



# **Overall & Functional Specification**

## **Issue Management System**

**– Hanoi, August 2023 –**

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**UG1: Register user account & Manage system settings.(Long)**

**UG2: Manage subjects.(Quang)**

UC3: Manage classes(Hưng)

UG4\_Manage projects(Hiếu)

### 3.Database

## I. Record of Changes

Date	A* M, D	In charge	Change Description
29/9	A	Nguyễn minh Hiếu	Draw use case of teacher , team leader
29/9	A	Nguyễn minh Hiếu	Draw function diagram
29/9	A	Nguyễn Phúc Long	Draw use case of Admin, team Guest
29/9	A	Nguyễn Quang Hưng	Draw use case of Manager, Teacher
29/9	A	Nguyễn Phúc Long	Draw Screens Flow
29/9	A	Nguyễn Quang Hưng	Draw Entity Relationship Diagram
30/9	A	Phùng Khắc Quang	Draw use case of Admin, Manager
30/9	A	Nguyễn Phúc Long	UG1: Register user account & Manage system settings.
30/9	A	Nguyễn Quang Hưng	UC3: Manage classes
30/9	A	Nguyễn Minh Hiếu	UG4_Manage projects

Date	A* M, D	In charge	Change Description
5/10	M`	Quang Hưng	Screen Authorization
5/10	M	Phùng Khắc Quang	Edit Actors' description.
5/10	M	Nguyễn Minh Hiếu	<b>1.1 Context Diagram</b>  <b>1.2.2 Use Cases</b> <b>Manage use case</b> <b>Student Use Case</b> <b>Team Leader use case</b> <b>Teacher use case</b>  <b>1.3.1 Screens Flow</b>  <b>1.3.1 Screens Flow</b>  <b>1.3.2 Screen Descriptions</b>  <b>1.3.3 Screen Authorization</b>
5/10	M	Nguyễn Phúc Long	<b>Edit Guest UC and Admin UC</b> <b>Draw ERD</b>  <b>1.2.2 Use Cases</b>  <b>Guest use case</b>  <b>Admin use case</b>
15/10	A	Nguyễn Phúc Long	Design DataBase

Date	A* M, D	In charge	Change Description
15/10	A	Nguyễn Phúc Long	Draw UI UG1: Register user account & Manage system settings
15/10	A	Nguyễn Minh Hiếu	Draw UI UG4_Manage projects
15/10	A	Nguyễn Quang Hưng	Draw UI Uc3: Manage classes
15/10	A	Phùng Khắc Quang	Draw UI Uc2: Manager subject

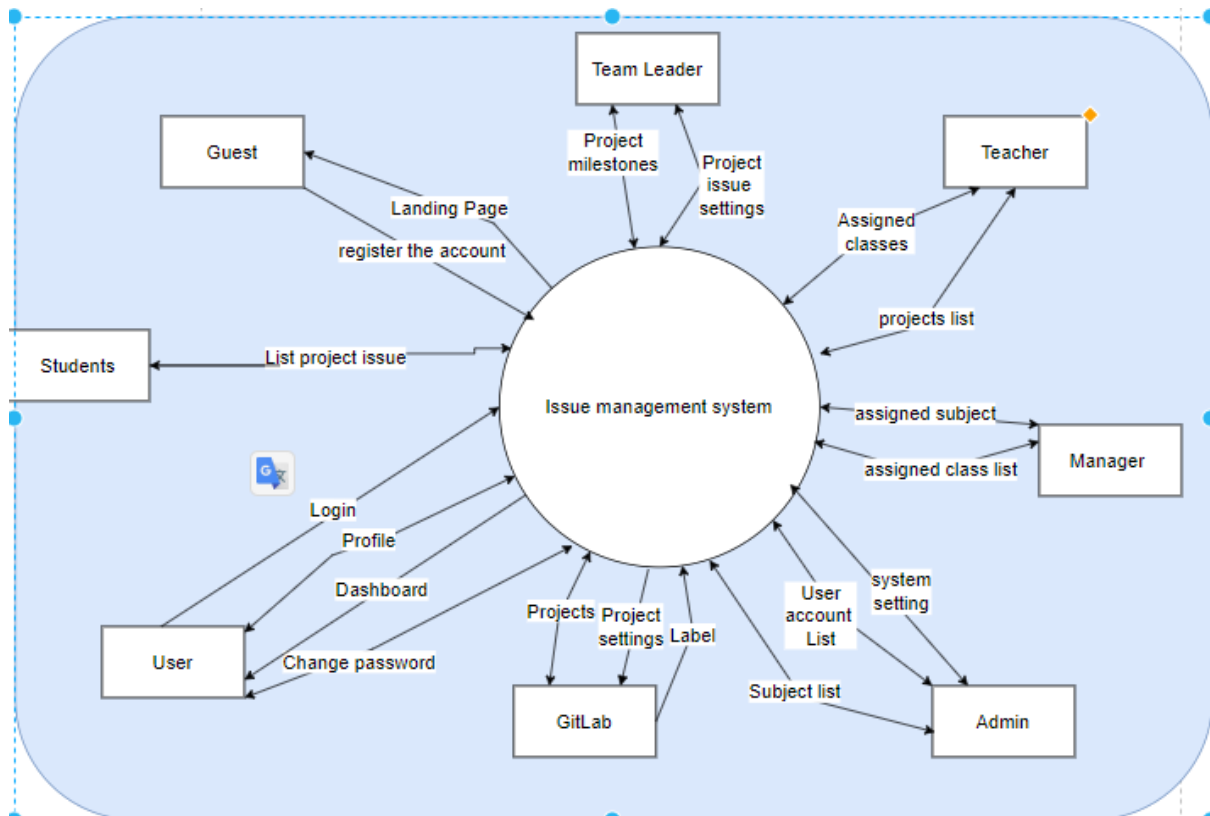
\*A - Added M - Modified D - Deleted

## II. Software Requirement Specification

### 1. Requirement Overview

#### 1.1 Context Diagram

The "Issue Management System" is a project management system designed for students, aiming to assist them in completing their ISP392, SWP391...coursework projects. It also provides support for educational institutions to manage and track students' learning progress and development.



## 1.2 User Requirements

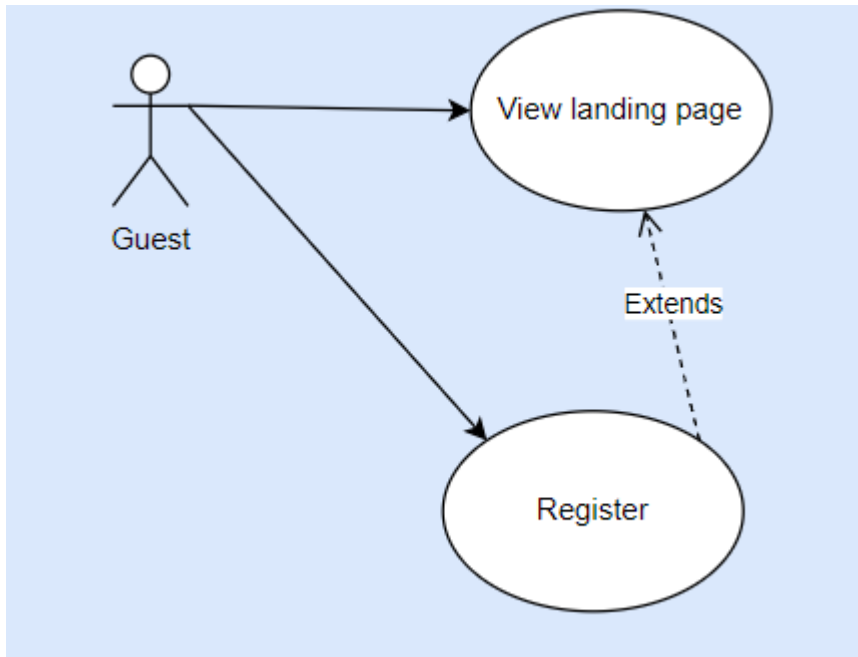
### 1.2.1 Actors

#	Actor	Description
1	Guest	View the basic information that the system displays and register to become a user.
2	User	Use and provide information to the system.
3	Manager	Is notified when something occurs within the system.
4	Teacher	Helps the system respond to and complete a task.
5	Admin	Full rights to access and use system functions and settings.
6	Student	Carry out projects and update progress.
7	Team leader	Divide tasks and manage the team's progress.

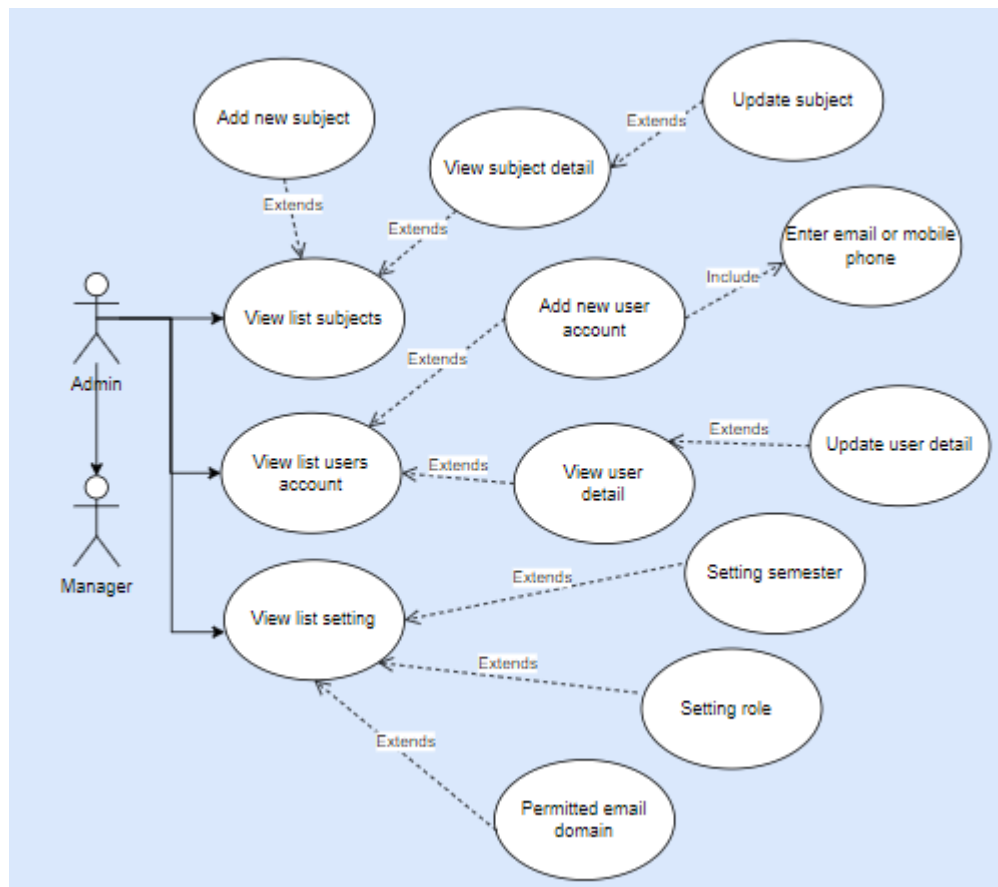
8	Gitlab	Provides information or services to the system.
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### 1.2.2 Use Cases

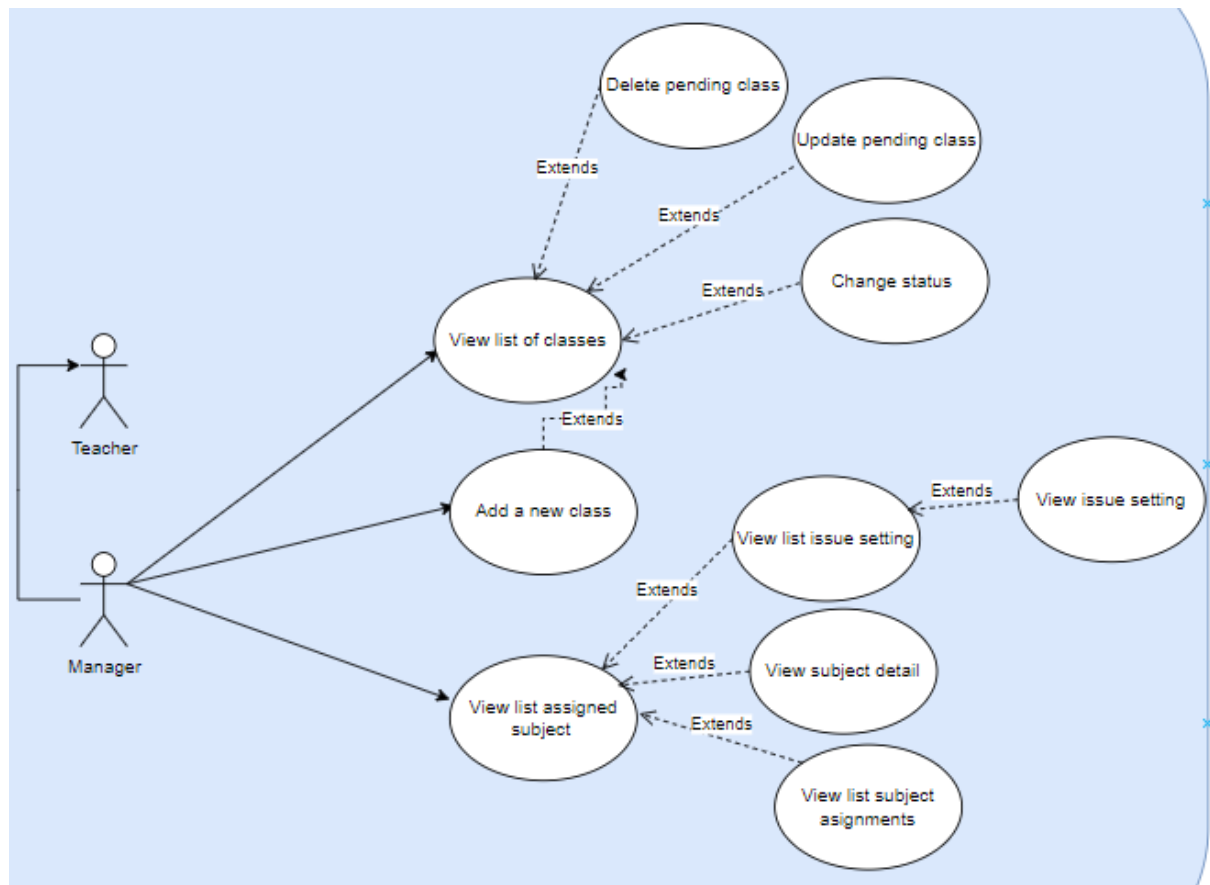
#### Guest use case



#### Admin use case

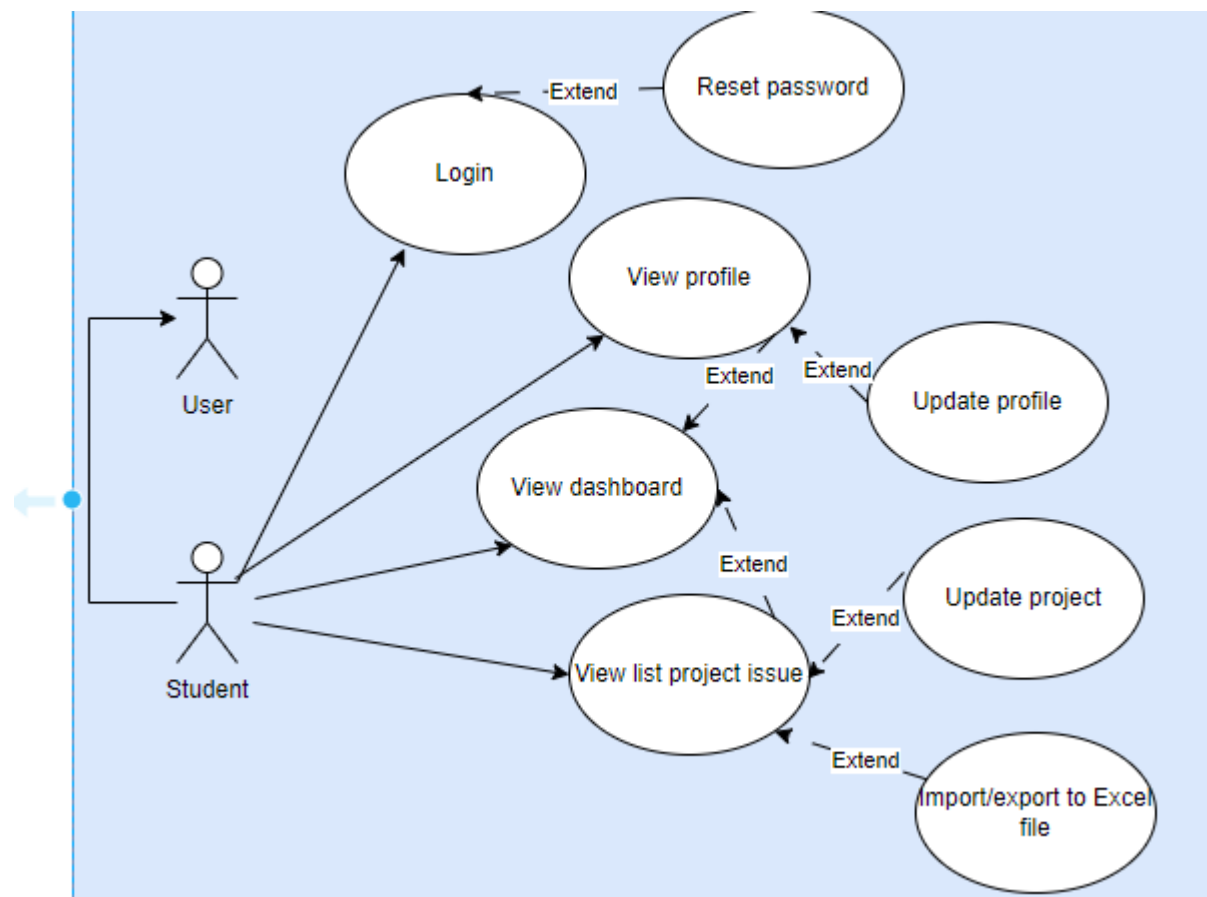


**Manage use case**

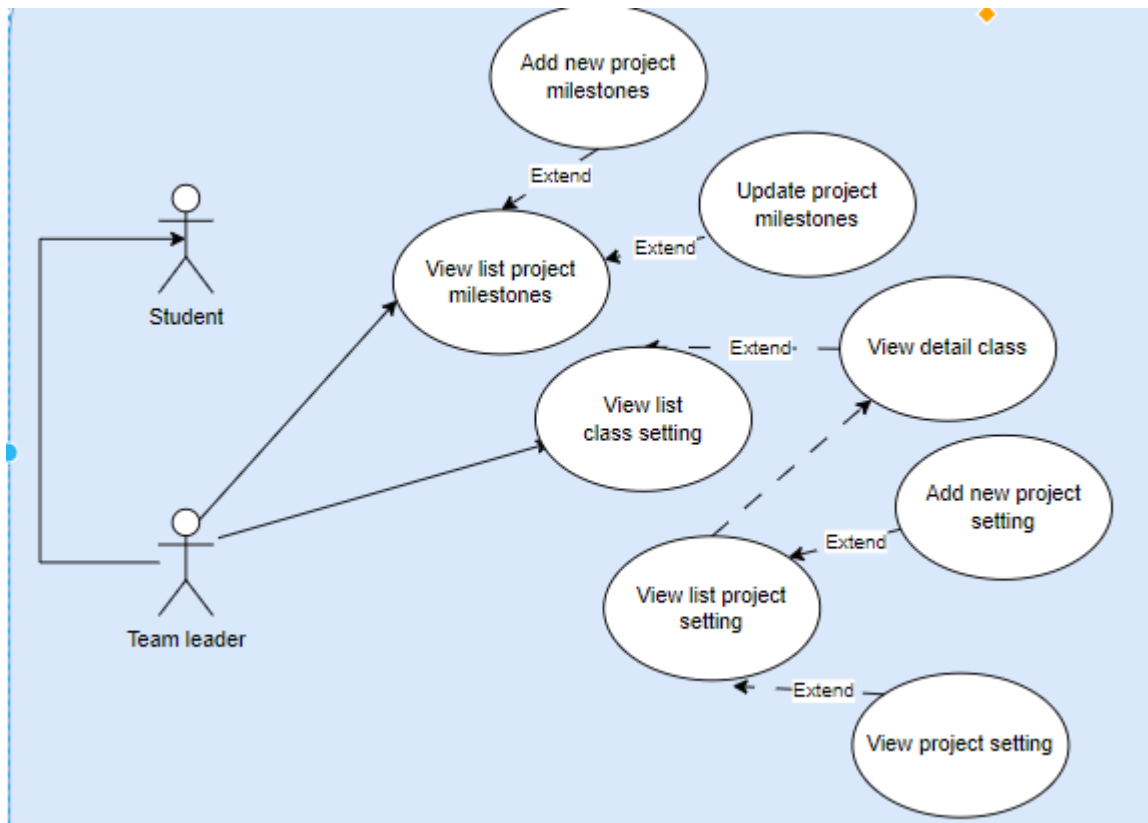


## Student Use Case

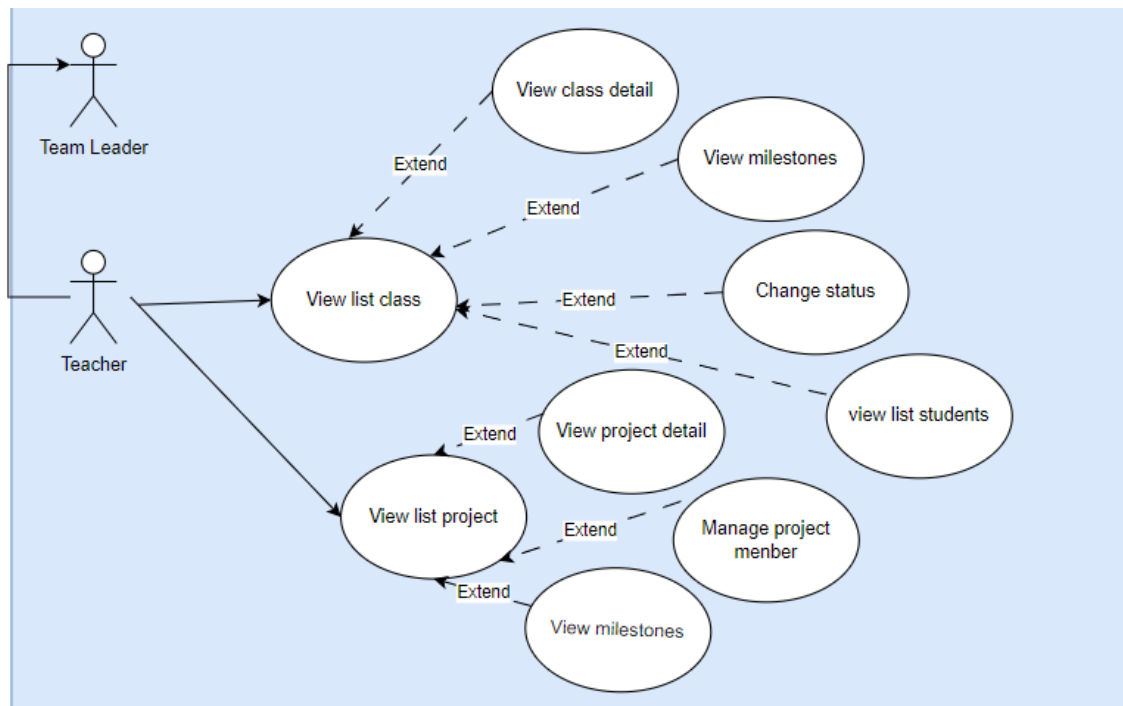




## Team Leader use case

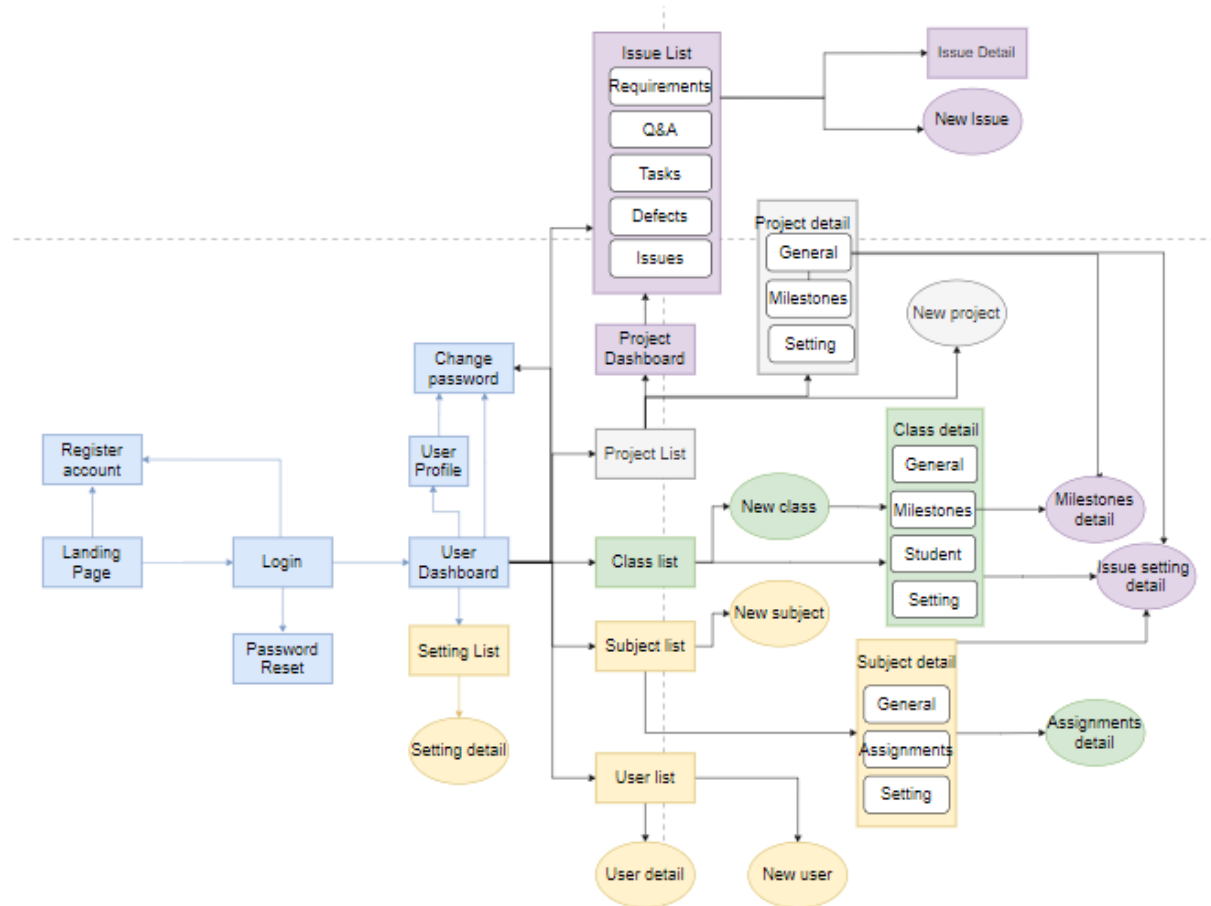


## Teacher use case



## 1.3 System Functionalities

### 1.3.1 Screens Flow



### 1.3.2 Screen Descriptions

#	Feature	Screen	Description
1	Guest	Login	Allows unregistered users to log in.
2	Guest	Register	Enables user registration.
3	User	Forget Password	Password reset for registered users.
4	User	Setting system	User-specific system settings.
	Admin	User list	List of all users for administrators.

	<b>Manager</b>	<b>Subject list</b>	<b>Management of subjects for managers.</b>
	<b>Teacher</b>	<b>ClassList</b>	<b>List of classes for teachers.</b>
	<b>User</b>	<b>User DashBoard</b>	<b>Main user dashboard.</b>
	<b>User</b>	<b>Profile</b>	<b>User profile management.</b>
	<b>Manager</b>	<b>Subject list</b>	<b>Subject management for managers.</b>
	<b>Teacher</b>	<b>Class detail</b>	<b>Detailed class information for teachers.</b>
	<b>Teacher</b>	<b>Class Setting</b>	<b>Class configuration for teachers.</b>
	<b>Student</b>	<b>Project Dashboard</b>	Overview of student projects.
	<b>Team leader</b>	<b>Setting Project</b>	Project setup for team leaders.
	<b>teamleader</b>	<b>project milestones</b>	Milestones management for team leaders.
	<b>Team leader</b>	<b>Milestones</b>	Milestones management for team leaders.
	<b>student</b>	<b>Issue setting detail</b>	Issue reporting for students.
	<b>teacher</b>	<b>Class milestones</b>	Milestones management for teachers.

### 1.3.3 Screen Authorization

Screen	Admin	Teacher	Team leader	Student	Guest	Manager
Landing Page	X	X	X	X	X	X
Login	X	X	X	X		X
Register	X	X	X	X	X	X
Forget Password	X	X	X	X		X
Setting system	X					

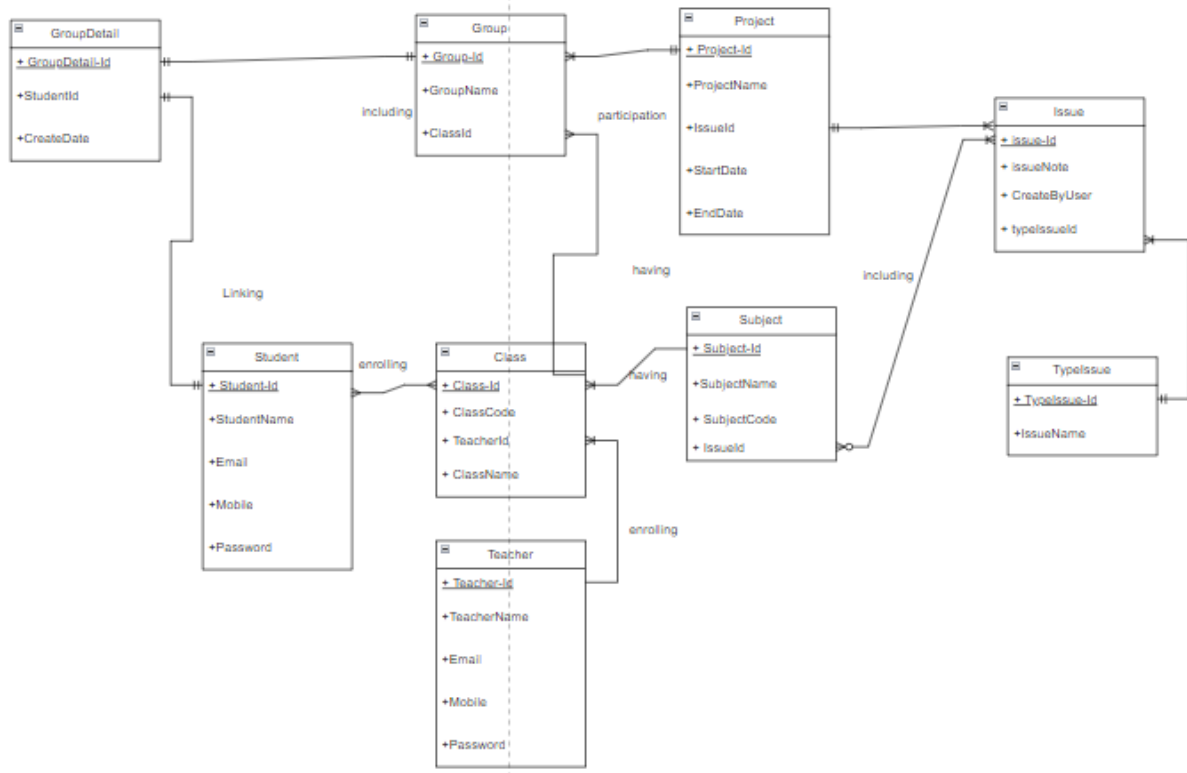
User list	X					
Subject list	X					X
ClassList	X	x				X
User DashBoard	X	X	X	X		X
Profile		X	X	X		X
Subject list	X					X
Class detail	X	X				X
Class Setting		X				X
Project		X	X	X		X
Project Dashboard		X	X			
Setting Project		X	X			
project milestones		X	X			
Milestones		x	x			
Issue setting detail		x	x			x

#### 1.3.4 Non-UI Functions

#	Feature	System Function	Description
1	Guest	User Registration	Register and validate user data, send verification codes, and store user information.
2	User	User Authentication	Verify login credentials and manage user sessions.
3		Password Reset	Handle password reset requests and update passwords.
4		Password Change	Update user passwords.
5	Student	Issue Management	CRUD operations for project issues, sync

			with GitLab.
6	Team Leader	Milestone Management	CRUD operations for project milestones, sync with GitLab.
7		Issue Settings Management	Manage project-specific settings, sync with GitLab.
8	Teacher	Class Management	CRUD operations for classes and related data
9		Issue Settings Management	Manage class issue settings.
10		Class Student Management	CRUD operations for class students, import/export files.
11	Manager	Subject Management	CRUD operations for subjects and configurations.
12		Class Management	CRUD operations for classes and data, sync with GitLab.
13	Admin	Subject Management	CRUD operations for subjects and related data.
14		User Management	CRUD operations for users, role management.
15		System Settings Management	Administer system-wide settings.

### 1.3.5 Entity Relationship Diagram



## Entities Description

#	Entity	Description
1	Project	Identify project
2	Project Detail	An overview of the project's components and functions.
3	Group	Identify and classify group
4	Teacher	Manage class
5	Class	Identify classes.
7	Subject	Categorizes and identifies subjects.
8	Student	Manage project

## 2. Functional Specifications

UG1: Register user account & Manage system settings.

a) UI

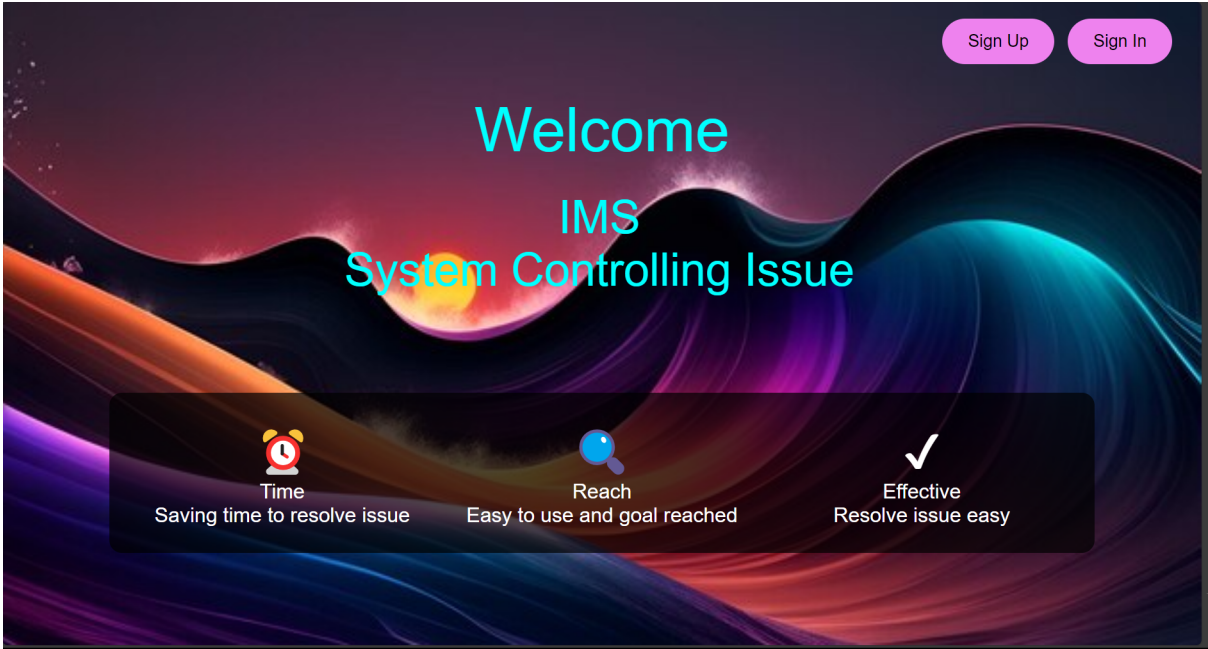
List setting

Responsive Table				
id	Setting	Type	Status	Action
1	Admin	Role	Active	Edit Deactive
2	Teacher	Role	Deactive	Edit Active
3	Fall 2023	Semester	...	...

Field Name	Field Type	Description
action	Hyperlink	User clicks to edit setting edit Deactive or edit Active
Status	Hyperlink	User clicks to edit setting Deactive or Active
Type	Hyperlink	User clicks to edit Role user


LandingPage





Field Name	Field Type	Description
Login	Button	User clicks to redirect to the Login Page
Sign up	Button	User clicks to redirect to the User Register page for registering new user account to access the system

Sign up

IMS

Sign Up

Username

Email address

Mobile

Password

☐ Check me out

[Forgot Password](#)

Sign Up

Already have an Account? [Sign In](#)

Field Name	Field Type	Description
Email*	Text Box	This is for user to input valid email address for logging in
Mobile*	Text Box	This is for user to input valid mobile address for logging in

<b>UserName*</b>	<b>Text Box</b>	<b>This is for user to input valid User name address for logging in</b>
<b>Password*</b>	<b>Password Box</b>	<b>This is for user to input password for logging in</b>
<b>Sign up</b>	<b>Button</b>	<b>User clicks to redirect to the User Register page for registering new user account to access the system</b>
<b>Forgot Password?</b>	<b>Hyperlink</b>	<b>User clicks to redirect to the Password Reset page for resetting his/her forgot password</b>

b) UC

<b>UC ID and Name:</b>	<b>UG1: Register user account (Guest's UC); Manage system settings (Admin's UCs)</b>		
<b>Created By:</b>	<b>LongNphuc</b>	<b>Date Created:</b>	<b>29/9/2023</b>
<b>Primary Actor:</b>	<b>Guest</b>	<b>Secondary Actors:</b>	<b>Admin</b>
<b>Trigger:</b>	<b>User requests to register an account (Guest's UC); Admin accesses system settings (Admin's UCs)</b>		
<b>Description:</b>	<b>The process of registering a user account for guests and managing system settings for administrators.</b>		
<b>Preconditions:</b>	<b>The system is operational.</b>  <b>The guest is not logged in (for UG1).</b>  <b>The actor is logged in as an administrator (for managing system settings).</b>		

<b>Postconditions:</b>	<p>The user account is registered successfully (for UG1).</p> <p>The system settings are updated as per the administrator's actions (for managing system settings).</p>
<b>Normal Flow:</b>	<p>-Guest: The guest selects the "Register" option.</p> <p>The system displays the user registration form.</p> <p>The guest fills in the required information.</p> <p>The system validates the information.</p> <p>If the information is valid, the system creates a user account.</p> <p>The guest is notified of successful registration.</p>
<b>Alternative Flows:</b>	<p>If the guest provides invalid information during registration, an error message is displayed, and the guest is prompted to correct the information.</p>
<b>Exceptions:</b>	<p>If there is a technical issue during registration or system settings management, an error message is displayed, and the process is aborted.</p>
<b>Priority:</b>	High
<b>Frequency of Use:</b>	<p>Register user account: Moderate to High</p> <p>Manage system settings: Low to Moderate</p>
<b>Business Rules:</b>	<p>User accounts must have unique usernames and valid email addresses.</p> <p>Only administrators can access and modify system settings.</p>
<b>Other Information:</b>	<p>This use case handles the essential functionality required for both guest users and administrators.</p>

<b>Assumptions:</b>	<b>The system is designed to accommodate multiple user roles, including guests and administrators.</b>  <b>The system has proper security measures in place to protect user data and system settings.</b>
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UG2: Manage subjects.

a) UI

**Subject List:**

Subjects Managementnt

Section 2

List	Deactivate List	Issue	
Code	Name	Create Date	Description
#1	Subject 1	dd/MM/yyyy	Description of subject 1
#2	Subject 2	dd/MM/yyyy	Description of subject 2

Add

Field Name	Field Type	Description
Add	Button	A pop-up page appears with the necessary information fields to add a new subject.

Details	Button	Open project details setting
Deactivate	Button	User clicks to delete new project
Delete	Button	User clicks to delete new project

Add new subject:

Subjects Managementnt

Section 2

List

Deactivate List

Issue

Code	Name	Create Date	Description	Actions
#1	Section 3 New subject			Delete
#2				Delete

Name:

newnew

Code:

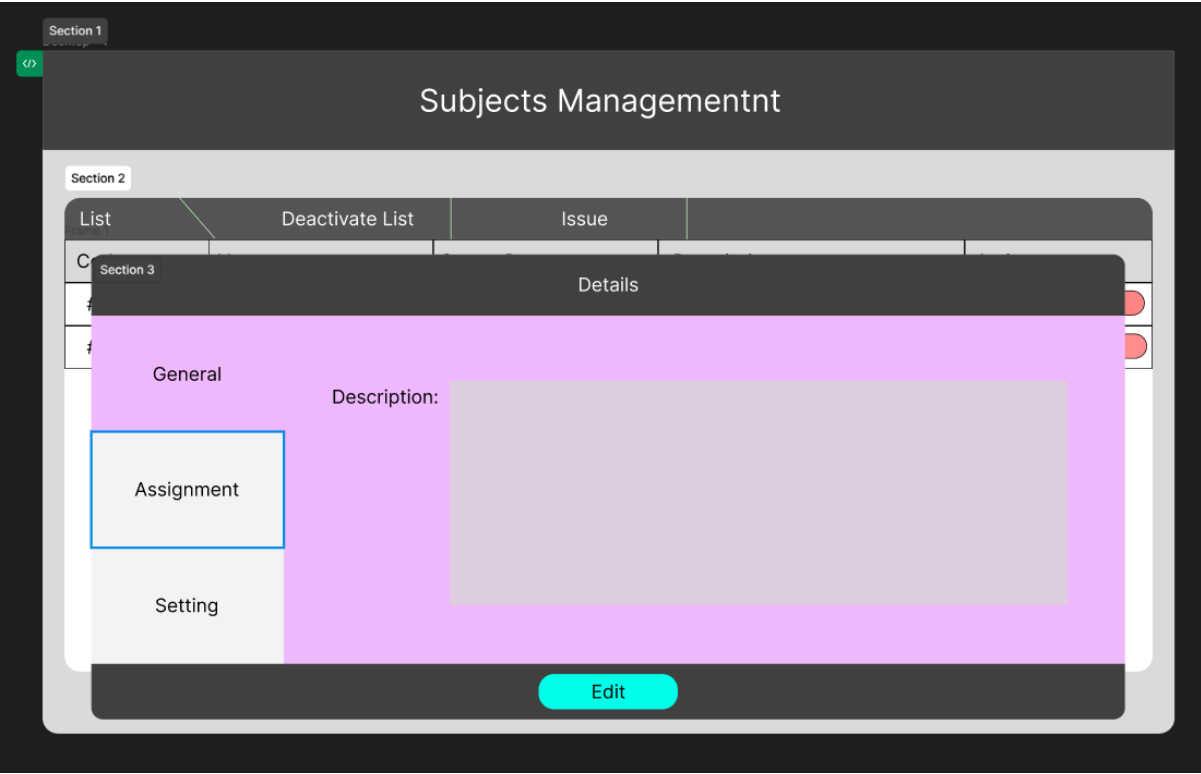
newnew

Description:

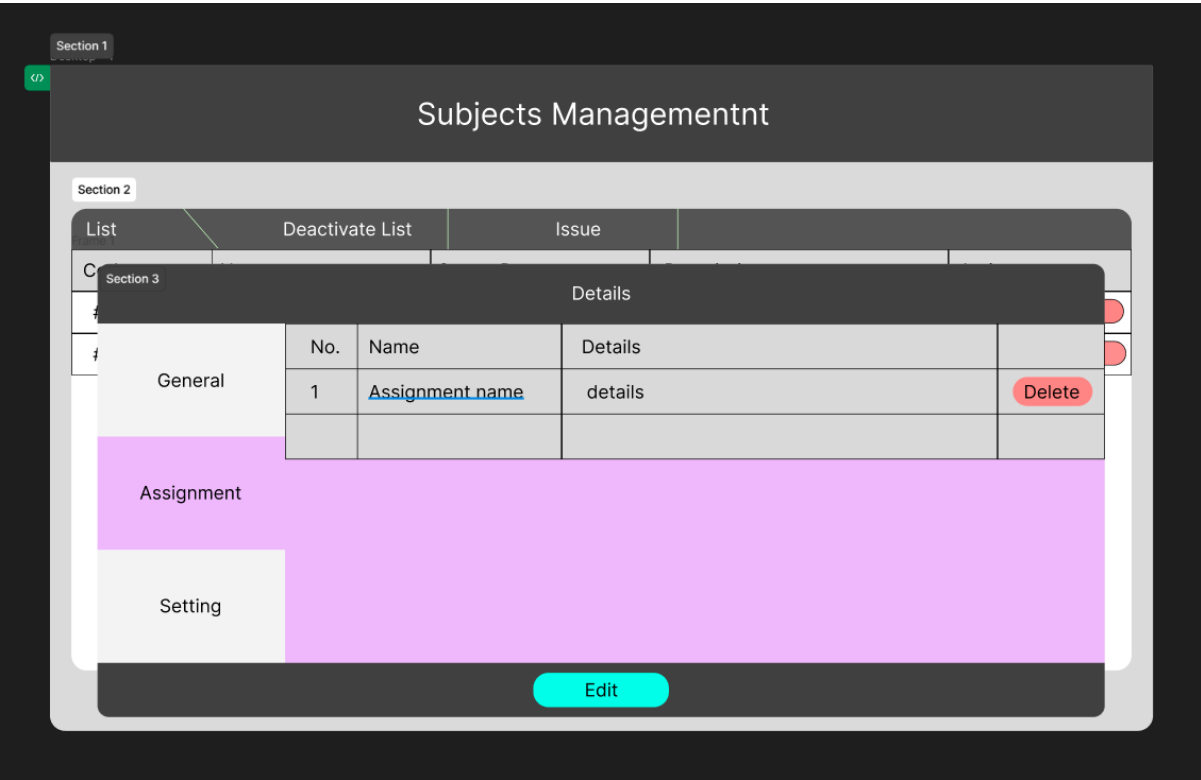
newnew

Add

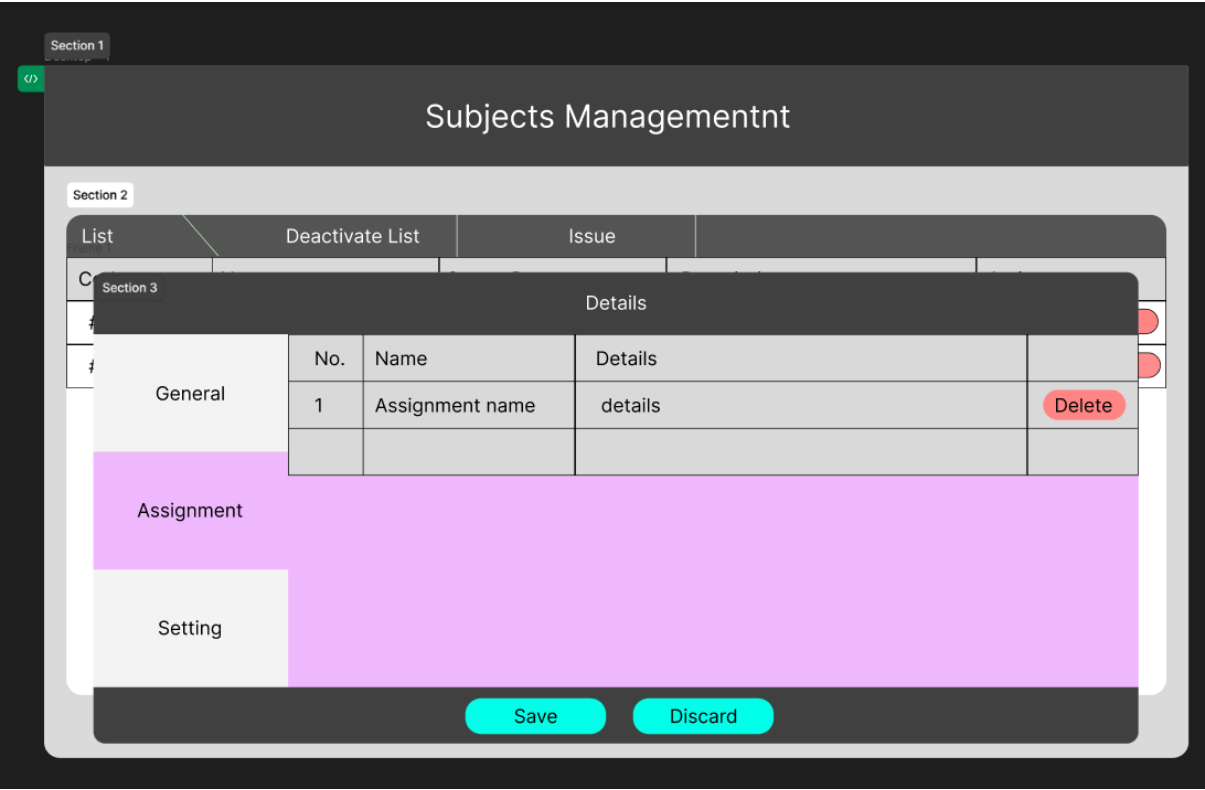
Subject details:



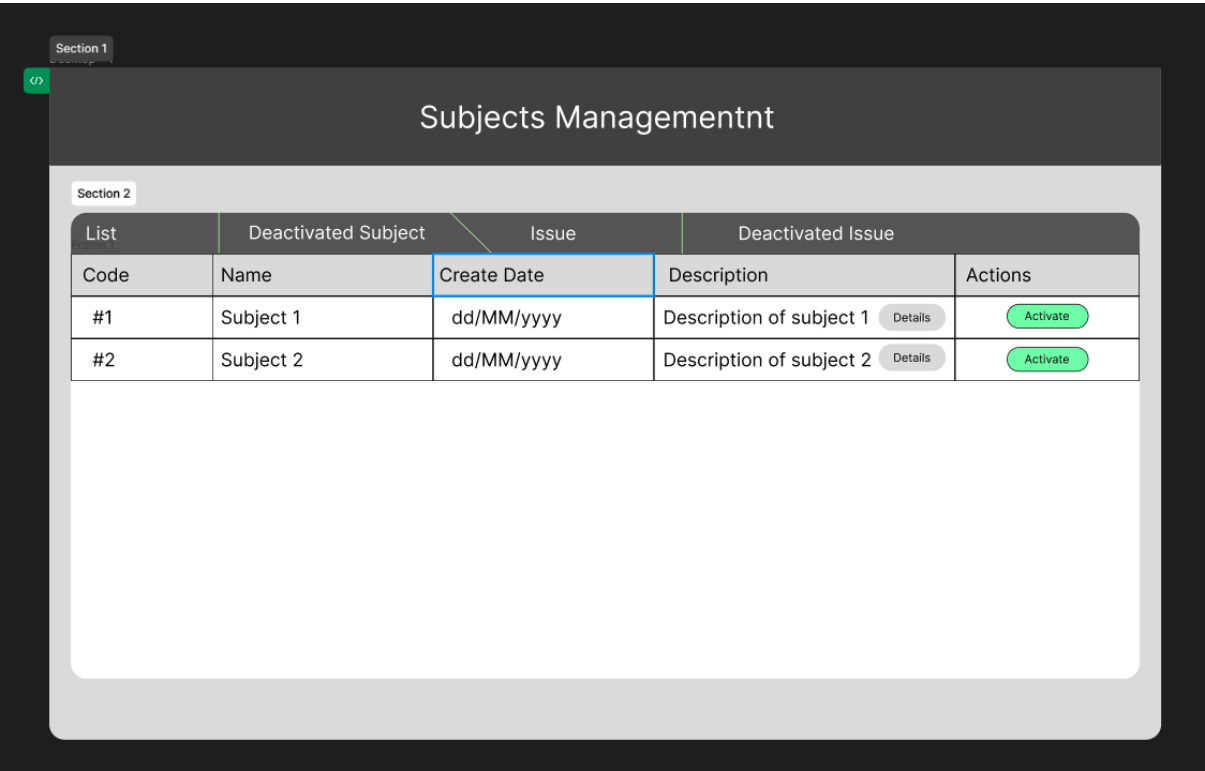
**Subject assignment:**



**Update details:**

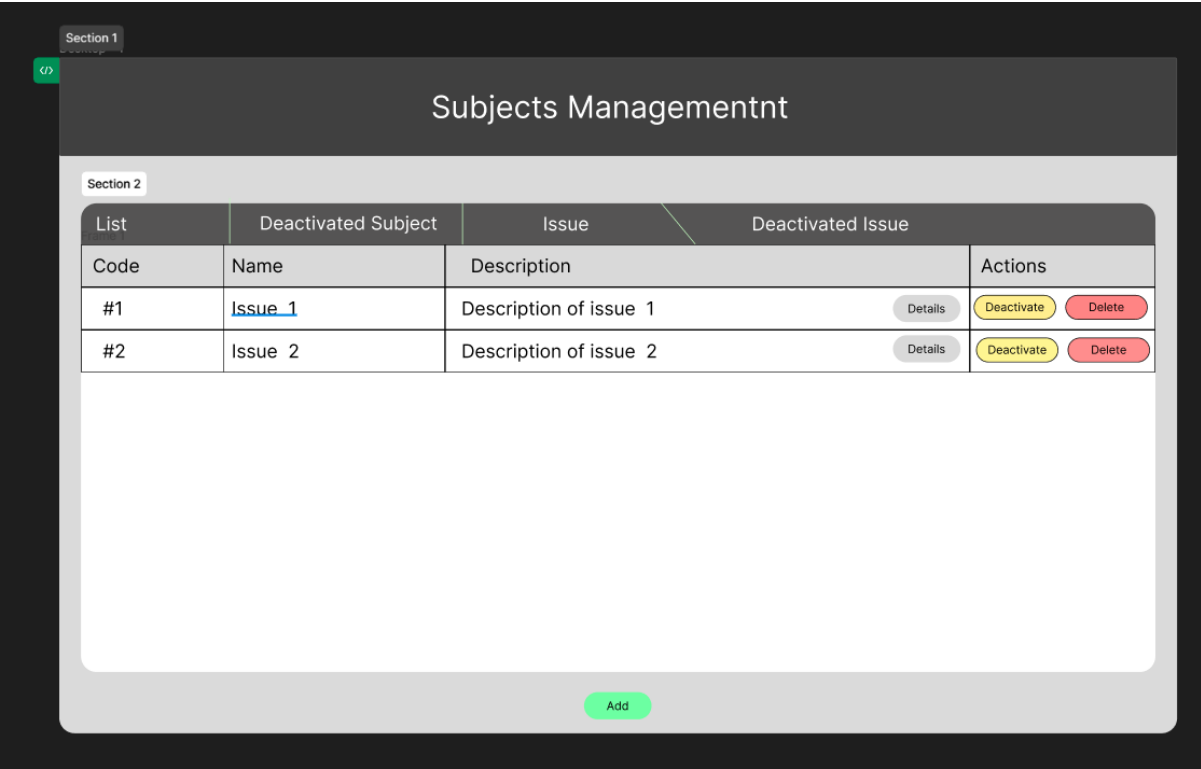


Activate subject:

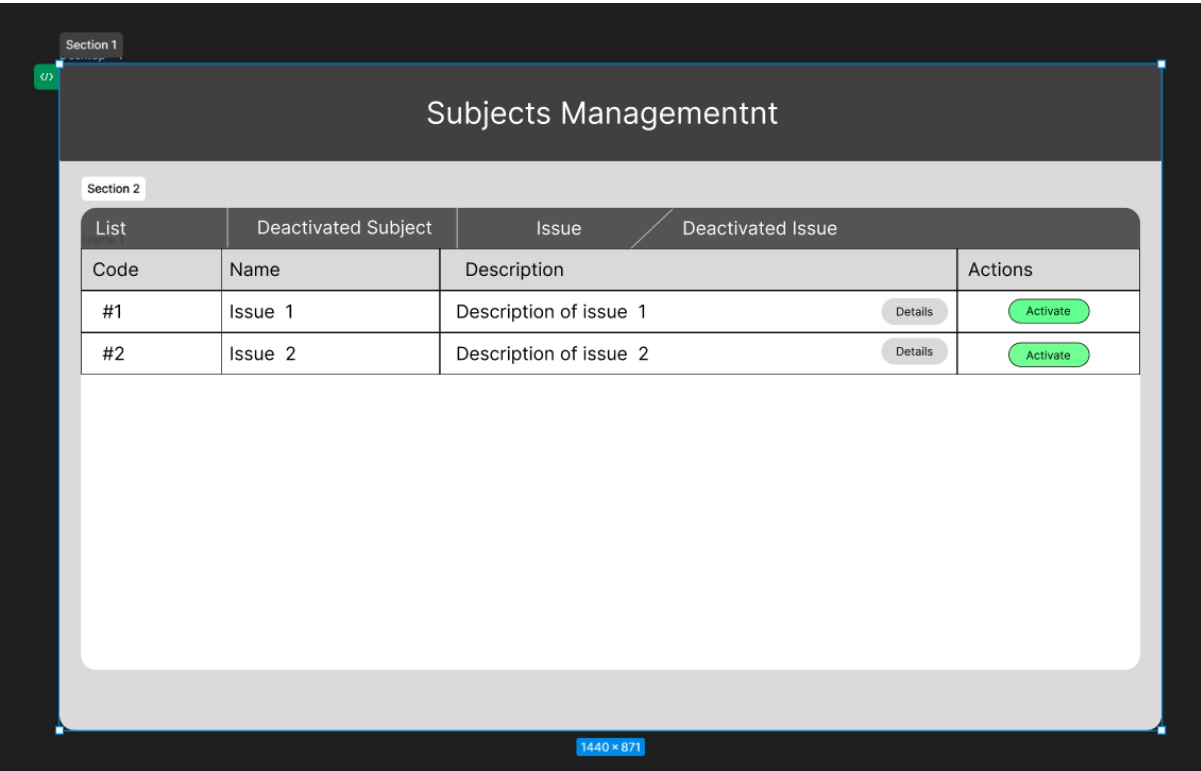


Issues list:





Deactivate issue list:



b) UC

<b>UC ID and Name:</b>	Manage subjects (Admin's UCs; Manager also have access to the assigned subject list and view/update some subject details as described)		
<b>Created By:</b>	QuangPK	<b>Date Created:</b>	30/9/2023
<b>Primary Actor:</b>	Admin	<b>Secondary Actors:</b>	Manager
<b>Trigger:</b>	Admin click any button (update, activate/deactivate, delete) to perform similar functions.		
<b>Description:</b>	As a Admin, i want to be able view subjects list, subjects details; add, delete, activate/deactivate, update subjects details.		
<b>Preconditions:</b>	Pre1: Allows users to access the subject list screen  Pre2: Confirm access rights as Admin		
<b>Postconditions:</b>	<ul style="list-style-type: none"> <li>- New subjects have been added to the list</li> <li>- The subject has been able, disabled</li> <li>- The subject has been deleted from the list</li> <li>- Subject details are updated</li> </ul>		

<b>Normal Flow</b>	<p>Admin or Manager access to the system.</p> <p>Admin or Manager click to view Subjects list.</p> <p>System displays a list of subjects and common functions.</p> <p>For Admin:</p> <ul style="list-style-type: none"> <li>- Add subjects.</li> <li>- Delete subjects.</li> <li>- Update subject details.</li> <li>- Activate/Deactivate subjects.</li> </ul> <p>For Manager:</p> <ul style="list-style-type: none"> <li>- Edit description</li> <li>- Edit GitLab configs.</li> </ul>
<b>Alternative Flows:</b>	None
<b>Exceptions:</b>	<ol style="list-style-type: none"> <li>1. If the user logs in under a different account, the admin will report an access error and lack of authorization.</li> <li>2. If the change is empty, the system will notify that there are no changes and return to the list.</li> </ol>
<b>Priority:</b>	High
<b>Frequency of Use:</b>	Expected frequency: Anytime, unlimited.

<b>Business Rules:</b>	<p>Only Admin or manager can access to add, update, activate/deactivate, delete, upgrade subjects.</p> <p>Only Manager can access to edit subject's description and GitLab configs.</p>
<b>Other Information:</b>	<p>Unsaved data due to connection errors needs to be backed up.</p> <p>Data change activities need to be recorded in reports.</p>
<b>Assumptions:</b>	<p>The system has enough database to save all new changes.</p> <p>Linking with 3rd party Gitlab is stable.</p> <p>The user is authorized to perform the functions.</p>

## UG4\_Manage projects

a) UI

### Project list

Project Management

Project List

Project Name	Project Code	Description	Actions
Project 1	PROJ001	Description of Project 1	<div>Delete</div> <div>Update</div>
Project 2	PROJ002	Description of Project 2	<div>Delete</div> <div>Update</div>

Features

Export Member List

Import Assignment of New Projects

Move or Remove Members from Projects

Create Project

Field Name	Field Type	Description
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Export Member List	Button	To export Member List to new other file
Import project	Button	Import Assignment of new projects
Delete or Update project	Button	Modify project
Create project	Button	User clicks to add new project

List member of project

	Project Code
	PROJ001
	PROJ002

ment of New Projects

M

List of Students:

ID	Student Name	
1	Student 1	<div>Delete</div> <div>Update</div>
2	Student 2	<div>Delete</div> <div>Update</div>

Close

Make Team Leader

Update Status

Actions
<div>Delete</div> <div>Update</div>
<div>Delete</div> <div>Update</div>

Field Name	Field Type	Description
Update status	Button	Update team member status with note
Make team leader	Button	Modify setting team member
Delete or Update Member	Button	move or remove team member

## Project dashboard

Project Management

Project Information

Team Name: Team 1  
Project Code: PROJ001  
Project Name: Project 1  
Description: Description of Project 1

Add Members to the Project

Select Student

Add Member

Back

View Project Milestones

Field Name	Field Type	Description
Add member	Button	To add new member
View Project milestones	Button	Open popup milestones of project

## Milestones of project

Project Management

Project Information

Team Name: Team 1  
Project Code: PROJ001  
Project Name: Project 1  
Description: Description of Project 1

Add Members to the Project

Select Student

Add Member

Back

View Project Milestones

Project Milestones

Milestone Name	Due Date	Status
Milestone 1	2023-10-30	In Progress
Milestone 2	2023-11-15	Not Started

Close

b) UC

<b>UC ID and Name:</b>	<b>UG4: Manage projects (Teacher's UCs; Team leader also have access to the assigned project list and view/update some project details as described)</b>		
<b>Created By:</b>	<b>Nguyễn Minh Hiếu</b>	<b>Date Created:</b>	<b>29/9/2023</b>
<b>Primary Actor:</b>	<b>Teacher</b>	<b>Secondary Actors:</b>	<b>Team leader</b>
<b>Trigger:</b>	<b>The teacher or team leader initiates the use case to manage projects.</b>		
<b>Description:</b>	<b>This use case allows teachers and team leaders to manage projects within the system. It involves creating, updating, and organizing project-related information</b>		
<b>Preconditions:</b>	<b>PRE-1: The teacher or team leader is logged into the system.</b> <b>PRE-2: The teacher or team leader has the appropriate permissions to manage projects.</b>		
<b>Postconditions:</b>	<b>POST-1: Project information is updated in the system.</b>		
<b>Normal Flow</b>	<b>4.0: The teacher or team leader selects the "Manage Projects" option.</b> <b>4.1: The system displays a list of existing projects.</b> <b>4.2: The teacher or team leader selects a project to manage.</b> <b>4.3: The system displays project details.</b> <b>4.4: The teacher or team leader can update project details.</b> <b>4.5: The teacher or team leader saves the changes.</b>		

	4.6: The system updates the project information.
Alternative Flows:	4.7: If the teacher or team leader wants to create a new project, they can do so by selecting the "Create New Project" option. The flow continues from step 4.3.
Exceptions:	<p>4.8.0.E1: If there is an error in updating the project information, the system displays an error message.</p> <p>4.8.0.E2: If the teacher or team leader does not have the necessary permissions, the system displays an access denied message.</p>
Priority:	Normal
Frequency of Use:	Estimated frequency: Multiple times a day
Business Rules:	Business rule BR-1: Only authorized teachers and team leaders can manage projects.
Other Information:	<p>Quality Attribute: This use case should ensure data accuracy and security.</p> <p>Exception Handling: If the use case execution fails due to an unanticipated error, the system should log the error and notify the administrator.</p> <p>Durable State Change: Project information is updated in the database upon successful completion of the use case. If an exception occurs, changes should be rolled back.</p>
Assumptions:	



**UC3: Manage classes**

a) UI

**List Class**

Class List						
#	Class Name	Subject Code	Number Of Sstudent	Project Code	Status Project	
1	ITA302	ITA	30	IMS	On Going	<a href="#">Detail</a>
2	ISP392	ISP	30	EMS	Not Start	<a href="#">Detail</a>
3	...	...	...	...	...	<a href="#">Detail</a>

Field Name	Field Type	Description
Detail	Button	Open class's detail in new screen

List StudentGroupProject

List Student

Export CSV

#	Full Name	Email	Image	Group	IsActive
1	Hung	jhon@fpt.edu.vn		1	Active
2	...	...	...	...	...

Group Management

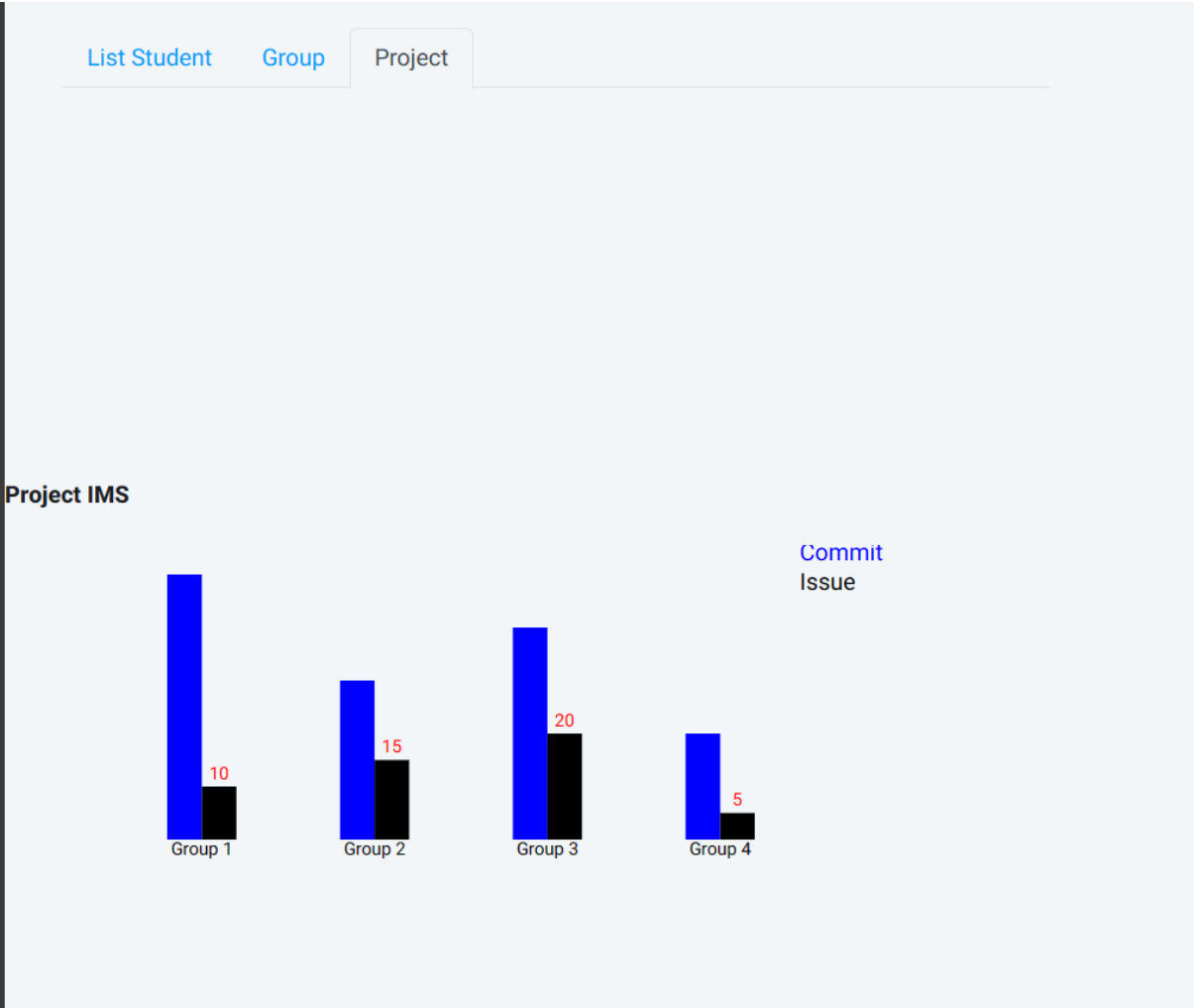
List StudentGroupProject

Group

Export CSV

#	Group Name/th>	Group Member	IsActive	Setting
1	Group 1	4	Active	<a href="#">Update/Detail</a>
2	...	...	...	...

Project Management



Field Name	Field Type	Description
List Student	Button	Go to List Student's screen
Group	Button	Go to Group's screen
Project	Button	Go to Project's screen
Export CSV	Button	Export file

b) UC

<b>ID and Name:</b>	<b>UC3: Manage classes (Manager's UCs; Teacher also have access to the assigned class list and view/update some class details as described)</b>		
<b>Created By:</b>	<b>HungNQ</b>	<b>Date Created:</b>	<b>29/9</b>
<b>Primary Actor:</b>	<b>Manager</b>	<b>Secondary Actors:</b>	<b>Teacher</b>
<b>Description:</b>	<b>This use case involves the management of classes within the educational management system, where the Manager has full control, and Teachers have limited access to assigned class lists and specific class details.</b>		
<b>Trigger:</b>	<b>The need to create, modify, or view class information within the system.</b>		
<b>Preconditions:</b>	<b>The Manager and Teachers must be logged into the system.</b> <b>The classes to be managed must exist in the system.</b>		
<b>Postconditions:</b>	<b>Class information is updated or created as needed, and access rights are maintained.</b>		

<b>Normal Flow:</b>	<p>The Manager logs into the system.</p> <p>The Manager selects the "Manage Classes" option.</p> <p>The Manager chooses to create a new class or modify an existing one.</p> <p>The Manager inputs or updates class details (e.g., name, schedule, location).</p> <p>The Manager saves the changes.</p>
<b>Alternative Flows:</b>	<p>If the Manager chooses to modify an existing class:</p> <ul style="list-style-type: none"> <li>- The Manager selects the class to be modified.</li> <li>- The Manager updates the class details.</li> <li>- The Manager saves the changes.</li> </ul> <p>If a Teacher accesses the class list:</p> <ul style="list-style-type: none"> <li>- The Teacher logs into the system.</li> <li>- The Teacher selects the "View Assigned Classes" option.</li> <li>- The system displays the list of classes assigned to that Teacher.</li> </ul> <p>If a Teacher views specific class details:</p> <ul style="list-style-type: none"> <li>- The Teacher selects a class from the assigned class list.</li> <li>- The system displays limited class details for that Teacher.</li> </ul>
<b>Exceptions:</b>	<p>If the Manager or Teacher encounters technical issues while accessing or updating class information.</p>
<b>Priority:</b>	High
<b>Frequency of Use:</b>	Frequently
<b>Business Rules:</b>	<p>Only the Manager can create and fully manage classes.</p> <p>Teachers can access and view class lists and limited class details for the classes they are assigned to.</p>

<b>Other Information:</b>	<b>N/A</b>
<b>Assumptions:</b>	<b>Users have the necessary permissions and credentials to access the system.</b>  <b>The system is functional and available for use.</b>  <b>Teachers are assigned to specific classes for which they have access rights.</b>