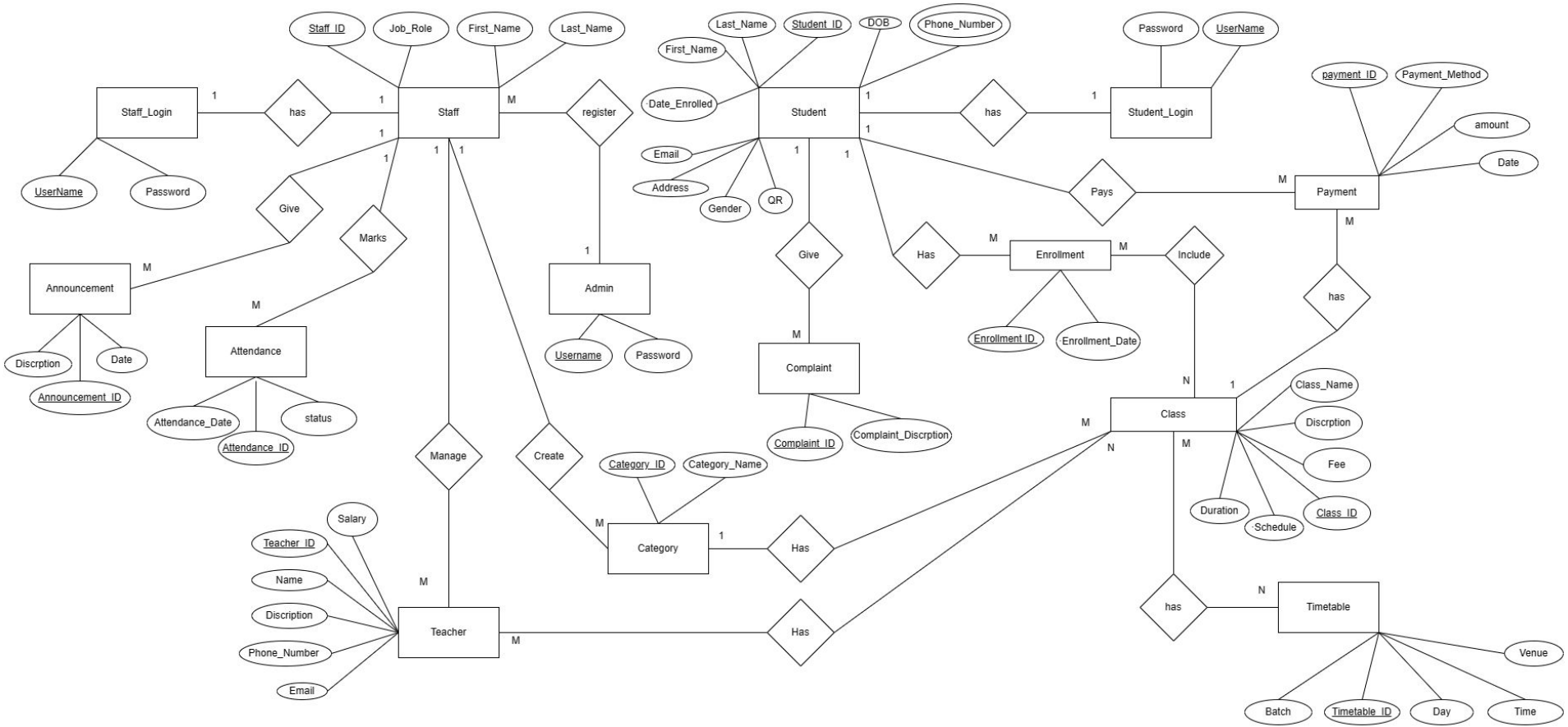
Login Page: The login page will allow users to enter their email and password to access the system. The login page can also have an option for users to reset their password if they forget it.



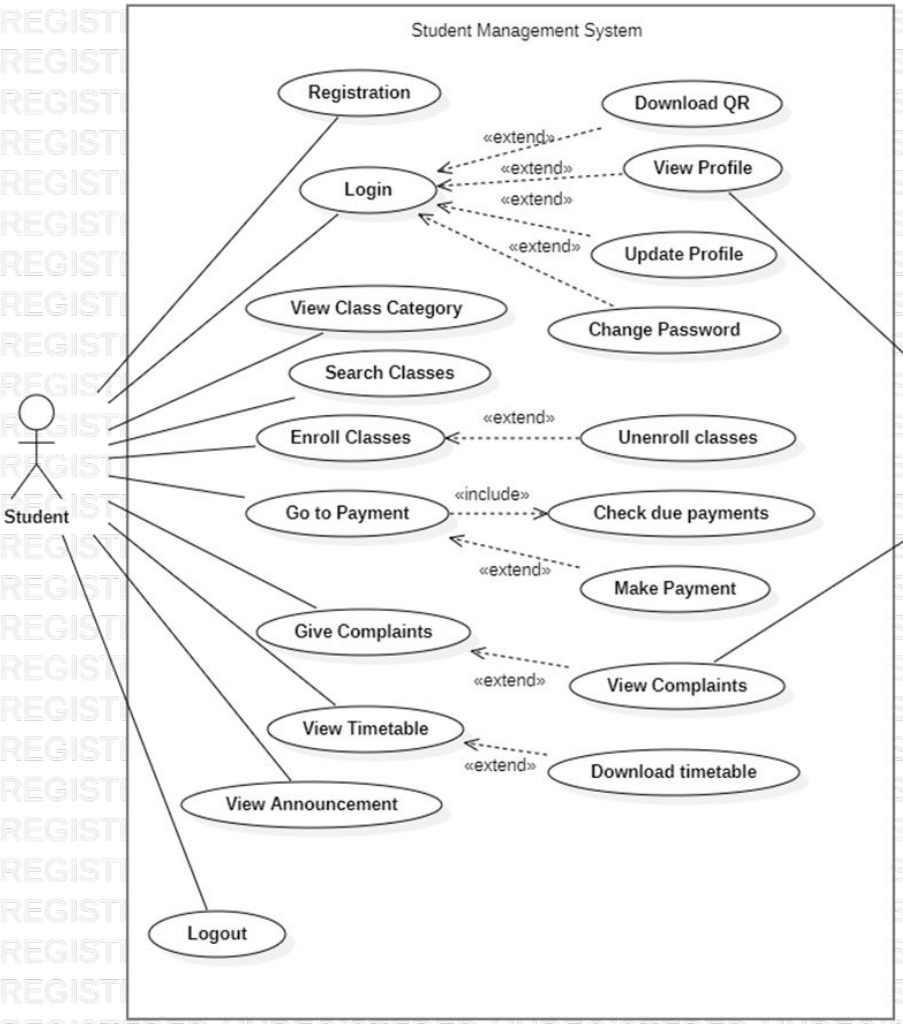
Dashboard Page: The dashboard page will provide users with an overview of their enrolled classes, upcoming classes, and recent announcements. Users can access various functionalities of the system, such as enrolling in new classes, managing existing courses, and accessing attendance reports, from the dashboard page.

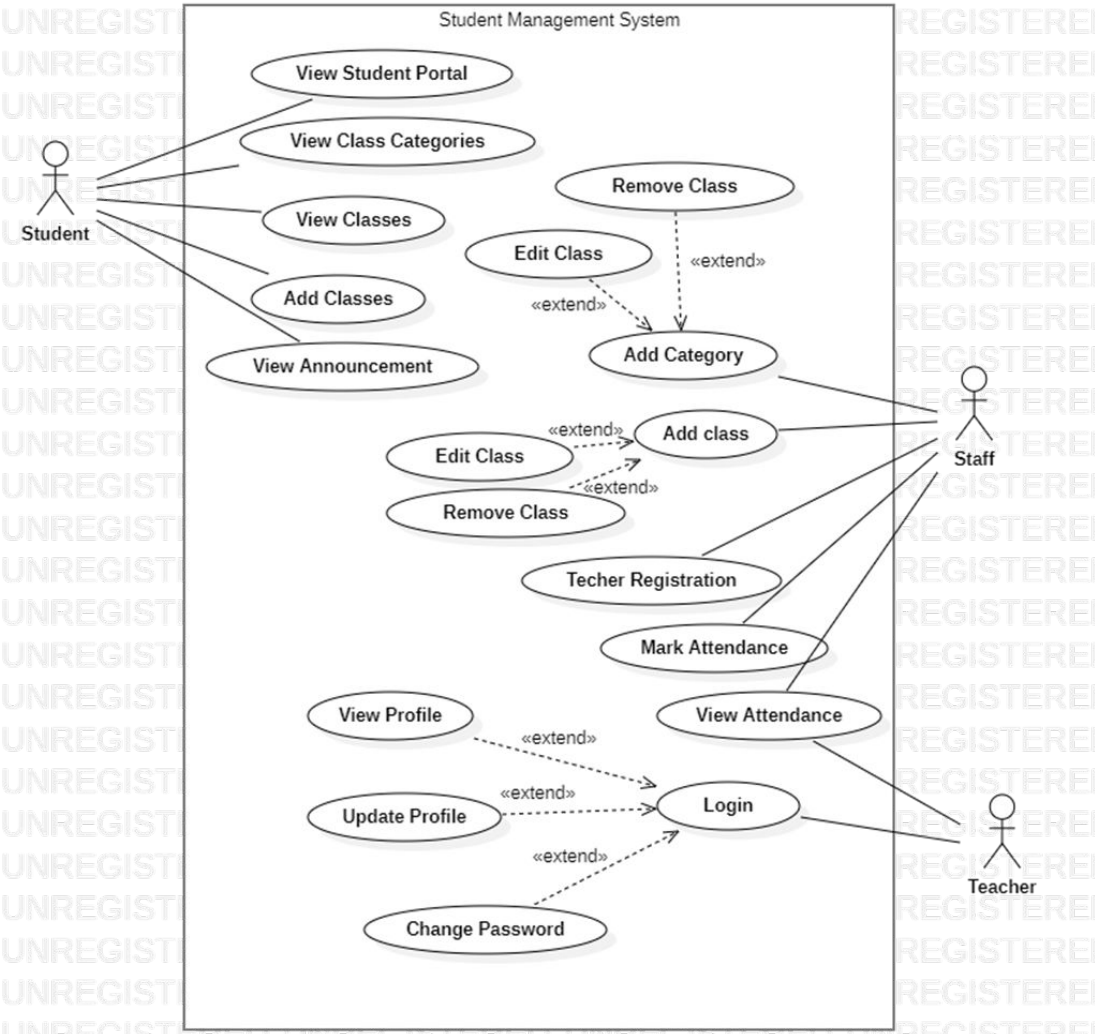


Database Design



Use Case Diagrams




Student Management System
View Student Portal
View Class Categories
View Classes
Add Classes
View Announcement
Student
Remove Class
Edit Class
«extend»
«extend»
Add Category
Staff
«extend»
Add class
Edit Class
«extend»
Remove Class
Techer Registration
Mark Attendance
View Attendance
View Profile
«extend»
«extend»
Update Profile
Login
«extend»
Change Password
Teacher

Methodology and technology

For the development of the system, Waterfall methodology was determined to be the most appropriate.

Technologies

- HTML,CSS,JavaScripts(Bootstrap) for front end development
- PHP,Python for backend development
- Framework (Laravel)
- XAMPP(cross-platform web server)
- MySQL and Cloud database technologies(Firebase) for database
- StarUML and DrawIO for drawing diagrams
- GoogleSlides,GoogleDocs and Grammerly for documentation

Test Plan

Unit Testing: Each component of the system will undergo unit testing to ensure it functions correctly and meets the requirements.

Integration Testing: Once the components are tested, they will be integrated and tested to ensure they work together seamlessly.

System Testing: The complete system will be tested to verify that all requirements are met, and the system functions correctly.

Performance Testing: The system will be tested under a load to ensure it can handle the expected number of users.

User Acceptance Testing: The system will be tested by the target audience to ensure it meets their needs and is easy to use.

Deployment Plan

Identify the deployment environment: The hardware and software environment where the system will be deployed will be identified.

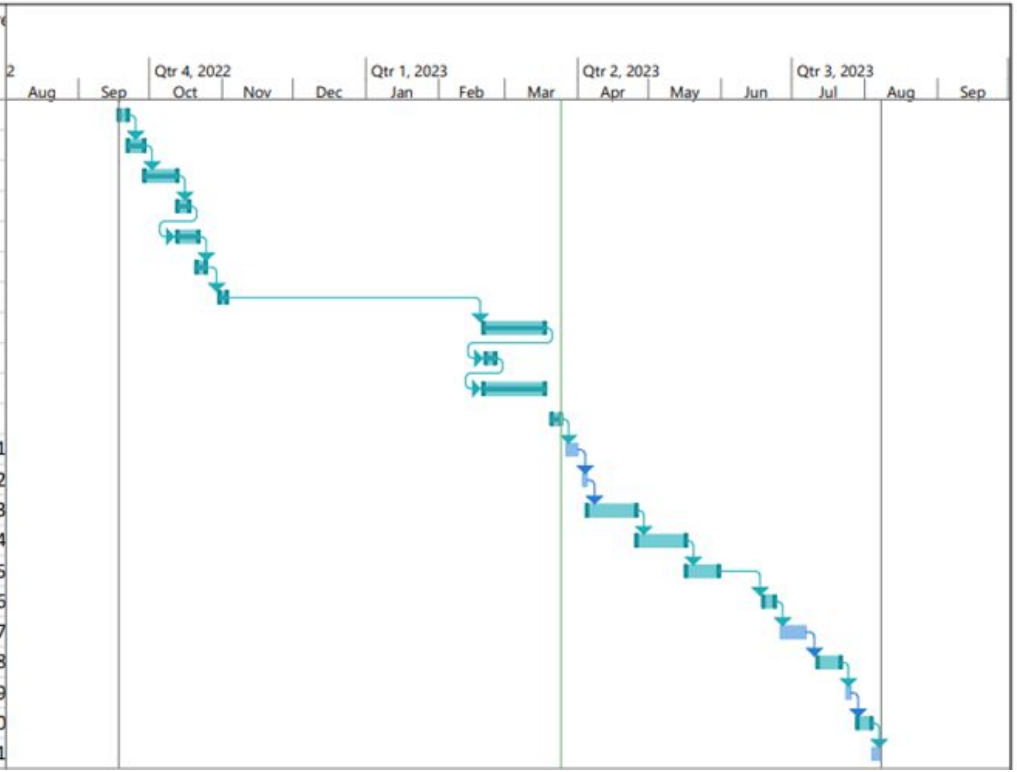
Prepare the system for deployment: The system will be configured to the specific deployment environment, including setting up the necessary databases, web servers, and other components.

Install the system: The system will be installed on the target hardware.
Test the deployed system: The deployed system will be tested to ensure it functions correctly in the production environment.

Provide user training and support: User training will be provided to ensure that the target audience knows how to use the system, and ongoing support will be available to address any issues that arise.

Timeline - Gantt chart

ID	Task Mode	Task Name	Duration	Start	Finish	Pre
1		Select the Broader area	4 days	Sun 9/18/22	Wed 9/21/22	
2	✓	Identifying literature	5 days	Thu 9/22/22	Wed 9/28/22	1
3	✓	Stakeholder Analysis	10 days	Thu 9/29/22	Wed 10/12/22	2
4	✓	Requirement gathering	3 days	Thu 10/13/22	Mon 10/17/22	3
5	✓	Project Proposal	7 days	Thu 10/13/22	Fri 10/21/22	4
6	✓	Presentation Slides Submission	2 days	Fri 10/21/22	Mon 10/24/22	5
7	✓	Project proposal evaluation	3 days	Mon 10/31/22	Wed 11/2/22	6
8	✓	Usecase/Fishbone Diagrams	20 days	Mon 2/20/23	Fri 3/17/23	7
9	✓	low-fidelity wireframe	4 days	Tue 2/21/23	Fri 2/24/23	8
10	✓	SRS	20 days	Mon 2/20/23	Fri 3/17/23	9
11	✓	Updated Project Plan	4 days	Tue 3/21/23	Fri 3/24/23	
12		Interim Report	5 days	Mon 3/27/23	Fri 3/31/23	11
13		Interim Presentation Slides	2 days	Mon 4/3/23	Tue 4/4/23	12
14		Database Design	15 days	Wed 4/5/23	Tue 4/25/23	13
15		Implement User Interface	15 days	Wed 4/26/23	Tue 5/16/23	14
16		Backend Development	10 days	Wed 5/17/23	Tue 5/30/23	15
17		Prototype	5 days	Mon 6/19/23	Fri 6/23/23	16
18		System Testing	9 days	Mon 6/26/23	Thu 7/6/23	17
19		Final Report	8 days	Wed 7/12/23	Fri 7/21/23	18
20		Final Presentation Slides	2 days	Mon 7/24/23	Tue 7/25/23	19
21		Final Project Evaluation	5 days	Sat 7/29/23	Thu 8/3/23	20
22		Updated Final Report	2 days	Fri 8/4/23	Mon 8/7/23	21



Deliverables of project

- Project proposal
- SRS document
- Interim Report
- Test plan
- Test cases/Test results
- Prototype
- Project report
- Prototype
- User manual
- Web based student management system
- Improved student management process