



Capstone Project Final Report

# FPTU CAPSTONE PROJECT MANAGEMENT

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<b>Capstone Project code</b>	FCPM

Hanoi, Sep 1<sup>st</sup>, 2020

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## Acknowledgements

*We wish to express our deepest gratitude to our supervisor Mrs. Nghiêm Thị Lan Phuong for her continuous sharing and motivating throughout the project. Under the instructions of Mrs. Phuong, the project team always felt comfortable and confident. Apart from all the technologies and methodologies, Mrs. Phuong shared with us the philosophy of keeping the right attitude towards problems. We believe that was the most important factor that led to the success of this project.*

*We would also like to thank the instructors at FPT University for all the classes. We hope you would find this project as a reflection of the knowledge and experiences you have given us during this period of four years.*

*Finally, we truly appreciate the random fellows on the internet who has discussed with us.*

*Without them, it would have likely been a real struggle to solve every tiny problem.*

# DEFINITIONS AND ACRONYMS

## Terminologies

No	Definition	Explanation
1	<b>FCPM</b>	FPTU Capstone Project Management website.
2	<b>FCPM</b>	A stand-alone application that manages students' system in the 9th semester of the school.
3	<b>FCPM Store</b>	FPTU Capstone Project Management Website Store
4	<b>FCPM Console</b>	FPTU Capstone Project Management Website Console
5	<b>FCPM Developer</b>	People who develops FPTU Capstone Project Management for web applications.
6	<b>FCPM User</b>	People who need FPTU Capstone Project Management Website for their projects
7	<b>User</b>	The term includes FCPM Developer and FCPM User

## Acronyms

Acronym	Definition
CPU	Central Processing Unit
RDBMS	Relational Database Management System
GUI	Graphical User Interface
HTTP	Hypertext Transfer Protocol
HTTPS	Hypertext Transfer Protocol Secure
IDE	Integrated Development Environment
UML	Unified Modelling Language
SRS	Software Requirement Specification
UC	Use Case
UI	User Interface
UX	User Experience
URL	Uniform Resource Locator
FCPM	FPT Capstone Project Management

# CHAPTER 1: INTRODUCTION

## 1.1 Purpose

This chapter provides an overview of the project including background information, a literature review of the existing system and raising a proposal for ideas of improvement.

## 1.2 Project Information

- Project name: FPTU Capstone Project Management
- Project code: **FCPM**
- Project group name: **FCPM**
- Product type: **Web Application**
- Timeline: **Sep 1<sup>st</sup> 2020**

## 1.3 The people

NO	NAME	ROLES	E-MAIL	PHONE
1	<i>Nghiem Thi Lan Phuong</i>	Supervisor	<a href="mailto:phuongntl@fpt.edu.vn">phuongntl@fpt.edu.vn</a>	0989376681
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## 1.4 Background

Each student studying at FPT University has a 4-year path to complete subjects according to the school's schedule. Each student must complete a graduation thesis as the final step to graduation. This made us think of a project of creating a software that provides students with functions such as registering, discussing, completing deadlines, exchanging with teachers ... With the abilities of reducing cost and time, it would be advantageous.



Figure 1-1: FPT University

## 1.5 The Existing System

As far as we know, most universities in Vietnam still manage projects manually.

Currently, FPT University has a number of websites for students to easily track their study progress and register their graduation project such as <http://fap.fpt.edu.vn/> to help students keep track of everything, subject information, exam schedule, score report, ...

As far as we know, the page <http://fap.fpt.edu.vn/> only has the project registration feature, not the project management feature for the training room. So we had the idea to create a project management system to help students, supervisors, training department and head of department easily and most convenient to use.

The figure shows a screenshot of the FAP System interface. On the left, there is a 'News' section with a search bar and a list of recent news items. The main area is divided into several sections: 'Academic Information', 'Information Access', 'Feedback', 'Reports', 'Others', and 'Courses on FPTU-Coursera'. Each section contains a list of links related to that category.

Section	Links
News	16/12/19 22:02 - FU-HL: THÔNG BÁO: Điểm phong trào sinh viên FPTU Hòa Lạc tháng 11 học kỳ Fall 2019 13/12/19 14:34 - FU-HL: Thông báo lịch thi lần 1 và lần 2 các môn học Block 5 và SYB301, TRS401, TRS501, TRS601 HK Fall 2019. 13/12/19 14:34 - FU-HL: Thông báo lịch thi lần 1 và lần 2 các môn học Block 5 và SYB301, TRS401, TRS501, TRS601 HK Fall 2019. 12/12/19 15:24 - FU-HL: Thông báo lịch thi và DSSV thi thực hành Block 5 Học Kỳ FALL 2019. 09/12/19 15:03 - FU-HL: Thông báo lịch thi lần 1 và lần 2 môn VOV114, VOV134 Part 2 HK Fall 2019 06/12/19 15:16 - FU-HL: FU-HL: THÔNG BÁO: Kế hoạch học tập chuẩn bị vào học kỳ Spring 2020. 05/12/19 10:14 - FU-HL: TB lịch bảo vệ KLTN học kỳ FA19 ngành GD 05/12/19 10:11 - FU-HL: TB lịch bảo vệ KLTN học kỳ FA19 ngành SE 05/12/19 10:08 - FU-HL: TB lịch bảo vệ KLTN học kỳ FA19 ngành IA 05/12/19 10:07 - FU-HL: TB lịch bảo vệ KLTN học kỳ FA19 ngành JPL
Academic Information	Registration/Application (Thủ tục/đơn từ) • Suspend one semester to take repeated course   Cancel (Xin tạm hoãn để một học kỳ để học lại   Hủy bỏ việc xin tạm hoãn) • Suspend one semester   Cancel (Xin nghỉ một học kỳ   Hủy bỏ việc xin nghỉ) • Move out class, suspend subject   Cancel (Xin chuyển lớp, tạm ngưng môn học, ...) • Register extra courses (Đăng ký môn học đì chậm kỳ) • Register to improve mark (Đăng ký học cải thiện điểm) • Register to repeat a course (Đăng ký học lại) • Cancel registration (Hủy đăng ký học) • Register Free Elective Courses (Đăng ký môn tự chọn) • Send Application (Gửi đơn)   View Application (Xem đơn) • Xin xác nhận sinh viên
Information Access	Information Access (Tra cứu thông tin) • University timetable (Lịch học) • Tuition fee per course (Biểu học phí) • Weekly timetable (Thời khóa biểu từng tuần) • Blended Online Course (BLOC) Schedules (Lịch học các môn theo phương pháp BLOC trong kỳ) • Class timetable (Xem thời khóa biểu của một lớp) • View exam schedule (Xem lịch thi) • View Syllabuses (Xem đề cương môn học)
Feedback	Feedback (Ý kiến) • Feedback about teaching (Ý kiến về việc giảng dạy)
Reports	Reports (Báo cáo) • Attendance report (Báo cáo điểm danh) • Mark Report (Báo cáo điểm) • Academic Transcript (Báo cáo điểm) • Curriculum (Khung chương trình) • Student Fee (Tra cứu học phí theo kỳ)
Others	Others (Khác) • View semester, room (Xem thông tin về học kỳ, phòng) • Công nhận và chuyển đổi tín chỉ các học phần của Đại học trực tuyến (FUNIX) • Cập nhật thông tin cá nhân (Update Profile) • Danh sách các môn học lại chờ xếp lớp • Giấy khen (Certificate of merit) • English Certificate
Courses on FPTU-Coursera	Regulations (Các quy định) • Regulations... • Dormitory regulations (Nội quy KTX)

Figure: FAP System

## **1.6 Proposal of the system**

### **1.6.1 System functions**

➤ Allow the student to:

- ✓ Allow the student to login with FPT email accounts.
- ✓ Allow the student to discuss and find teammates for capstone project in forum.
- ✓ Allow the student to communicate via chat feature.
- ✓ Allow the student to view and research project management models.
- ✓ Allow the student to register projects.
- ✓ Allow the student to view information and choose supervisors.
- ✓ Allow the student to edit the capstone project's name.
- ✓ Allow the student to report the working process of the group.
- ✓ Allow the student to report following Jira's task template.
- ✓ Allow the student to view news and notifications.

➤ Allow supervisor to:

- ✓ Allow the supervisor to login with FPT email accounts.
- ✓ Allow the supervisor to discuss and gather team's members for capstone project in forum.
- ✓ Allow the supervisor to communicate via chat feature.
- ✓ Allow the supervisor to view the list of registrants.
- ✓ Allow the supervisor to confirm / reject the project.
- ✓ Allow the supervisor to confirm / reject the request of changing project name.
- ✓ Allow the supervisor to view the group's working process.
- ✓ Allow the supervisor to view and comment on reports.

➤ Allow the Training Department to:

- ✓ Allow the training department to login with FPT email accounts.
- ✓ Allow the training department to view capstone project in forum.
- ✓ Allow the training department to communicate via chat feature.
- ✓ Allow the training department to view the list of registrants.
- ✓ Allow the training department to manage capstone projects.

- ✓ Allows the training department to confirm / reject the request of changing project name.
  - ✓ Allow the training department to manage users.
- Allow the Head of Department to:
- ✓ Allow the head of department to login with FPT email account.
  - ✓ Allow the head of department to view capstone projects in forum.
  - ✓ Allow the head of department to communicate via chat feature.
  - ✓ Allow the head of department to confirm / reject the project.
  - ✓ Allow the head of department to view dashboard of all capstone projects.
  - ✓ Allow the head of department to view process of working in group.

### **1.6.2 Out-of-scope functions**

Because of the time limitation, we did not implement these following functions in the FCPM initial version 1.0.0 release of the project but they are not permanently excluded. We are aware of their importance and they will be developed in future version 2.0.0:

- FCPM adds functions for affairs department.
- FCPM adds functions for examination council.
- FCPM completes functions of assessing the process of project.
- FCPM integrates API of project management systems.

Finally, we used some new approaches to solve the stated problems. Having awareness of the importance of new technologies, we aimed at applying them to our project.

### **1.6.3 Special approaches**

- Using Spring boot for business development.
- Using Spring data JPA.
- Using IntelliJ IDEA 2020.2.3.
- Using MySQL Workbench 8.0 CE to manage data.
- Using HTML, CSS, Bootstrap to create frontend.
- Using MS Excel create templates for imported data.

# CHAPTER 2: SOFTWARE PROJECT MANAGEMENT PLAN (SPMP)

## 2.1 Purpose

- Helping readers understand the organization and activities of the project and making it easy for readers to visualize how the project is going.
- Setting out the principles that the team members must adhere to and strictly follow throughout the project.
- Each team member must be conscious of the team project, so all team members must use this document to clarify their responsibilities.

### 2.1.1 Software processing model

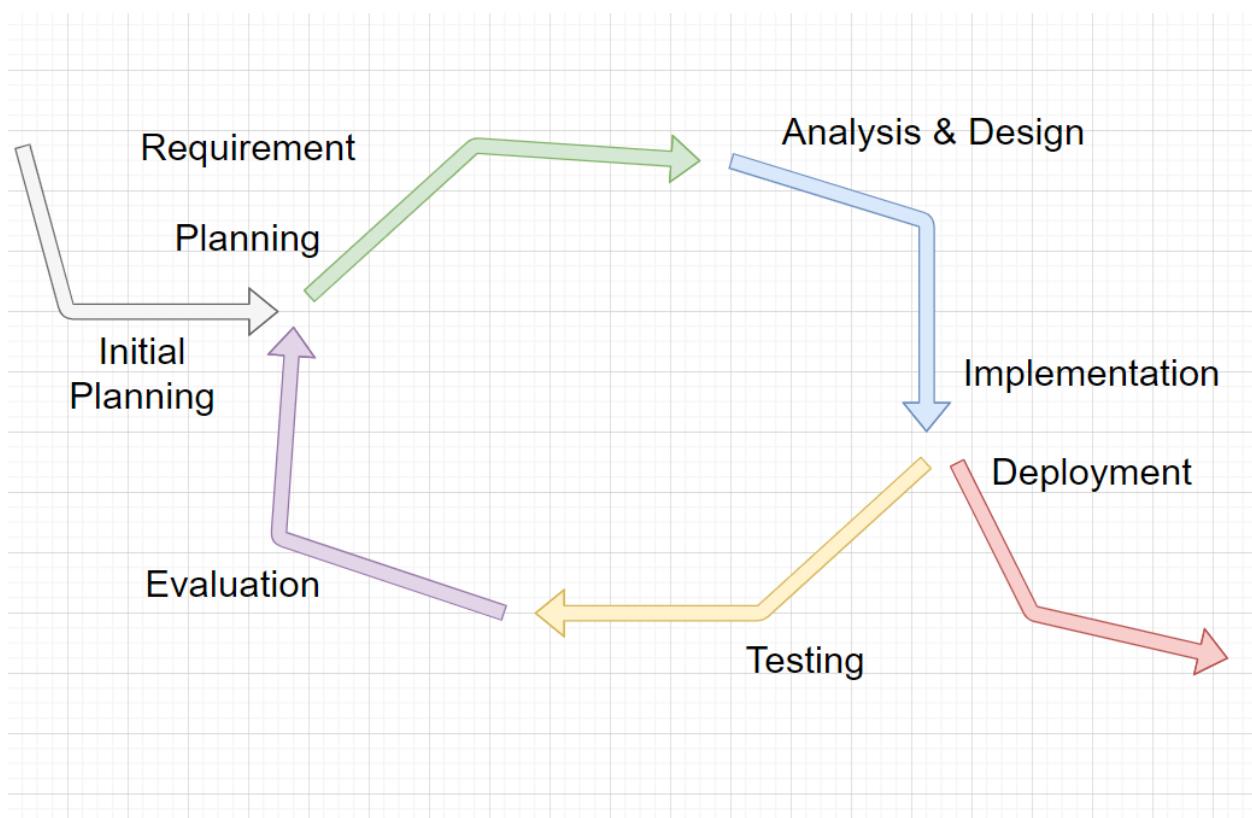


Figure: Iterative development model

The project used the Iterative Process Model

The Iterative Process Model is mostly used when the scope of the project is big, the major requirements are defined clearly, some more details will be added later in software development. By using this software processing model, we broke down the developing system tasks into series of smaller tasks which were completed separately, allowing us to take advantage of what was learned during the development of earlier parts of the system. In addition, the iterative model is easier than other models when the issues are discovered. They are reported back to the team, and solutions will be found while the project is still in development.

## 2.1.2 Roles and Responsibilities

### 2.1.2.1 Organization Structure

Role	Responsibility
Project Manager	Planning, dividing works among team members, developing schedules, supporting team members, coordinating communication with team members, maintaining a comfortable and proficient working atmosphere, and keeping the team focused on working for the main goal.
Technical Leader	Choosing and deciding what technologies should be used, instruct and support team members in using technologies they may not be familiar with, overseeing the work being done by other developers
Test Leader	Test execution, including test set-up and test run, evaluating test runs, recovering errors, defect loggings, and recording test results.
Developer	Code the product, discuss, exchange and review code of other developers.
Designer	Design product's user interface
Tester	Test the product

Table 2-1: Project Structure

### 2.1.2.2 Project Team Members

Team Member	Role
DucDDSE04936	Project Manager, Technical Leader, Developer, Designer
KienBTSE05182	Test Leader, Developer, Designer, Tester
KhanhNNSE05045	Developer, Designer, Tester
LongNDSE05906	Developer, Designer, Tester
KhangNMSE05904	Developer, Designer, Tester

Table: Project Team Members

### 2.1.2.3 Tools and Techniques

Software Tool	Version	Description
Jira	Online	Management tools
GitHub	Online	Source code control
Source Tree	3.1.3	Source code control
Microsoft Words	2019	Document tools
Microsoft Excel	2019	Document tools
MySQL Workbench 8.0 CE	2019	My SQL
Facebook	Online	Communication tool
Skype	Online	Communication tool
Process Model		Iterative Model
Draw.io	Online	Diagram, UML tool, chart
Spring Boot	2.3.3	IDE for coding
Spring Data JPA	2.0.3	IDE for coding
Hibernate		IDE for coding
Visual Studio Code	1.34.0	IDE for coding
HTML		IDE for coding
CSS		IDE for coding
Bootstrap		IDE for coding
JS, JQuery		IDE for coding
IntelliJ IDEA	2020.2.3	IDE for coding

## 2.2 PROJECT MANAGEMENT PLAN

### 2.2.1 Estimated Tasks

ICON	KEY	SUMMARY	STATUS	TIME TRACKING (SPENT)	TIME SPENT	START DATE	END DATE
☒	FCPM-5	Start capstone project	DONE	<div style="width: 0%; background-color: #ccc;"></div>	0% 0d	29/Sep/20	25/Oct/20
☒	FCPM-6	In the process	DONE	<div style="width: 0%; background-color: #ccc;"></div>	0% 0d	26/Oct/20	23/Nov/20
⌚	2	✓ FCPM Sprint 1	DONE	<div style="width: 100%; background-color: #0070C0;"></div>	100% 2d	02/Oct/20	04/Oct/20
⌚	3	✓ FCPM Sprint 2	DONE	<div style="width: 100%; background-color: #0070C0;"></div>	100% 4d	05/Oct/20	08/Oct/20
☒	FCPM-20	– Search and filter forum	DONE	<div style="width: 100%; background-color: #0070C0;"></div>	100% 1m	05/Oct/20	08/Oct/20
☒	FCPM-21	– Create common upload file	DONE	<div style="width: 100%; background-color: #0070C0;"></div>	100% 3m	09/Oct/20	11/Oct/20
☒	FCPM-22	– Create common send email	DONE	<div style="width: 100%; background-color: #0070C0;"></div>	100% 1w 2d	05/Oct/20	11/Oct/20
☒	FCPM-23	– Create notification component	DONE	<div style="width: 100%; background-color: #0070C0;"></div>	100% 1w 2d	05/Oct/20	11/Oct/20
☒	FCPM-25	– Create booking lecturers feature	DONE	<div style="width: 100%; background-color: #0070C0;"></div>	100% 1w 2d	05/Oct/20	11/Oct/20
☒	FCPM-24	– Create capstone project detail page	DONE	<div style="width: 100%; background-color: #0070C0;"></div>	100% 1w 2d	05/Oct/20	11/Oct/20
☒	FCPM-13	– Register project to admin	DONE	<div style="width: 100%; background-color: #0070C0;"></div>	100% 2d	29/Sep/20	04/Oct/20
☒	FCPM-12	– Create login with google account	DONE	<div style="width: 100%; background-color: #0070C0;"></div>	100% 4d	29/Sep/20	04/Oct/20
☒	FCPM-15	– View detail information of user	DONE	<div style="width: 100%; background-color: #0070C0;"></div>	100% 1w 1d	29/Sep/20	04/Oct/20
☒	FCPM-14	– Show list lecturers and booking	DONE	<div style="width: 100%; background-color: #0070C0;"></div>	100% 1w 1d	29/Sep/20	04/Oct/20
☒	FCPM-16	– Post	DONE	<div style="width: 100%; background-color: #0070C0;"></div>	100% 4d	29/Sep/20	01/Oct/20
⌚	7	✓ FCPM Sprint 3	DONE	<div style="width: 100%; background-color: #0070C0;"></div>	100% 1w 2d	12/Oct/20	18/Oct/20
☒	FCPM-27	– Append send email to register project	DONE	<div style="width: 100%; background-color: #0070C0;"></div>	100% 1w 2d	12/Oct/20	18/Oct/20
☒	FCPM-28	– Append send email to booking lecturers	DONE	<div style="width: 100%; background-color: #0070C0;"></div>	100% 1w 2d	12/Oct/20	18/Oct/20
☒	FCPM-29	– Append upload file to forum	DONE	<div style="width: 100%; background-color: #0070C0;"></div>	100% 1w 1d	12/Oct/20	18/Oct/20
☒	FCPM-34	– Append upload file to register project	DONE	<div style="width: 100%; background-color: #0070C0;"></div>	100% 1w 2d	12/Oct/20	18/Oct/20
☒	FCPM-26	– Create confirm join team feature	DONE	<div style="width: 100%; background-color: #0070C0;"></div>	100% 1w 2d	12/Oct/20	18/Oct/20
☒	FCPM-18	– Create group for chatting	DONE	<div style="width: 100%; background-color: #0070C0;"></div>	100% 1w 3d	09/Oct/20	11/Oct/20
⌚	8	✓ FCPM Sprint 4	DONE	<div style="width: 100%; background-color: #0070C0;"></div>	100% 1w 2d	19/Oct/20	25/Oct/20
☒	FCPM-30	– Training department view information, status of list student	DONE	<div style="width: 100%; background-color: #0070C0;"></div>	100% 1w 2d	19/Oct/20	25/Oct/20
☒	FCPM-32	– Training department request information to admin	DONE	<div style="width: 100%; background-color: #0070C0;"></div>	100% 1w 2d	19/Oct/20	25/Oct/20
☒	FCPM-31	– Training department view and edit the list of registered projects	DONE	<div style="width: 100%; background-color: #0070C0;"></div>	100% 1w 2d	19/Oct/20	25/Oct/20
☒	FCPM-35	– Admin view list capstone project	DONE	<div style="width: 100%; background-color: #0070C0;"></div>	100% 1w 2d	19/Oct/20	25/Oct/20
☒	FCPM-36	– Admin accept or reject project	DONE	<div style="width: 100%; background-color: #0070C0;"></div>	100% 1w 2d	19/Oct/20	25/Oct/20
⌚	9	✓ FCPM Sprint 5	DONE	<div style="width: 100%; background-color: #0070C0;"></div>	100% 2w 4d	26/Oct/20	08/Nov/20
☒	FCPM-38	– Daily report of member to leader	DONE	<div style="width: 100%; background-color: #0070C0;"></div>	100% 2w 4d	26/Oct/20	08/Nov/20
☒	FCPM-39	– Weekly report of leader to lecturer	DONE	<div style="width: 100%; background-color: #0070C0;"></div>	100% 2w 4d	26/Oct/20	08/Nov/20
⌚	10	✓ FCPM Sprint 6	DONE	<div style="width: 100%; background-color: #0070C0;"></div>	100% 3w	09/Nov/20	22/Nov/20
☒	FCPM-47	– Calculate data with the import file for statistics	DONE	<div style="width: 100%; background-color: #0070C0;"></div>	100% 2w 4d	09/Nov/20	22/Nov/20
☒	FCPM-40	– Dashboard all project for admin	DONE	<div style="width: 100%; background-color: #0070C0;"></div>	100% 2w	09/Nov/20	22/Nov/20
☒	FCPM-41	– Detail project for admin	DONE	<div style="width: 100%; background-color: #0070C0;"></div>	100% 2w	09/Nov/20	22/Nov/20

Figure: Task management

## 2.2.2 Meeting sessions

All meeting sessions were be written following this template:

Meeting/Project Name:	FCPM																										
Date of meeting:	25/8/2020	<i>Time: (Type)</i>	<i>1 hours (Face-to-face)</i>																								
Meeting Called by:	DucDD	<i>Location:</i>	<i>FPT University – P205</i>																								
Note Taker:	KhangNM	<i>Time Keeper:</i>	DucDD																								
1. Meeting Objectives <ol style="list-style-type: none"> <li>1. Assigning new tasks for members</li> <li>2. Conducting report No.2</li> </ol>																											
2. Attendance <table border="1"> <thead> <tr> <th>Name</th><th>Roles</th><th>E-mail</th><th>Phone</th></tr> </thead> <tbody> <tr> <td>Do Dinh Duc</td><td>Project Manager</td><td><a href="mailto:Ducddse04936@fpt.edu.vn">Ducddse04936@fpt.edu.vn</a></td><td>0968480997</td></tr> <tr> <td>Bui Trung Kien</td><td>Developer ,Tester Leader, Doc</td><td><a href="mailto:Kienbtse05182@fpt.edu.vn">Kienbtse05182@fpt.edu.vn</a></td><td>0986268048</td></tr> <tr> <td>Nguyen Ngoc Khanh</td><td>Developer ,Tester, Doc</td><td><a href="mailto:Khanhnse05045@fpt.edu.vn">Khanhnse05045@fpt.edu.vn</a></td><td>0914092466</td></tr> <tr> <td>Nguyen Minh Khang</td><td>Developer ,Tester, Doc</td><td><a href="mailto:Khangnmse05904@fpt.edu.vn">Khangnmse05904@fpt.edu.vn</a></td><td>0971091547</td></tr> <tr> <td>Nguyen Duc Long</td><td>Developer ,Tester, Doc</td><td><a href="mailto:Longndse05906@fpt.edu.vn">Longndse05906@fpt.edu.vn</a></td><td>09782996448</td></tr> </tbody> </table>				Name	Roles	E-mail	Phone	Do Dinh Duc	Project Manager	<a href="mailto:Ducddse04936@fpt.edu.vn">Ducddse04936@fpt.edu.vn</a>	0968480997	Bui Trung Kien	Developer ,Tester Leader, Doc	<a href="mailto:Kienbtse05182@fpt.edu.vn">Kienbtse05182@fpt.edu.vn</a>	0986268048	Nguyen Ngoc Khanh	Developer ,Tester, Doc	<a href="mailto:Khanhnse05045@fpt.edu.vn">Khanhnse05045@fpt.edu.vn</a>	0914092466	Nguyen Minh Khang	Developer ,Tester, Doc	<a href="mailto:Khangnmse05904@fpt.edu.vn">Khangnmse05904@fpt.edu.vn</a>	0971091547	Nguyen Duc Long	Developer ,Tester, Doc	<a href="mailto:Longndse05906@fpt.edu.vn">Longndse05906@fpt.edu.vn</a>	09782996448
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3. Done tasks <ol style="list-style-type: none"> <li>1. Building project structure.</li> <li>2. Configuring git repository with security.</li> <li>3. Conducting report No.1</li> </ol>																											
4. New tasks <ol style="list-style-type: none"> <li>1. Backend</li> <li>2. Frontend</li> </ol>																											
5. Risks & Difficulties																											

### **2.2.3 Coding Convention**

Sonar Lint tool for checking convention of Java

### **2.2.4 Risk Management Plan**

No	Description	Avoidance plan	Contingency plan
R1	Data loss	Using GitHub for version control. - Teaching members how to use Git and resolving conflicts. - Always have important backups.	- Restoring backed up data from GitHub.
R2	Illness or absence of team members	- Providing schedules in advance. - For long periods of absence, members should notify the group in advance.	- Assigning the tasks of absent member to other members. - Working overtime if necessary.
R3	Misunderstanding of Requirements	- Discussing requirements carefully with the customer. - Always ask for clarification if requirements are unclear. - Commenting needs to meet	- Making sure idea's business logic is carefully analysed.
R4	Changes in requirements	- Every new update of requirement has to be reviewed by all team members and supervisor. - Team member has to analyse requirements carefully before raising up to team.	- If requirement has new update, all members have to join the meeting to be aware and to make decisions.
R5	Conflicts between team members	- Everything must be documented. - Every team member has to express clearly and carefully.	- Making sure any miscommunication has to be resolved.
R6	Failed to meet deadline	- Planning and developing schedule carefully. - Assigning tasks carefully.	- Finding the root cause of the problem. - Reassigning tasks. - Focusing on important functions first.

		- Defining punishment for team members who neglect work.	
--	--	--	--

Table 2-5: Risk Management

## 2.2.5 Communication Plan

*Weekly meeting schedule:* We used Iterative and Incremental Process Model, then we divided the system into two sub-systems, each sub-system was divided into series of small tasks. The amount of work by the whole team, after that the task will be assigned to team members by the Team Leader, and depending on difficulty levels, the Technical Leader set deadlines for each task. We had a meeting inform to all team about what each member finished last week, the status (fast, on time or slow), the issues met and how to solve them. When any member raised any issue, the whole team helped to find out a solution together. After that, the team defined detailed stories for next week tasks.

*Daily meeting schedule:* Each sub-system had one development team with different schedule. Starting each workday, each team had a stand-up meeting to inform to others: “What did I do yesterday?”, “What will I do today?” and “Is there any difficulty?”. By focusing on what each person accomplished the day before and will accomplish on that day, the team gained an excellent understanding of what had been done and what remained.

*Unscheduled meeting:* When someone had an important problem that he wanted to solve immediately, we had a meeting for discussion, usually via some online channels: Skype, Facebook or Phone.

*Communication channel:* Our main communication channel was Skype. On the other hand, we used face-to-face meetings, Facebook group to comment issues. However, we sometimes made phone calls or instant messages if someone had a problem.

# **CHAPTER 3: SOFTWARE REQUIREMENTS SPECIFICATION (SRS)**

## **3.1 Purpose**

Software Requirements Specifications chapter provides general, as well as specific information of the system, it outlines functional and non-functional requirements of our website. Following these requirements, FCPM performs its intended functionality used in designing developing and testing. All members work based on the information that provided in this document.

## **3.2 Functional Requirements**

### **3.2.1 Use Case Diagram**

The figure below is displayed the use cases we had in this project.

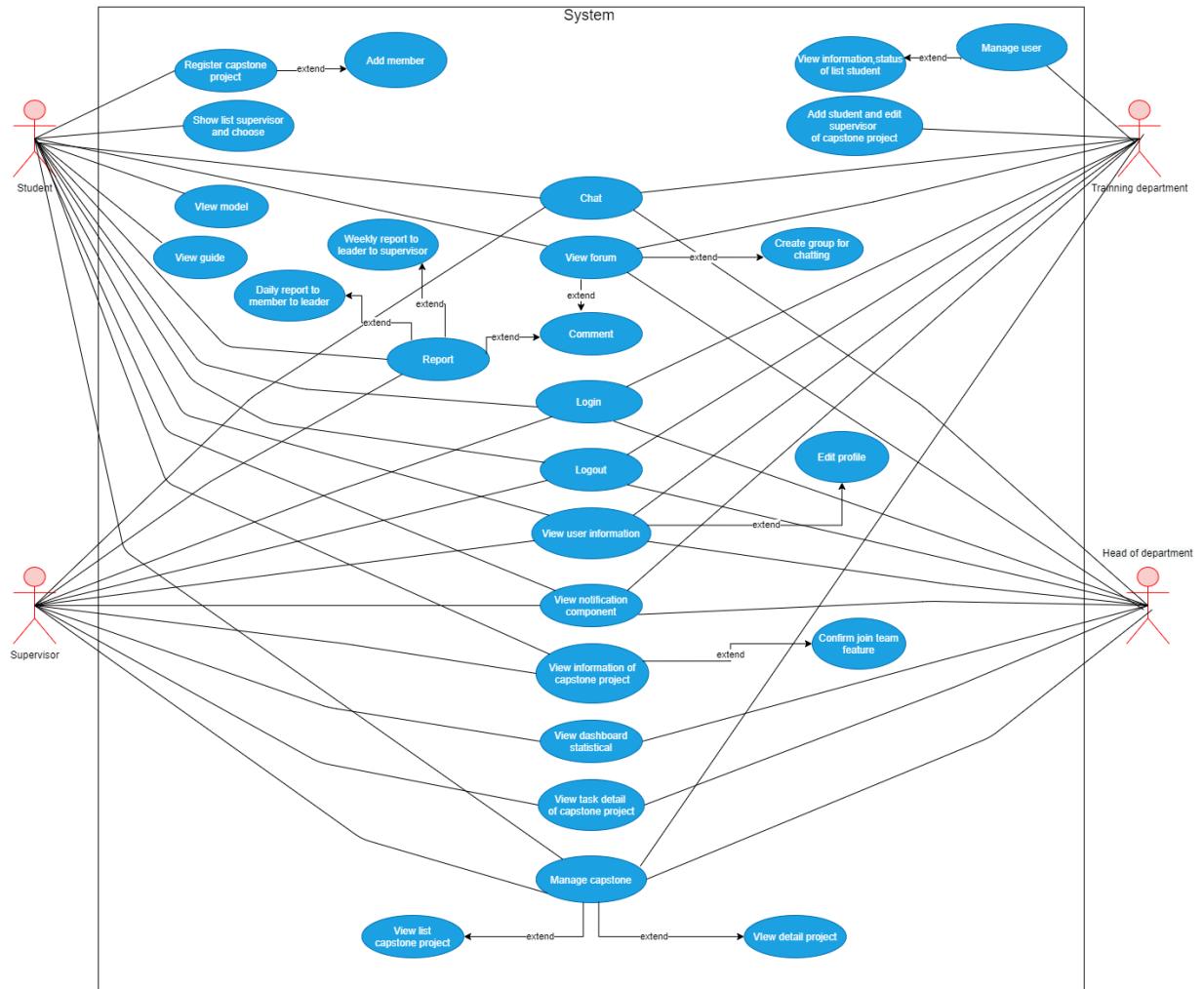


Figure: Use case diagram

### 3.2.2 Business Rules

No	Description
B1	Username must not be empty.
B2	Username must be unique.
B3	User's full name must not be empty.
B4	The email must not be empty.
B5	Email address must be valid.
B6	Each email address can be used for only one account.
B7	Capstone Project must have campus and semesters
B8	Phone number must be valid.
B9	The administrator is able to: active/ deactivate account, change account role, change request state.
B10	Only users whose role is: Head of department, Supervisor view statistical dashboard of the screen.
B11	The administrator is able to: active/ deactivate account, change account role, change request state of student, supervisor.
B12	Exported files must be Microsoft Excel files with valid formats.
B13	Only leader can be created weekly report.
B14	Only student can create reports.
B15	Only training department add news.
B16	Only training department can manage users.
B17	Users must have sites and semesters

Table: Business rules

### 3.2.3 Use Cases

Actor	Description
Student	FPT students who have qualified for the project, are preparing to do a project can easily find their project group and register for the project in the fastest and most convenient way. Students will know the information of instructors to choose the right supervisor for the group. And in the process of making projects, students can also exchange and report on weekly work with supervisors.
Supervisor	The supervisor looks at the project teams of his choice and makes a decision to accept or reject the instruction. During the project, the supervisor can see the daily and weekly reports sent by the leader of team, and the supervisor will decide whether the project team is protected or not.
Training department	The training department will view the project registration list and view information and status of the project group. The training department will decide what the group will do and the supervisor will guide the group.

	Training department will synthesizes the results and decide the success or failure of the project team
Head of department	The Head of Department will see all of: the information, the project team list and the details of the team's project making process.

**Table: Actor description**

	<b>Actor</b>	<b>Name</b>	<b>Description</b>
<b>UC-001</b>	Student, Supervisors, Training department, Head of department	Login	Login to system with FCPM account.
<b>UC-002</b>	Student, Supervisors, Training department, Head of department	Logout	Logout to system with FCPM account
<b>UC-003</b>	Student	Register Capstone Project	Students register capstone project to system
<b>UC-004</b>	Student	Add member	Students add members to register project
<b>UC-005</b>	Student	View model	Students view model for reference
<b>UC-006</b>	Student	Show list supervisors and booking	Students choose supervisor of their group
<b>UC-007</b>	Student	View GUIDE	View GUIDE to reference
<b>UC-008</b>	Student	Upload file	Students upload file to register projects or add posts
<b>UC-009</b>	Student	Send mail	Students send mail to register project and booking supervisor
<b>UC-010</b>	Student, Supervisor, Training department, Head of department	Chat	Users chat together
<b>UC-011</b>	Student	Create chat	Students create group for chatting and invite other student who do not have project group to talk, exchange.

<b>UC-012</b>	Student	Confirm join team feature	After talking through a group chat, Students will agree to form a group to register project
<b>UC-013</b>	Student	Edit Profile	Students can edit profile
<b>UC-014</b>	Student, Supervisors, Training department, Head of department	Notification component	When there is any information, there will be a notice to the student, supervisors, training department, head of department
<b>UC-015</b>	Student, Supervisors, Training department, Head of department	Comment	Students, supervisors, training department, head of department can comment, exchange information with each other
<b>UC-016</b>	Student, Supervisors	Daily report to member to leader	Every day, members who complete tasks must report to leader
<b>UC-017</b>	Leader	Weekly report to leader to supervisor	Every week, the leader must report to supervisor during the past week, team has performed
<b>UC-018</b>	Training department	Manage User	Training department can manage all information of user
<b>UC-019</b>	Training department	View information, status of list student	Training department can view information of list student and view status of students who are eligible to do projects or students don not have groups to add to another group
<b>UC-020</b>	Training department	Add student and edit supervisor of Capstone Project	Training department can add student and edit supervisor of Capstone Project
<b>UC-021</b>	Head of department, Supervisor	View list capstone project	Allow students, supervisor see the list capstone project
<b>UC-022</b>	Head of department, Supervisor	View detail project	Head of department, supervisors can view detail project
<b>UC-023</b>	Head of department, Supervisor	Manage Capstone Project	Head of department and supervisors can manage capstone project
<b>UC-024</b>	Supervisors, Head of department	View task detail of Capstone Project	Supervisors and head of department can view task detail of Capstone Project
<b>UC-025</b>	Supervisors, Head of department	Dashboard statistical of project	Supervisors and head of department will dashboard statistical all information project of registered groups

<b>UC-026</b>	Student, Supervisor, Head of department, Training department	View information of user	Students, supervisors, head of department and training department can view information of users
<b>UC-027</b>	Head of department	Approve capstone project in the project registration stage	Head of department can approve capstone project in the project registration stage
<b>UC-028</b>	Training department	Change pass / fail results	Training department can Change pass / fail results capstone project
<b>UC-029</b>	Training department	Create notification	Training department can create notification
<b>UC-030</b>	Training department	View history record	Training department can view history record
<b>UC-031</b>	Student	Change name capstone project	Student can change name capstone project
<b>UC-032</b>	Student, Supervisor, Head of department, Training department	View List Post	Student, Supervisor, Head of department, Training department view list post
<b>UC-033</b>	Student, Supervisor, Head of department, Training department	Get comment	Student, Supervisor, Head of department, Training department get comment
<b>UC-034</b>	Student, Supervisor, Head of department, Training department	Add post	Student, Supervisor, Head of department, Training department add post
<b>UC-035</b>	Student, Supervisor, Head of department, Training department	Edit post	Student, Supervisor, Head of department, Training department edit post
<b>UC-036</b>	Student, Supervisor, Head of department, Training department	Delete post	Student, Supervisor, Head of department, Training department delete post
<b>UC-037</b>	Student, Supervisor, Head of department,	Search post	Student, Supervisor, Head of department, Training department search post

	Training department		
<b>UC-038</b>	Training department	Add user	Training department add user
<b>UC-039</b>	Training department	Approve capstone project in the changing name stage	Training department approve capstone project in the changing name stage

*Table: Use Case List*

### 3.2.4 Use Cases Detail

#### UC-001. Login

##### *Use Case Specification*

UC ID and Name:	<b>UC- Log in</b>		
Create by:	DucDD	Date Created:	10/08/2020
Primary Actor:	Students, Supervisors, Training department, Head of department	Secondary Actor:	
Trigger:	KienBT		
Description:	Allow students, supervisors, training department, head of department who have FCPM account to login.		
Preconditions:	Students supervisors, training department, head of department account has been set up and username and password has been generated.		
Post conditions:	Students, supervisors, training department, head of department are logged into FCPM successfully. System displays Login Page.		
Normal Flow:	<b>Login:</b> 1. Student visits the login page. 2. Student click " Sign in with Google " 3. Systems displays account verification 4. Student choose account FPT 5. System displays forum		
Alternative Flows:	Students violates some business rule in step 4 1. Students choose a non-FPT account 3. Go to step 1 in normal flow.		
Exceptions:	Cannot communicate with server 1. FCPM displays error message.		

Priority:	High
Frequency of Use:	High
Business Rules:	
Other Information:	N/A
Assumptions:	N/A

## UC-002. Logout

### *Use Case Specification*

UC ID and Name:	<b>UC- Logout</b>		
Create by:	KienBT	Date Created:	10/08/2020
Primary Actor:	Students, Supervisors, Training department, Head of department	Secondary Actor:	
Trigger:	DucDD		
Description:	To prevent other users from stealing information		
Preconditions:	User has logged into FCPM system		
Post conditions:	Students, supervisors, training department, head of department are logged into FCPM successfully. System displays forum.		
Normal Flow:	<b>Logout:</b> 1. Students successfully login to the forum 2. Student select their username in the top right corner of the forum 3. Student click "Logout" 4. System display Login Page		
Alternative Flows:	N/A		
Exceptions:	Cannot communicate with server 1. FCPM displays error message.		
Priority:	High		
Frequency of Use:	High		
Business Rules:			
Other Information:	N/A		
Assumptions:	N/A		

## UC-003. Register Capstone Project

*Use Case Specification*

UC ID and Name:	<b>UC- Register Capstone Project</b>		
Create by:	KhanhNN	Date Created:	10/08/2020
Primary Actor:	Student	Secondary Actor:	
Trigger:	LongND		
Description:	Student register capstone project to system		
Preconditions:	The student has formed his project team		
Post conditions:	1.The student has successfully formed his project team 2.Students login to their account successfully 3.The system displays forum		
Normal Flow:	<b>Register:</b> 1.Students login to their account successfully 2.Students access the forum 3.Students click on " Capstone Project " and choose " Create Capstone " 4.System display Register Project Page 5.Students register project and click "submit" to register		
Alternative Flows:	N/A		
Exceptions:	Cannot communicate with server 1. FCPM displays error message.		
Priority:	High		
Frequency of Use:	High		
Business Rules:			
Other Information:	N/A		
Assumptions:	N/A		

## UC-004. Add Member

*Use Case Specification*

UC ID and Name:	<b>UC- Add member</b>		
Create by:	LongND	Date Created:	10/08/2020
Primary Actor:	Student	Secondary Actor:	
Trigger:	KhangNM		
Description:	Student add member to register capstone project		
Preconditions:	The student has formed his project team		
Post conditions:	1.The student has successfully formed his project team 2.Students login to their account successfully 3.The system displays forum		
Normal Flow:	<b>Add member:</b> 1.Students login to their account successfully 2.Students access the forum 3.Students click on " Capstone Project " and choose " Create Capstone "		

	4.System display Register Project Page 5.Student add account member of team 6.Student click button “Add”
Alternative Flows:	N/A
Exceptions:	Cannot communicate with server 1. FCPM displays error message.
Priority:	High
Frequency of Use:	High
Business Rules:	
Other Information:	N/A
Assumptions:	N/A

## UC-005. View model

### *Use Case Specification*

UC ID and Name:	<b>UC- View model</b>		
Create by:	KhangNM	Date Created:	10/08/2020
Primary Actor:	Student	Secondary Actor:	
Trigger:	DucDD		
Description:	Student view model for reference		
Preconditions:	The student has formed his project team		
Post conditions:	1.The student has successfully formed his project team 2.Students login to their account successfully 3.The system displays forum		
Normal Flow:	<b>View model:</b> 1.Students login to their account successfully 2.Students access the forum 3.Students click on "Model" to view model		
Alternative Flows:	N/A		
Exceptions:	Cannot communicate with server 1. FCPM displays error message.		
Priority:	High		
Frequency of Use:	High		
Business Rules:			
Other Information:	N/A		
Assumptions:	N/A		

## UC-006. Show list supervisor and booking

*Use Case Specification*

UC ID and Name:	<b>UC- Show list supervisor and booking</b>		
Create by:	LongND	Date Created:	10/08/2020
Primary Actor:	Student	Secondary Actor:	
Trigger:	KhangNM		
Description:	Student choose instructors of their group		
Preconditions:	Students have registered for the project		
Post conditions:	Students found the details of the supervisors		
Normal Flow:	<b>Booking supervisor:</b> 1. Students login to their account successfully 2. Students click on “Capstone Project” at the top of the page, Choose supervisors 3. System display a list supervisors’ page 4. Students click on name of supervisor to show information of supervisor to booking		
Alternative Flows:	N/A		
Exceptions:	Cannot communicate with server 1. FCPM displays error message.		
Priority:	High		
Frequency of Use:	High		
Business Rules:			
Other Information:	N/A		
Assumptions:	N/A		

## UC-007. View GUIDE

*Use Case Specification*

UC ID and Name:	<b>UC- View GUIDE</b>		
Create by:	DucDD	Date Created:	10/08/2020
Primary Actor:	Student	Secondary Actor:	
Trigger:	LongND		
Description:	Student view GUIDE to reference		
Preconditions:	Students have registered for the project		
Post conditions:	Students found the details of the supervisors		
Normal Flow:	<b>View GUIDE:</b> 1. Students login to their account successfully 2. Students access the forum 3. Students click on "GUIDE" to research GUIDE		
Alternative Flows:	N/A		

Exceptions:	Cannot communicate with server 1. FCPM displays error message.
Priority:	High
Frequency of Use:	High
Business Rules:	
Other Information:	N/A
Assumptions:	N/A

## UC-008. Upload file

### *Use Case Specification*

UC ID and Name:	<b>UC- Upload file</b>		
Create by:	KhangNM	Date Created:	10/08/2020
Primary Actor:	Student	Secondary Actor:	
Trigger:	DucDD		
Description:	Student upload file to register project or add post		
Preconditions:	Leader gathered enough information about the group members to complete the word file Leader complete the word file to upload		
Post conditions:	1. Students login to their account successfully 2. Leader gathered enough information about the group members to complete the word file to upload 3. The system displays the Register Project page to upload file		
Normal Flow:	<b>Upload file:</b> 1. Students login to their account successfully 2. Students access the forum 3. Students click on " Capstone Project " and choose " Create Capstone " 4. System display Register Project Page to upload file 5. Students click on “ Upload” to upload file		
Alternative Flows:	N/A		
Exceptions:	Cannot communicate with server 1. FCPM displays error message.		
Priority:	High		
Frequency of Use:	High		
Business Rules:			
Other Information:	N/A		
Assumptions:	N/A		

## UC-009. Send mail

*Use Case Specification*

UC ID and Name:	<b>UC- Send mail</b>		
Create by:	KhanhNN	Date Created:	10/08/2020
Primary Actor:	Student	Secondary Actor:	
Trigger:	KienBT		
Description:	Students send mail to register capstone project and booking supervisor		
Preconditions:	Group has enough to member		
Post conditions:	1.The group has all the information of its members 2.The group had the project's topic		
Normal Flow:	<b>Send mail:</b> 1.Student access to email page 2.Student create email 3.Student enter information of team 4.Student send mail to register capstone project and booking supervisor to training department		
Alternative Flows:	N/A		
Exceptions:	Cannot communicate with server 1. FCPM displays error message.		
Priority:	High		
Frequency of Use:	High		
Business Rules:			
Other Information:	N/A		
Assumptions:	N/A		

## UC-010. Chat

*Use Case Specification*

UC ID and Name:	<b>UC- Chat</b>		
Create by:	KienBT	Date Created:	10/08/2020
Primary Actor:	Student, Supervisor, Training department, Head of department	Secondary Actor:	
Trigger:	KhanhNN		
Description:	User chat together		
Preconditions:	User login successfully		
Post conditions:	User access successfully to forum		
Normal Flow:	<b>Chat:</b>		

	<ol style="list-style-type: none"> <li>1. Users login to their account successfully</li> <li>2. Users access to forum</li> <li>3. Users click button “Messenger” to chat</li> </ol>
Alternative Flows:	N/A
Exceptions:	Cannot communicate with server 1. FCPM displays error message.
Priority:	High
Frequency of Use:	High
Business Rules:	
Other Information:	N/A
Assumptions:	N/A

## UC-011. Create chat

### *Use Case Specification*

UC ID and Name:	<b>UC- Create chat</b>		
Create by:	DucDD	Date Created:	10/08/2020
Primary Actor:	Student	Secondary Actor:	
Trigger:	LongND		
Description:	Students Create chat and invite other student who do not have project group to talk, exchange		
Preconditions:	Students have not found their own project group		
Post conditions:	Project group does not have enough members		
Normal Flow:	<b>Create chat:</b> <ol style="list-style-type: none"> <li>1. Students login to their account successfully</li> <li>2. Students access the forum page to post</li> <li>3. Student click icon on screen</li> <li>4. Show room to student chat</li> </ol>		
Alternative Flows:	N/A		
Exceptions:	Cannot communicate with server 1. FCPM displays error message.		
Priority:	High		
Frequency of Use:	High		
Business Rules:			
Other Information:	N/A		
Assumptions:	N/A		

## UC-012. Confirm join team feature

*Use Case Specification*

UC ID and Name:	<b>UC- Confirm join team feature</b>		
Create by:	KhangNM	Date Created:	10/08/2020
Primary Actor:	Student	Secondary Actor:	
Trigger:	KhanhNN		
Description:	After talking through a group chat, Students will agree to form a group to register project		
Preconditions:	Students have not found their own project group		
Post conditions:	Project group not enough members		
Normal Flow:	<b>Confirm join team feature:</b> -Students login to their account successfully -Students access the forum page to post -Students Create chat - If the student is interested, press the join button, it will automatically add to the chat group - After the group chat members feel ok, the students in that group will form a group to register the project group.		
Alternative Flows:	N/A		
Exceptions:	Cannot communicate with server 1. FCPM displays error message.		
Priority:	High		
Frequency of Use:	High		
Business Rules:			
Other Information:	N/A		
Assumptions:	N/A		

## UC-013. Edit Profile

*Use Case Specification*

UC ID and Name:	<b>UC- Edit Profile</b>		
Create by:	KienBT	Date Created:	10/08/2020
Primary Actor:	Student	Secondary Actor:	
Trigger:	LongND		
Description:	Student can edit profile		
Preconditions:	Student login to their account successfully		
Post conditions:	Student access successfully to forum		
Normal Flow:	<b>Edit profile:</b> 1. Students login to their account successfully 2. Students access the forum 3. Student click to account 4. Student click button "Edit profile"		

Alternative Flows:	N/A
Exceptions:	Cannot communicate with server 1. FCPM displays error message.
Priority:	High
Frequency of Use:	High
Business Rules:	
Other Information:	N/A
Assumptions:	N/A

## UC-014. Notification component

### *Use Case Specification*

UC ID and Name:	<b>UC- Notification component</b>		
Create by:	LongND	Date Created:	10/08/2020
Primary Actor:	Student, Supervisor, Training department, Head of department	Secondary Actor:	
Trigger:	KhangNM		
Description:	When there is any information, there will be a notice to the student, supervisors, training department, head of department		
Preconditions:	1. Users can access the system. 2. Users logins successfully		
Post conditions:	N/A		
Normal Flow:	<b>Notification component:</b> 1. Users login to their account successfully 2. Users access the forum page 3. Select the notifications you want to see 4. Displays details of the notifications you want to see		
Alternative Flows:	N/A		
Exceptions:	Cannot communicate with server 1. FCPM displays error message.		
Priority:	High		
Frequency of Use:	High		
Business Rules:			
Other Information:	N/A		
Assumptions:	N/A		

## UC-015. Comment

*Use Case Specification*

UC ID and Name:	<b>UC- Comment</b>		
Create by:	KhanhNN	Date Created:	10/08/2020
Primary Actor:	Student, Supervisor	Secondary Actor:	
Trigger:	DucDD		
Description:	Student and supervisors can comment, exchange information with each other		
Preconditions:	1. Student, supervisor can access the system. 2. Student, supervisor logins successfully		
Post conditions:	N/A		
Normal Flow:	<b>Comment:</b> 1. Students, supervisor login to their account successfully 2. Students, supervisor access the forum page 3. Student, supervisor can enter information you want comment, click send in post		
Alternative Flows:	N/A		
Exceptions:	Cannot communicate with server 1. FCPM displays error message.		
Priority:	High		
Frequency of Use:	High		
Business Rules:			
Other Information:	N/A		
Assumptions:	N/A		

## UC-016. Daily report to member to leader

*Use Case Specification*

UC ID and Name:	<b>UC- Daily report to member to leader</b>		
Create by:	DucDD	Date Created:	10/08/2020
Primary Actor:	Student	Secondary Actor:	
Trigger:	KhanhNN		
Description:	Every day, members who complete tasks must report to leader		
Preconditions:	Members complete their task		
Post conditions:	N/A		
Normal Flow:	<b>Report:</b> 1. Students login to their account successfully 2. Students access the forum page 3. Select the Reports section at the top of the page, then select create report 4. Enter information report, then click button submit 5. Display reports of yourself and team members		

	6. Click name of title to view detail information of report 7. Display report detail
Alternative Flows:	N/A
Exceptions:	Cannot communicate with server 1. FCPM displays error message.
Priority:	High
Frequency of Use:	High
Business Rules:	
Other Information:	N/A
Assumptions:	N/A

## UC-017. Weekly report to leader to supervisor

### *Use Case Specification*

UC ID and Name:	<b>UC- Weekly report to leader to supervisor</b>		
Create by:	KienBT	Date Created:	10/08/2020
Primary Actor:	Leader	Secondary Actor:	
Trigger:	LongND		
Description:	Every week, the leader must report to supervisor during the past week, team has performed		
Preconditions:	Team complete their task		
Post conditions:	N/A		
Normal Flow:	<p><b>Report:</b></p> <ol style="list-style-type: none"> <li>1. Leader login to their account successfully</li> <li>2. Leader access the forum page</li> <li>3. Select the Reports section at the top of the page, then select create report</li> <li>4. Enter information report, then click button submit</li> <li>5. Display reports of yourself and team members</li> <li>6. Click name of title to view detail information of report</li> <li>7. Display report detail</li> </ol>		
Alternative Flows:	N/A		
Exceptions:	Cannot communicate with server 1. FCPM displays error message.		
Priority:	High		
Frequency of Use:	High		
Business Rules:			
Other Information:	N/A		
Assumptions:	N/A		

## **UC-018. Manage User**

*Use Case Specification*

UC ID and Name:	<b>UC- Manage User</b>		
Create by:	LongND	Date Created:	10/08/2020
Primary Actor:	Training department	Secondary Actor:	
Trigger:	DucDD		
Description:	Training department can manage all information of users		
Preconditions:	Training department login to their account successfully		
Post conditions:	Training department access successfully the forum page		
Normal Flow:	<b>Manage User:</b> 1.Training department login to their account successfully 2.Training department access the forum page 3.Training department manage users 4. Show detail information of users		
Alternative Flows:	N/A		
Exceptions:	Cannot communicate with server 1. FCPM displays error message.		
Priority:	High		
Frequency of Use:	High		
Business Rules:			
Other Information:	N/A		
Assumptions:	N/A		

## **UC-019. View information, status of list student**

*Use Case Specification*

UC ID and Name:	<b>UC- View information, status of list student</b>		
Create by:	KhangNM	Date Created:	10/08/2020
Primary Actor:	Training department	Secondary Actor:	
Trigger:	DucDD		
Description:	Training department can view information of list student and view status of students who are eligible to do projects or students don't have groups to add to another group		
Preconditions:	Training department has logged into FCPM website		
Post conditions:	“Registered project page” screen will be shown		
Normal Flow:	<b>View:</b>		

	<p>1.Training department login to their account successfully</p> <p>2.System display “Registered projects list” screen</p> <p>3. The dropdown section containing the supervisors and student information will be displayed on the screen</p> <p>4. Training department will select a group in the dropdown to see information, status of list student</p> <p>5.Training department can switch status from registered _ capstone -&gt; approve_ capstone _ supervisors -&gt; approve_ capstone_ head -&gt;doing_ capstone</p>
Alternative Flows:	N/A
Exceptions:	Cannot communicate with server 1. FCPM displays error message.
Priority:	High
Frequency of Use:	High
Business Rules:	
Other Information:	N/A
Assumptions:	N/A

## UC-020. Add student and edit supervisor of Capstone Project

### *Use Case Specification*

UC ID and Name:	<b>UC- Add student and edit supervisor of Capstone Project</b>		
Create by:	LongND	Date Created:	10/08/2020
Primary Actor:	Training department	Secondary Actor:	
Trigger:	KienBT		
Description:	Training department can add student and edit supervisor of Capstone Project		
Preconditions:	Training department has logged into FCPM website		
Post conditions:	Training department access successfully to forum		
Normal Flow:	<p><b>View and edit:</b></p> <p>1.Training department login to their account successfully</p> <p>2.System display forum</p> <p>3. Training department click on Capstone Project</p> <p>4. Training department choose Capstone Project List</p> <p>5.Training department add student and edit supervisor of Capstone Project</p>		
Alternative Flows:	N/A		
Exceptions:	Cannot communicate with server 1. FCPM displays error message.		
Priority:	High		
Frequency of Use:	High		

Business Rules:			
Other Information:	N/A		
Assumptions:	N/A		

## UC-021. View list capstone project

### *Use Case Specification*

UC ID and Name:	<b>UC- View list capstone project</b>		
Create by:	DucDD	Date Created:	10/08/2020
Primary Actor:	Head of department, Supervisor	Secondary Actor:	
Trigger:	KhanhNN		
Description:	Allow students, supervisor see the list capstone project		
Preconditions:	Students, supervisor have logged into FCPM website		
Post conditions:	“Capstone project list” screen will be shown		
Normal Flow:	<b>View:</b> 1. Head of department, supervisor access in FCPM website. 2. System display “List capstone project” screen 3. Head of department, supervisor click on Capstone Project 4. Head of department, supervisor choose List Capstone Project		
Alternative Flows:	N/A		
Exceptions:	Cannot communicate with server 1. FCPM displays error message.		
Priority:	High		
Frequency of Use:	High		
Business Rules:			
Other Information:	N/A		
Assumptions:	N/A		

## UC-022. View detail Project

*Use Case Specification*

UC ID and Name:	<b>UC- View detail Project</b>		
Create by:	KhangNM	Date Created:	10/08/2020
Primary Actor:	Student, Supervisor	Secondary Actor:	
Trigger:	LongND		
Description:	Head of department, supervisor can view detail project		
Preconditions:	Head of department, supervisor have logged into FCPM website.		
Post conditions:	Head of department, supervisor access successfully to forum		
Normal Flow:	<b>View detail:</b> 1. Head of department, supervisor logs to their account successfully 2. Head of department, supervisors access the forum page 3. Head of department, supervisors click on Capstone Project 4. Head of department, supervisors choose Capstone Project List 5. Head of department, supervisors click on one capstone project to view detail project		
Alternative Flows:	N/A		
Exceptions:	Cannot communicate with server 1. FCPM displays error message.		
Priority:	High		
Frequency of Use:	High		
Business Rules:			
Other Information:	N/A		
Assumptions:	N/A		

## UC-023. Manage Capstone Project

*Use Case Specification*

UC ID and Name:	<b>UC- Manage Capstone Project</b>		
Create by:	KienBT	Date Created:	10/08/2020
Primary Actor:	Head of department, Supervisor	Secondary Actor:	
Trigger:	KhanhNN		
Description:	Head of department, Supervisors can manage capstone project		
Preconditions:	Head of department, Supervisors login to their account successfully		
Post conditions:	Head of department, Supervisors access successfully the forum page		
Normal Flow:	<b>Manage User:</b> 1.Training department login to their account successfully 2.Training department access the forum page		

	3. Head of department, Supervisors manage capstone project
Alternative Flows:	N/A
Exceptions:	Cannot communicate with server 1. FCPM displays error message.
Priority:	High
Frequency of Use:	High
Business Rules:	
Other Information:	N/A
Assumptions:	N/A

### UC-024. View task detail of Capstone Project

*Use Case Specification*

UC ID and Name:	<b>UC- View detail Project</b>		
Create by:	KhanhNN	Date Created:	10/08/2020
Primary Actor:	Head of department, Supervisor	Secondary Actor:	
Trigger:	DucDD		
Description:	Head of department, supervisors can view task detail of Capstone Project		
Preconditions:	Head of department, supervisors have logged into FCPM website.		
Post conditions:	Head of department, supervisors access successfully to forum		
Normal Flow:	<b>View detail:</b> 1. Head of department, supervisor logs in to their account successfully 2. Head of department, supervisors access the forum page 3. Head of department, supervisors click on Capstone Project 4. Head of department, supervisors choose Capstone Project List 5. Head of department, supervisors click on one capstone project to view task detail of capstone project		
Alternative Flows:	N/A		
Exceptions:	Cannot communicate with server 1. FCPM displays error message.		
Priority:	High		
Frequency of Use:	High		
Business Rules:			
Other Information:	N/A		
Assumptions:	N/A		

## UC-025. Dashboard statistical of project

*Use Case Specification*

UC ID and Name:	<b>UC- Dashboard statistical of project</b>		
Create by:	KienBT	Date Created:	10/08/2020
Primary Actor:	Supervisor, Head of department	Secondary Actor:	
Trigger:	LongND		
Description:	Supervisors and head of department will dashboard statistical all information project of registered groups		
Preconditions:	1. Supervisors, head of department can access the system. 2. Supervisors, head of department login successfully		
Post conditions:	N/A		
Normal Flow:	<b>Dashboard statistical:</b> 1. Supervisors, head of department access in FCPM website. 2. System display “Home page” screen 3. Supervisors, head of department clicks on “Dashboard” 4. System displays dashboard statistical of project		
Alternative Flows:	N/A		
Exceptions:	Cannot communicate with server 1. FCPM displays error message.		
Priority:	High		
Frequency of Use:	High		
Business Rules:			
Other Information:	N/A		
Assumptions:	N/A		

## UC-026. View information of user

*Use Case Specification*

UC ID and Name:	<b>UC- View information of user</b>		
Create by:	KhangNM	Date Created:	10/08/2020
Primary Actor:	Student, Training department, Head of department, Supervisor	Secondary Actor:	
Trigger:	KhanhNN		
Description:	Students, Training department, Head of department, Supervisors can view information of user		
Preconditions:	Students, Training department, Head of department, Supervisors have logged into FCPM website		
Post conditions:	Students, Training department, Head of department, Supervisors access successfully to forum		
Normal Flow:	<b>View:</b>		

	<ol style="list-style-type: none"> <li>1. Students, Training department, Head of department, Supervisors login successfully</li> <li>2. Students, Training department, Head of department, Supervisors access successfully to forum</li> <li>3. Students, Training department, Head of department, Supervisors click to name of user</li> <li>4. System display information of users</li> </ol>
Alternative Flows:	N/A
Exceptions:	<p>Cannot communicate with server</p> <p>1. FCPM displays error message.</p>
Priority:	High
Frequency of Use:	High
Business Rules:	
Other Information:	N/A
Assumptions:	N/A

### UC-027. Approve capstone project in the project registration stage

#### *Use Case Specification*

UC ID and Name:	<b>UC- Approve capstone project in the project registration stage</b>		
Create by:	LongND	Date Created:	10/08/2020
Primary Actor:	Head of department	Secondary Actor:	
Trigger:	KienBT		
Description:	Head of department can Approve capstone project in the project registration stage of students		
Preconditions:	Head of department has logged into FCPM website		
Post conditions:	Head of department has logged successfully into FCPM website		
Normal Flow:	<b>Approve capstone project in the project registration stage:</b> <ol style="list-style-type: none"> <li>1. Head of department login successfully to system</li> <li>2. Head of department access successfully to forum</li> <li>3. Head of department click on capstone project</li> <li>4. Head of department choose list capstone project</li> <li>5. System display capstone projects list</li> <li>6. Head of department can click button “Accept” or “Reject” project</li> </ol>		
Alternative Flows:	N/A		
Exceptions:	<p>Cannot communicate with server</p> <p>1. FCPM displays error message.</p>		
Priority:	High		
Frequency of Use:	High		

Business Rules:			
Other Information:	N/A		
Assumptions:	N/A		

## UC-028. Change pass / fail results

*Use Case Specification*

UC ID and Name:	<b>UC- Change pass / fail results</b>		
Create by:	DucDD	Date Created:	10/08/2020
Primary Actor:	Training department	Secondary Actor:	
Trigger:	KhanhNN		
Description:	Training department can Change pass / fail results capstone project		
Preconditions:	Training department has logged into FCPM website		
Post conditions:	Training department has logged successfully into FCPM website		
Normal Flow:	<b>Change pass / fail results:</b> <ol style="list-style-type: none"> <li>1. Training department login successfully to system</li> <li>2. Training department access successfully to forum</li> <li>3. Training department click on capstone project</li> <li>4. Training department choose list capstone project</li> <li>5. System display list of capstone project</li> <li>6. Training department can click button “Update”</li> </ol>		
Alternative Flows:	N/A		
Exceptions:	Cannot communicate with server 1. FCPM displays error message.		
Priority:	High		
Frequency of Use:	High		
Business Rules:			
Other Information:	N/A		
Assumptions:	N/A		

## UC-029. Create notification

*Use Case Specification*

UC ID and Name:	<b>UC- Create notification</b>		
Create by:	KienBT	Date Created:	10/08/2020
Primary Actor:	Training department	Secondary Actor:	
Trigger:	DucDD		
Description:	Training department can create notification		

Preconditions:	Training department has logged into FCPM website
Post conditions:	Training department has logged successfully into FCPM website
Normal Flow:	<p><b>Create notification:</b></p> <ol style="list-style-type: none"> <li>1. Training department login successfully to system</li> <li>2. Training department access successfully to forum</li> <li>3. Training department click on Notification</li> <li>4. Training department choose Create notification</li> <li>5. System display list of Create notification page</li> </ol>
Alternative Flows:	N/A
Exceptions:	<p>Cannot communicate with server</p> <ol style="list-style-type: none"> <li>1. FCPM displays error message.</li> </ol>
Priority:	High
Frequency of Use:	High
Business Rules:	
Other Information:	N/A
Assumptions:	N/A

## UC-030. View history record

### *Use Case Specification*

UC ID and Name:	UC- View history record		
Create by:	KhanhNN	Date Created:	10/08/2020
Primary Actor:	Training department	Secondary Actor:	
Trigger:	LongND		
Description:	Training department can view history record		
Preconditions:	Training department has logged into FCPM website		
Post conditions:	Training department has logged successfully into FCPM website		
Normal Flow:	<p><b>View history record:</b></p> <ol style="list-style-type: none"> <li>1. Training department login successfully to system</li> <li>2. Training department access successfully to forum</li> <li>3. Training department click on History</li> <li>4. System display list of History page</li> </ol>		
Alternative Flows:	N/A		
Exceptions:	<p>Cannot communicate with server</p> <ol style="list-style-type: none"> <li>1. FCPM displays error message.</li> </ol>		
Priority:	High		
Frequency of Use:	High		
Business Rules:			
Other Information:	N/A		
Assumptions:	N/A		

## UC-031. Change name capstone project

*Use Case Specification*

UC ID and Name:	<b>UC- Change name capstone project</b>		
Create by:	LongND	Date Created:	10/08/2020
Primary Actor:	Students	Secondary Actor:	
Trigger:	KhangNM		
Description:	Students can change name capstone project		
Preconditions:	Students have logged into FCPM website		
Post conditions:	Students have logged successfully into FCPM website		
Normal Flow:	<b>Change name capstone project:</b> 1. Students login successfully to system 2. Students access successfully to forum 3. Students click on Capstone Project 4. Students choose My Capstone 5. Students click button “Change name”		
Alternative Flows:	N/A		
Exceptions:	Cannot communicate with server 1. FCPM displays error message.		
Priority:	High		
Frequency of Use:	High		
Business Rules:			
Other Information:	N/A		
Assumptions:	N/A		

## UC-032. View list post

*Use Case Specification*

UC ID and Name:	<b>UC- View list post</b>		
Create by:	DucDD	Date Created:	10/08/2020
Primary Actor:	Student, Supervisor, Head of department, Training department	Secondary Actor:	
Trigger:	LongND		
Description:	Student, Supervisor, Head of department, Training department view list post		

Preconditions:	Student, Supervisor, Head of department, Training department have logged into FCPM website
Post conditions:	Student, Supervisor, Head of department, Training department have logged successfully into FCPM website
Normal Flow:	<p><b>View list post:</b></p> <p>1 Student, Supervisor, Head of department, Training department login successfully to system      2. Student, Supervisor, Head of department, Training department access successfully to forum      3. Student, Supervisor, Head of department, Training department click on List Post</p>
Alternative Flows:	N/A
Exceptions:	<p>Cannot communicate with server</p> <p>1. FCPM displays error message.</p>
Priority:	High
Frequency of Use:	High
Business Rules:	
Other Information:	N/A
Assumptions:	N/A

### UC-033. Get comment

#### *Use Case Specification*

UC ID and Name:	<b>UC- Get comment</b>		
Create by:	KienBT	Date Created:	10/08/2020
Primary Actor:	Student, Supervisor, Head of department, Training department	Secondary Actor:	
Trigger:	KhangNM		
Description:	Student, Supervisor, Head of department, Training department get comment		
Preconditions:	Student, Supervisor, Head of department, Training department have logged into FCPM website		
Post conditions:	Student, Supervisor, Head of department, Training department have logged successfully into FCPM website		
Normal Flow:	<p><b>Get comment:</b></p> <p>1 Student, Supervisor, Head of department, Training department login successfully to system      2. Student, Supervisor, Head of department, Training department access successfully to forum</p>		

	3. Student, Supervisor, Head of department, Training department comment
Alternative Flows:	N/A
Exceptions:	Cannot communicate with server 1. FCPM displays error message.
Priority:	High
Frequency of Use:	High
Business Rules:	
Other Information:	N/A
Assumptions:	N/A

## UC-034. Add post

### *Use Case Specification*

UC ID and Name:	<b>UC- Add post</b>		
Create by:	KhanhNN	Date Created:	10/08/2020
Primary Actor:	Student, Supervisor, Head of department, Training department	Secondary Actor:	
Trigger:	KhanhNN		
Description:	Student, Supervisor, Head of department, Training department add post		
Preconditions:	Student, Supervisor, Head of department, Training department have logged into FCPM website		
Post conditions:	Student, Supervisor, Head of department, Training department have logged successfully into FCPM website		
Normal Flow:	<b>Add post:</b> 1 Student, Supervisor, Head of department, Training department login successfully to system 2. Student, Supervisor, Head of department, Training department access successfully to forum 3. Student, Supervisor, Head of department, Training department click to button “Add” to add post		
Alternative Flows:	N/A		
Exceptions:	Cannot communicate with server 1. FCPM displays error message.		
Priority:	High		
Frequency of Use:	High		
Business Rules:			
Other Information:	N/A		
Assumptions:	N/A		

## UC-035. Edit post

### *Use Case Specification*

UC ID and Name:	<b>UC- Edit post</b>		
Create by:	KhangNM	Date Created:	10/08/2020
Primary Actor:	Student, Supervisor, Head of department, Training department	Secondary Actor:	
Trigger:	DucDD		
Description:	Student, Supervisor, Head of department, Training department edit post		
Preconditions:	Student, Supervisor, Head of department, Training department have logged into FCPM website		
Post conditions:	Student, Supervisor, Head of department, Training department have logged successfully into FCPM website		
Normal Flow:	<b>Edit post:</b> 1 Student, Supervisor, Head of department, Training department login successfully to system 2. Student, Supervisor, Head of department, Training department access successfully to forum 3. Student, Supervisor, Head of department, Training department click on Edit post		
Alternative Flows:	N/A		
Exceptions:	Cannot communicate with server 1. FCPM displays error message.		
Priority:	High		
Frequency of Use:	High		
Business Rules:			
Other Information:	N/A		
Assumptions:	N/A		

## UC-036. Delete post

### *Use Case Specification*

UC ID and Name:	<b>UC- Delete post</b>		
Create by:	LongND	Date Created:	10/08/2020
Primary Actor:	Student, Supervisor, Head of department, Training department	Secondary Actor:	
Trigger:	KhangNM		
Description:	Student, Supervisor, Head of department, Training department delete post		
Preconditions:	Student, Supervisor, Head of department, Training department have logged into FCPM website		
Post conditions:	Student, Supervisor, Head of department, Training department have logged successfully into FCPM website		
Normal Flow:	<p><b>Delete post:</b></p> <ol style="list-style-type: none"> <li>1 Student, Supervisor, Head of department, Training department login successfully to system</li> <li>2. Student, Supervisor, Head of department, Training department access successfully to forum</li> <li>3. Student, Supervisor, Head of department, Training department click to button “Delete” to delete post</li> </ol>		
Alternative Flows:	N/A		
Exceptions:	<p>Cannot communicate with server</p> <p>1. FCPM displays error message.</p>		
Priority:	High		
Frequency of Use:	High		
Business Rules:			
Other Information:	N/A		
Assumptions:	N/A		

## UC-037. Search post

### *Use Case Specification*

UC ID and Name:	<b>UC- Search post</b>		
Create by:	DucDD	Date Created:	10/08/2020
Primary Actor:	Student, Supervisor, Head of department, Training department	Secondary Actor:	
Trigger:	KhanhNN		
Description:	Student, Supervisor, Head of department, Training department search post		
Preconditions:	Student, Supervisor, Head of department, Training department have logged into FCPM website		
Post conditions:	Student, Supervisor, Head of department, Training department have logged successfully into FCPM website		
Normal Flow:	<p><b>Search post:</b></p> <p>1 Student, Supervisor, Head of department, Training department login successfully to system</p> <p>2. Student, Supervisor, Head of department, Training department access successfully to forum</p> <p>3. Student, Supervisor, Head of department, Training department click to “Search” to search post</p>		
Alternative Flows:	N/A		
Exceptions:	<p>Cannot communicate with server</p> <p>1. FCPM displays error message.</p>		
Priority:	High		
Frequency of Use:	High		
Business Rules:			
Other Information:	N/A		
Assumptions:	N/A		

## UC-038 Add user

### *Use Case Specification*

UC ID and Name:	<b>UC- Add user</b>		
Create by:	KienBT	Date Created:	10/08/2020
Primary Actor:	Training department	Secondary Actor:	
Trigger:	LongND		
Description:	Training department add user		
Preconditions:	Training department has logged into FCPM website		
Post conditions:	Training department has logged successfully into FCPM website		
Normal Flow:	<p><b>Add user:</b></p> <ol style="list-style-type: none"> <li>1. Training department login successfully to system</li> <li>2. Training department access successfully to forum</li> <li>3. Training department click on Capstone Project</li> <li>4. Training department choose Manage user</li> <li>5. Training department button “Add” to add user</li> </ol>		
Alternative Flows:	N/A		
Exceptions:	<p>Cannot communicate with server</p> <p>1. FCPM displays error message.</p>		
Priority:	High		
Frequency of Use:	High		
Business Rules:			
Other Information:	N/A		
Assumptions:	N/A		

## UC-039 Approve capstone project in the changing name stage

### *Use Case Specification*

UC ID and Name:	<b>UC- Approve capstone project in the changing name stage</b>		
Create by:	KhanhNN	Date Created:	10/08/2020
Primary Actor:	Training department	Secondary Actor:	
Trigger:	KhangNM		
Description:	Training department add user		
Preconditions:	Training department has logged into FCPM website		
Post conditions:	Training department has logged successfully into FCPM website		
Normal Flow:	<p><b>Approve capstone project in the changing name stage :</b></p> <ol style="list-style-type: none"> <li>1. Training department login successfully to system</li> <li>2. Training department access successfully to forum</li> <li>3. Training department click on Capstone Project</li> <li>4. Training department choose Manage user</li> <li>5. Training department button “change” to changing name</li> </ol>		
Alternative Flows:	N/A		
Exceptions:	<p>Cannot communicate with server</p> <p>1. FCPM displays error message.</p>		
Priority:	High		
Frequency of Use:	High		
Business Rules:			
Other Information:	N/A		
Assumptions:	N/A		

### 3.3 Non-functional Requirement

#### 3.3.1 Security

- ❖ The system must use authentication with google
- ❖ The authentication server returns information of user logged in with email.
- ❖ The security matrix is as the following table:

Function	Student	Supervisor	Training department	Head of department
Login	X	X	X	X
Logout	X	X	X	X
Register Capstone Project	X			
Add member	X			
View model	X			
Show list supervisors and booking	X			
View GUIDE	X			
Upload file	X			
Send mail	X			
Chat	X	X	X	X
Create chat	X			
Confirm join team feature	X			
Edit Profile	X			
Notification component	X	X	X	X
Comment	X	X	X	X
Daily report to member to leader	X	X		
Weekly report to leader to supervisor	X	X		
Manage User			X	
View information, status of list student			X	
Add student and edit supervisor of Capstone Project			X	
View list capstone project		X		X
View detail project		X		X
Manage Capstone Project		X		X
View task detail of Capstone Project		X		X

Dashboard statistical of project		X		X
View information of user	X	X	X	X
Approve capstone project in the project registration stage				X

### 3.3.2 Supportability

- ❖ The application should be easy to use for the user
- ❖ The application must have all necessary features to support the user
- ❖ The application can be easily extended

### 3.3.3 Accuracy

- ❖ The overall accuracy is calculated by diving total number of correct answers by the number of questions asked

### 3.3.4 Maintainability and Extensibility

- ❖ Source code must follow the coding convention in order to help developers to understand, improve readability of source code and make the website more maintainable or modify the code.

### 3.3.5 Performance

- ❖ Web frontend uses bootstrap to make the website design process simpler and faster, it is also a free toolkit for open-source code to help website templates become more completed and eye-catching.
- ❖ This software requires a powerful server machine with high band internet access.
- ❖ The app must work on all platforms.
- ❖ The system must be usable when many people use it at the same time or at any time.
- ❖ Web uses spring boot to help us programmers to simplify the process of programming an application with Spring, focusing only on developing business for the application.

### 3.3.6 Usability

- ❖ The interface is beautiful, good-looking for users, simple and easy to use, it does not break at various zoom levels
- ❖ Links and buttons are easily clickable
- ❖ Must help users to use the application in the most satisfied way
- ❖ The screen layout is clearly streamlined
- ❖ Screen should be attractive and attractive to the user
- ❖ Main functions are organized into tabs for easy and convenient user access
- ❖ Having response buttons and clickable menus to help guide end users to their answer when needed
- ❖ Buttons containing important commands must be unique

## 3.4 Entity Relationship Diagram

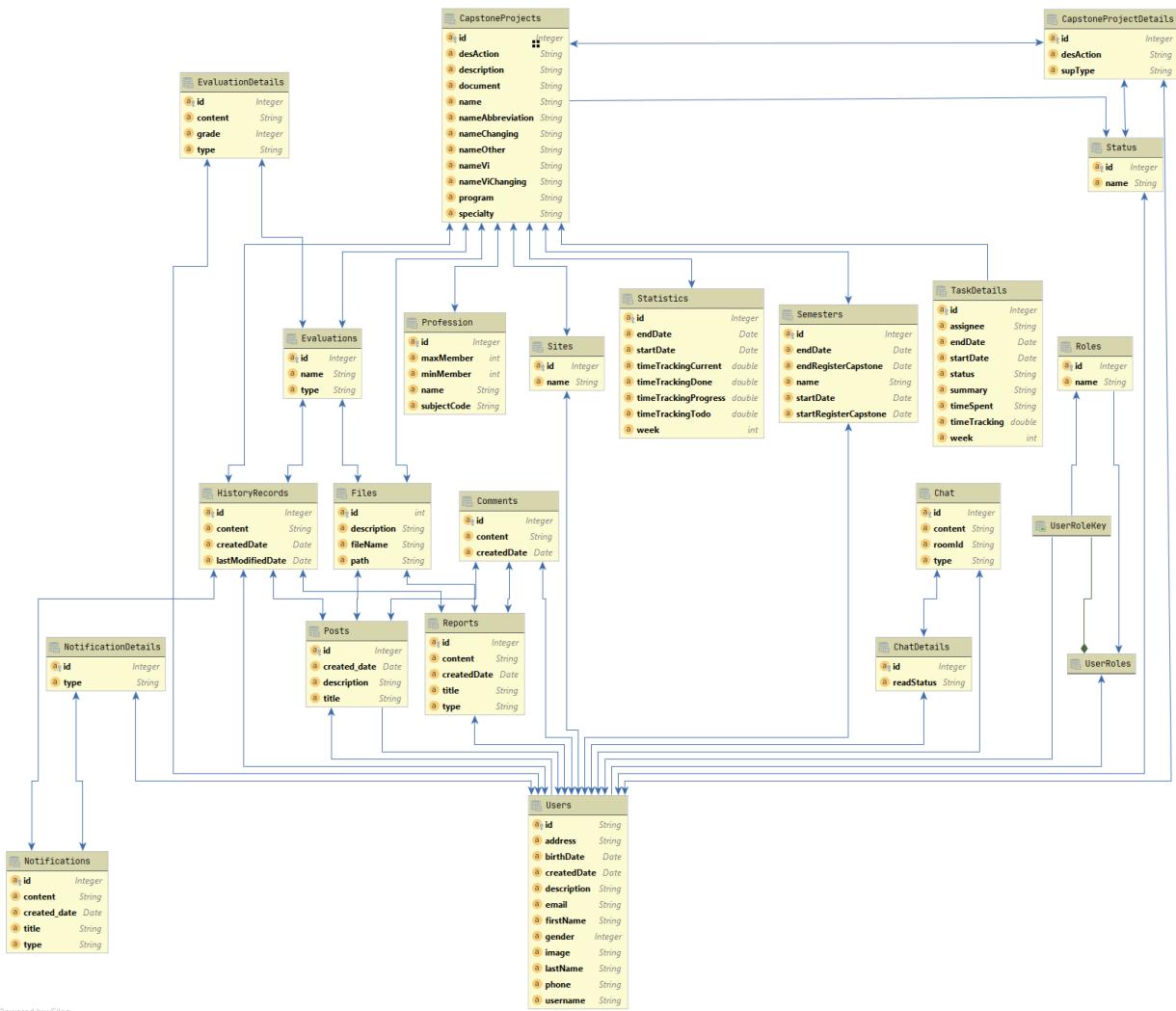


Figure: Entity Relationship diagram

# CHAPTER 4: SOFTWARE DESIGN

## 4.1 Purpose

- This chapter is to give the developer team an overview of what the system's architecture is, and how they should be implemented. This chapter consists of:
  - ✓ Architecture overview
  - ✓ Component diagram
  - ✓ Detailed design
  - ✓ Detailed description of components
  - ✓ Database design

## 4.2 Architectural overview

### 4.2.1 System Architecture

#### 4.2.1.1 Diagram

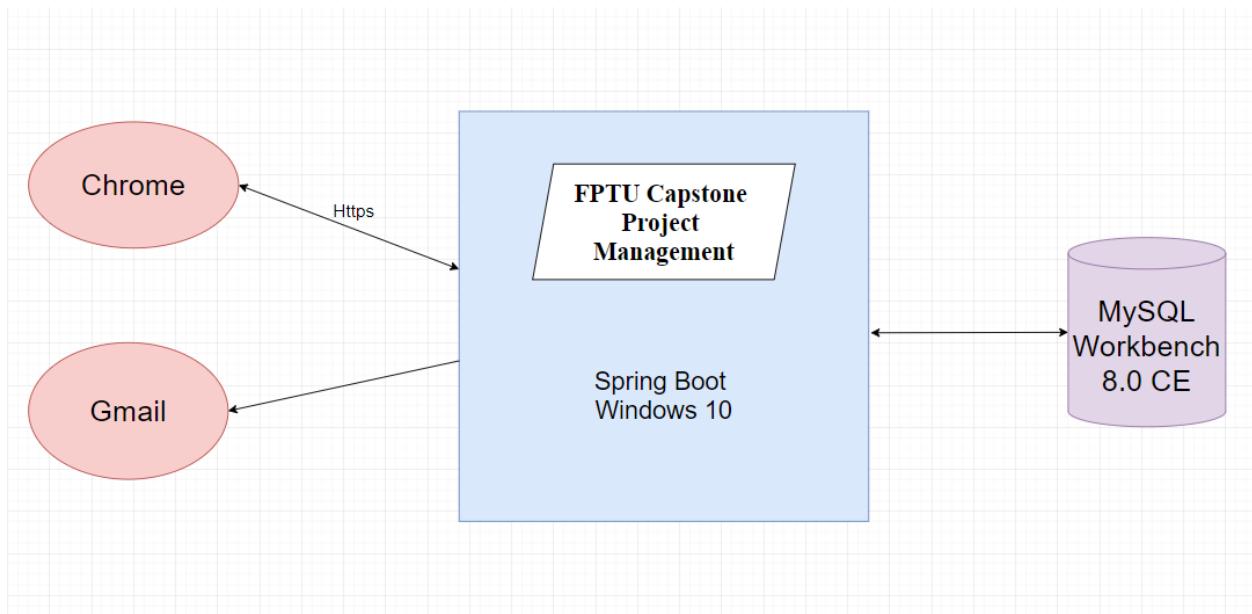


Figure: System overview

## 4.2.2 System Architectural Explanation

### 4.2.2.1 Layer Architectural

#### 4.2.2.1.1 View application – HTML5 & CSS3 & JavaScript & JQuery & Bootstrap.



*Figure: Front End*

- Using HTML5 & CSS3 & JavaScript & JQuery & Bootstrap provides advantage of making the website design process simple, fast, eye-catching, and allows users to freely create ideas, create more and more diverse products. This design also helps to save maximum time designing website interface. Not only that, it also brings many advantages for businesses to develop, web developers can easily use and use in the most convenient way.

### 4.2.2.2 Controller

- ✓ In Spring Boot, @Controller annotation indicates that the annotated class is a controller. It is a specialization of @Component and is auto detected through class path scanning. It is typically used in combination with annotated handler methods based on the @RequestMapping annotation.
- ✓ In the following application, we demonstrate the usage of @Controller. The application returns current data and time to the client.

### 4.2.2.3 Model

#### 4.2.2.3.1 SQL Database – MySQL Workbench 8.0 CE

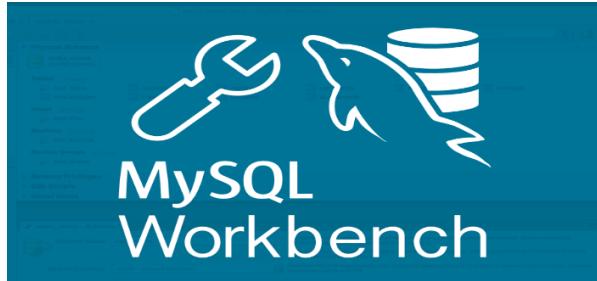


Figure: MySQL Workbench 8.0 CE

- MySQL Workbench is a visually modelled and designed database access tool for use with a relational MySQL server database. MySQL Workbench helps to create new physical data models and supports modification of existing MySQL databases with reverse / forward techniques, optional management functions.

### 4.2.2.4 Service providers

#### 4.2.2.4.1 Session state

- The session state service manages session state for every user. They store the state in the memory, in external process or in MySQL database. The membership service stores usernames, passwords and other membership data in MySQL

#### 4.2.2.4.2 Mail service



Figure: Gmail

## 4.3 Design of FPT Project Management System

### 4.3.1 Architectural Layers Design

#### 4.3.1.1 FCPM – Layers Design

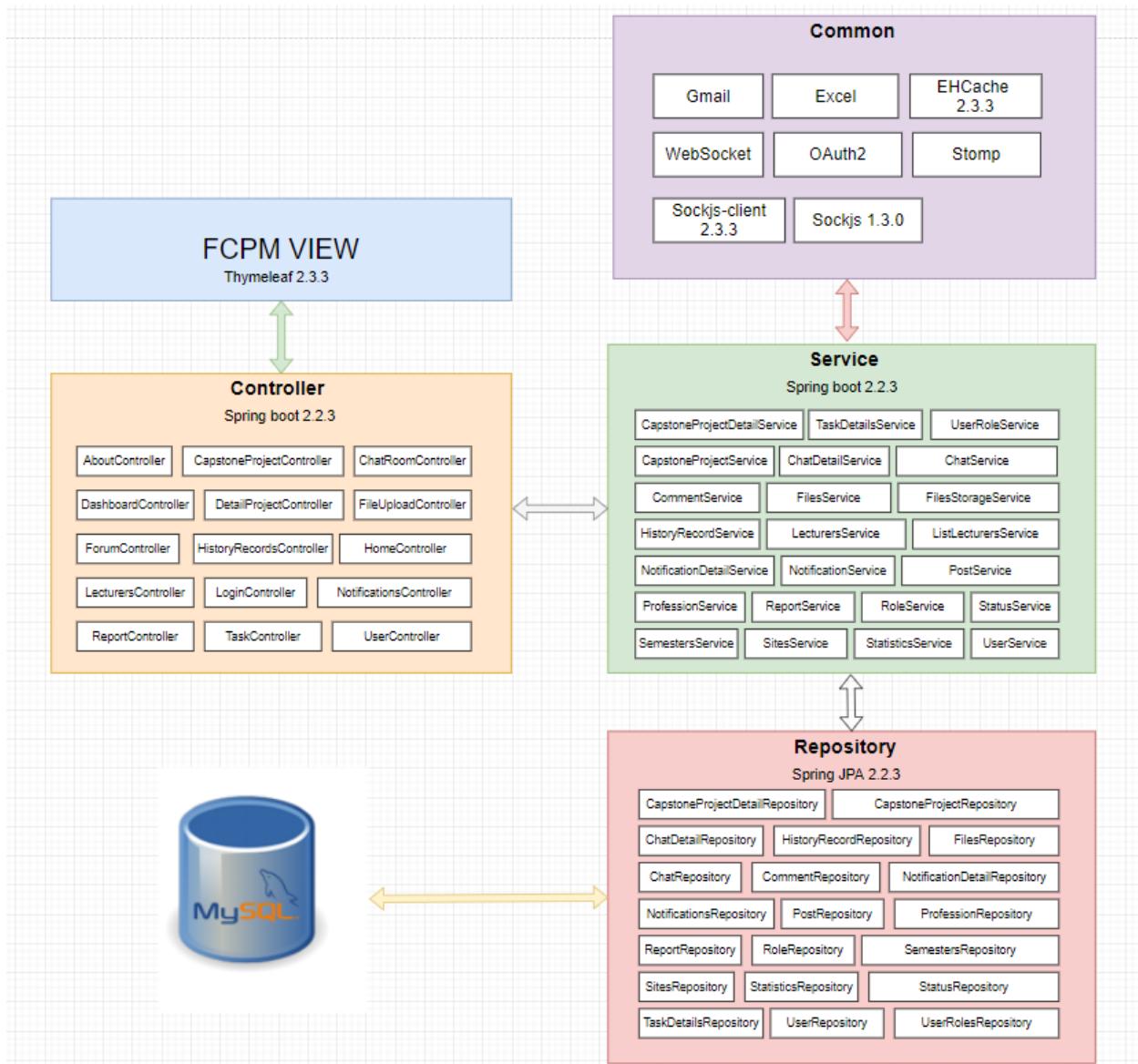


Figure: FCPM- Layers Design

#### 4.3.1.2 Package design

No.	Directory	Description	Convention
1	/CONFIG	Where the basic configuration of the website is contained	N/A
2	/Controller	The place we call from the service to handle the URL request	N/A
3	/DTO	Where DTO to Entity and Entity to DTO Conversion	N/A
4	/Entity	Where we create entity classes. Each entity will describe a table in DB	N/A
5	/Repository	The place we write the database query to call from the database	N/A
6	/Service	The place we call from the repository to process logic and then push back to the controller	N/A
7	/UTILS	Where we use the web	N/A
8	/Common	Where supporting code for the backend	N/A
9	/Static	Where contains html, image files to design the homepage interface	N/A

## 4.3.2 Database Design

### 4.3.2.1 Database diagram

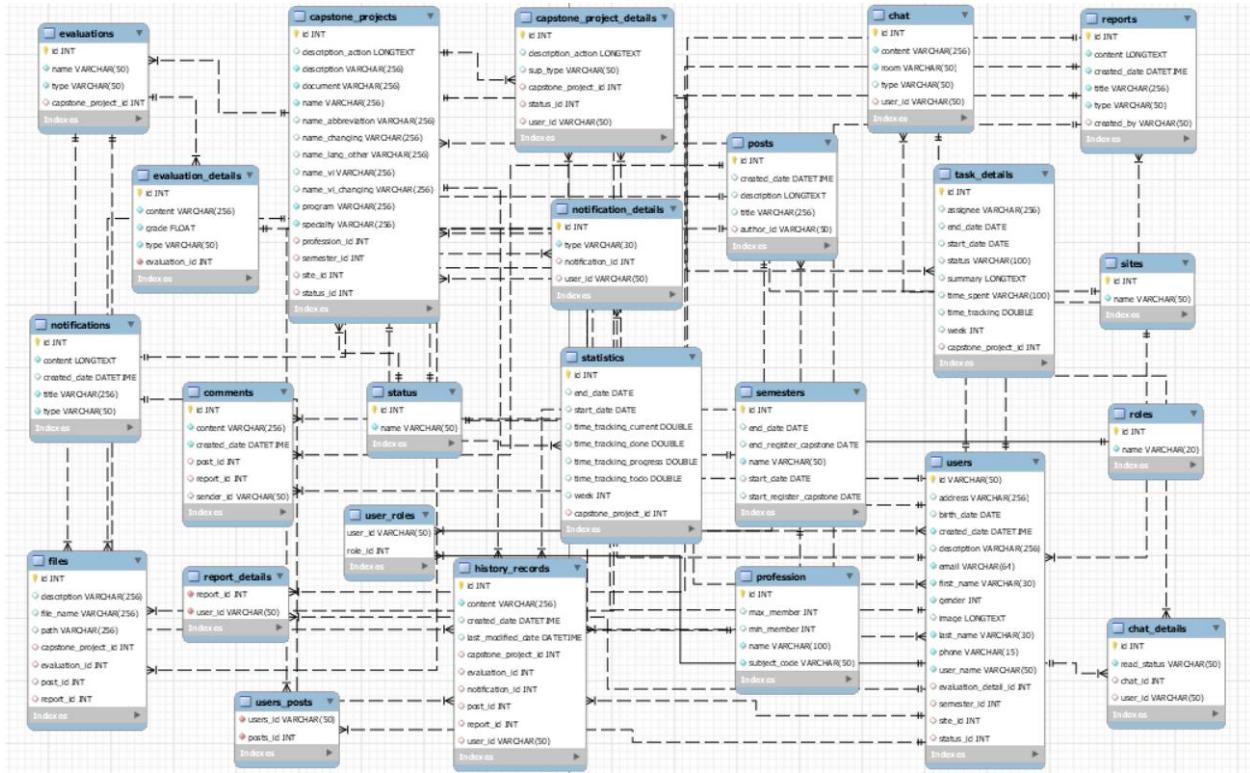
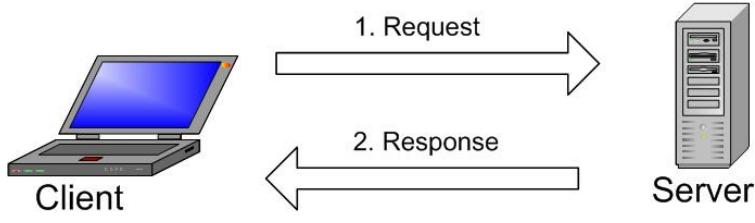


Figure: FCPM database document diagram

#### 4.3.2.2 Explanation of database decision



*Figure: Client-Server*

The image above explains the basic structure of the client-server communication model. A client machine communicates with the server machine in a given network. Each client can send a request from the Graphical user interface (GUI) on the screen, and the server will return the desired result as long as both understand each other. The same goes for the main operation in a MySQL environment:

- ✓ MySQL creates tables to store data, defining the relationships between those tables.
- ✓ The client will send the SQL request with a special command on MySQL.
- ✓ The application on the server will respond to the information and return the results on the client machine.

So, we chose MySQL because:

- ✓ Flexibility and convenience: You can modify the source code to meet your needs without paying any extra costs. The installation process is also very simple and usually takes less than 30 minutes.
- ✓ High Performance: Many server clusters use MySQL. Whether you store big data from e-commerce sites or do heavy IT businesses, MySQL can handle it with smooth, high speeds.
- ✓ Industry standard: The data and technology industry has been using MySQL for many years, so it is a basic skill as a programmer. MySQL users can also deploy projects quickly and hire data experts for a fee if they need to.
- ✓ Safety: Data security is always the most important issue when choosing RDBMS software. With decentralized access and account management, MySQL has a very high standard of security. Host-based authentication and credential encryption are available.

### **4.3.2.3 Data Dictionary**

#### **4.3.2.3.1 Table description & Table design**

- Table description**

No	Table Name	Description
1	users	Save information users.
2	semesters	Save semesters information of students
3	Roles	5 roles: Student members, Supervisors, Training department, Head of department, Student leaders.
4	Post	Save posts of users.
5	comments	Save comments of users.
6	status	Show and save the status of users and capstone projects.
7	Files	Save file names and paths.
8	reports	Save daily and weekly reports.
9	user-roles	To save which users corresponds to which roles.
10	notifications	Save news and notifications.
11	report-details	To save which users corresponds to which reports.
12	evaluations	Send evaluation information from instructors to students.
13	users-posts	To save which users corresponds to which posts.
14	capstone-projects	Save information of capstone project.
15	history-records	Save history with transactions such as adding students, delete students ...
16	evaluation-details	Send evaluation detail information from instructors to students.
17	profession	Save profession information of students.
18	capstone-projects-details	Save detail information of capstone projects.
19	Chat	Save chats.
20	notification-details	Save detail notification the training department to students, or instructors to students.
21	statistics	Dashboard statistical all projects.
22	task-details	Save task details information of capstone project.
23	Sites	Save sites.
24	chat-details	Save chat details.

- **Table design**

*4.3.2.3.1.1: Users*

Field	Type	Allow Nulls	Description
ID	VARCHAR (50)		
BIRTH_DATE	DATE	NULL	
CREATED_DATE	DATETIME		
DESCRIPTION	VARCHAR (256)	NULL	
EMAIL	VARCHAR (64)		
ENCRYTED_PASSWORD	VARCHAR (256)		
FIRST_NAME	VARCHAR (30)		
GENDER	INT		
IMAGE	LONGTEXT	NULL	
LAST_NAME	VARCHAR (30)		
PHONE	VARCHAR (15)		
USER_NAME	VARCHAR (50)		
EVALUATION_DETAIL_ID	INT	NULL	
LOCATIONS_ID	INT	NULL	
REPORT_DETAIL_ID	INT	NULL	
REPORT_RECEIVE_ID	INT	NULL	
REPORT_ID	INT	NULL	
STATUS_ID	INT	NULL	
NOTIFICATION_ID	INT	NULL	

*4.3.2.3.1.2: Semesters*

Field	Type	Allow Nulls	Description
ID	INT		
END_DATE	DATE	NULL	
END_REGISTER_CAPSTONE	DATE	NULL	
NAME	VARCHAR		
START_DATE	DATE	NULL	
START_REGISTER_CAPSTONE	DATE	NULL	

#### *4.3.2.3.1.3: Roles*

Field	Type	Allow Nulls	Description
ID	INT		
NAME	VARCHAR (20)		

#### *4.3.2.3.1.4: Post*

Field	Type	Allow Nulls	Description
ID	INT		
CREATED_DATE	DATETIME	NULL	
DESCRIPTION	LONGTEXT	NULL	
TITLE	VARCHAR (256)	NULL	
AUTHOR_ID	VARCHAR (50)	NULL	
POST_AUTHOR	VARCHAR (50)	NULL	

#### *4.3.2.3.1.5: Comments*

Field	Type	Allow Nulls	Description
ID	INT		
CONTENT	VARCHAR (256)		
CREATED_DATE	DATETIME		
POST_ID	INT	NULL	
REPORT_DETAIL_ID	INT	NULL	
SENDER_ID	VARCHAR (50)	NULL	

#### *4.3.2.3.1.6: Status*

Field	Type	Allow Nulls	Description
DESCRIPTION	VARCHAR (256)	NULL	
NAME	VARCHAR (50)		

#### *4.3.2.3.1.7: Files*

Field	Type	Allow Nulls	Description
DESCRIPTION	INT		
FILE_NAME	VARCHAR (256)	NULL	
PATH	VARCHAR (256)	NULL	
CAPSTONE_PROJECT_ID	VARCHAR (256)	NULL	
EVALUATION_ID	INT	NULL	
POST_ID	INT	NULL	
REPORT_DETAIL_ID	INT	NULL	

#### *4.3.2.3.1.8: Reports*

Field	Type	Allow Nulls	Description
ID	INT		
NAME	VARCHAR (50)		
TYPE	VARCHAR (50)		
SENDER_ID	VARCHAR (50)		

#### *4.3.2.3.1.9: User-roles*

Field	Type	Allow Nulls	Description
USER_ID	VARCHAR (50)		
ROLE_ID	INT		

#### *4.3.2.3.1.10: Notifications*

Field	Type	Allow Nulls	Description
ID	INT		
CONTENT	LONGTEXT		
TITLE	VARCHAR (256)		
TYPE	VARCHAR (50)		
CREATED_DATE	DATETIME	NULL	
SENDER_ID	VARCHAR (50)	NULL	

#### *4.3.2.3.1.11: Report-details*

Field	Type	Allow Nulls	Description
LAST_MODIFIED_DATE	DATETIME		
REPORT_ID	INT	NULL	

#### *4.3.2.3.1.12: Evaluations*

Field	Type	Allow Nulls	Description
ID	INT		
NAME	VARCHAR (50)		
TYPE	VARCHAR (50)		
CAPSTONE_PROJECT_ID	INT	NULL	

#### *4.3.2.3.1.13: Users-post*

Field	Type	Allow Nulls	Description
USERS_ID	VARCHAR(50)		
POSTS_ID	INT		

#### *4.3.2.3.1.14: Capstone-projects*

Field	Type	Allow Nulls	Description
ID	INT		
DESCRIPTION_ACTION	LONGTEXT	NULL	
DESCRIPTION	VARCHAR (256)		
DOCUMENT	VARCHAR (256)		
NAME	VARCHAR (100)	NULL	
NAME_ABBREVIATION	VARCHAR (20)	NULL	
NAME_LANG_OTHER	VARCHAR (20)	NULL	
NAME_VI	VARCHAR (20)		
PROGRAM	VARCHAR (256)		
SPECIALTY	VARCHAR (10)		
PROFESSION_ID	INT	NULL	
STATUS_ID	INT	NULL	

#### *4.3.2.3.1.15: History-records*

Field	Type	Allow Nulls	Description
ID	INT		
CONTENT	VARCHAR (256)		
CREATED_DATE	DATETIME	NULL	
LAST_MODIFIED_DATE	DATETIME	NULL	
CAPSTONE_PROJECT_ID	INT	NULL	
EVALUATION_ID	INT	NULL	
POST_ID	INT	NULL	
REPORT_ID	INT	NULL	
USER_ID	VARCHAR (50)	NULL	
NOTIFICATION_ID	INT	NULL	

#### *4.3.2.3.1.16: Evaluation-details*

Field	Type	Allow Nulls	Description
ID	INT		
CONTENT	VARCHAR (256)		
GRADE	FLOAT		
TYPE	VARCHAR (50)		
EVALUATION_ID	INT		
ASSESSOR_ID	VARCHAR (50)		

#### *4.3.2.3.1.17: Profession*

Field	Type	Allow Nulls	Description
ID	INT		
MAX_MEMBER	INT	NULL	
MIN_MEMBER	INT	NULL	
NAME	VARCHAR (100)		
SUBJECT_CODE	VARCHAR (50)		

#### *4.3.2.3.1.18: Capstone-projects-details*

Field	Type	Allow Nulls	Description

ID	INT	
DESCRIPTION_ACTION	VARCHAR (50)	NULL
CAPSTONE_PROJECT_ID	VARCHAR (256)	NULL
STATUS_ID	INT	NULL
USER_ID	INT	NULL

#### 4.3.2.3.1.19: Chat

Field	Type	Allow Nulls	Description
ROOM	VARCHAR (50)		
USER_ID	VARCHAR (50)	NULL	

#### 4.3.2.3.1.20: Notification-details

Field	Type	Allow Nulls	Description
NOTIFICATION_ID	INT	NULL	
USER_ID	VARCHAR (50)	NULL	

#### 4.3.2.3.1.21: Statistics

Field	Type	Allow Nulls	Description
ID	INT		
END_DATE	DATE	NULL	
START_DATE	DATE	NULL	
TIME_TRACKING_CURRENT	DOUBLE	NULL	
TIME_TRACKING_DONE	DOUBLE	NULL	
TIME_TRACKING_PROGRESS	DOUBLE	NULL	
TIME_TRACKING_TODO	DOUBLE	NULL	
WEEK	INT	NULL	
CAPSTONE_PROJECT_ID	INT	NULL	

#### 4.3.2.3.1.22: Task-details

Field	Type	Allow Nulls	Description
ID	INT		
ASSIGNEE	VARCHAR (256)	NULL	
END_DATE	DATE	NULL	
START_DATE	DATE	NULL	

STATUS	VARCHAR (100)	NULL
SUMMARY	LONGTEXT	NULL
TIME_SPENT	VARCHAR (100)	NULL
TIME_TRACKING	DOUBLE	NULL
WEEK	INT	NULL
CAPSTONE_PROJECT_ID	INT	NULL

#### 4.3.2.3.1.23: *Sites*

Field	Type	Allow Nulls	Description
ID	INT		
READ_STATUS	VARCHAR (50)		
CHAT_ID	INT	NULL	
USER_ID	VARCHAR(50)	NULL	

#### 4.3.2.3.1.24: *Chat-details*

Field	Type	Allow Nulls	Description
NOTIFICATION_ID	INT	NULL	
USER_ID	VARCHAR(50)	NULL	

## **4.4 SEQUENCE DIAGRAM**

### **4.4.1: Description of the Sequence Diagram**

#### **4.4.1.1: Login**

**Class Diagram:**

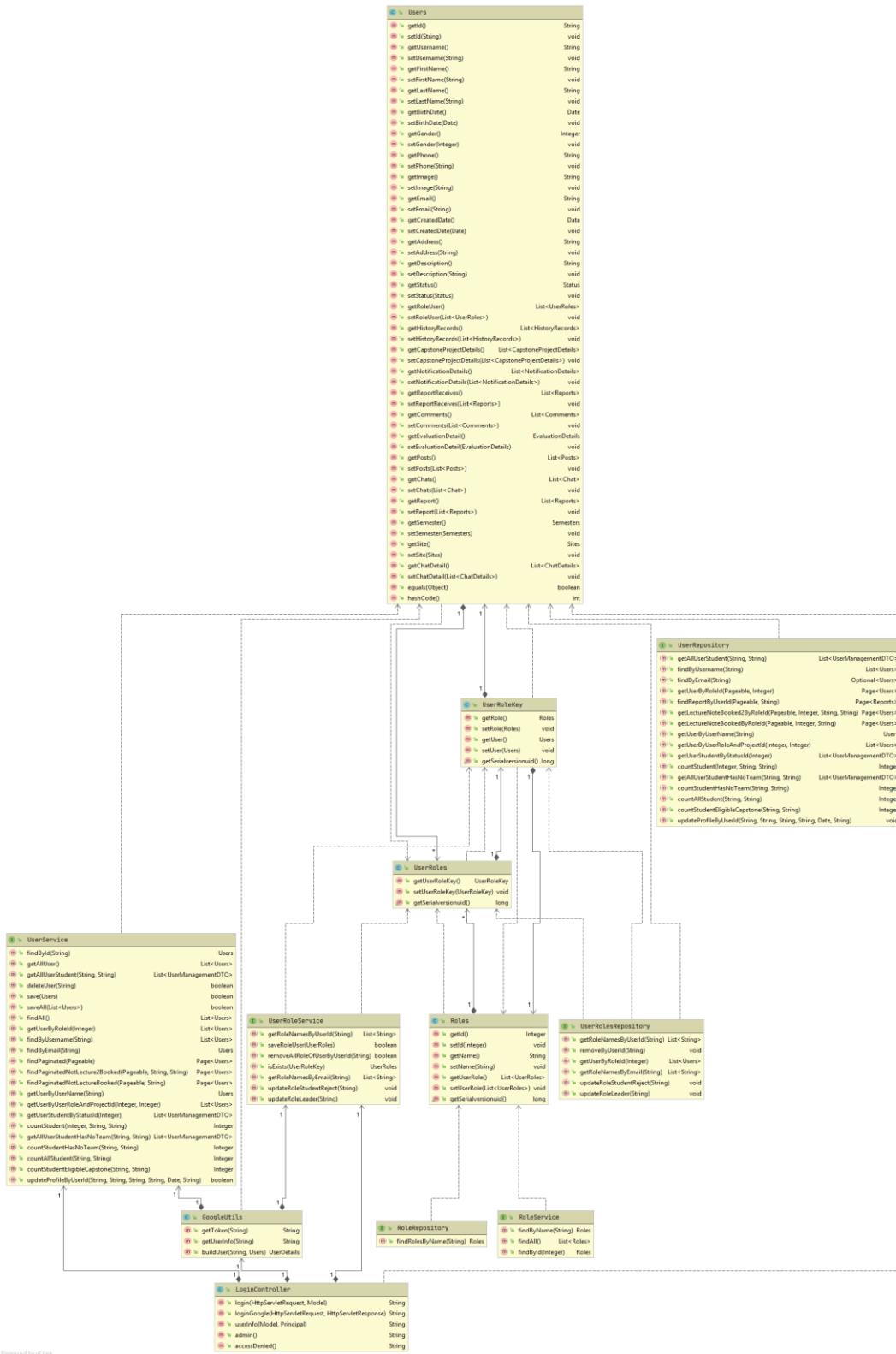
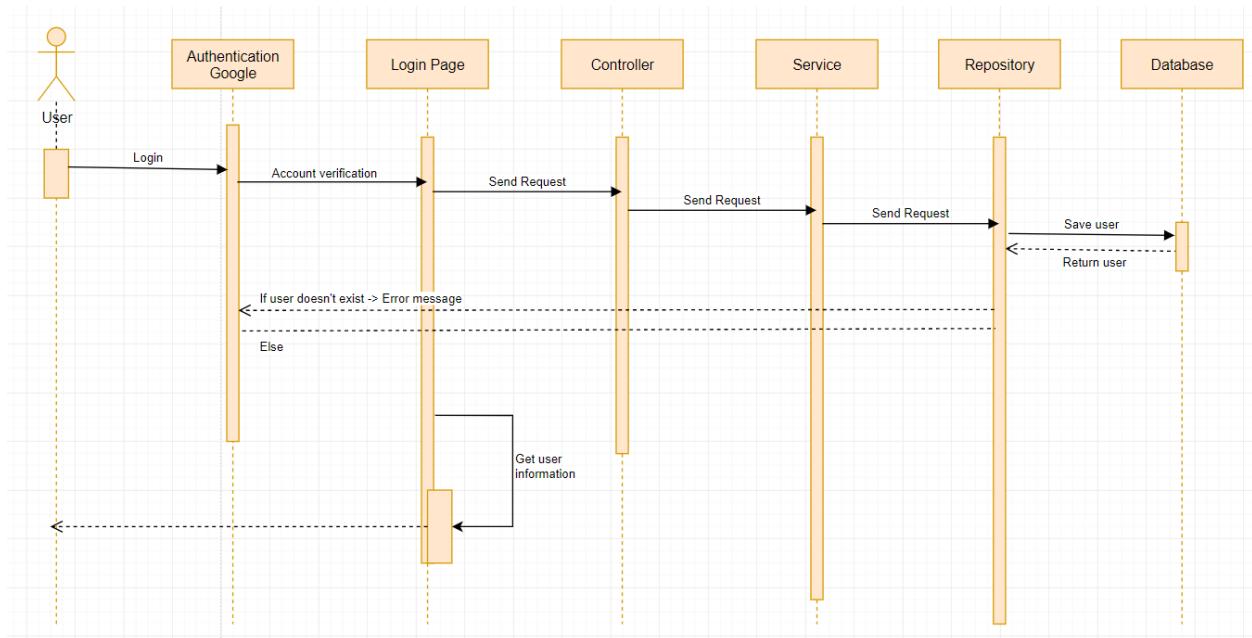


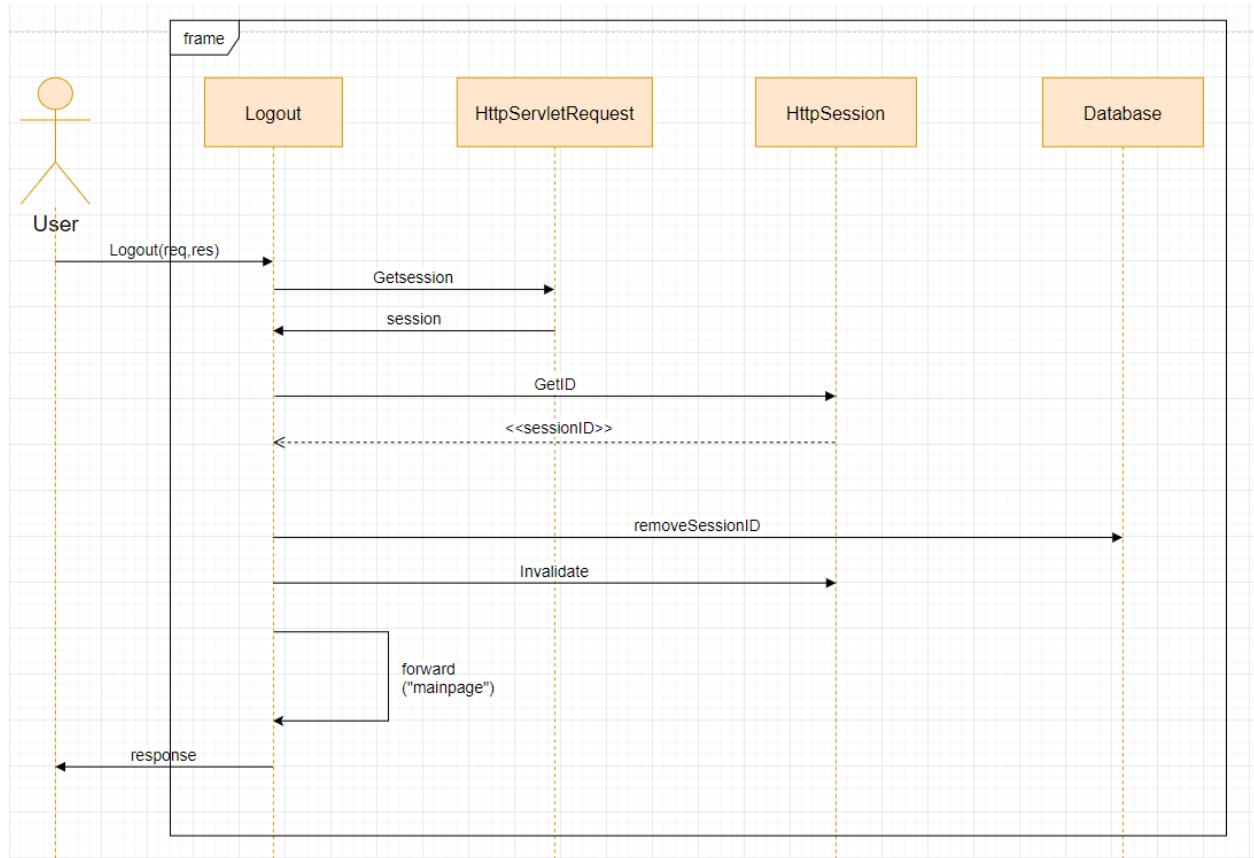
Figure: Login class diagram

## Sequence Diagram:



#### 4.4.1.2: Logout

Sequence Diagram:



### 4.4.1.3: Register Capstone Project

#### Class Diagram:

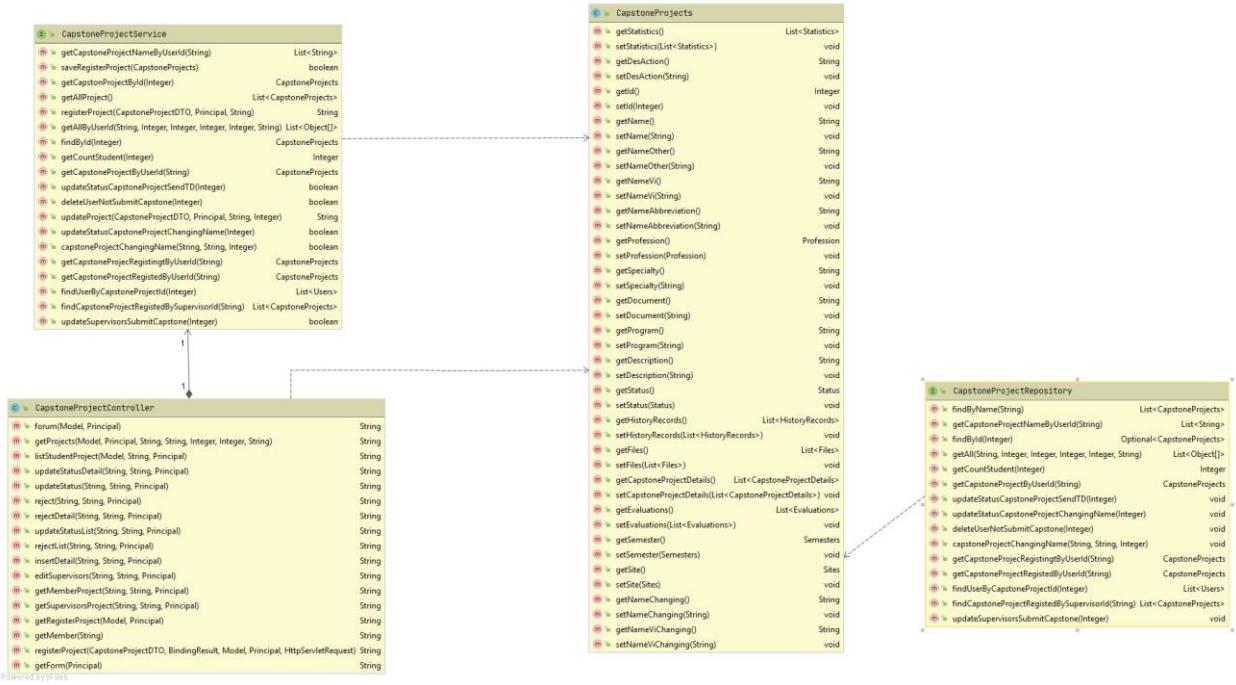
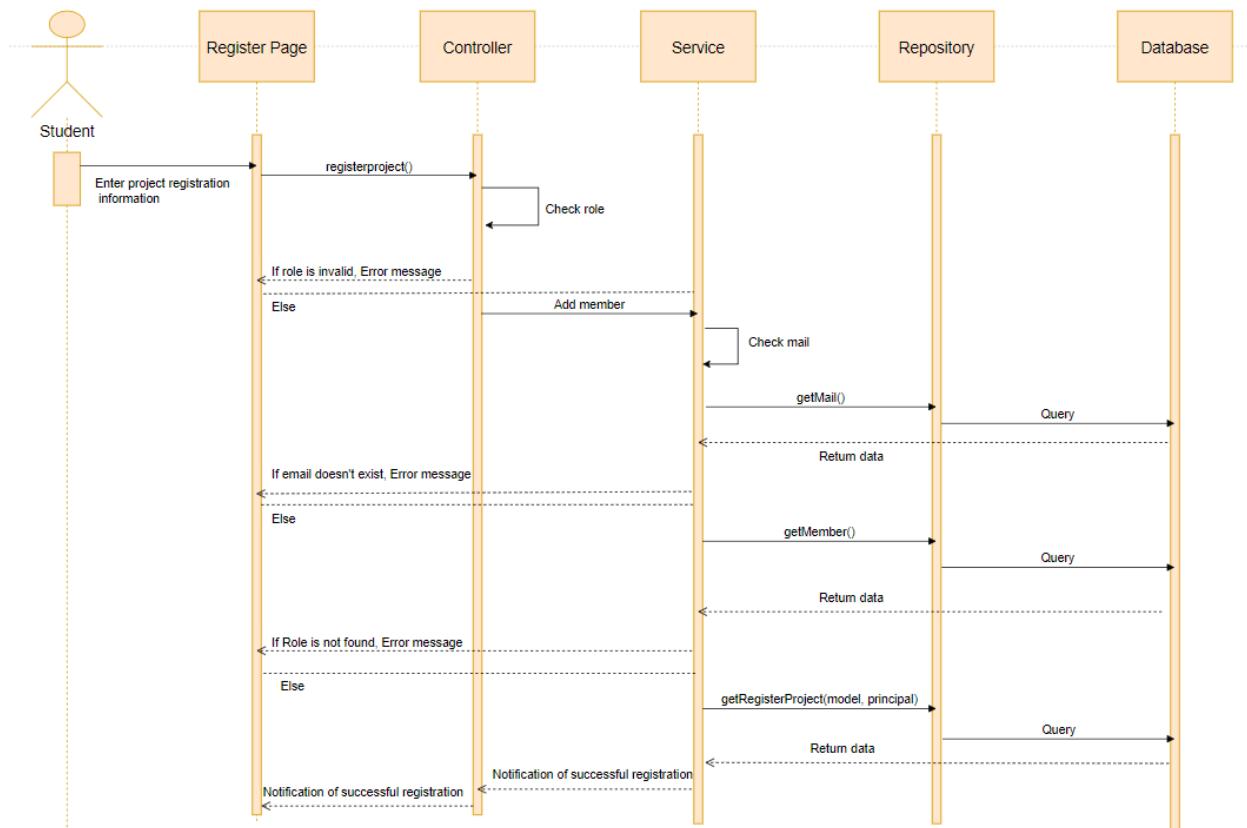


Figure: Register capstone project class diagram

## Sequence Diagram:



#### 4.4.1.4: Add member

Class Diagram:

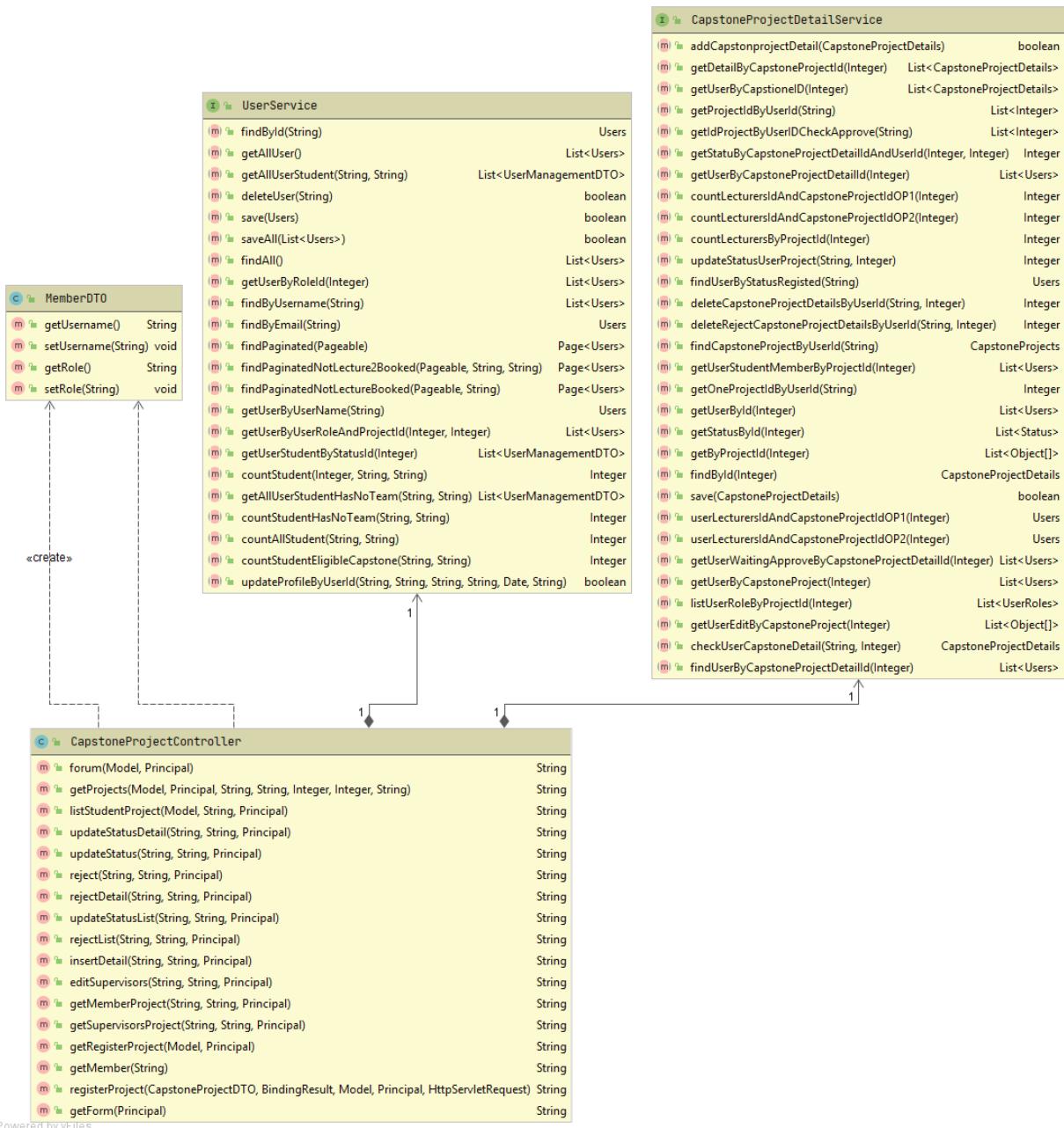
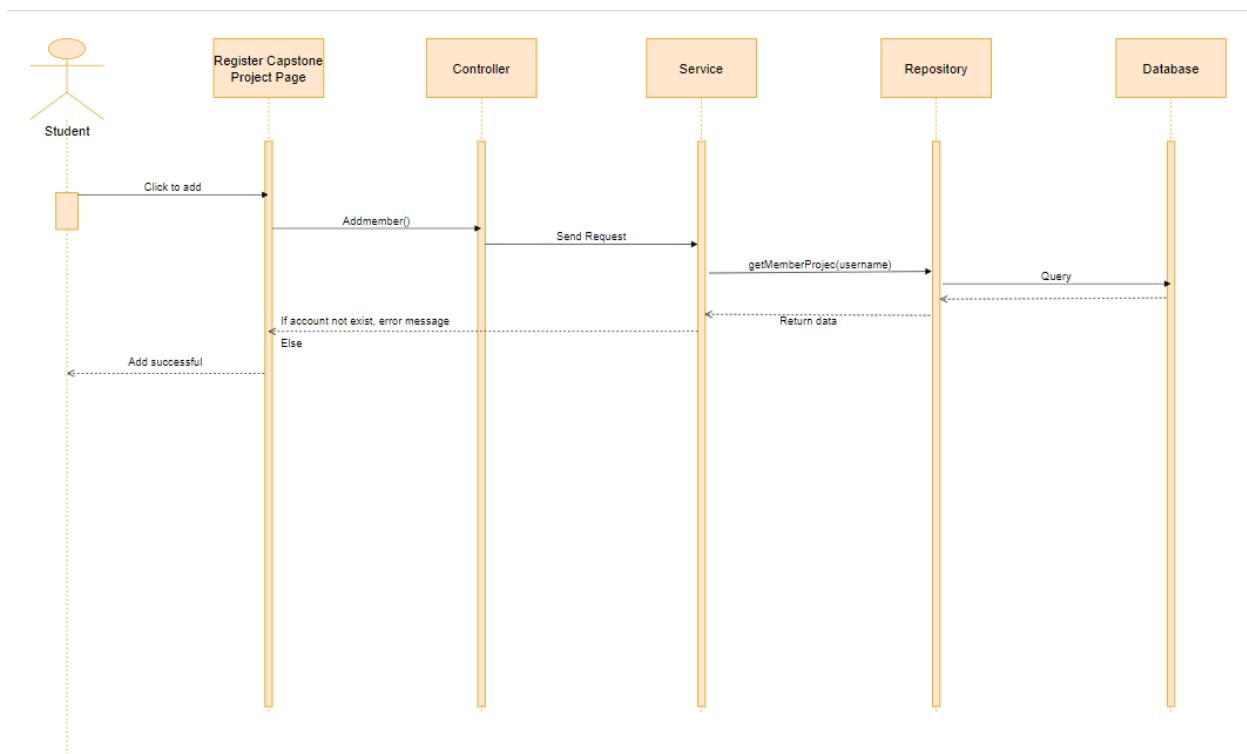
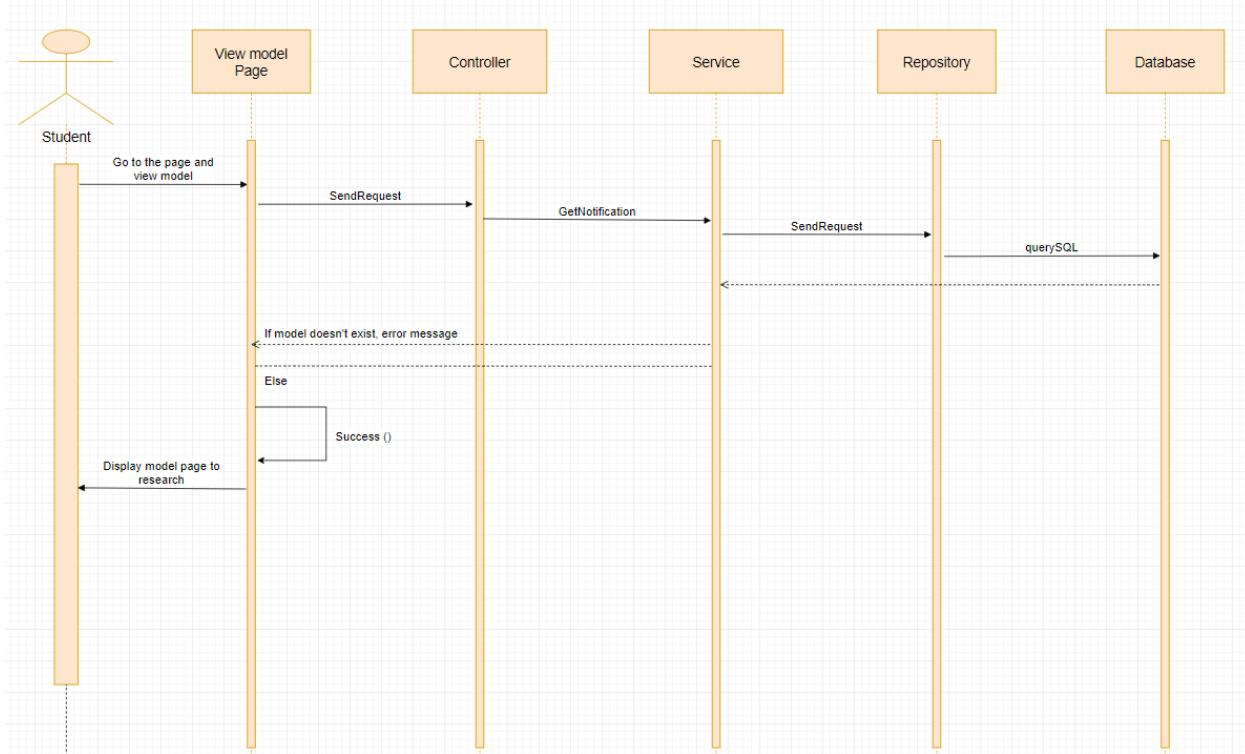


Figure: Add member class diagram

## Sequence Diagram:



#### 4.4.1.5: View model



#### **4.4.1.6: Show list supervisors and choose**

## Class Diagram:

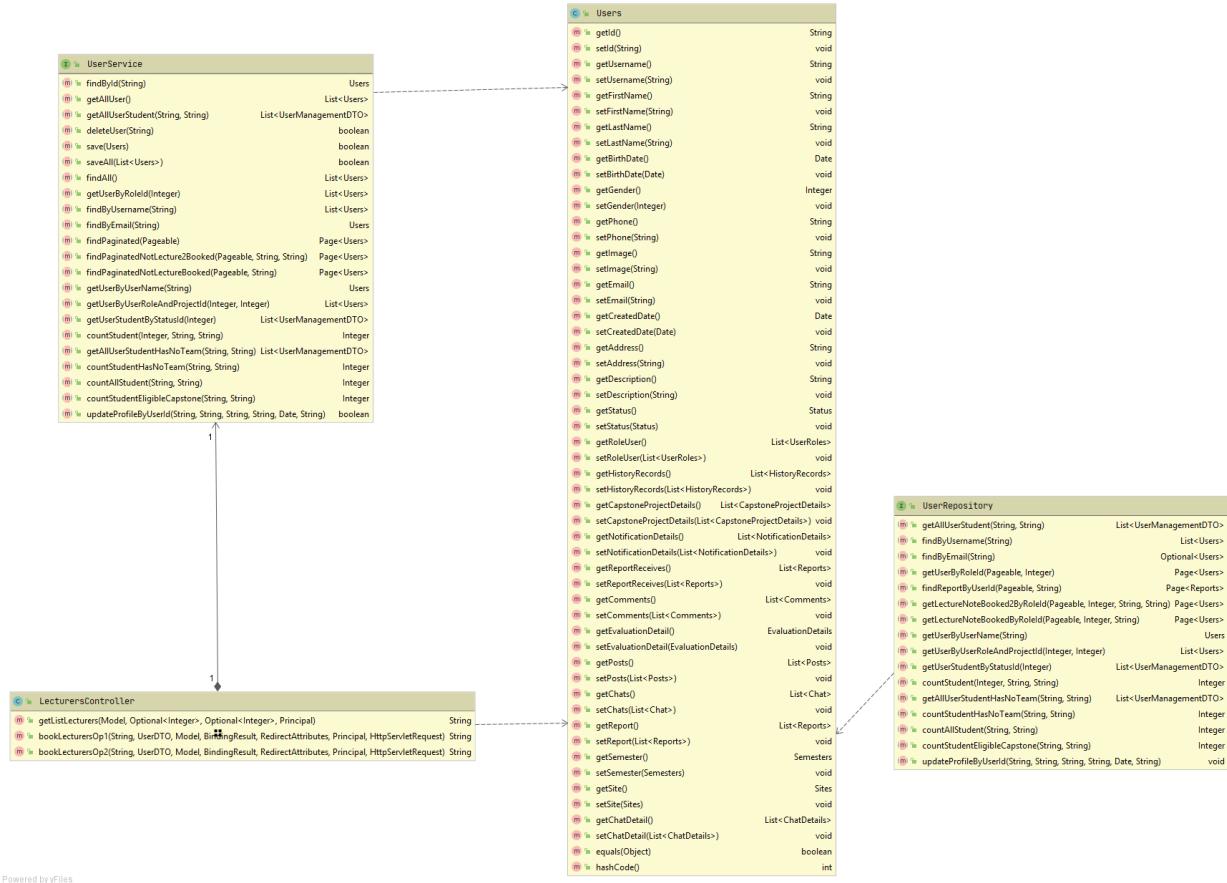
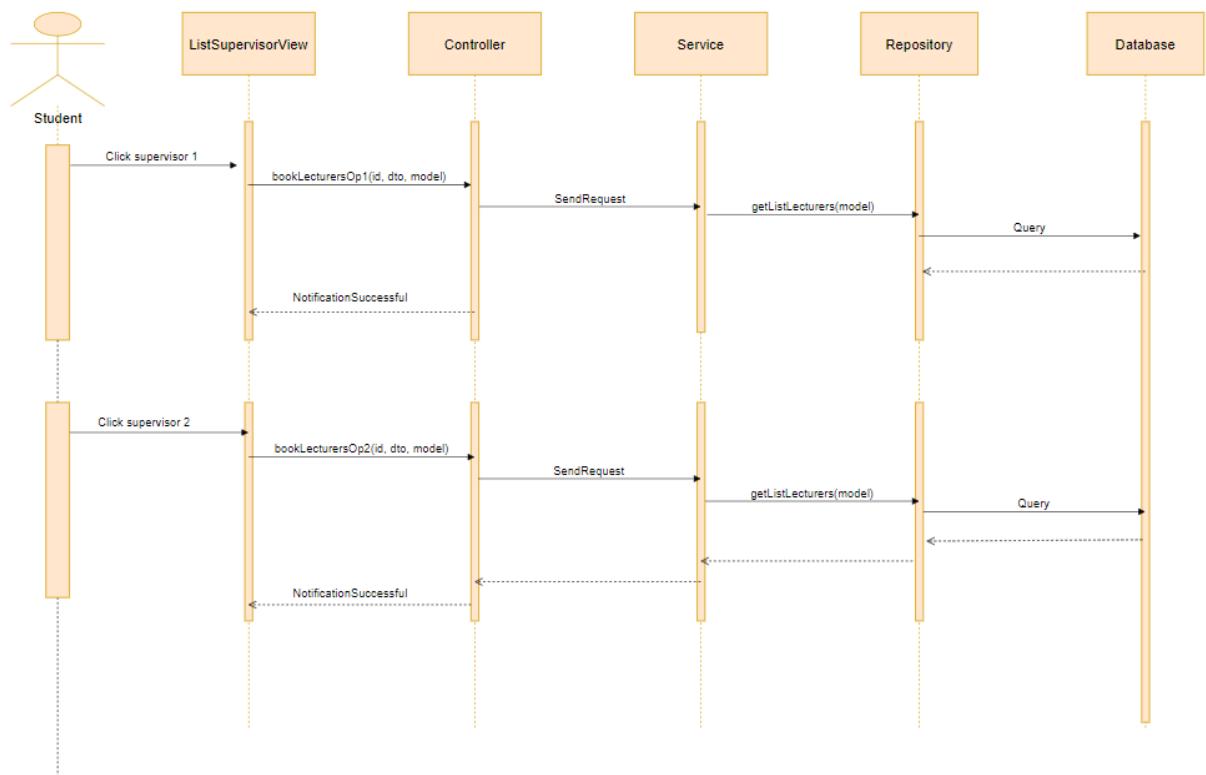
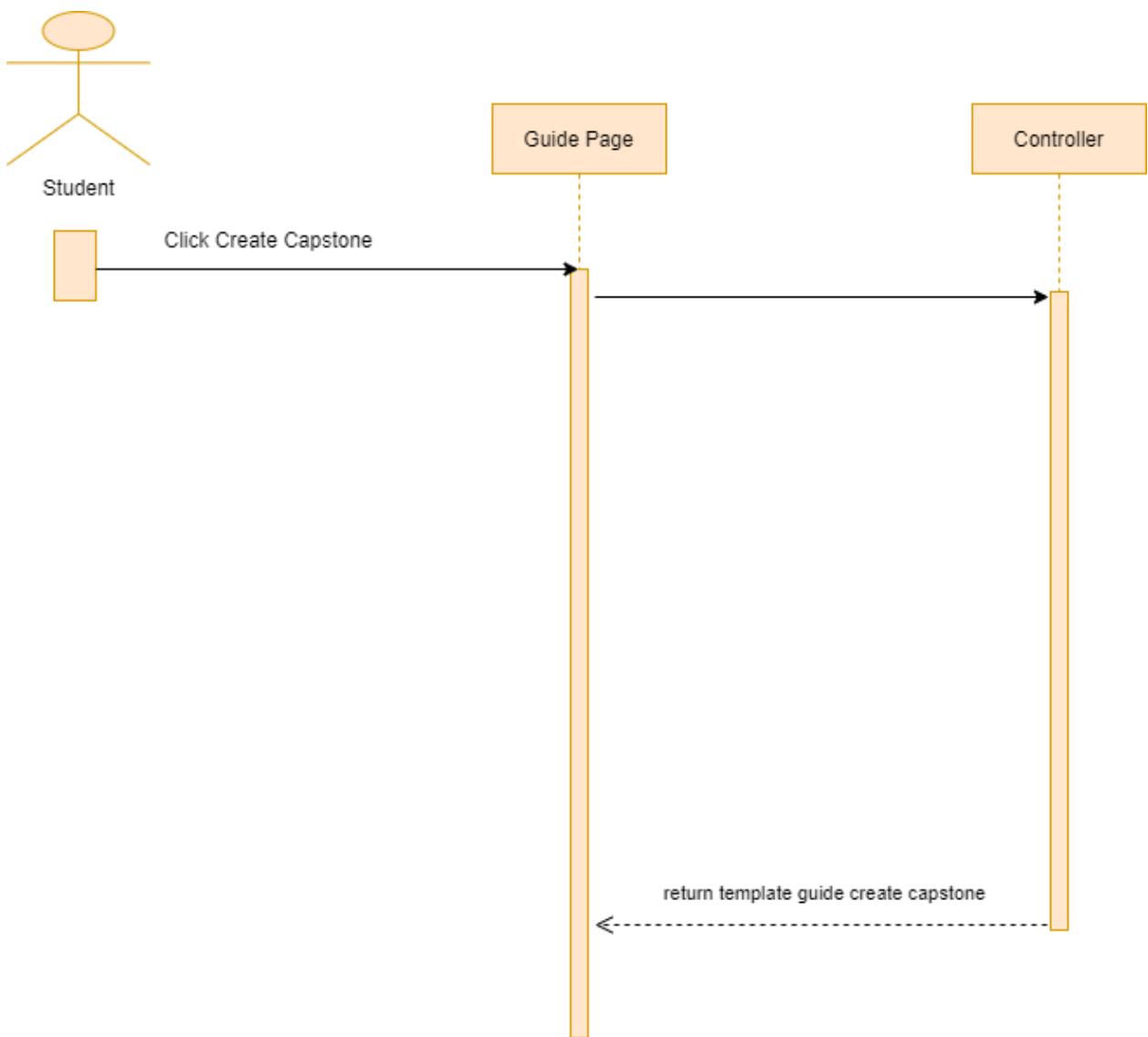


Figure: Show list supervisors and choose class diagram

## Sequence Diagram:

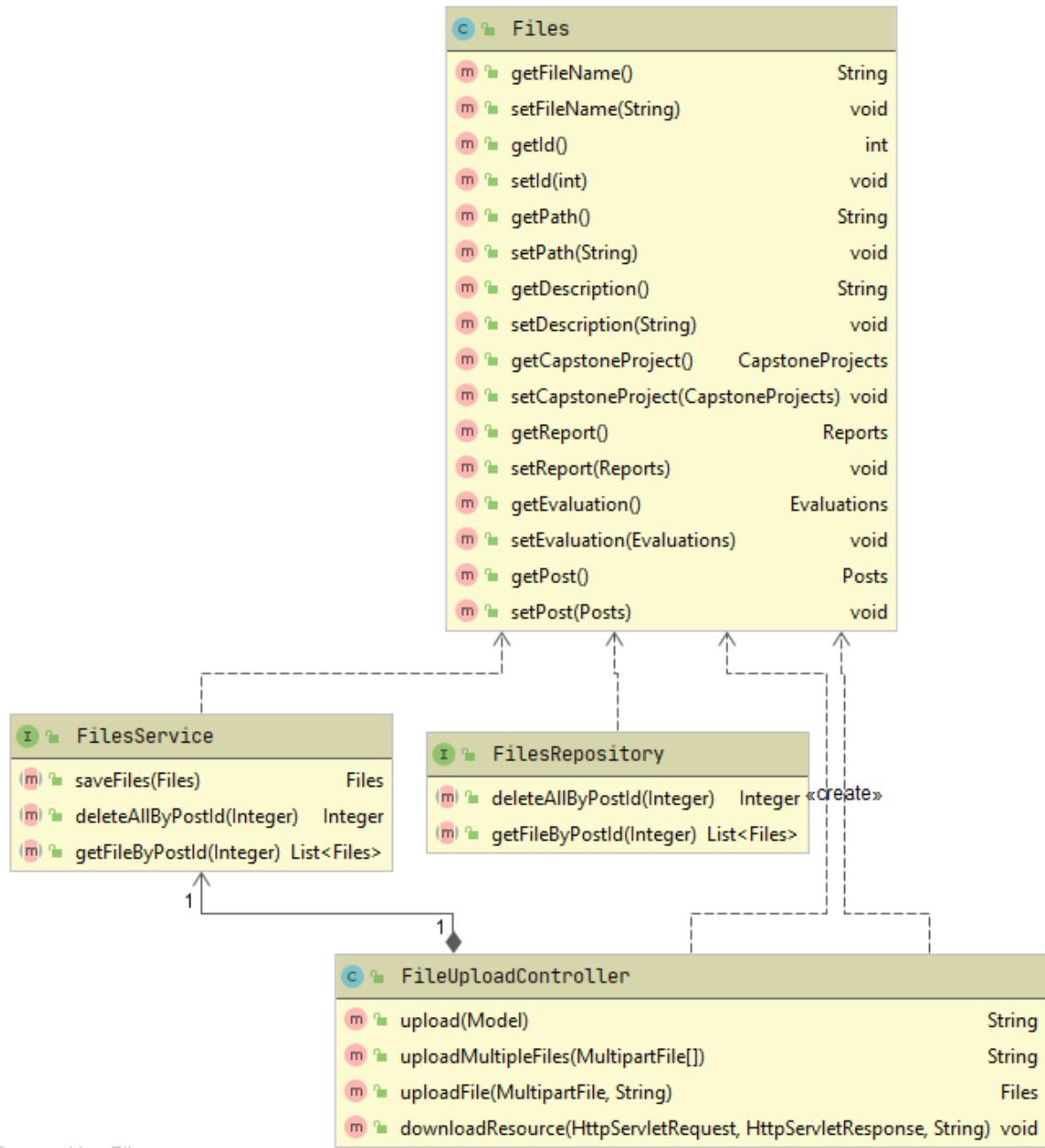


#### 4.4.1.7: View GUIDE



#### 4.4.1.8: Upload file

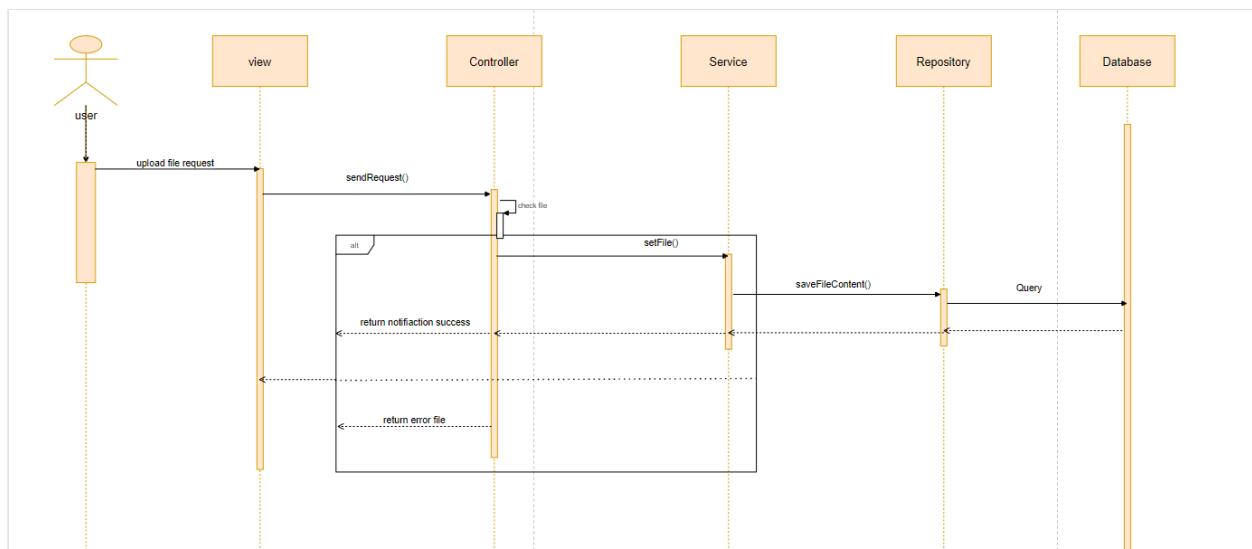
Class Diagram:



Powered by yFiles

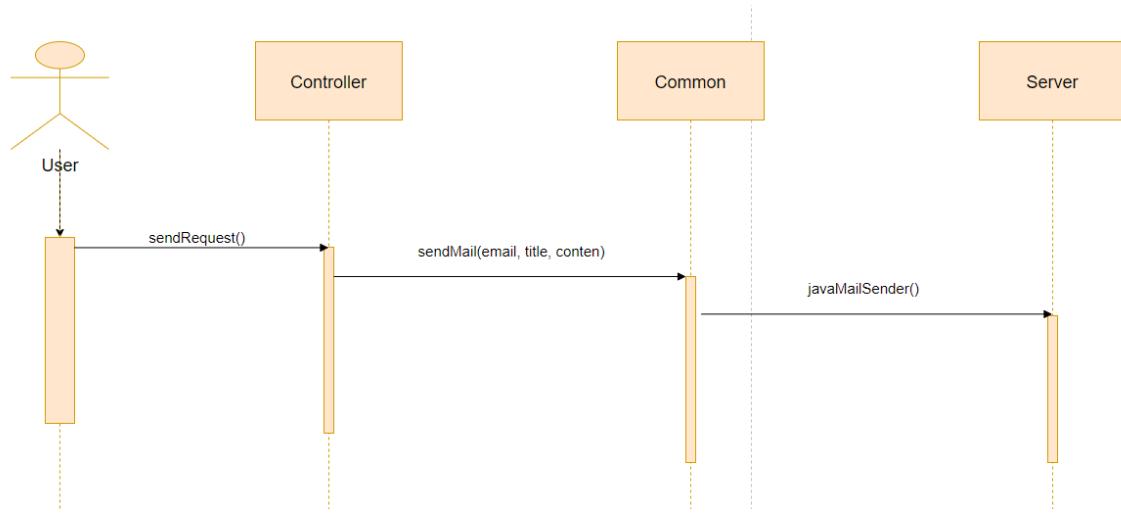
Figure: Upload file class diagram

## Sequence Diagram:



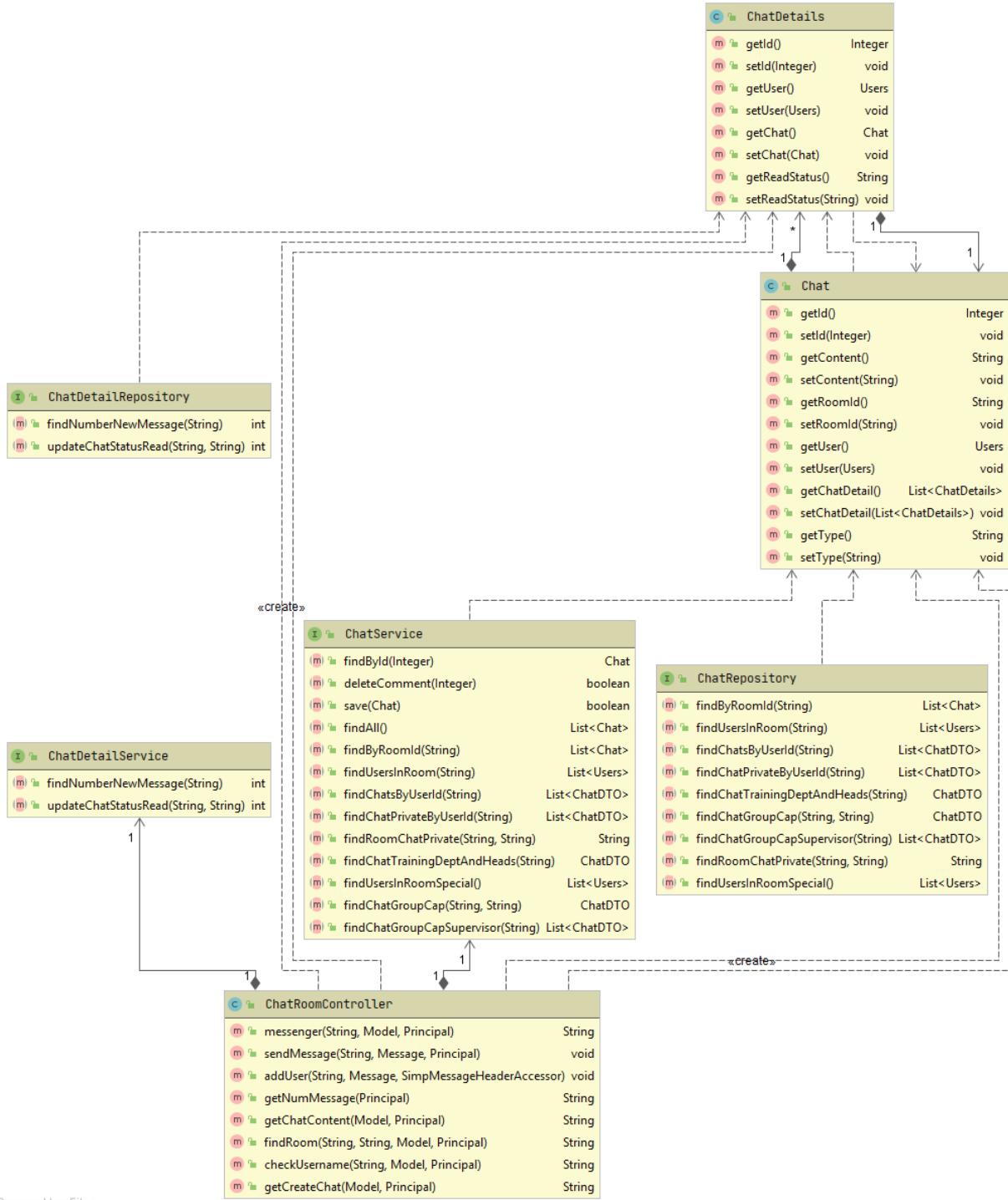
#### 4.4.1.9: Send mail

Sequence Diagram:



#### 4.4.1.10: Chat

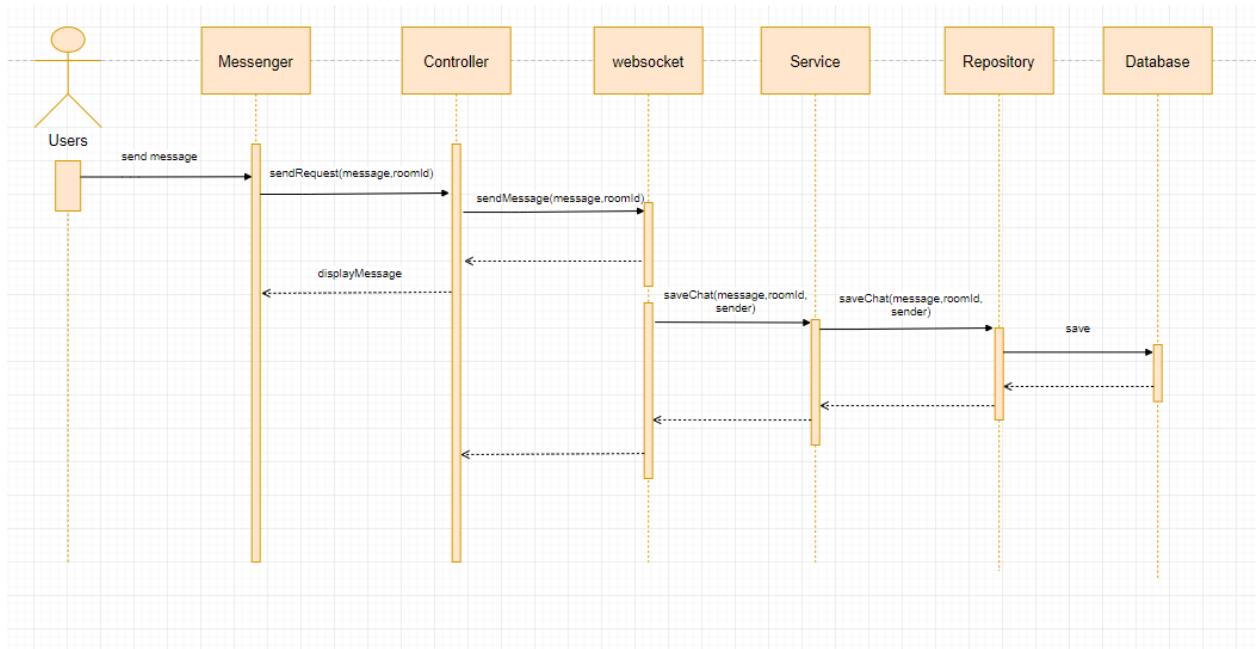
**Class Diagram:**



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Figure: Chat class diagram

## Sequence Diagram:



#### 4.4.1.11: Create chat

Class Diagram:

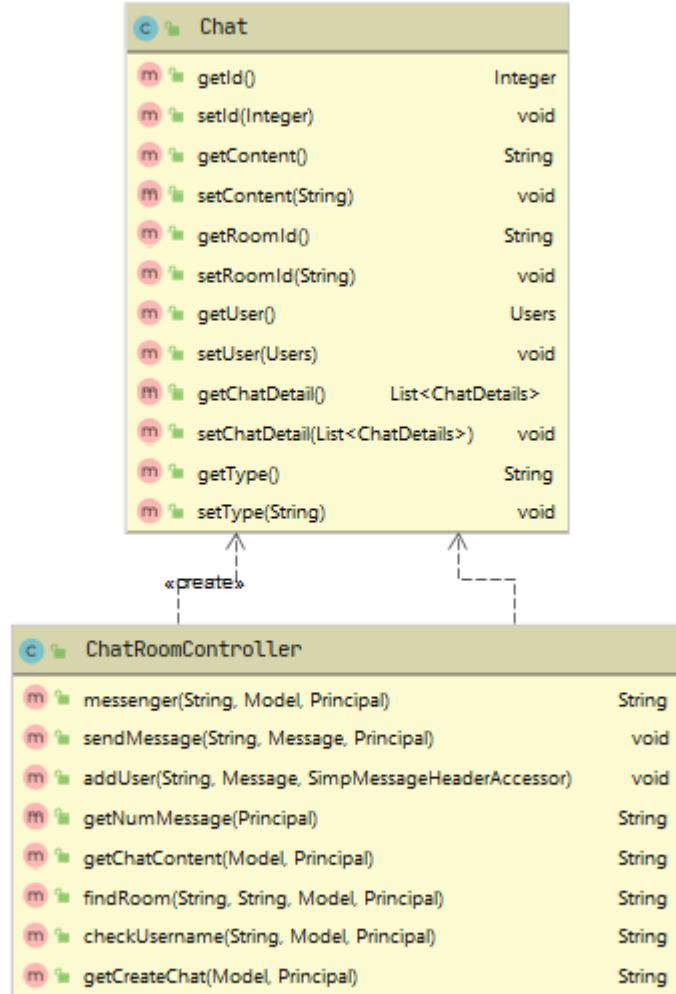
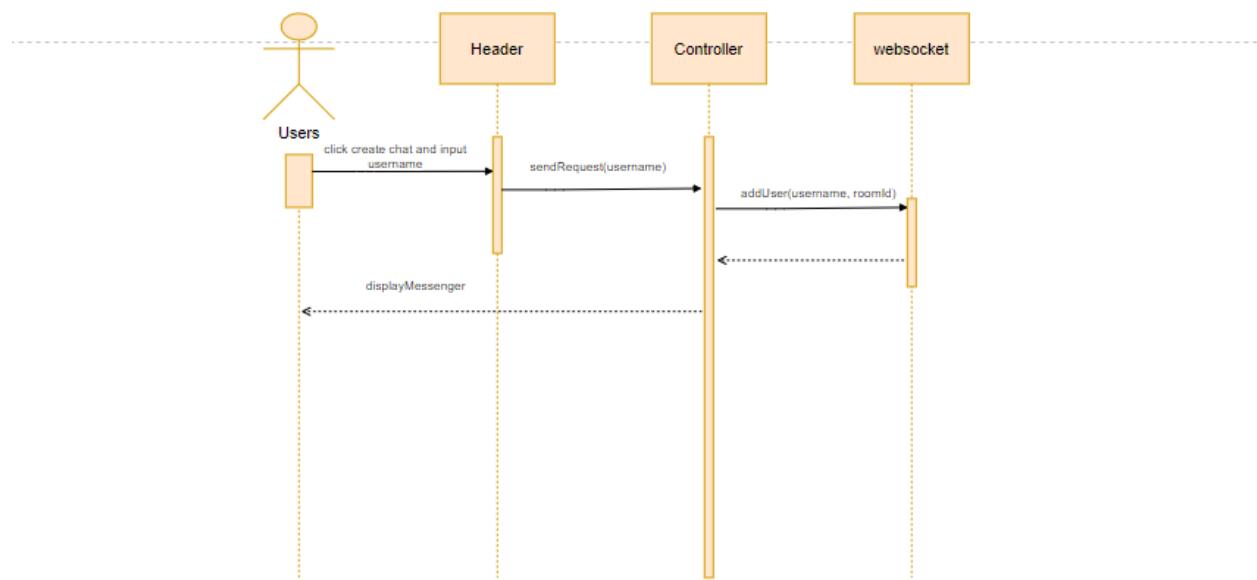


Figure: Create chat class diagram

## Sequence Diagram:



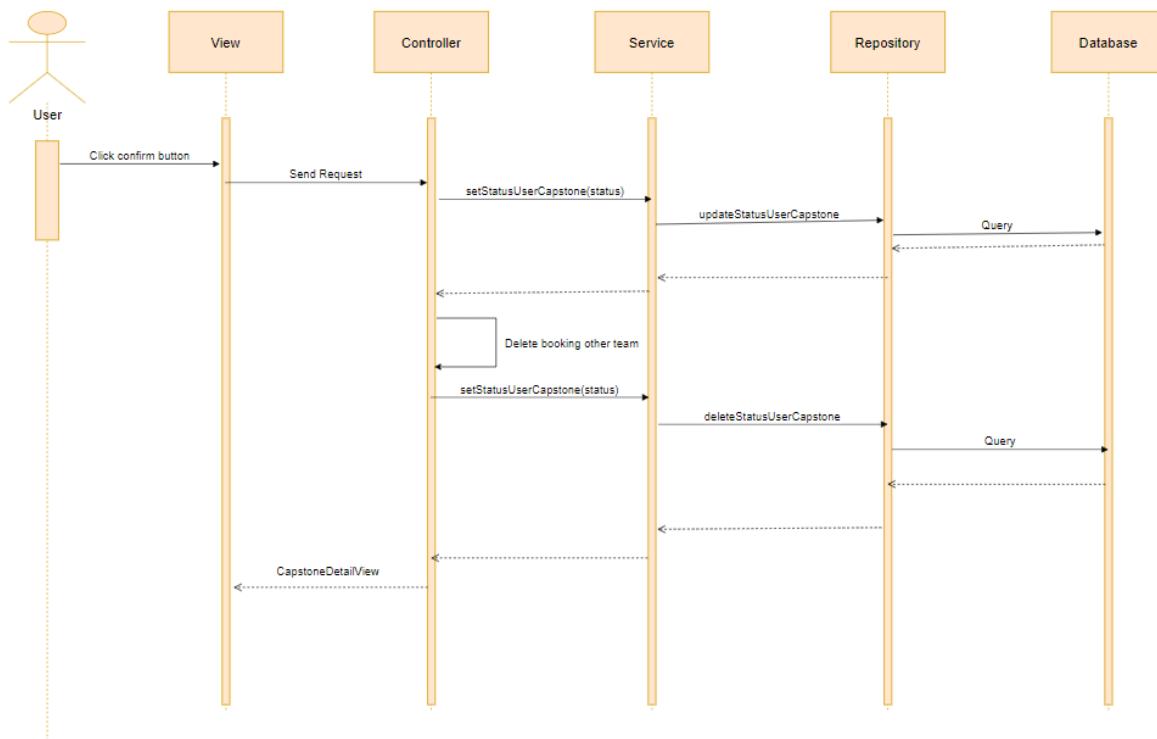
#### **4.4.1.12: Confirm join team feature**

**Class Diagram:**



Figure: Confirm join team feature class diagram

## Sequence Diagram:



#### 4.4.1.13: Edit profile

##### Class Diagram:

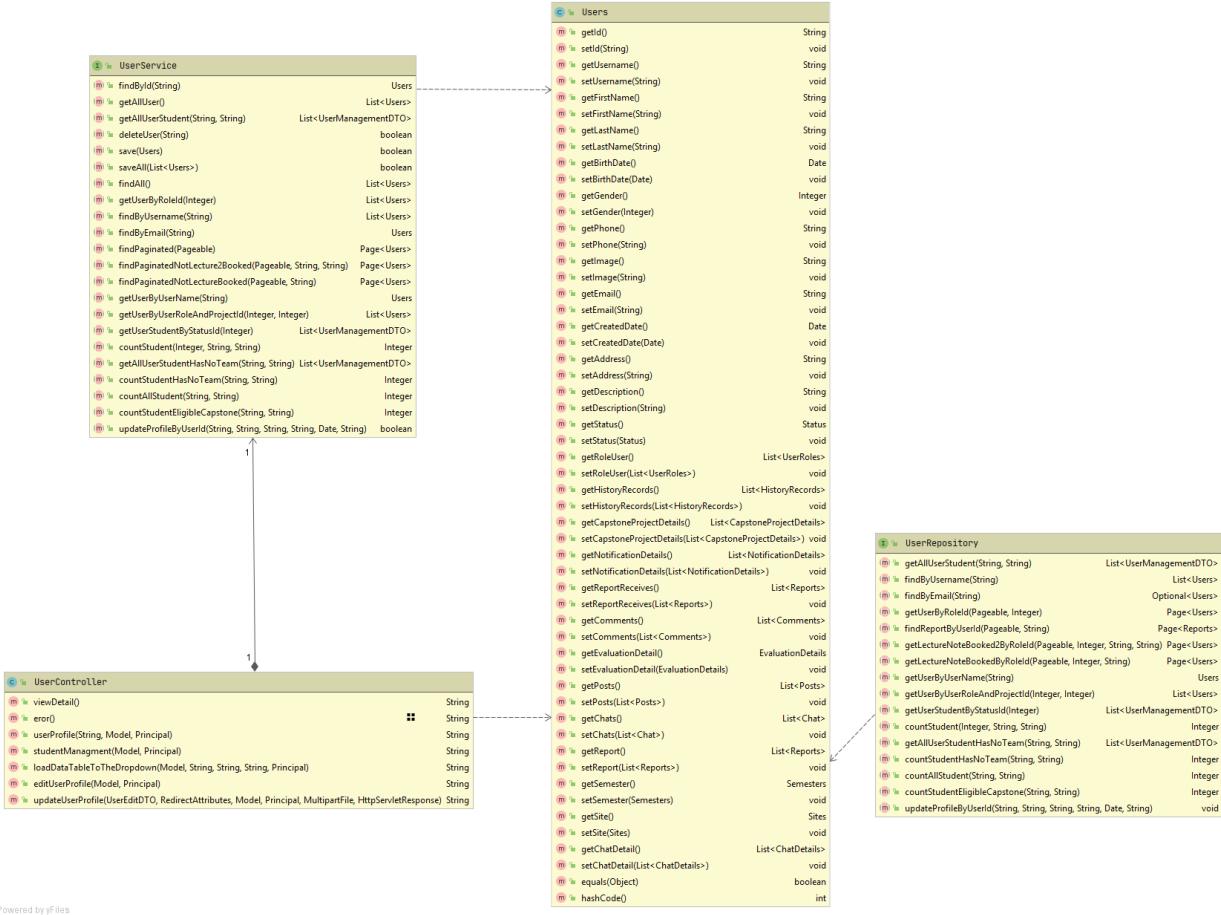
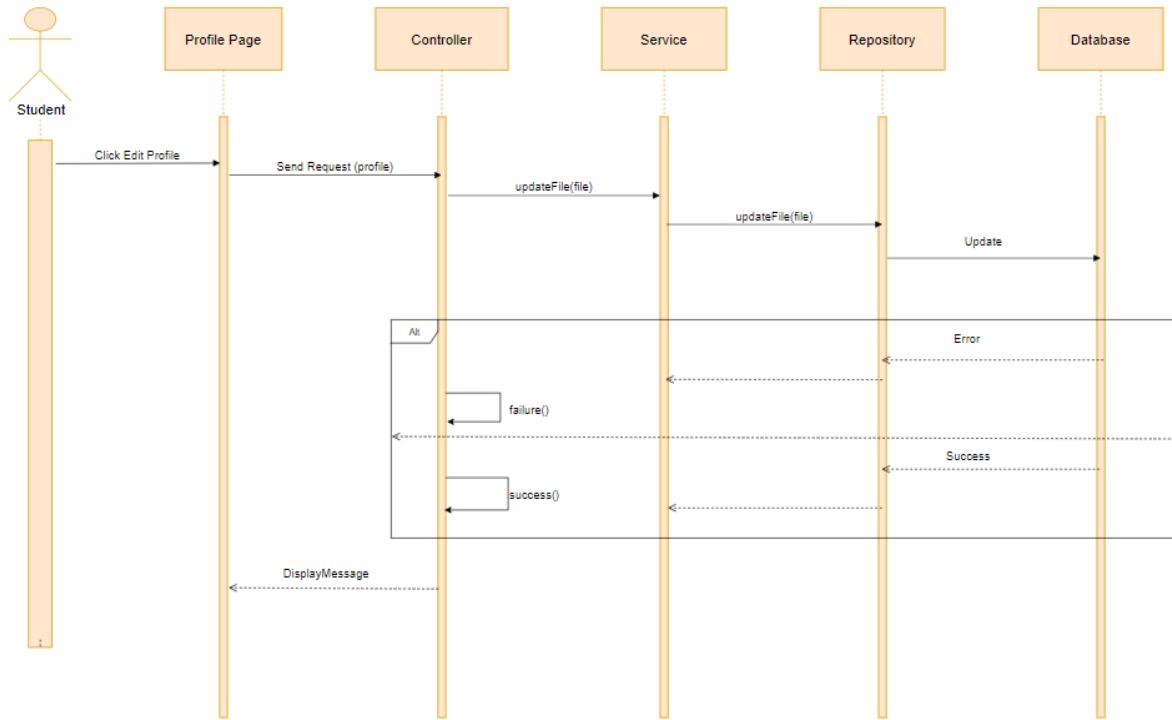


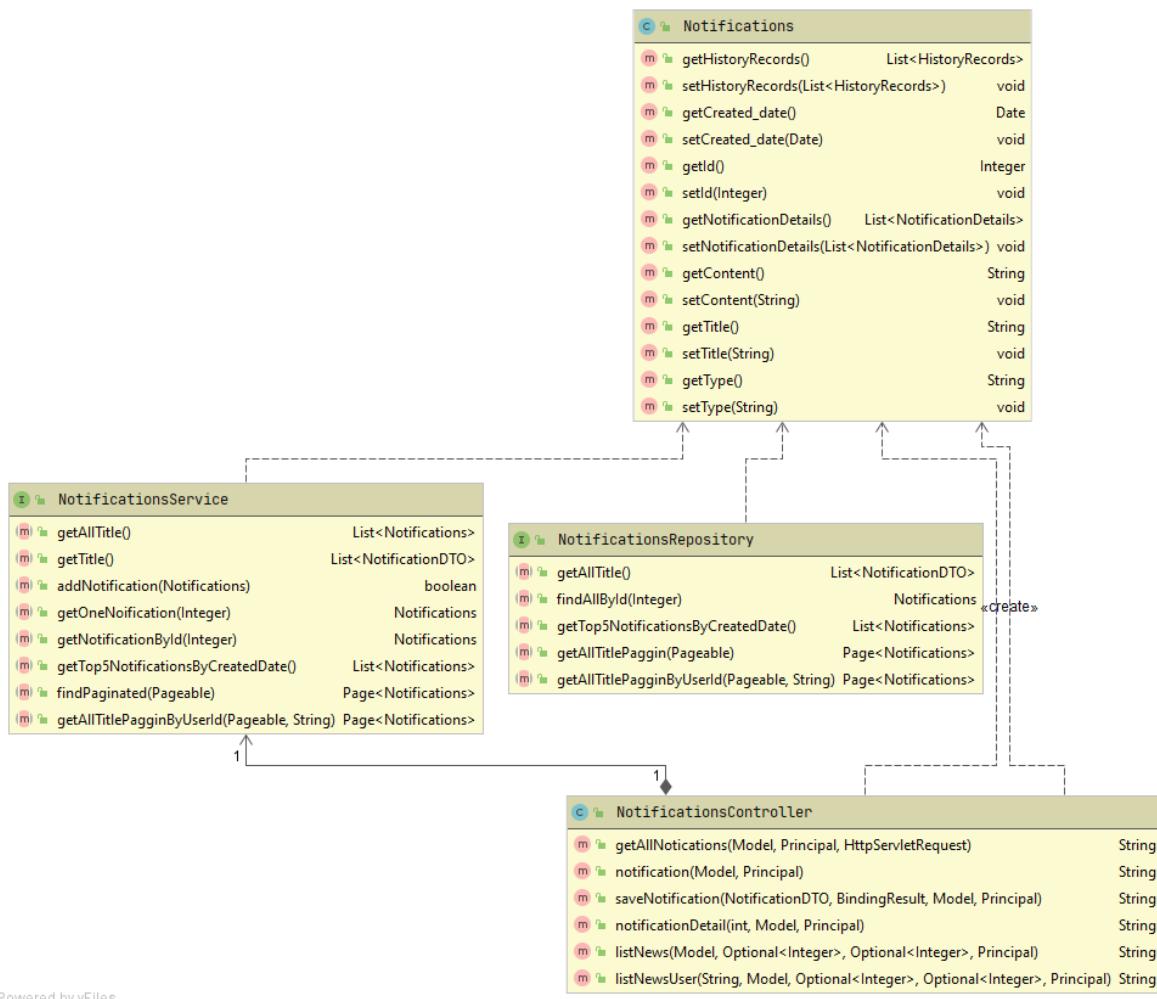
Figure: Edit profile class diagram

## Sequence Diagram:



#### 4.4.1.14: Notification component

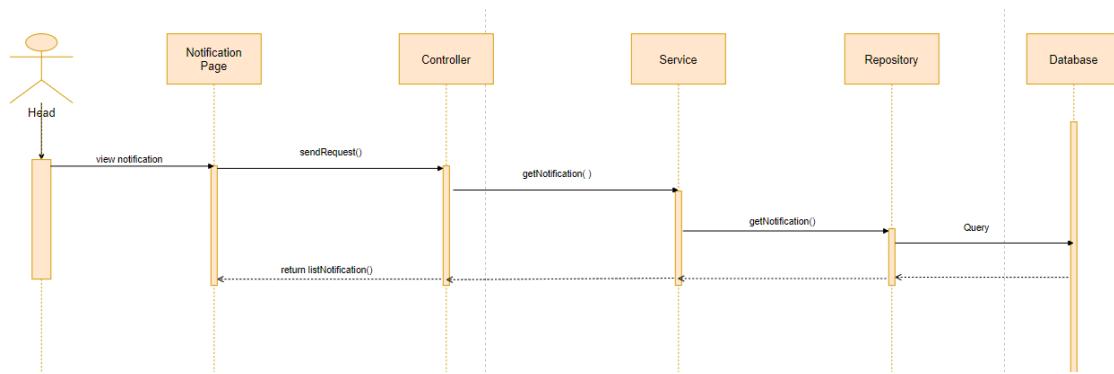
**Class Diagram:**



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Figure: Notification component class diagram

## Sequence Diagram:



#### 4.4.1.15: Comment

Class Diagram:

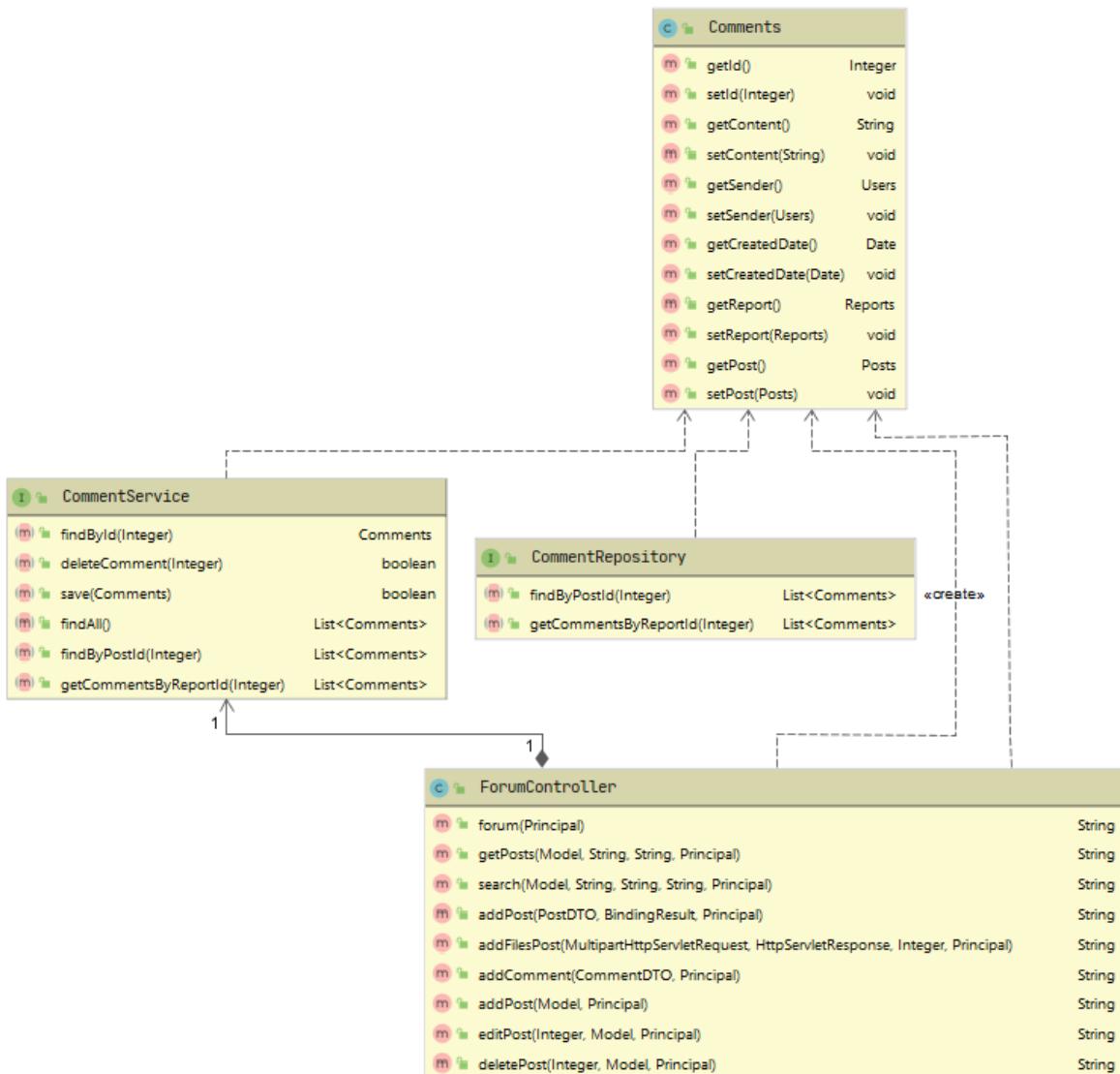
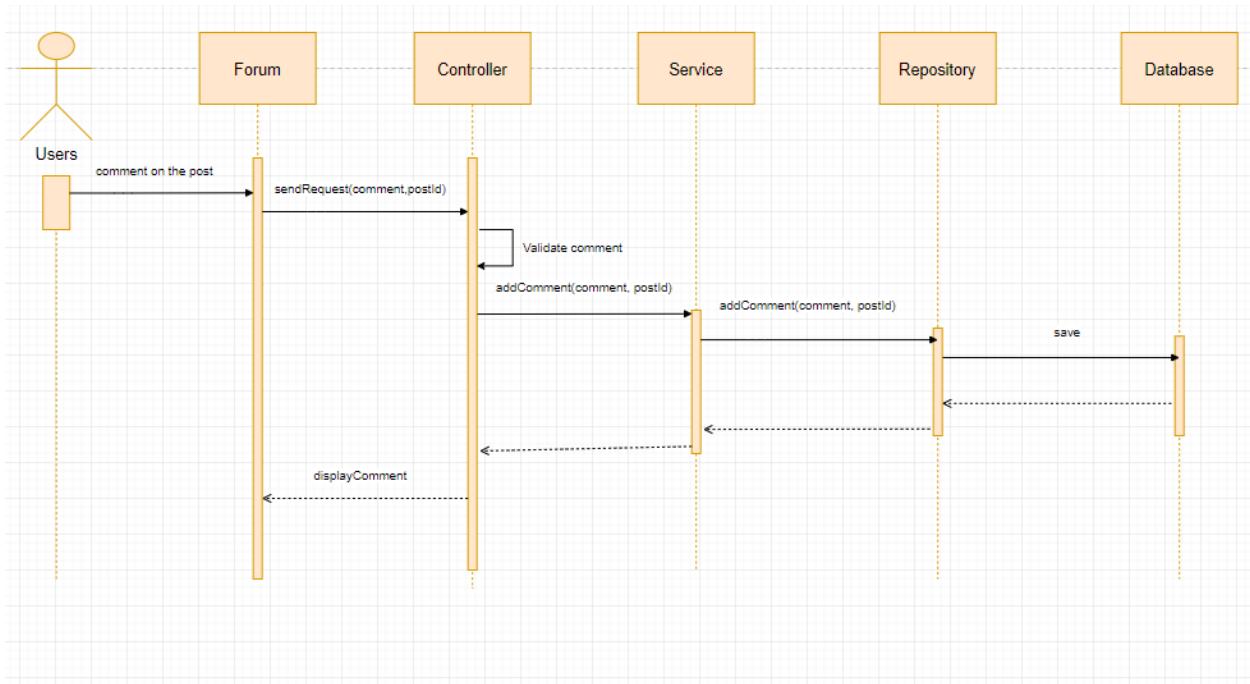


Figure: Comment class diagram

## Sequence Diagram:



#### 4.4.1.16: Daily report to member to leader

Class Diagram:

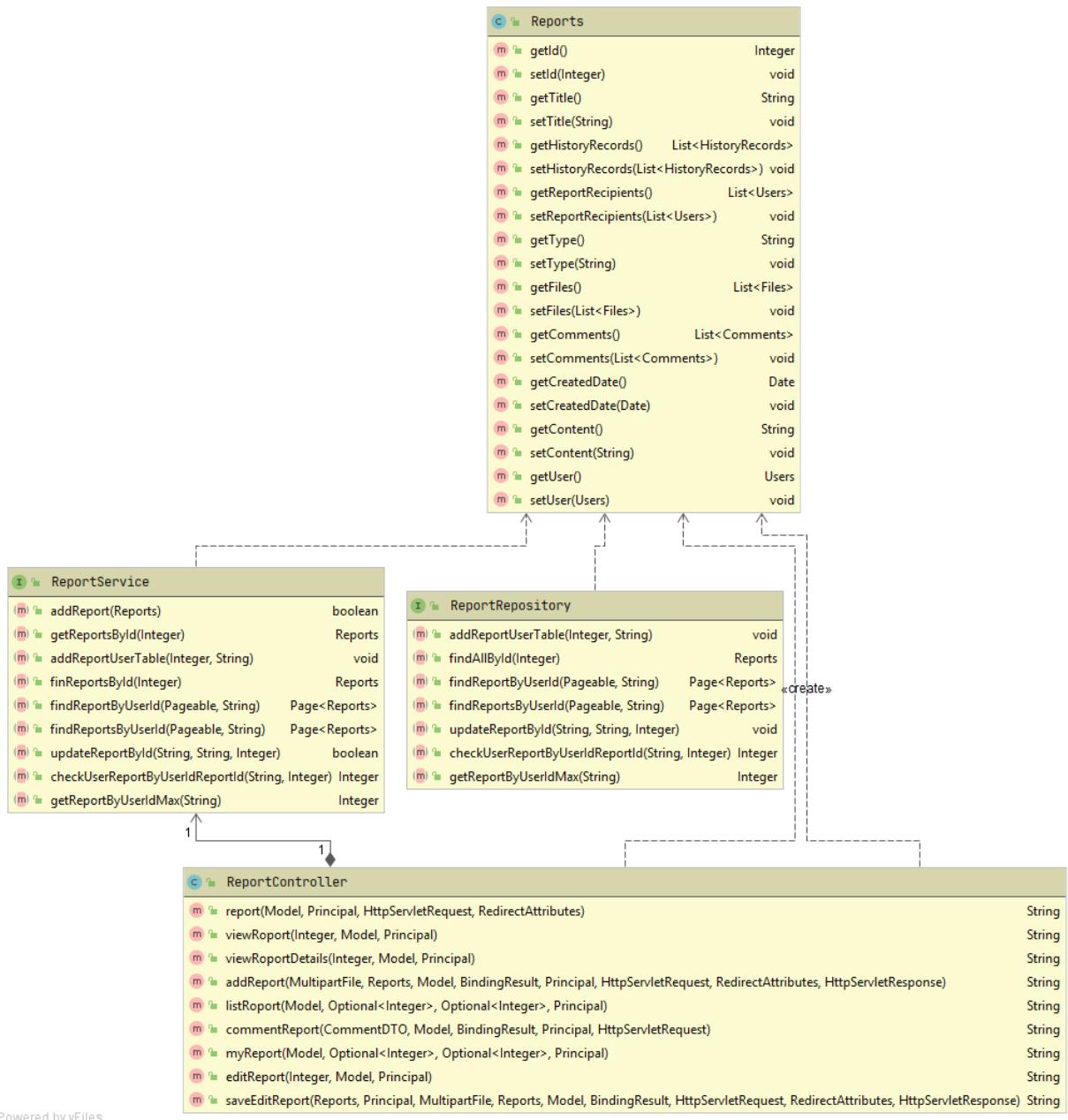
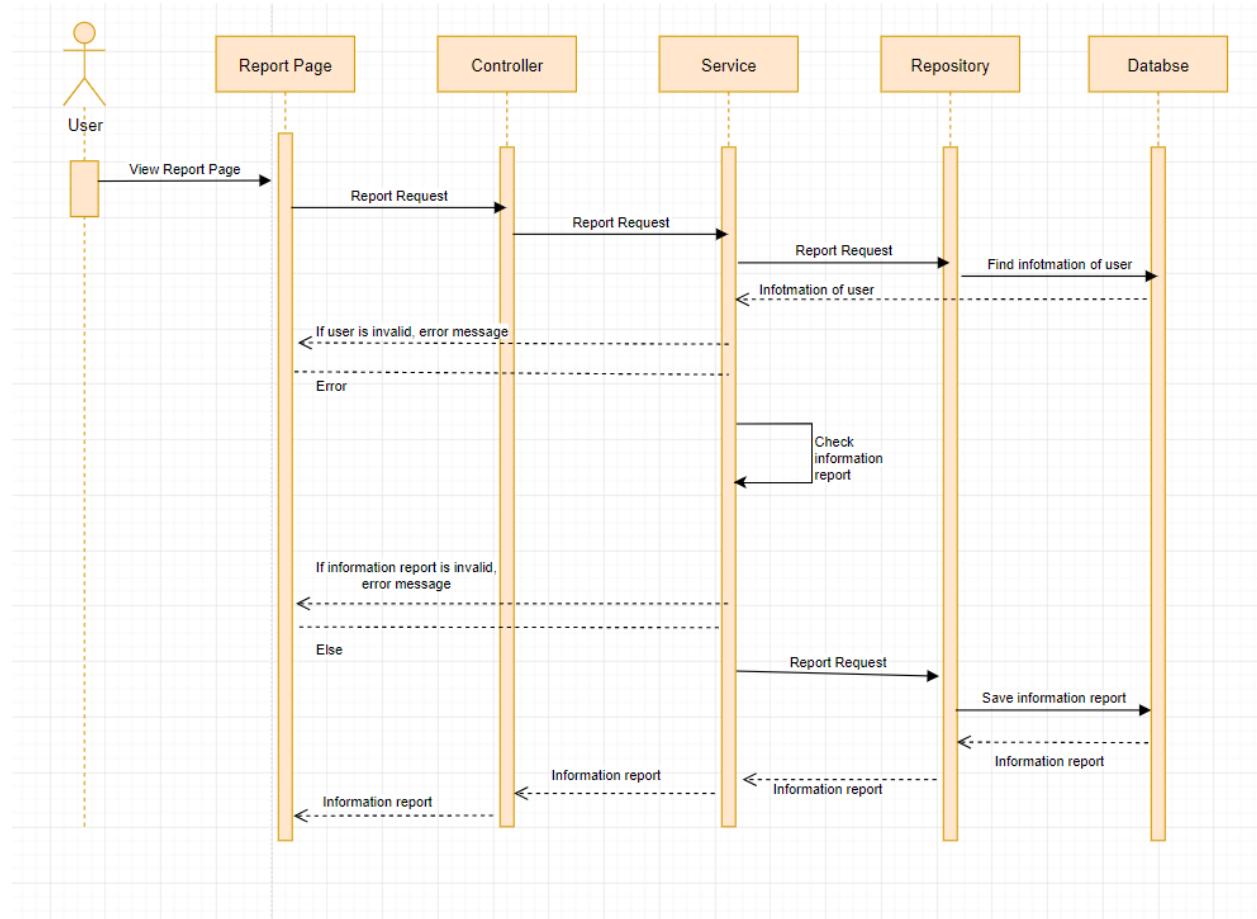


Figure: Daily report to member to leader class diagram

## Sequence Diagram:



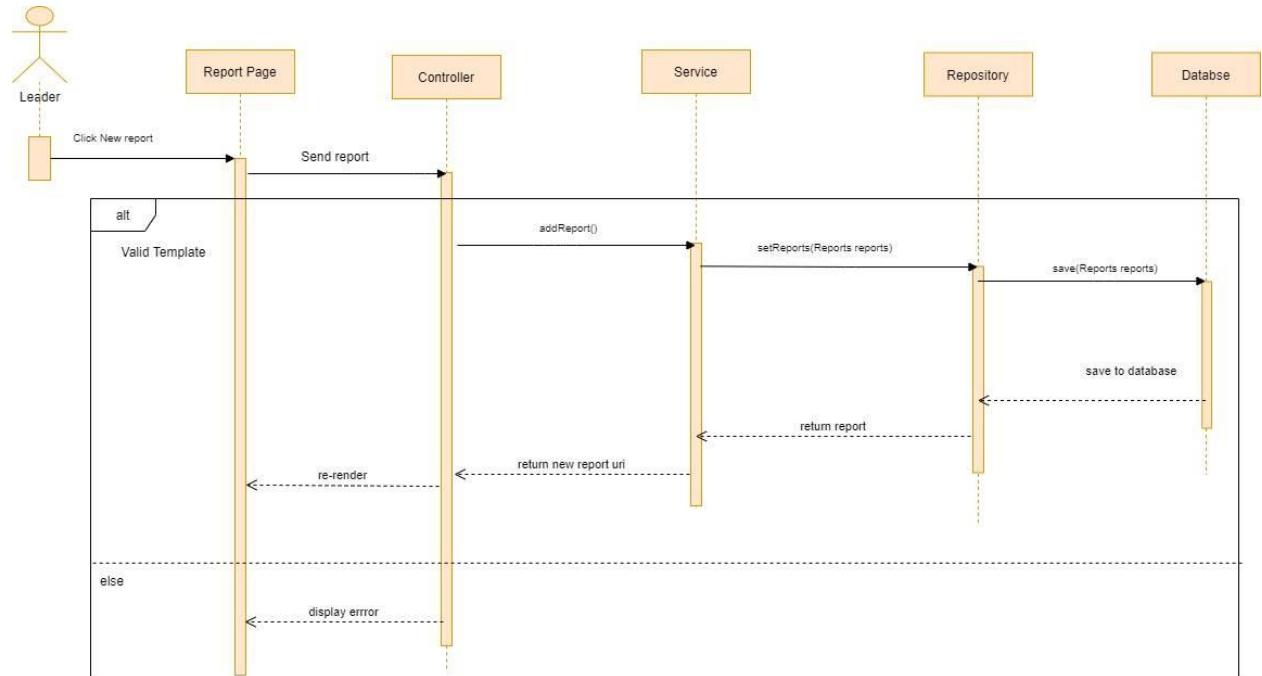
#### 4.4.1.17: Weekly report to leader to supervisor

**Class Diagram:**



Figure: Weekly report to leader to supervisor class diagram

## Sequence Diagram:



#### 4.4.1.18: Manage user

**Class Diagram:**

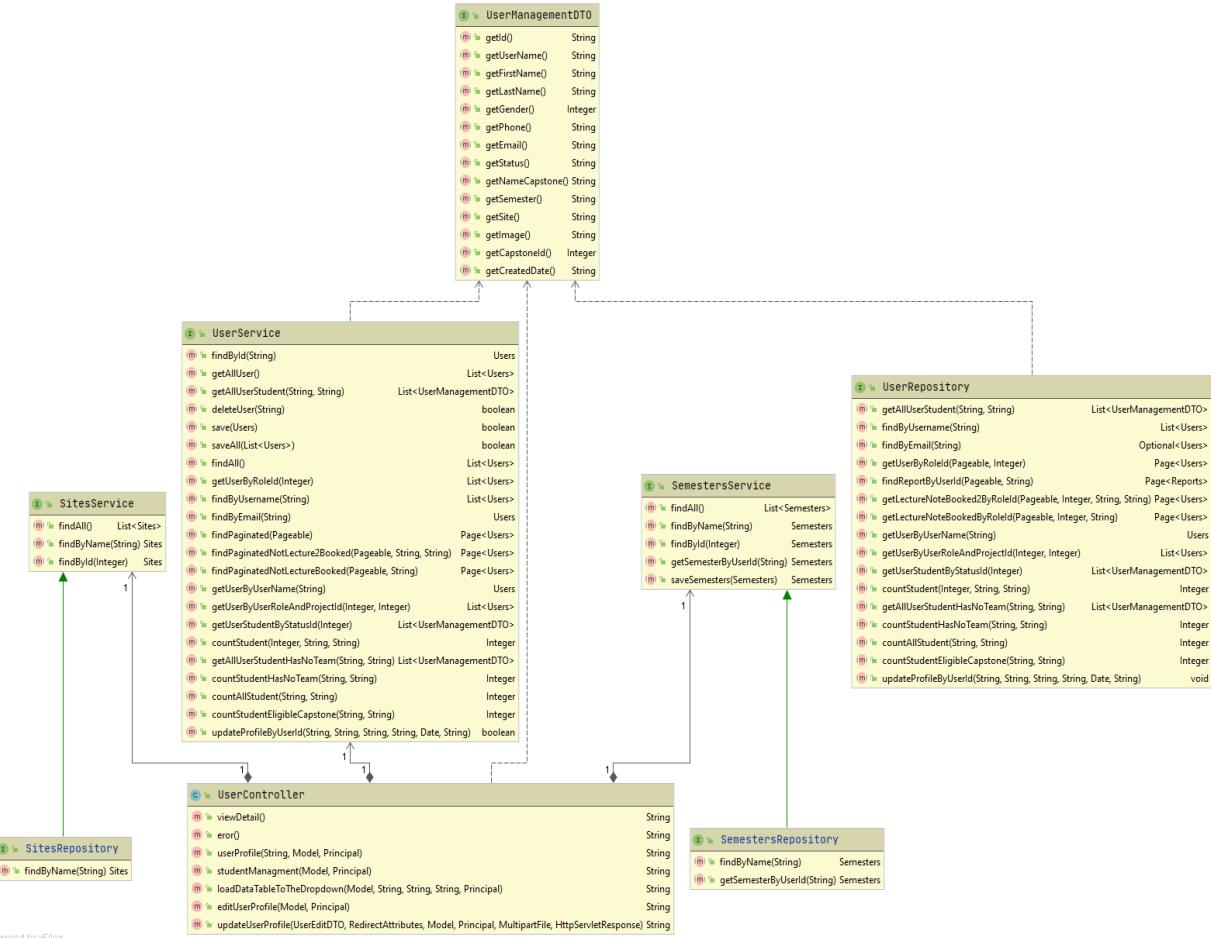
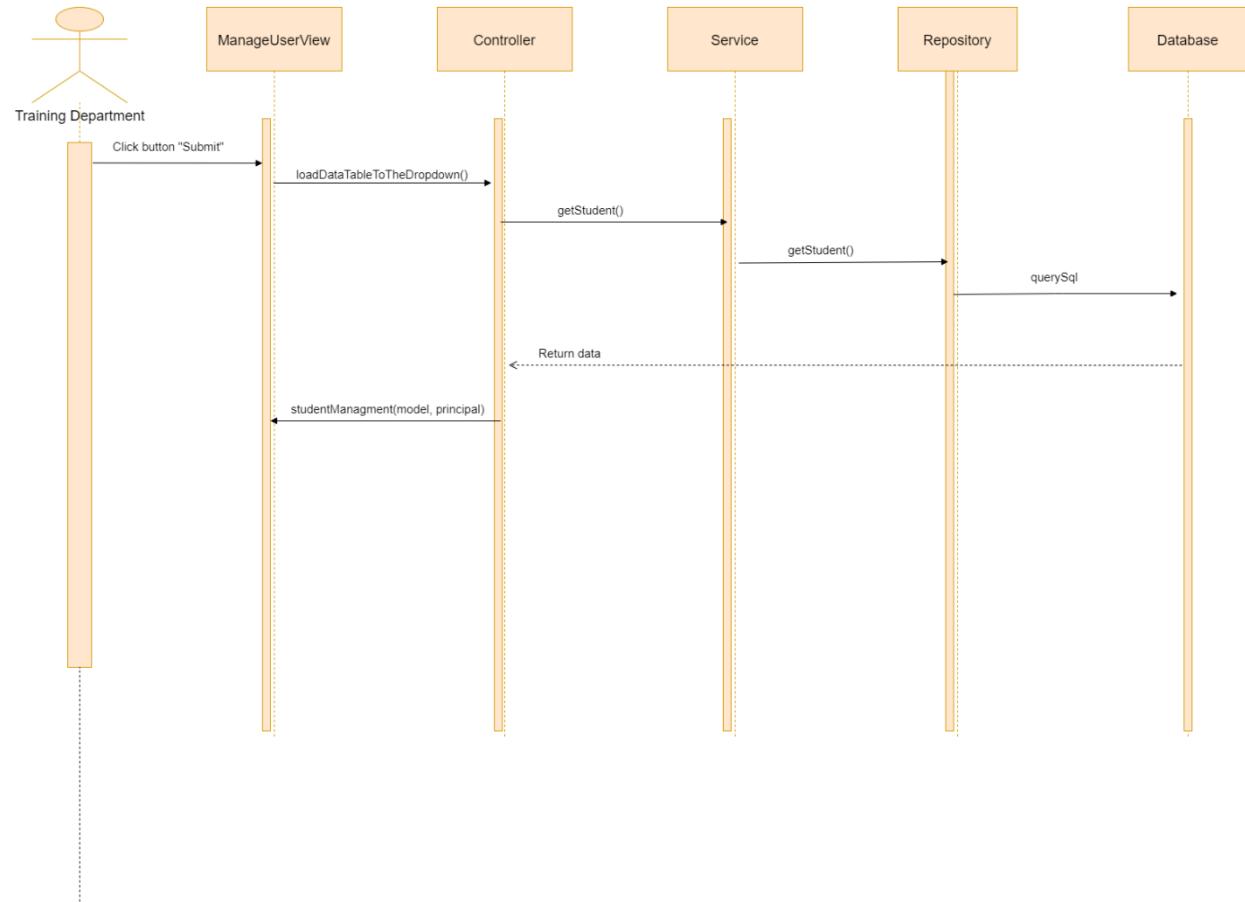


Figure: Manage user class diagram

## Sequence Diagram:



#### **4.4.1.19: View information, status of list student**

**Class Diagram:**

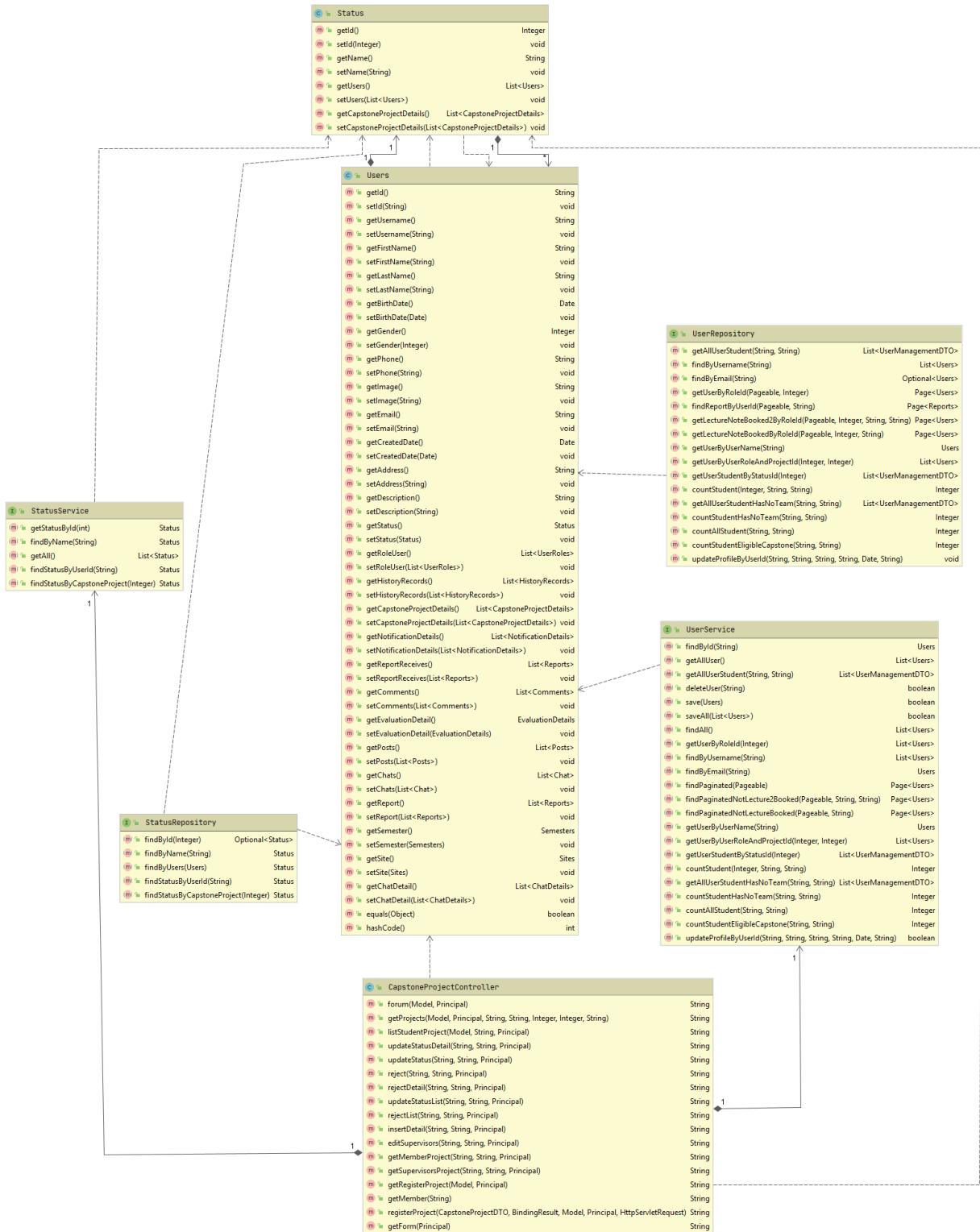
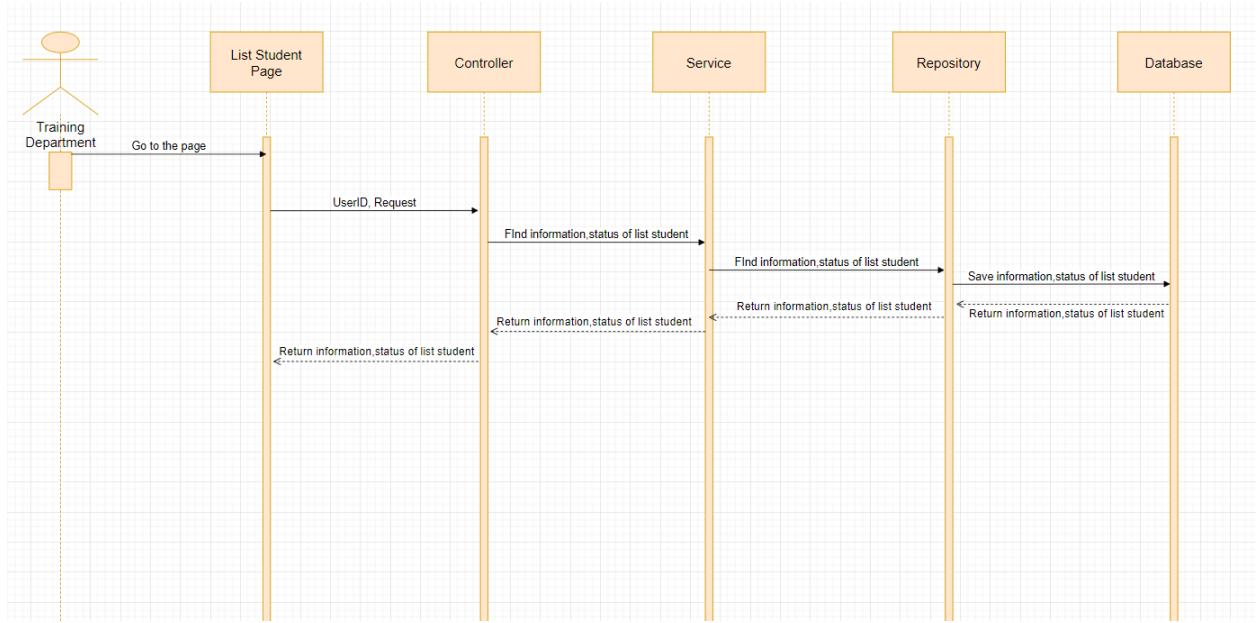


Figure: View information, status of list student class diagram

## Sequence Diagram:



## 4.4.1.20: Add student and edit supervisor of Capstone Project

### Class Diagram:

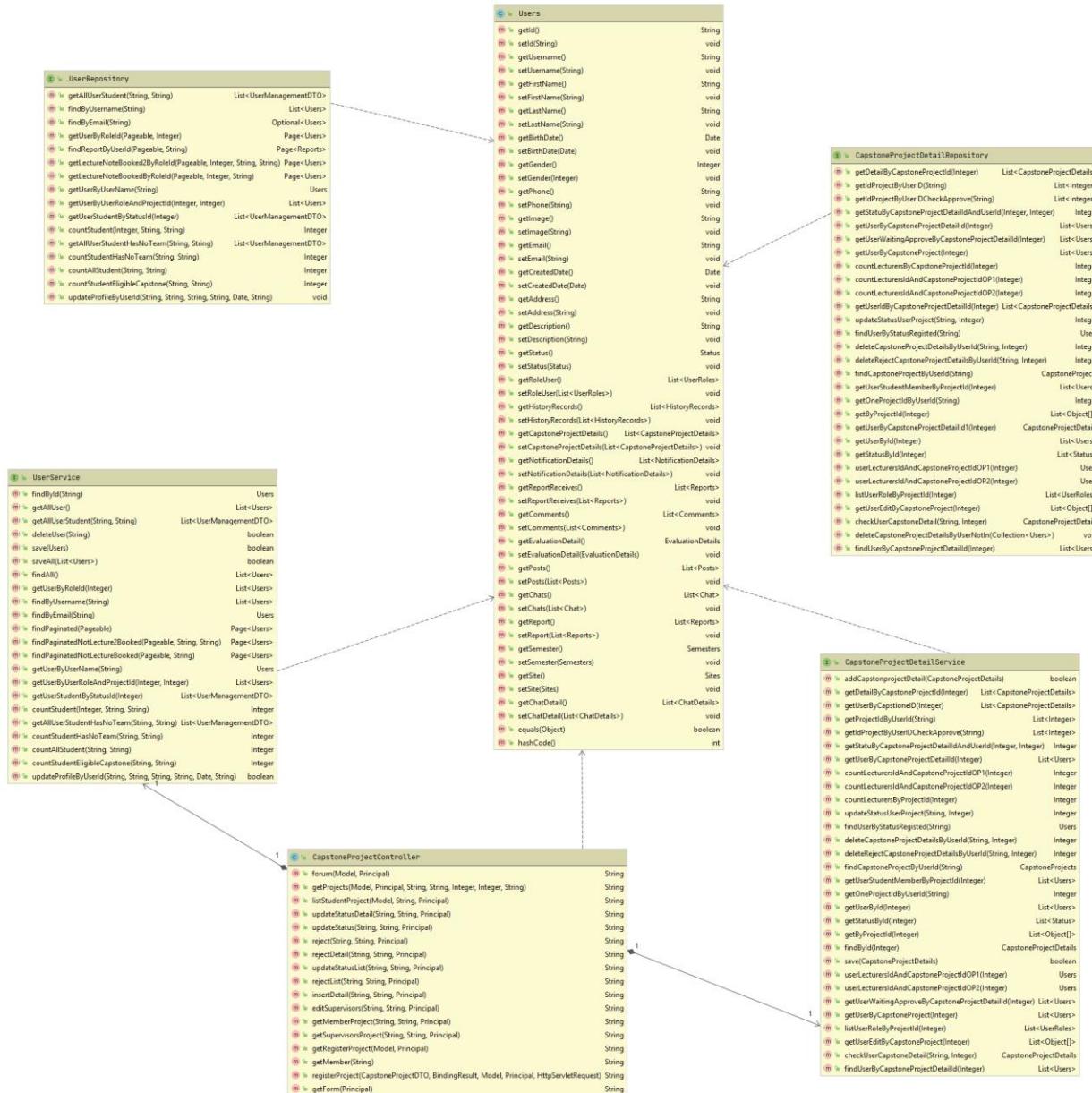
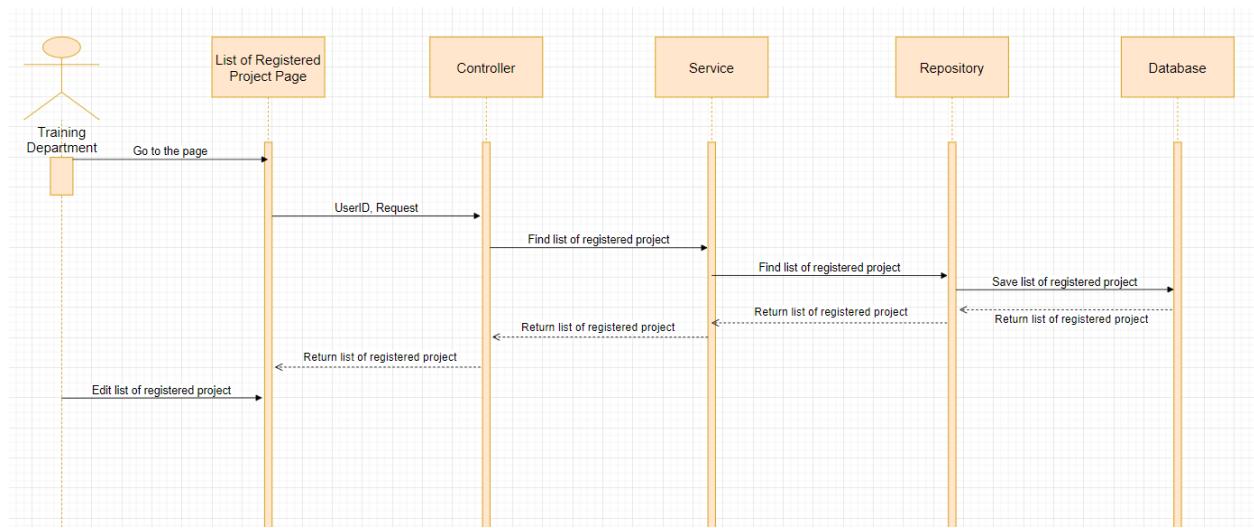


Figure: Add student and edit supervisor of capstone project class diagram

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## Sequence Diagram:



#### 4.4.1.21: View list capstone project

**Class Diagram:**

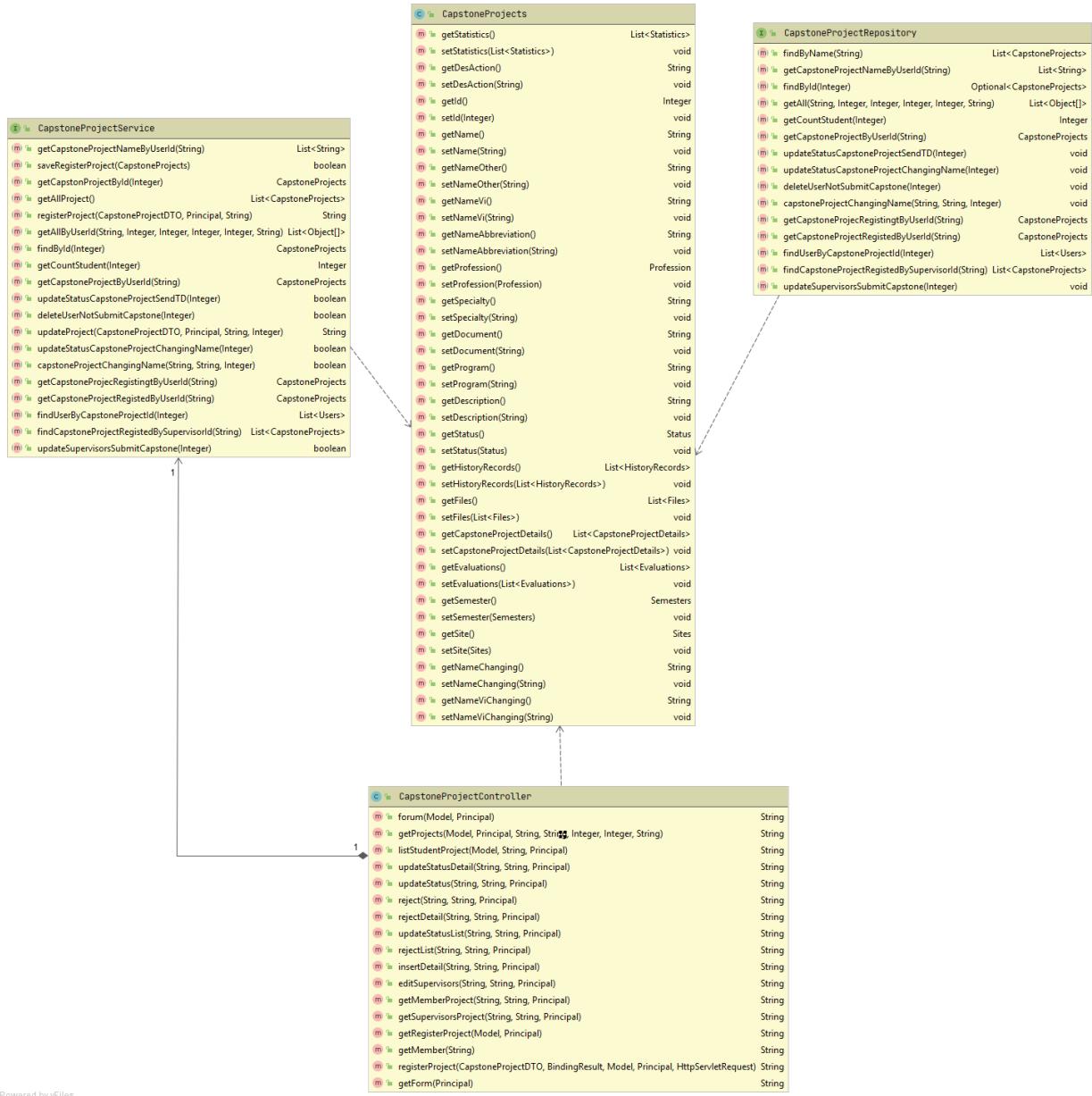
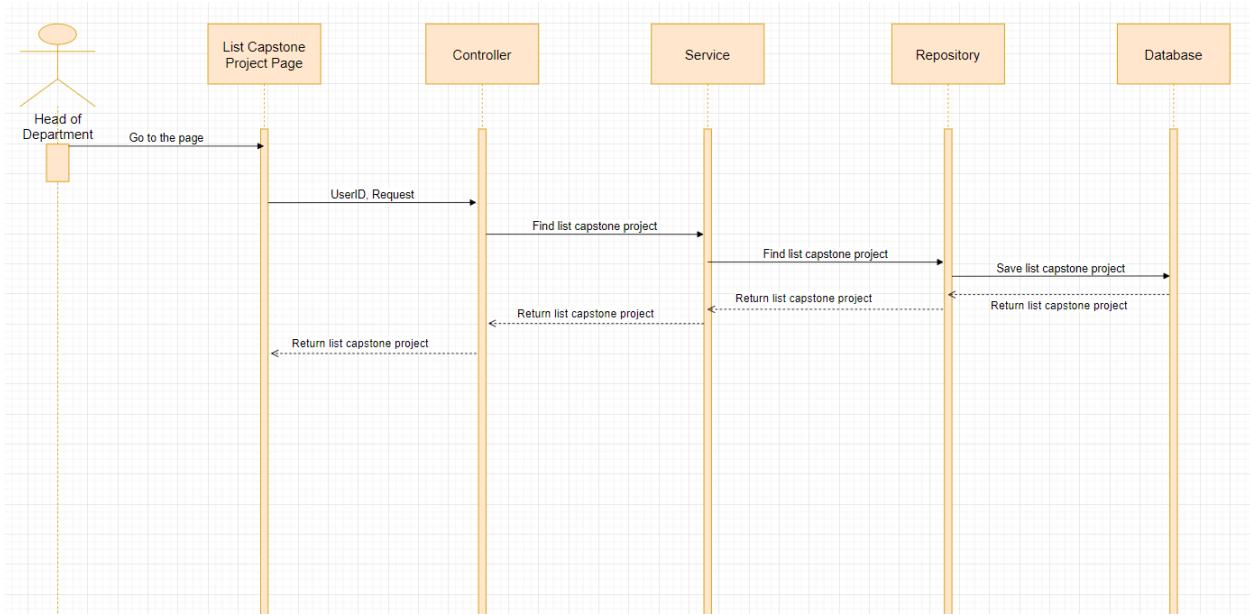


Figure: View list capstone project class diagram

## Sequence Diagram:



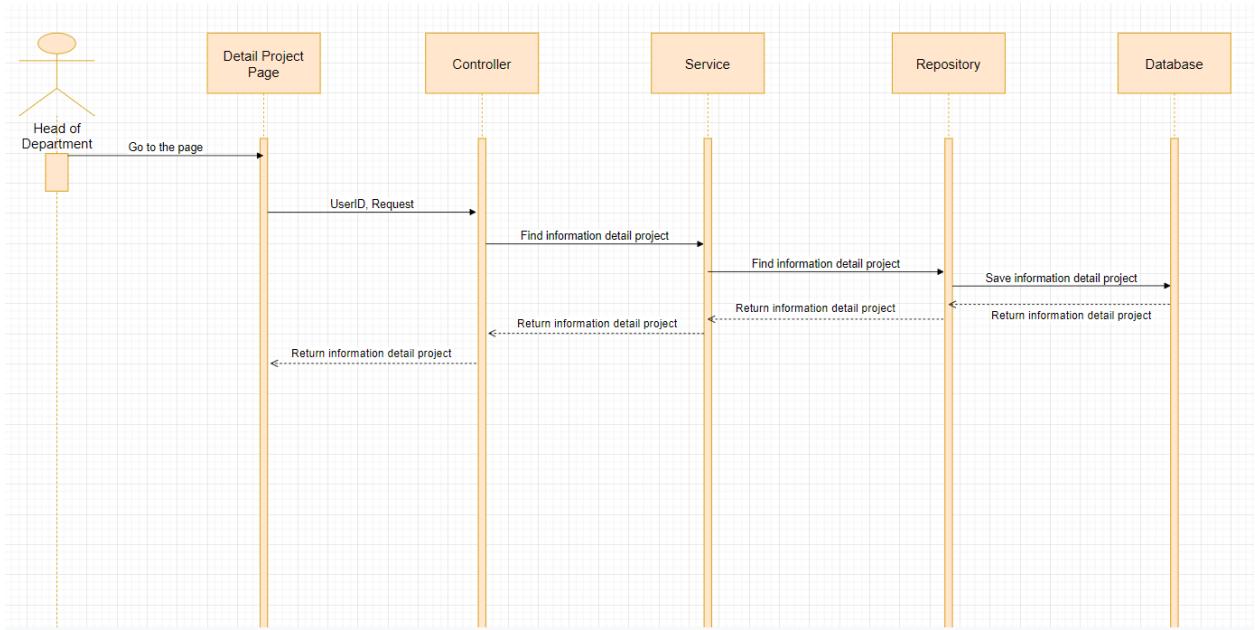
#### 4.4.1.22: View detail project

##### Class Diagram:



Figure: View detail project class diagram

## Sequence Diagram:



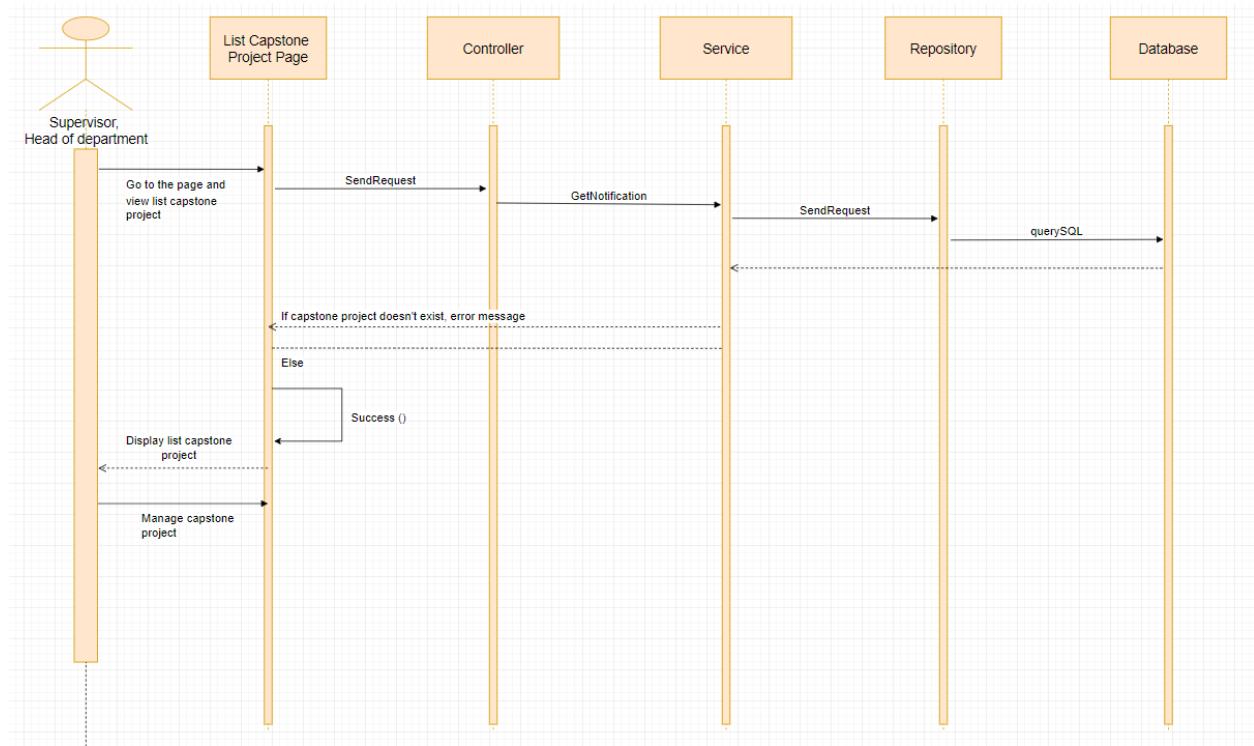
### 4.4.1.23: Manage Capstone Project

#### Class Diagram:



Figure: Manage capstone project class diagram

## Sequence Diagram:



#### 4.4.1.24: View task detail of Capstone Project

**Class Diagram:**

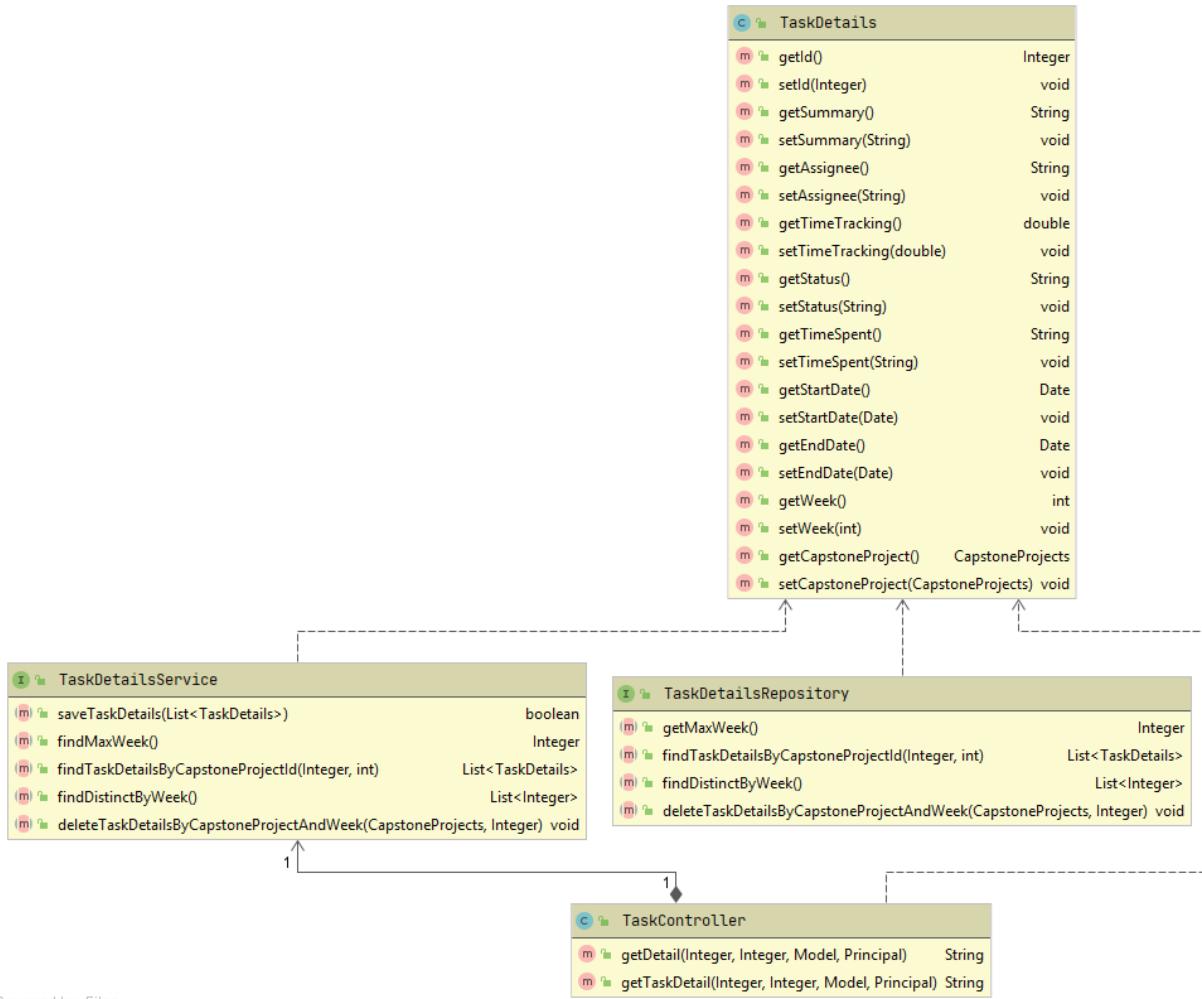
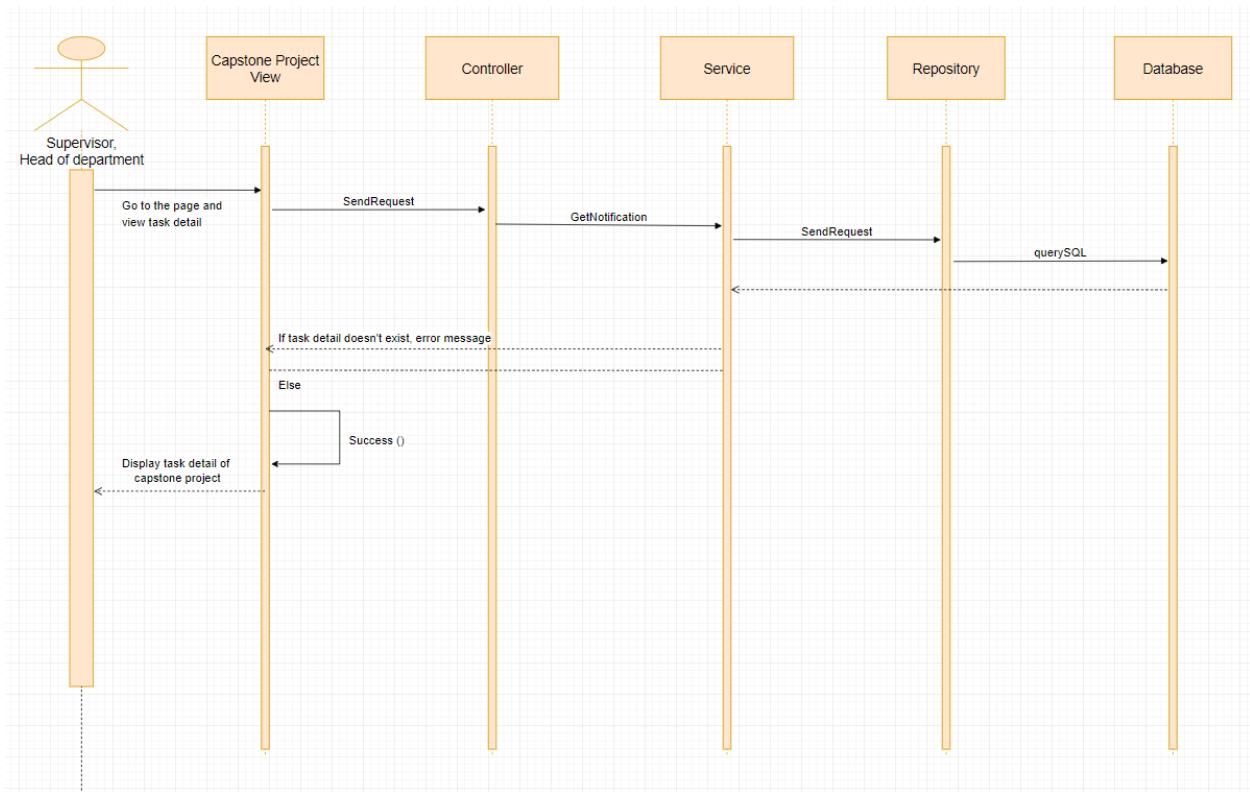


Figure: View task detail of capstone project class diagram

## Sequence Diagram:



#### **4.4.1.25: Dashboard statistical of project**

## Class Diagram:

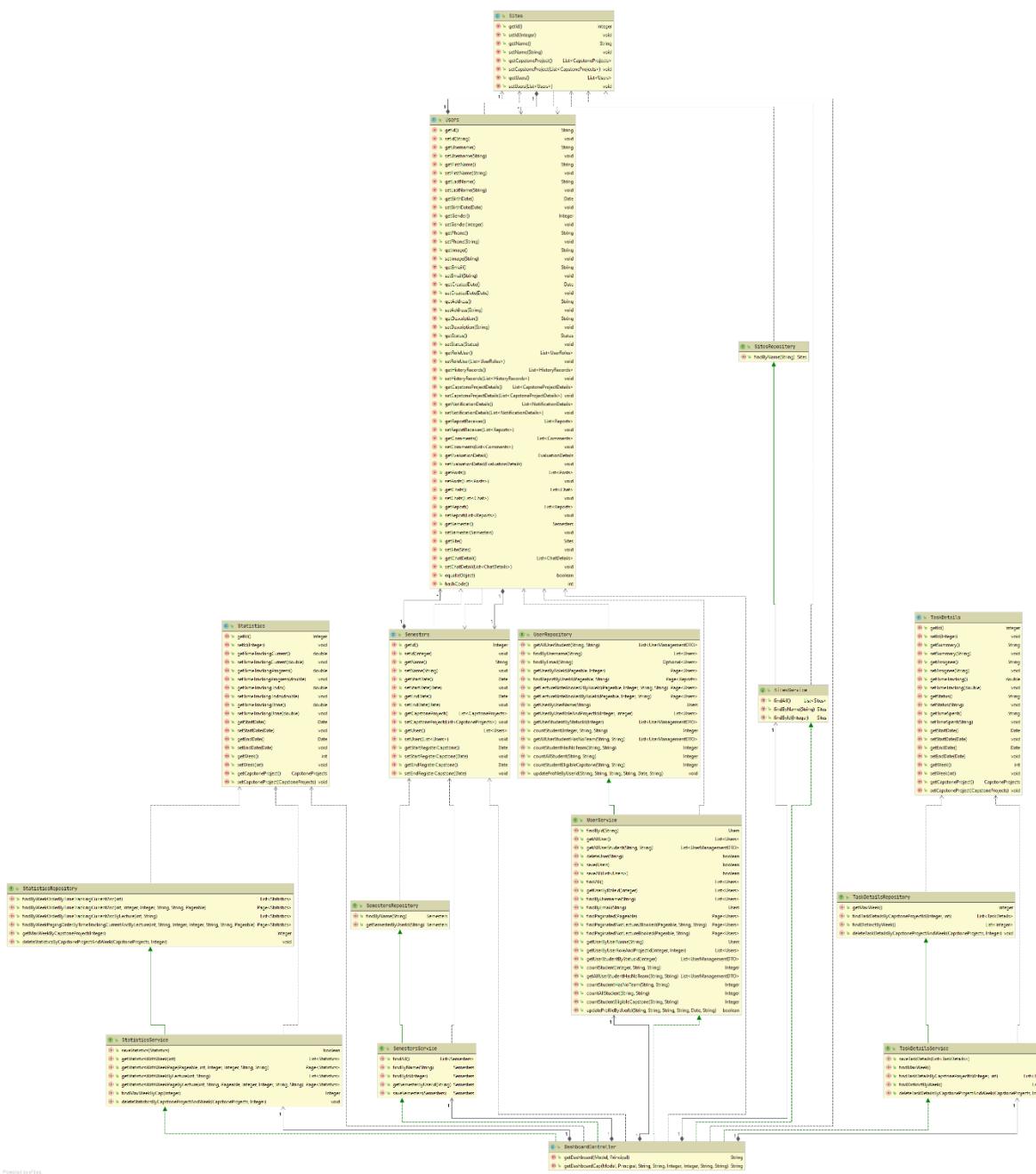
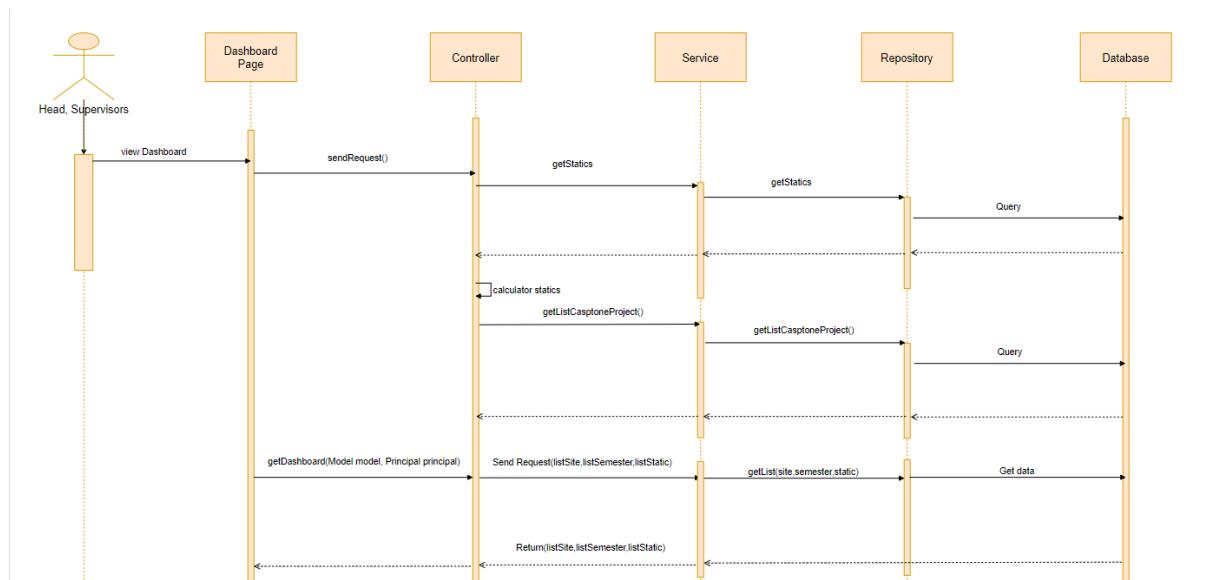


Figure: Dashboard statistical of project class diagram

**Sequence diagram:**



#### 4.4.1.26: View information of user

**Class Diagram:**

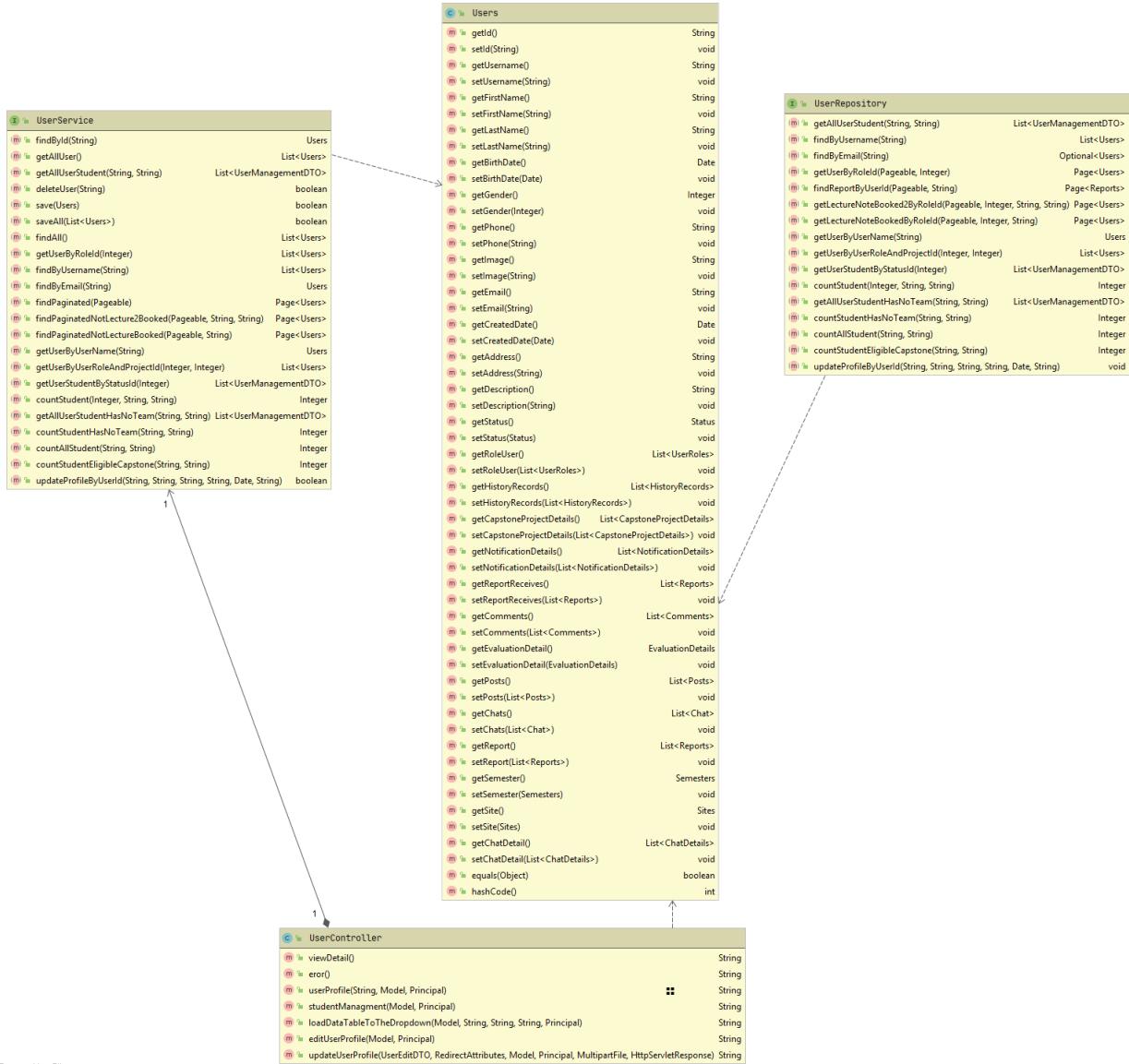
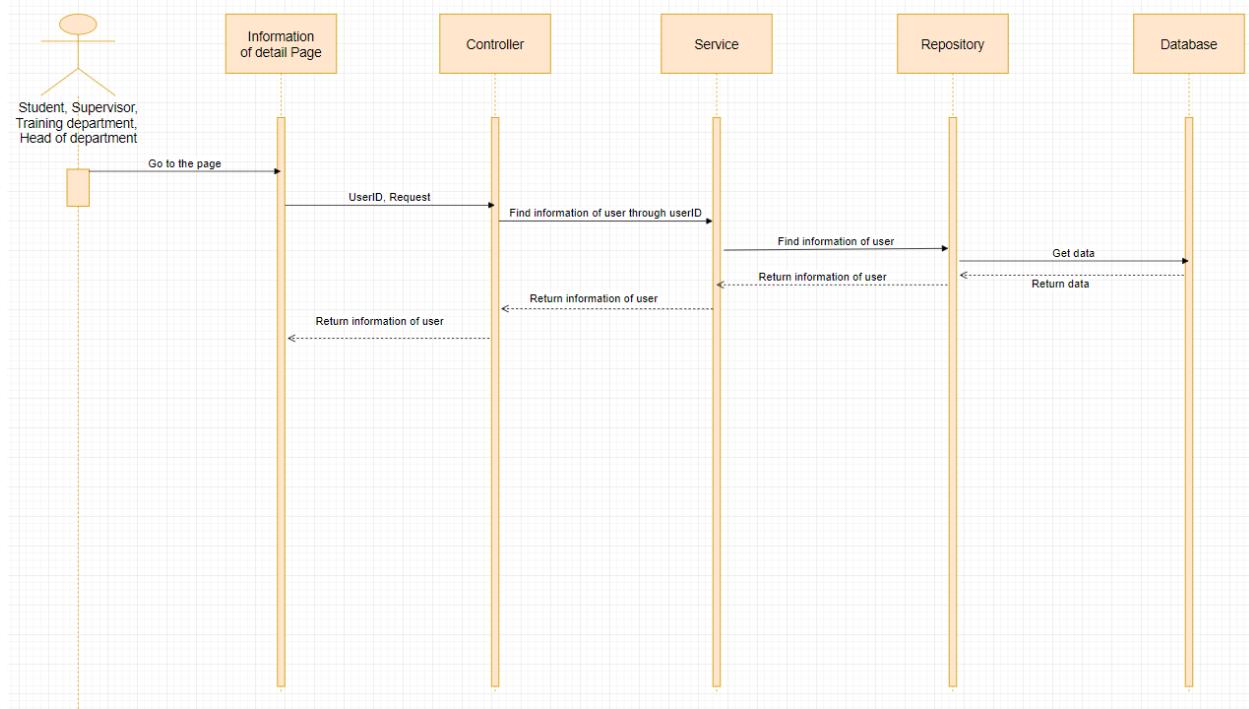


Figure: View information of user class diagram

## Sequence Diagram:



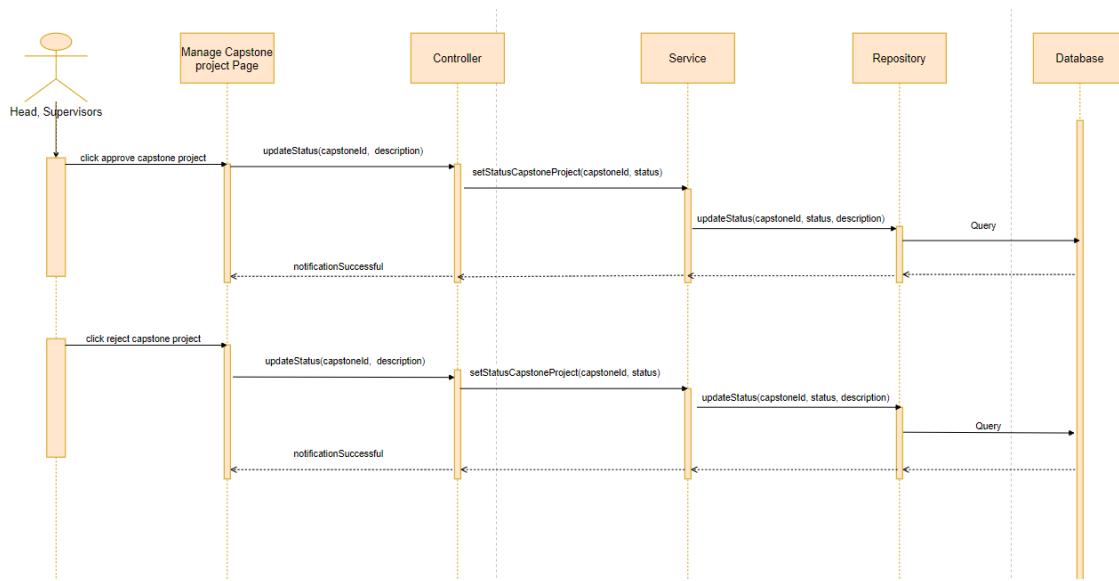
#### **4.4.1.27: Approve capstone project in the project registration stage**

**Class Diagram:**



Figure: Approve capstone project in the project registration stage class diagram

### Sequence Diagram:



#### 4.4.1.28: Change pass / fail results

##### Class Diagram:



Figure: Change pass / fail results class diagram

### Sequence Diagram:



#### 4.4.1.29: Create notification

##### Class Diagram:

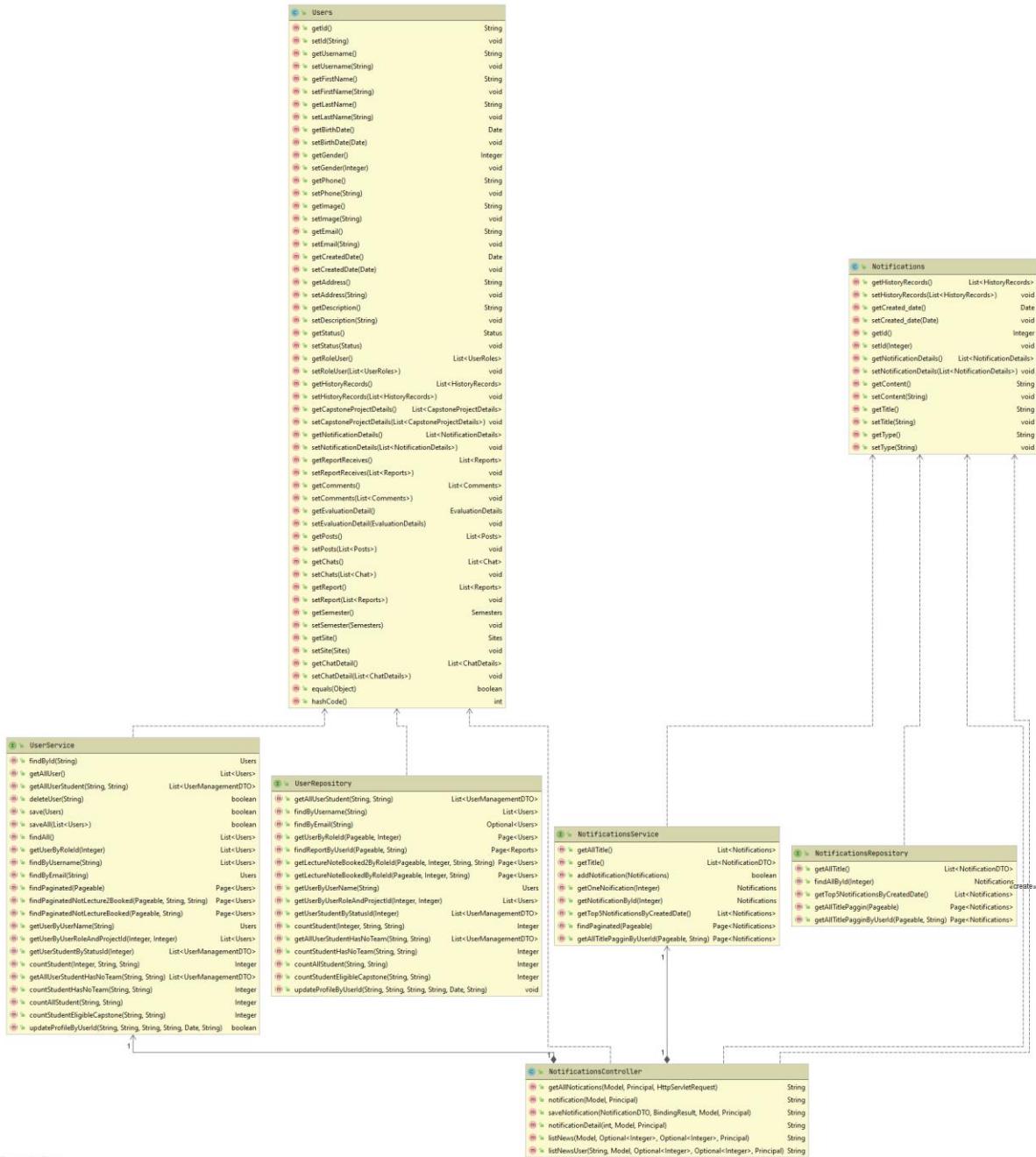
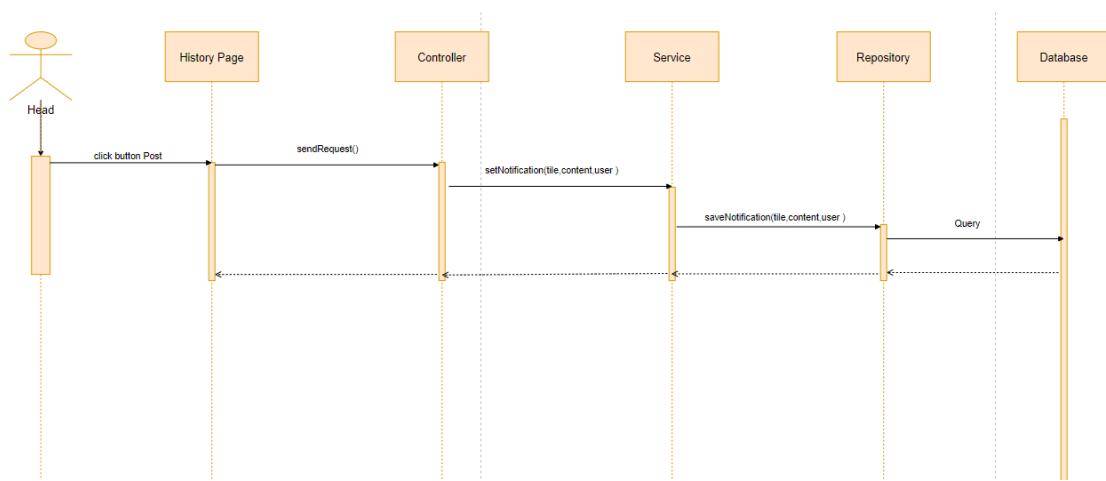


Figure: Create notification class diagram

## Sequence Diagram:



#### **4.4.1.30: View history record**

**Class Diagram:**

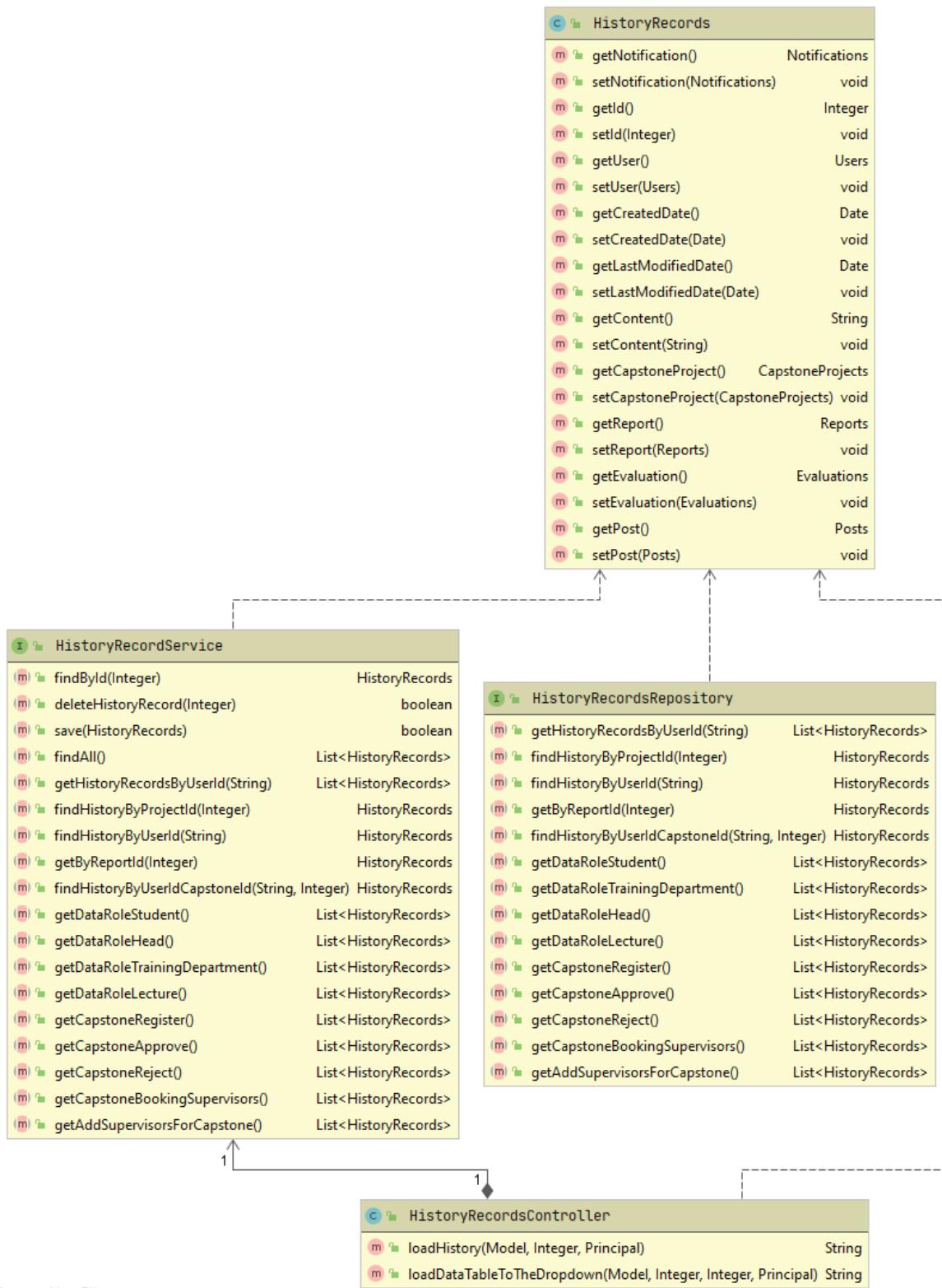
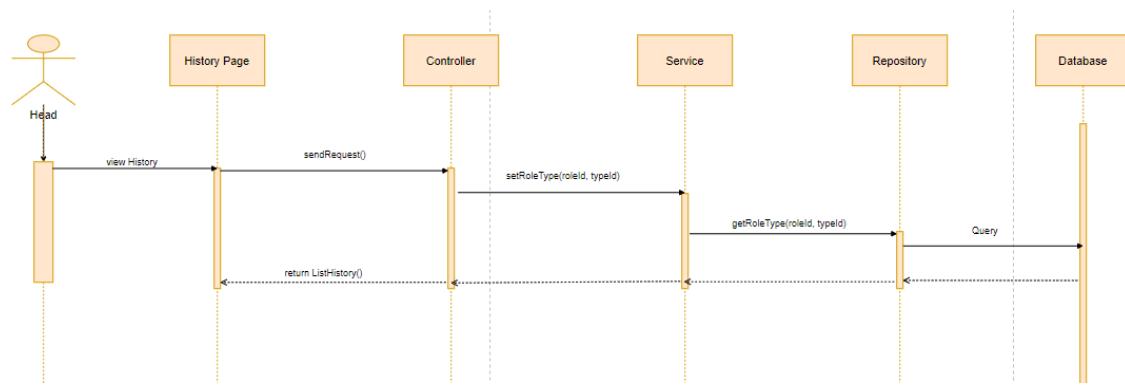


Figure: View history record class diagram

## Sequence Diagram:



#### **4.4.1.31: Change name capstone project**

**Class Diagram:**

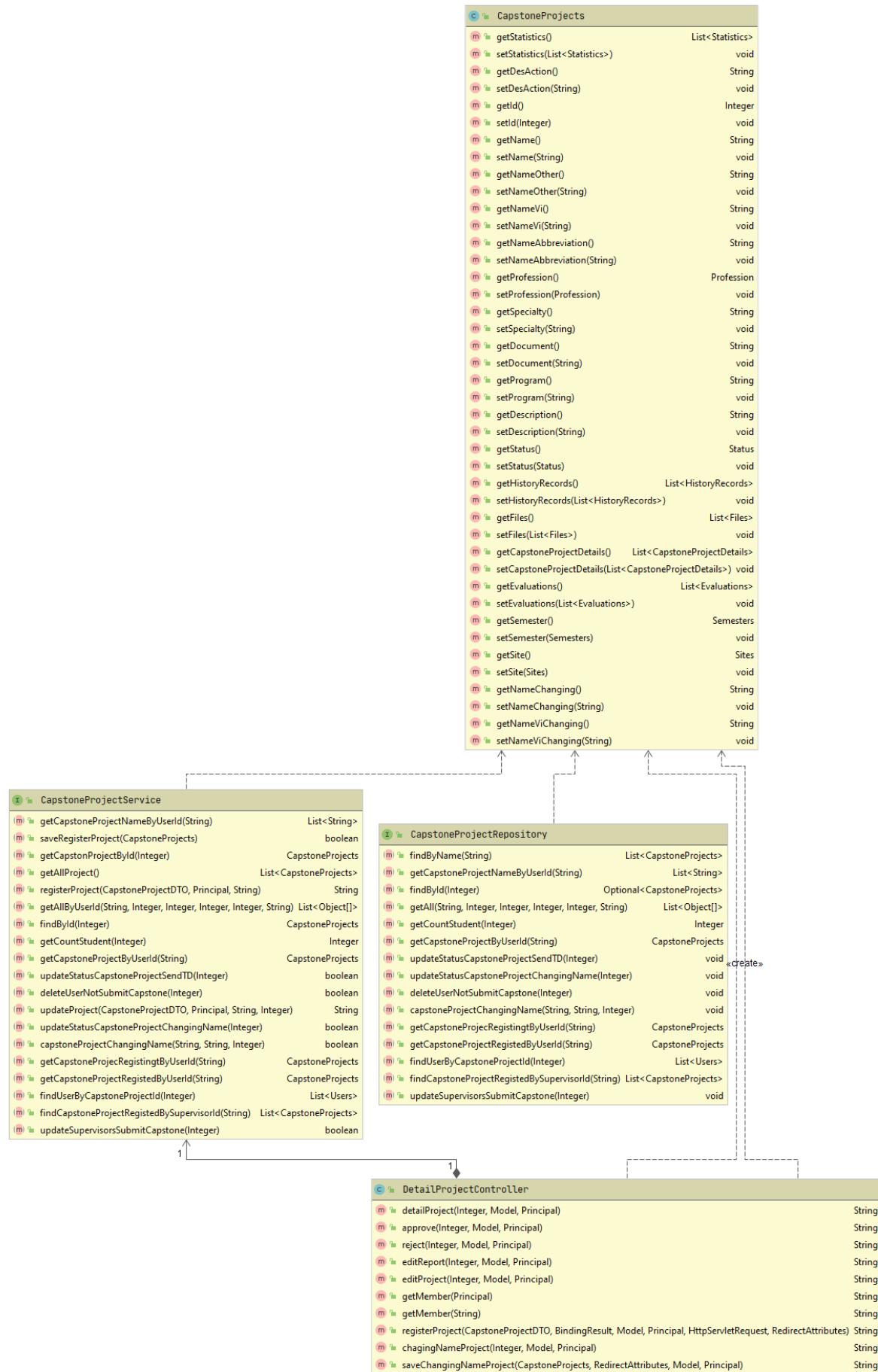
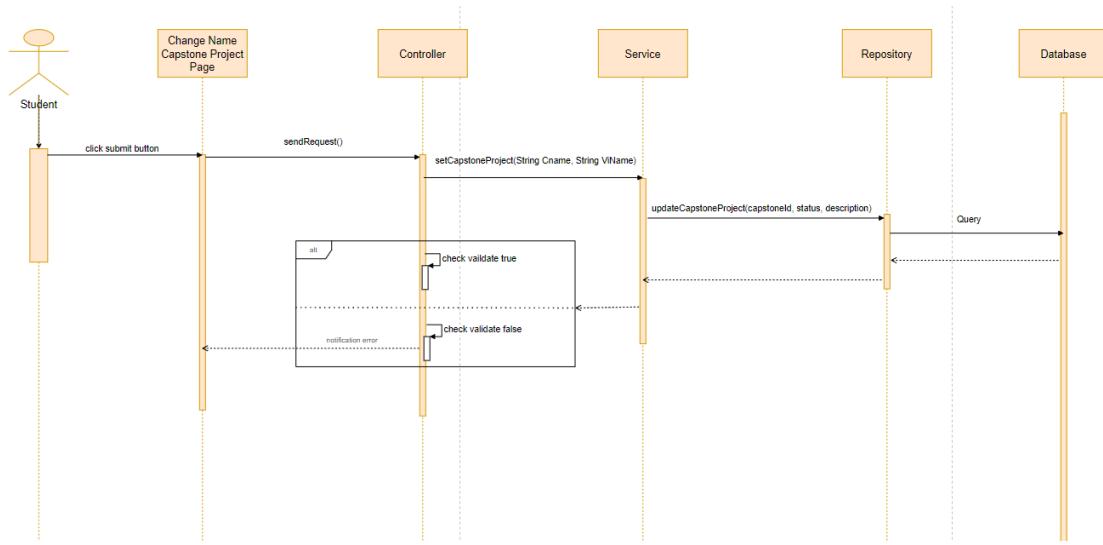


Figure: Change name capstone project class diagram

**Sequence Diagram:**



#### 4.4.1.32: View list post

**Class Diagram:**

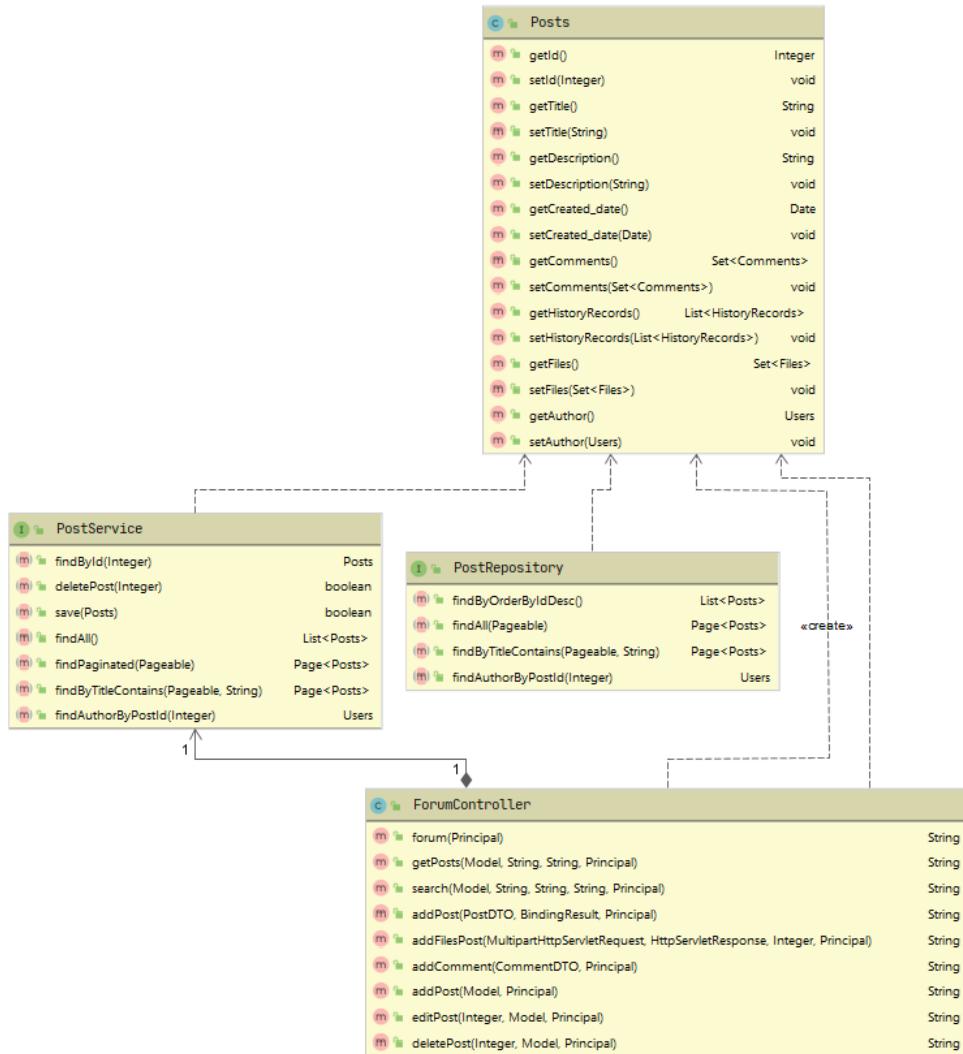
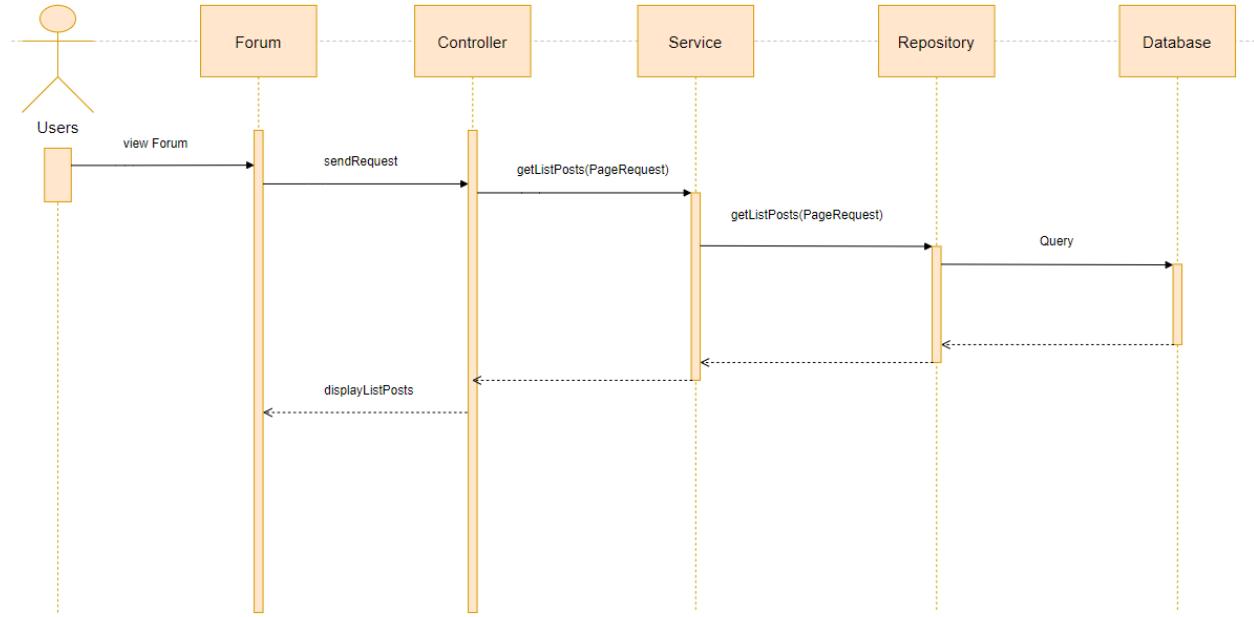


Figure: View list post class diagram

## Sequence Diagram:



#### 4.4.1.33: Get comment

Class Diagram:

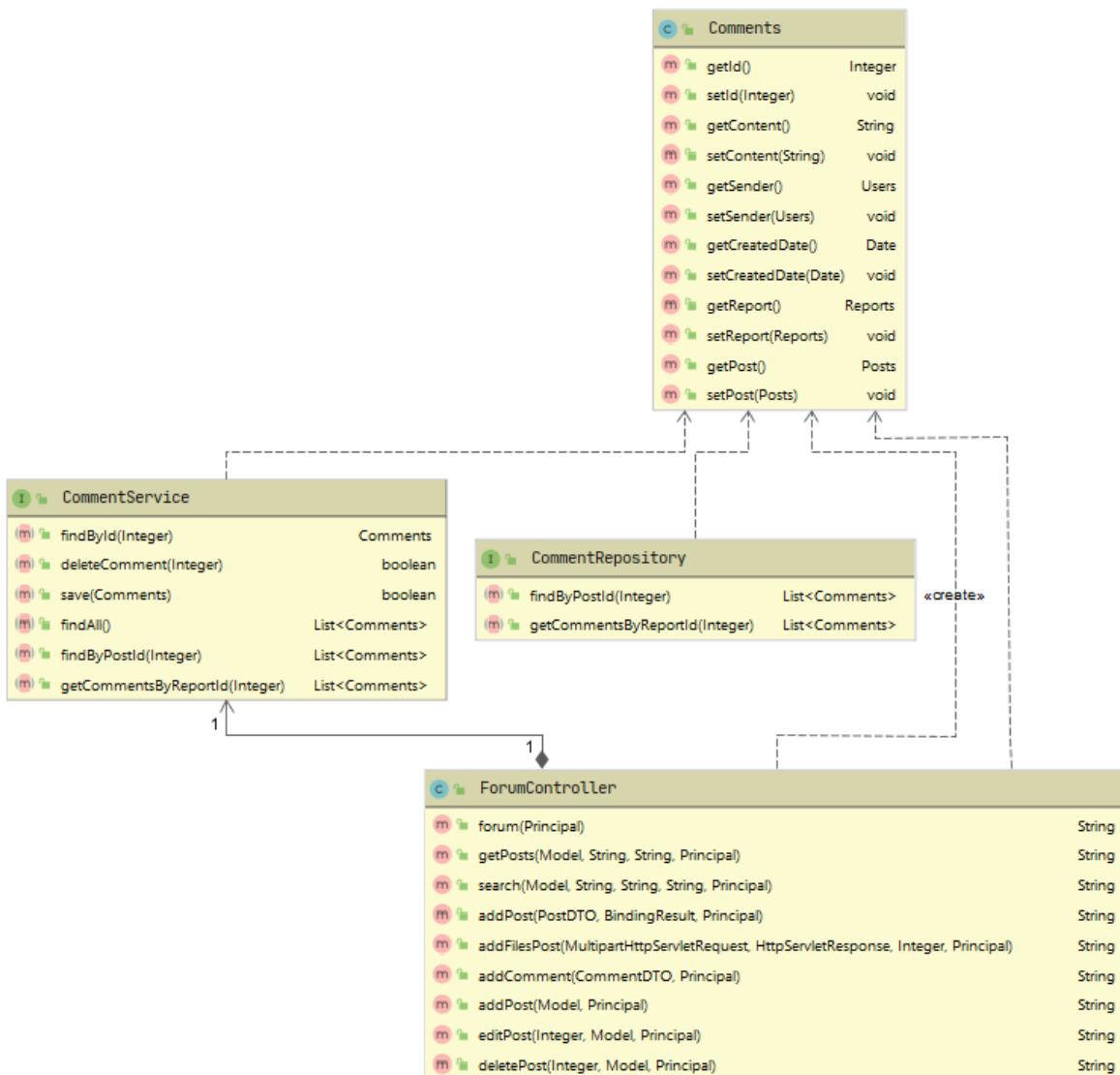
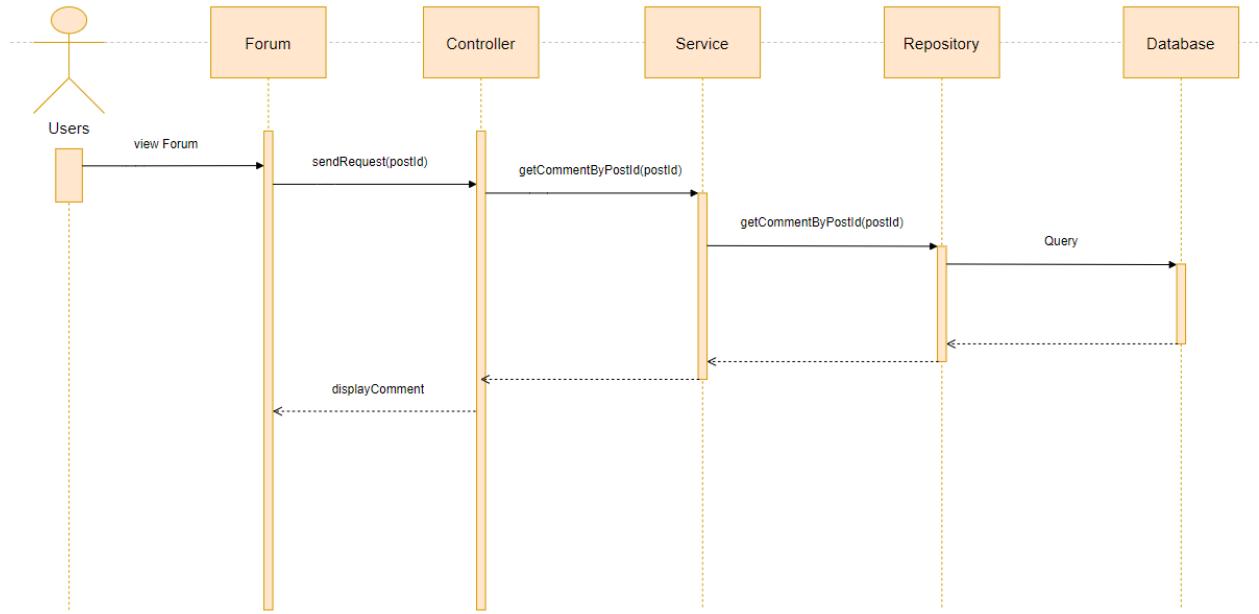


Figure: Get comment class diagram

## Sequence Diagram:



#### 4.4.1.34: Add post

**Class Diagram:**

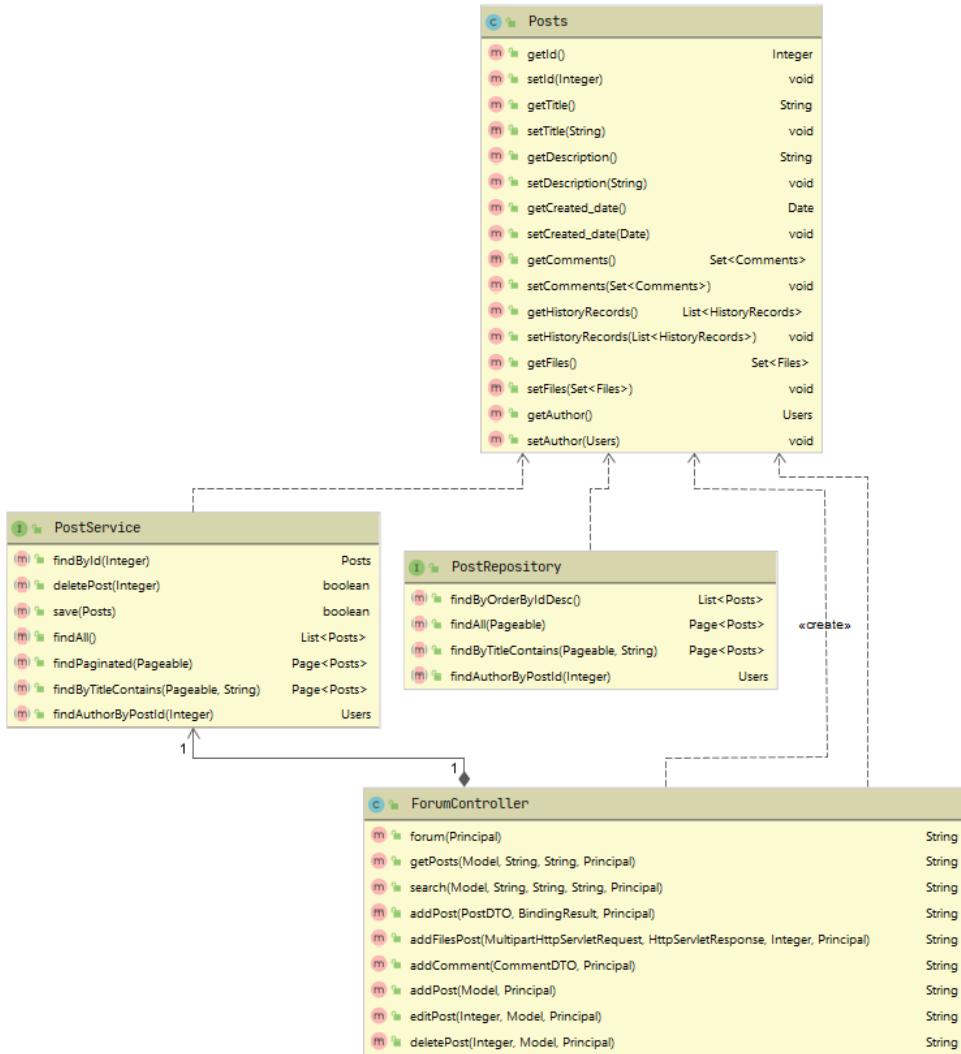
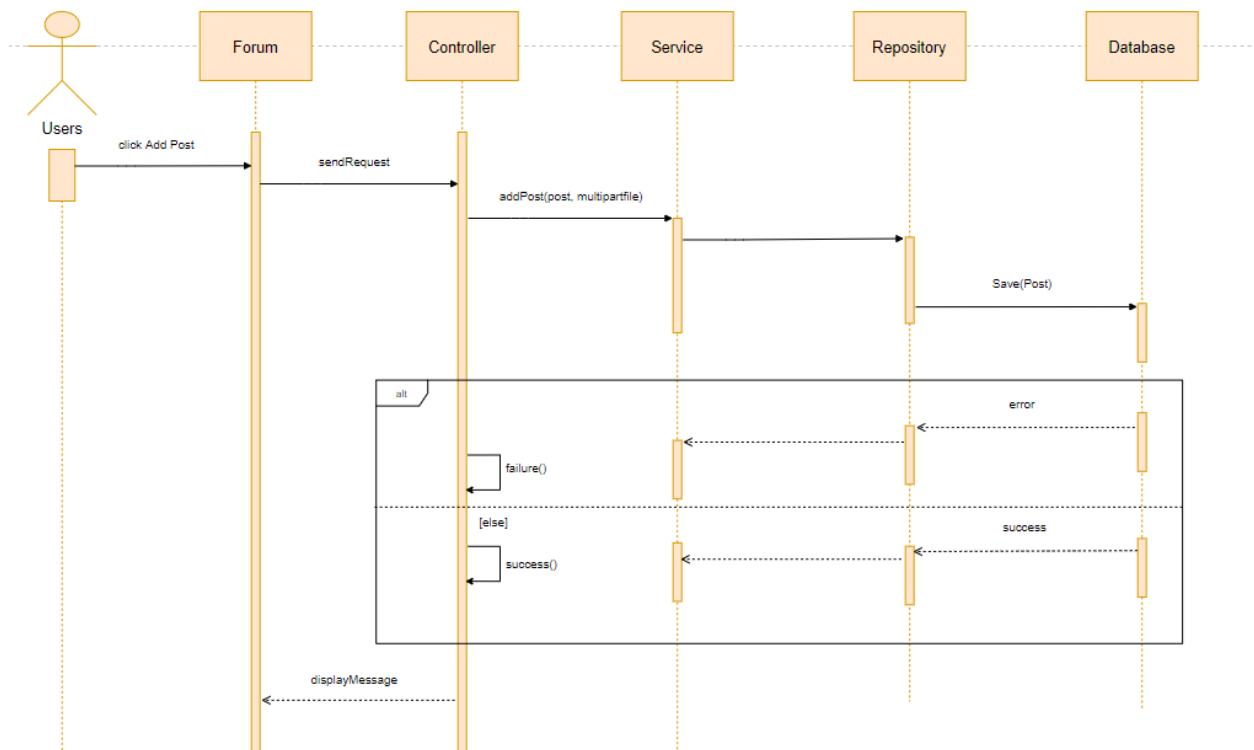


Figure: Add post class diagram

## Sequence Diagram:



#### 4.4.1.35: Edit post

**Class Diagram:**

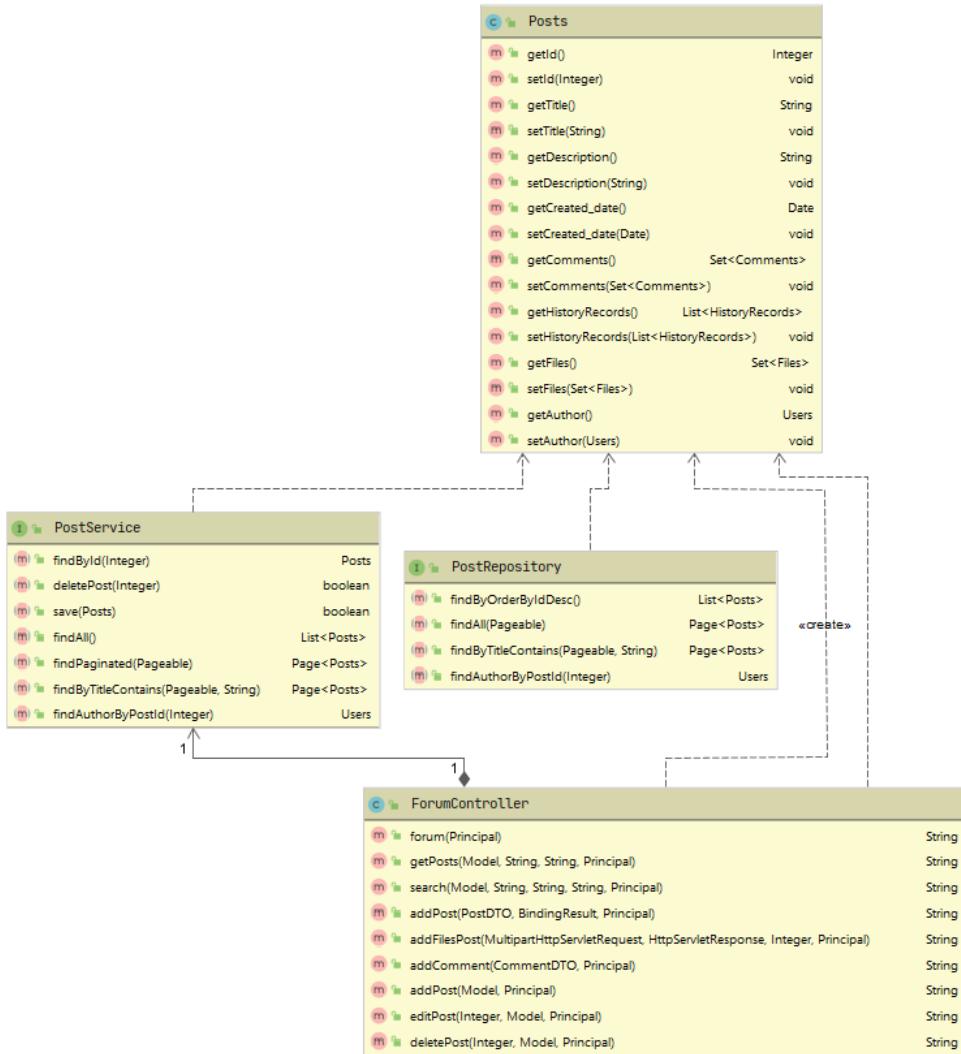
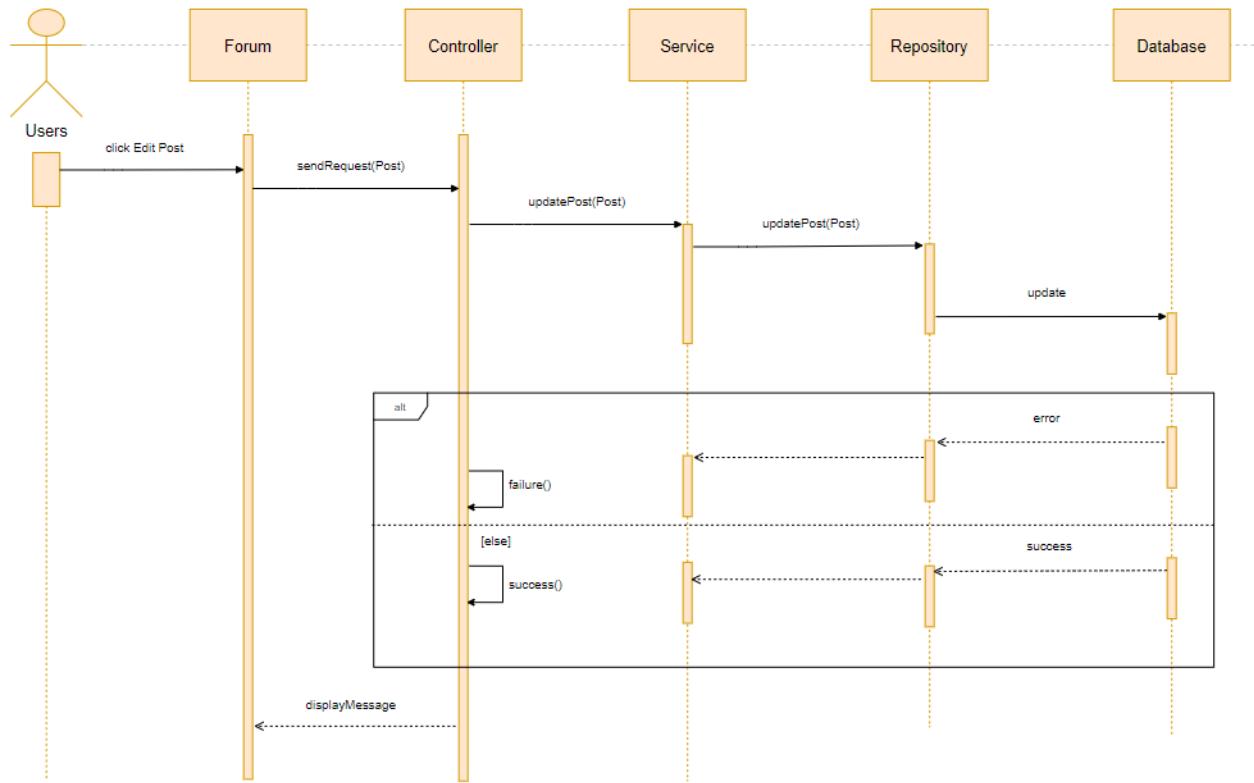


Figure: Edit post class diagram

## Sequence Diagram:



#### 4.4.1.36: Delete post

**Class Diagram:**

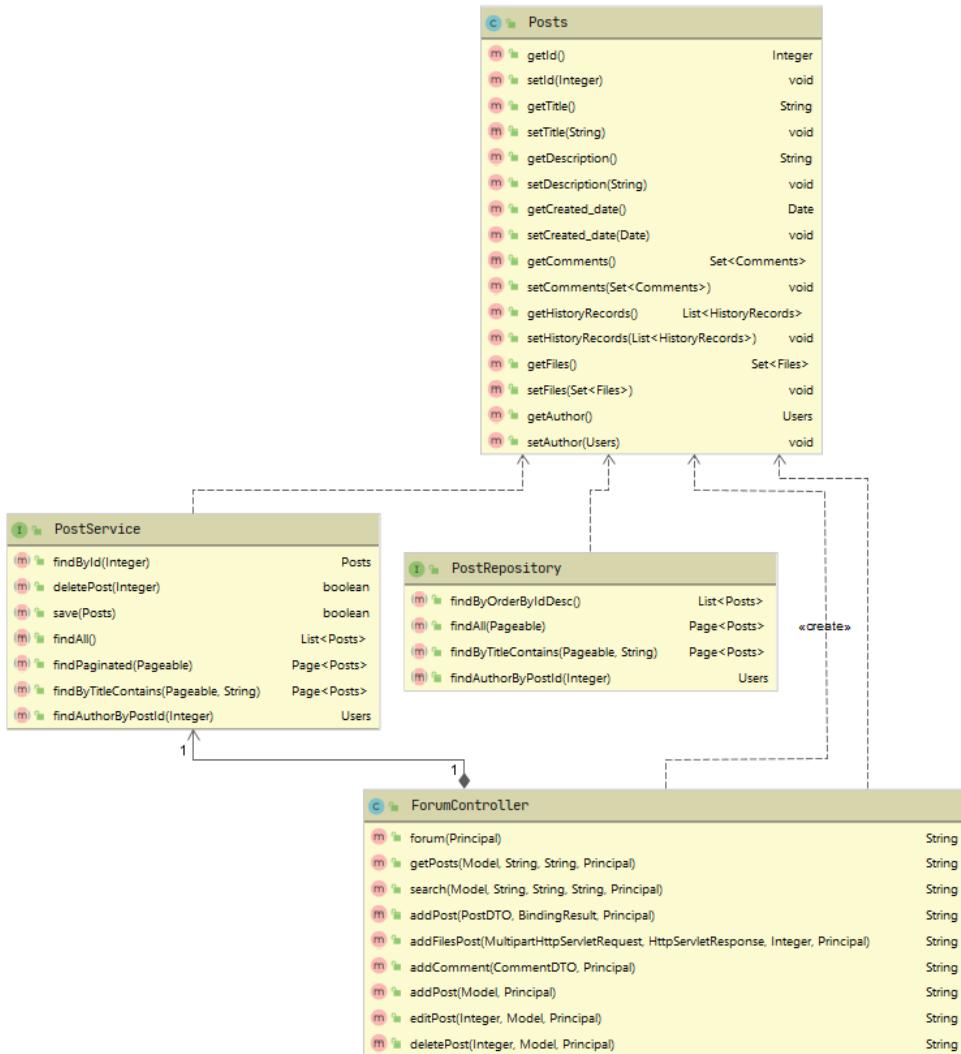
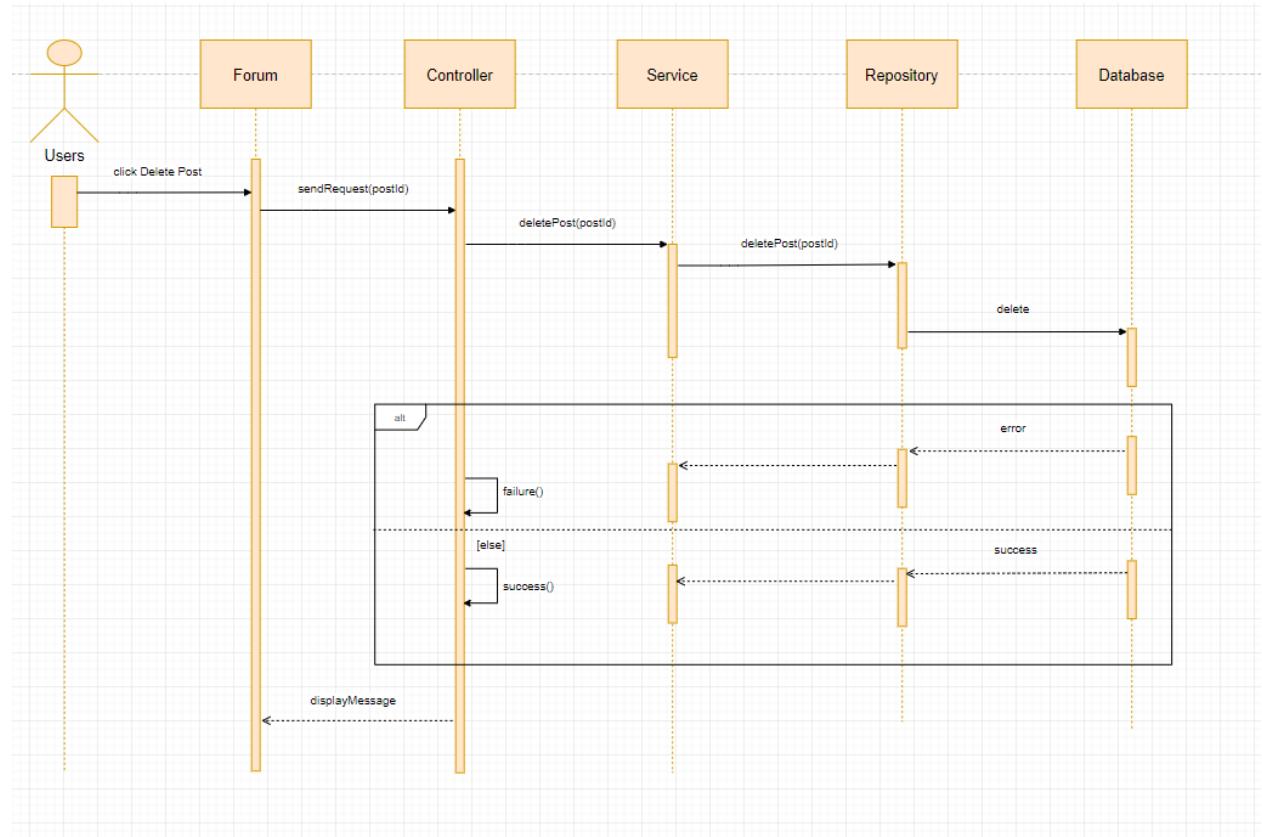


Figure: Delete post class diagram

## Sequence Diagram:



#### 4.4.1.37: Search post

**Class Diagram:**

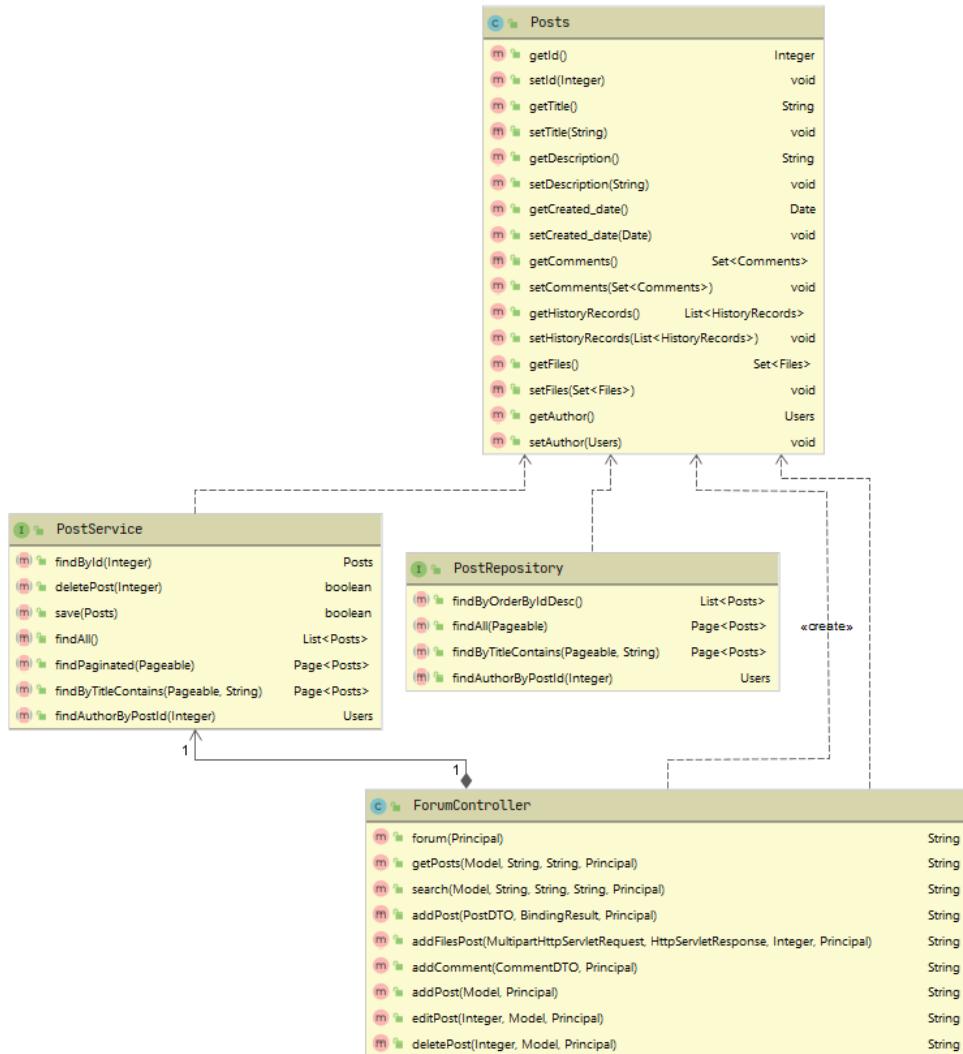
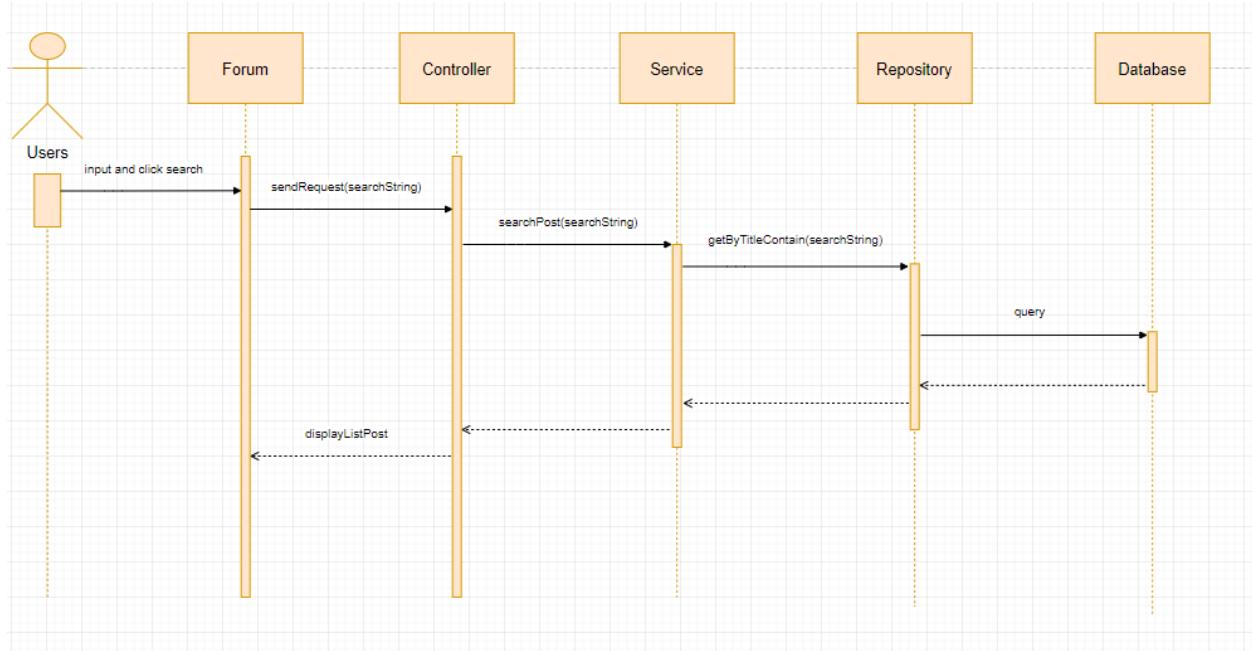


Figure: Search post class diagram

## Sequence Diagram:



#### **4.4.1.38: Add user**

## Class Diagram:

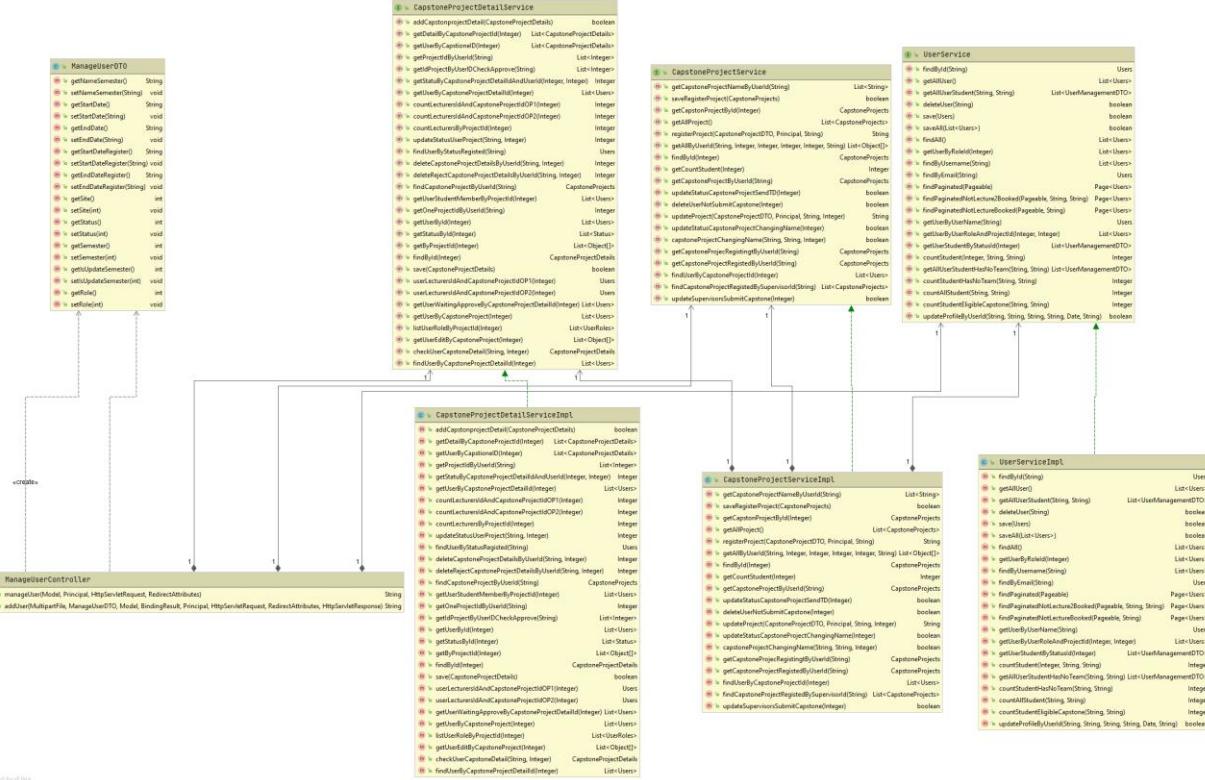
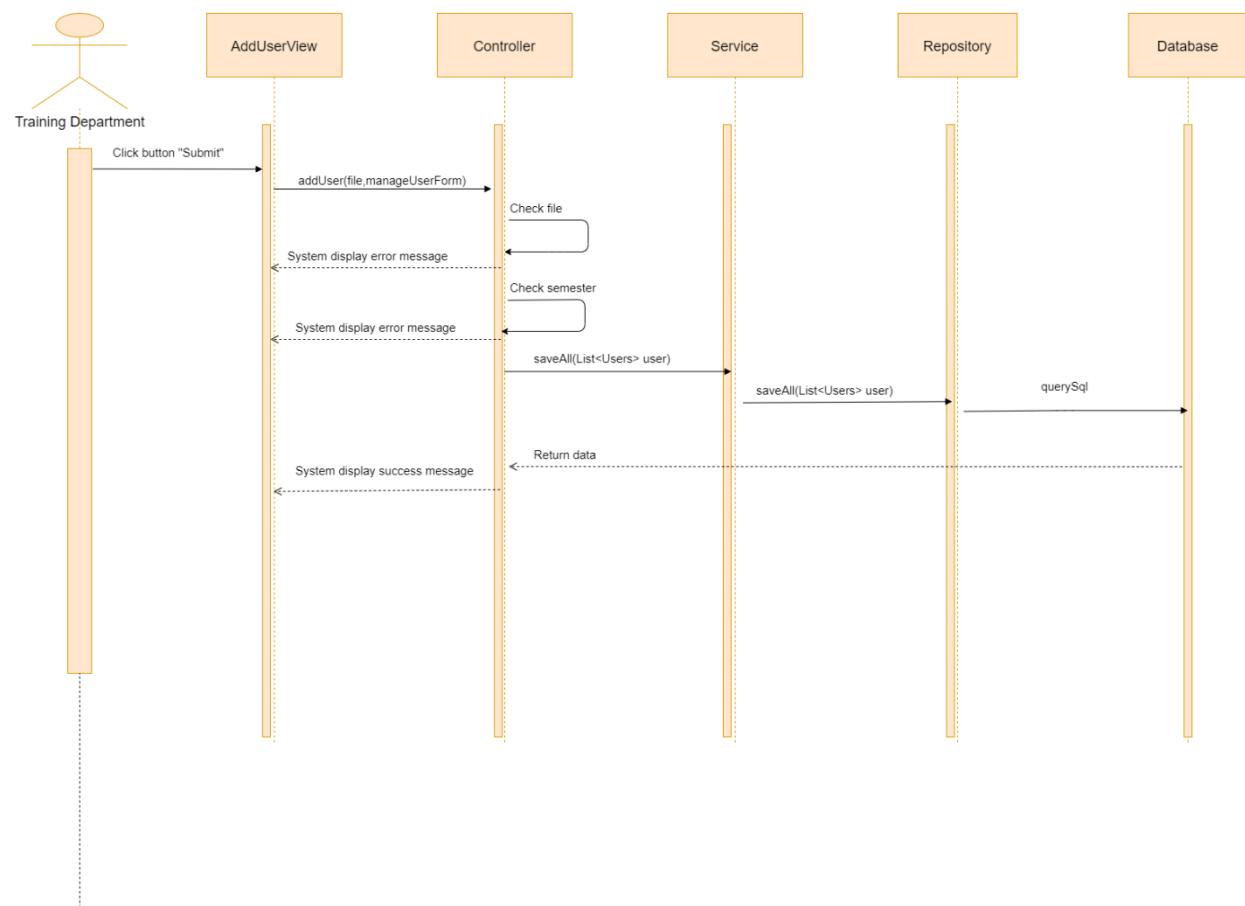
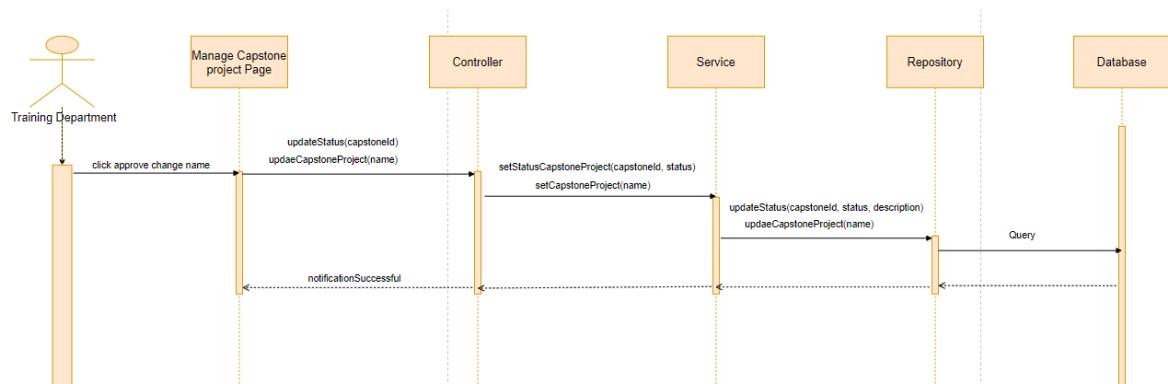


Figure: Add user class diagram

## Sequence Diagram:



#### 4.4.1.39: Approve capstone project in the changing name stage



## 4.5. User Interface Design

### 4.5.1 Description of the User Interface

#### 4.5.1.1. Login

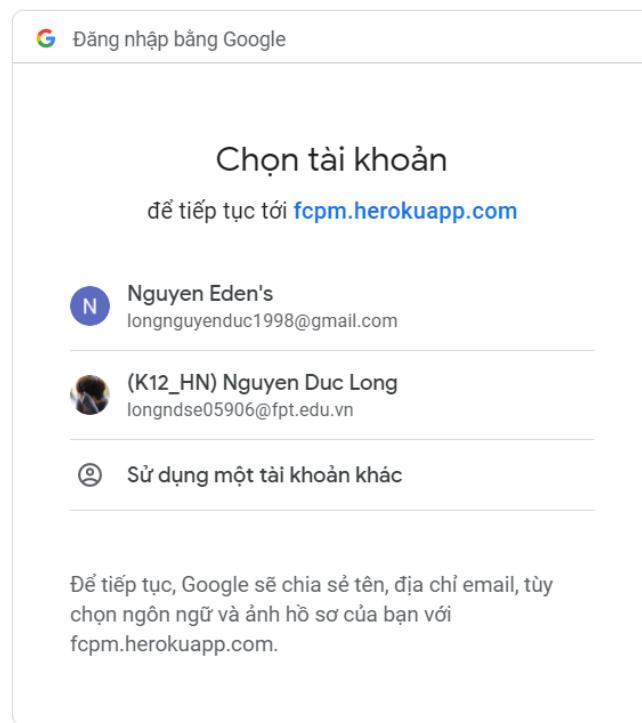
- Screen Images



#### Capstone Project Management Login

Helping the school to have the tools to register and manage project making and grading while making it as easy, convenient and fast as possible for students, teachers, and training rooms.



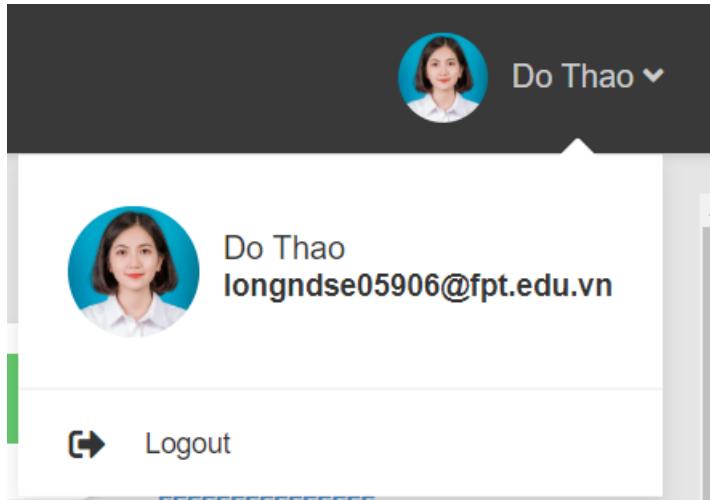


### Button/ Hyperlinks

No	Function	Description	Validation	Outcome
1	Login	Click to Sign in With Google	No	Navigate to account for authentication
2	Login	Choose FPT email	No	Navigate to forum

#### 4.5.1.2. Logout

- Screen Images



Button/ Hyperlinks

No	Function	Description	Validation	Outcome
1	Logout	Click to Do Thao	No	Show logout
2	Logout	Click to Logout	No	Navigate to Login Page

### 4.5.1.3. Register Capstone Project

- Screen Images

The screenshot shows a web application interface for registering a capstone project. At the top, there is a navigation bar with links for STARS, FPT UNIVERSITY, Forum, Capstone Project (which is the active tab), Lectures, Notification, and Reports. A user profile for 'Do Thao' is visible on the right.

The main content area is titled 'Register Project'. It contains several input fields:

- Name Project: A text input field.
- Name Project Other language: A text input field.
- Name Project Vietnamese: A text input field.
- Name Project Abbreviation: A text input field.
- Program Project: A text input field.
- Specialty Project: A text input field.
- Document Project: A text input field.
- Member: A dropdown menu showing 'thoadtse0007' and 'Leader'.
- Add: A green 'Add' button.
- Description Project: A large text area for project description.
- Add a files: A section for file uploads with a 'Chọn tệp' button and a message 'Không có tệp nào được chọn'.
- Submit: A green 'Submit' button.
- Reset: A green 'Reset' button.

On the right side of the screen, there are two sidebar sections:

- Global News**: A list of news items with titles like 'qweg', 'e', 'eeeeeeeeeeeeeee', 'sadasdad', and 'sd', each with a timestamp.
- Notification**: A section with a single entry: 'FU-HL: THÔNG BÁO: KẾ HOẠCH LỊCH ĐÀO TẠO HỆ ĐẠI HỌC CHÍNH QUY NĂM 2021.'

### Button/ Hyperlinks

No	Function	Description	Validation	Outcome
1	Register	Click to Create Capstone	No	Navigate to Register Project Page
2	Choose leader or member	Choose leader or member	No	Show leader or Member
3	Add member	Click to Add	No	Show name of member
4	Add file	Click to choose file	No	Show file
5	Submit Register	Click to submit	No	Show submit success or fail
6	Reset register	Click to reset	No	Re-register

### Fields

No	Field Name	Description	Read Only	Mandatory	Control Type	Data Type	Length
7	Name Project	Name of project	No	Yes	Text	String	120
8	Name project other language	Name project other language	No	Yes	Text	String	120
9	Name project Vietnamese	Name project Vietnam	No	Yes	Text	String	120

10	Name project Abbreviation	Name project Abbreviation	No	Yes	Text	String	120
11	Profession project	Profession Project	No	Yes	Text	String	120
12	Program project	Program Project	No	Yes	Text	String	120
13	Specialty project	Specialty Project	No	Yes	Text	String	120
14	Document project	Document Project	No	Yes	Text	String	120
12	Member	Member add	No	Yes	Text	String	120
13	Description project	Description Project	No	Yes	Text	String	120

#### 4.5.1.4 Add member

- Screen Images

Document Project

Member

  Add

You can only add minimum 1 member and maximum 10 members (SE)

longndse05906 Leader ▾

Description Project

Button/ Hyperlinks

No	Function	Description	Validation	Outcome
1	Add member	Click to “Add”	No	Show name of member

#### 4.5.1.5 View model

- Screen Images:

The screenshot shows a web-based application for managing projects. At the top, there's a navigation bar with links for 'Forum', 'Capstone Project', 'Supervisors', 'Reports', 'Model' (which is highlighted with a red arrow), 'About', and 'Tutorial Model'. On the right side, there's a user profile for 'Nguyen Long' and a 'Global News' sidebar displaying recent posts.

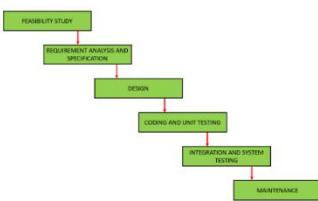
**Register Project**

**Warning:**  
You can only register once. Be careful with the information you enter. You will not be able to edit it after sending it.  
If you need any information please contact the admin.

Name Project

Name Project Other language

Name Project Vietnamese



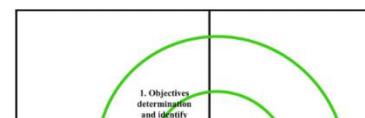
##### Classical Waterfall Model

Classical waterfall model is the basic software development life cycle model. It is very simple but idealistic. Earlier this model was very popular but nowadays it is not used. But it is very important because all the other software development life cycle models are based on the classical waterfall model. Classical waterfall model divides the life cycle into a set of phases. This model considers that one phase can be started after completion of the previous phase. That is the output of one phase will be the input to the next phase. Thus the development process can be considered as a sequential flow in the waterfall. Here the phases do not overlap with each other. The different sequential phases of the classical waterfall model are shown in the below figure.

[Detail More](#)

##### Spiral Model

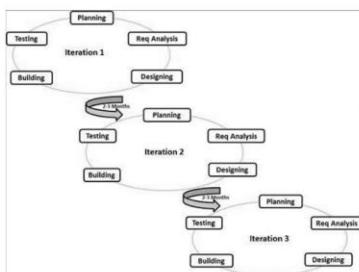
Spiral model is one of the most important Software Development Life Cycle models, which provides support for Risk Handling. In its diagrammatic representation, it looks like a spiral with many loops. The exact number of loops of the spiral is unknown and can vary from project to project. Each loop of the spiral is called a Phase of the software development process. The exact number of phases



### Spiral Model

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[Detail More](#)



### Agile Development Models

In earlier days Iterative Waterfall model was very popular to complete a project. But nowadays developers face various problems while using it to develop a software. The main difficulties included handling change requests from customers during project development and the high cost and time required to incorporate these changes. To overcome these drawbacks of Waterfall model, in the mid-1990s the Agile Software Development model was proposed. The Agile model was primarily designed to help a project to adapt to change requests quickly. So, the main aim of the Agile model is to facilitate quick project completion. To accomplish this task agility is required. Agility is achieved by fitting the process to the project, removing activities that may not be essential for a specific project. Also, anything that is wastage of time and effort is avoided. Iterative approach is taken and working software build is delivered after each iteration. Each build is incremental in terms of features; the final build holds all the features required by the customer..

[Detail More](#)



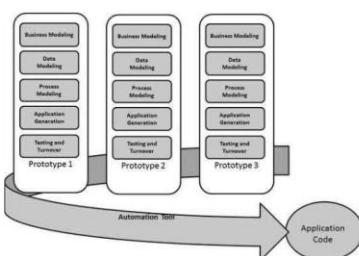
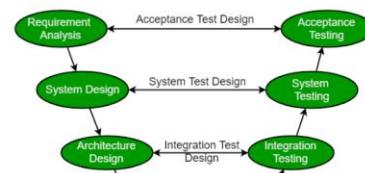
build holds all the features required by the customer..

[Detail More](#)

### SDLC V-Model

The V-model is a type of SDLC model where process executes in a sequential manner in V-shape. It is also known as Verification and Validation model. It is based on the association of a testing phase for each corresponding development stage. Development of each step directly associated with the testing phase. The next phase starts only after completion of the previous phase i.e. for each development activity, there is a testing activity corresponding to it..

[Detail More](#)



### RAD Model Models

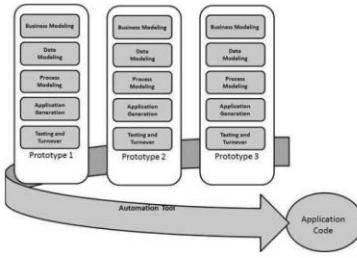
Rapid application development is a software development methodology that uses minimal planning in favor of rapid prototyping. A prototype is a working model that is functionally equivalent to a component of the product. In the RAD model, the functional modules are developed in parallel as prototypes and are integrated to make the complete product for faster product delivery. Since there is no detailed preplanning, it makes it easier to incorporate the changes within the development process. RAD projects follow iterative and incremental model and have small teams comprising of developers, domain experts, customer representatives and other IT resources working progressively on their component or prototype. The most important aspect for this model to be successful is to make sure that the prototypes developed are reusable..

[Detail More](#)

### Iterative Model

In the Iterative model, iterative process starts with a simple implementation of a small set of the





#### RAD Model Models

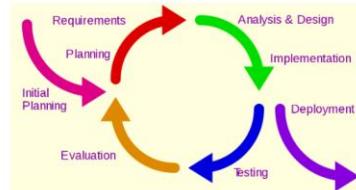
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[Detail More](#)

#### Iterative Model

In the iterative model, iterative process starts with a simple implementation of a small set of the software requirements and iteratively enhances the evolving versions until the complete system is implemented and ready to be deployed. An iterative life cycle model does not attempt to start with a full specification of requirements. Instead, development begins by specifying and implementing just part of the software, which is then reviewed to identify further requirements. This process is then repeated, producing a new version of the software at the end of each iteration of the model. Iterative process starts with a simple implementation of a subset of the software requirements and iteratively enhances the evolving versions until the full system is implemented. At each iteration, design modifications are made and new functional capabilities are added. The basic idea behind this method is to develop a system through repeated cycles (iterative) and in smaller portions at a time (incremental).

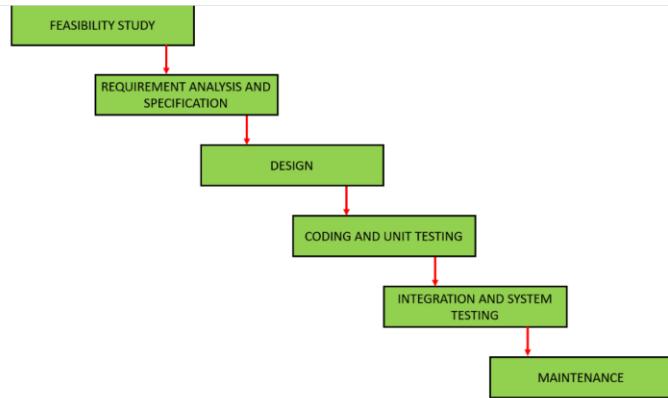
[Detail More](#)



#### Software Engineering | Classical Waterfall Model

Classical waterfall model is the basic **software development life cycle** model. It is very simple but idealistic. Earlier this model was very popular but nowadays it is not used. But it is very important because all the other software development life cycle models are based on the classical waterfall model.

Classical waterfall model divides the life cycle into a set of phases. This model considers that one phase can be started after completion of the previous phase. That is the output of one phase will be the input to the next phase. Thus the development process can be considered as a sequential flow in the waterfall. Here the phases do not overlap with each other. The different sequential phases of the classical waterfall model are shown in the below figure:



Let us now learn about each of these phases in brief details:

1. **Feasibility Study:** The main goal of this phase is to determine whether it would be financially and technically feasible to develop the software.

The feasibility study involves understanding the problem and then determine the various possible strategies to solve the problem. These different identified solutions are analyzed based on their benefits and drawbacks. The best solution is chosen and all the other phases are carried out as per this solution strategy.

2. **Requirements analysis and specification:** The aim of the requirement analysis and specification

2. **Requirements analysis and specification:** The aim of the requirement analysis and specification phase is to understand the exact requirements of the customer and document them properly. This phase consists of two different activities.

- o **Requirement gathering and analysis:** Firstly all the requirements regarding the software are gathered from the customer and then the gathered requirements are analyzed. The goal of the analysis part is to remove incompleteness (an incomplete requirement is one in which some parts of the actual requirements have been omitted) and inconsistencies (inconsistent requirement is one in which some part of the requirement contradicts with some other part).
- o **Requirement specification:** These analyzed requirements are documented in a software requirement specification (SRS) document. SRS document serves as a contract between development team and customers. Any future dispute between the customers and the developers can be settled by examining the SRS document.

3. **Design:** The aim of the design phase is to transform the requirements specified in the SRS document into a structure that is suitable for implementation in some programming language.

4. **Coding and Unit testing:** In coding phase software design is translated into source code using any suitable programming language. Thus each designed module is coded. The aim of the unit testing phase is to check whether each module is working properly or not.

5. **Integration and System testing:** Integration of different modules are undertaken soon after they have been coded and unit tested. Integration of various modules is carried out incrementally over a number of steps. During each integration step, previously planned modules are added to the partially integrated system and the resultant system is tested. Finally, after all the modules have been successfully integrated and tested, the full working system is obtained and system testing is carried out on this.

5. **Integration and System testing:** Integration of different modules are undertaken soon after they have been coded and unit tested. Integration of various modules is carried out incrementally over a number of steps. During each integration step, previously planned modules are added to the partially integrated system and the resultant system is tested. Finally, after all the modules have been successfully integrated and tested, the full working system is obtained and system testing is carried out on this.

System testing consists three different kinds of testing activities as described below :

- **Alpha testing:** Alpha testing is the system testing performed by the development team.
  - **Beta testing:** Beta testing is the system testing performed by a friendly set of customers.
  - **Acceptance testing:** After the software has been delivered, the customer performed the acceptance testing to determine whether to accept the delivered software or to reject it.
6. **Maintainence:** Maintenance is the most important phase of a software life cycle. The effort spent on maintenance is the 60% of the total effort spent to develop a full software. There are basically three types of maintenance :
- **Corrective Maintenance:** This type of maintenance is carried out to correct errors that were not discovered during the product development phase.
  - **Perfective Maintenance:** This type of maintenance is carried out to enhance the functionalities of the system based on the customer's request.
  - **Adaptive Maintenance:** Adaptive maintenance is usually required for porting the software to work in a new environment such as work on a new computer platform or with a new operating system.

#### **Advantages of Classical Waterfall Model**

Classical waterfall model is an idealistic model for software development. It is very simple, so it can

- Phases in this model are processed one at a time.
- Each stage in the model is clearly defined.
- This model has very clear and well understood milestones.
- Process, actions and results are very well documented.
- Reinforces good habits: define-before- design, design-before-code.
- This model works well for smaller projects and projects where requirements are well understood.

#### **Drawbacks of Classical Waterfall Model**

Classical waterfall model suffers from various shortcomings, basically we can't use it in real projects, but we use other software development lifecycle models which are based on the classical waterfall model. Below are some major drawbacks of this model:

- **No feedback path:** In classical waterfall model evolution of a software from one phase to another phase is like a waterfall. It assumes that no error is ever committed by developers during any phases. Therefore, it does not incorporate any mechanism for error correction.
- **Difficult to accommodate change requests:** This model assumes that all the customer requirements can be completely and correctly defined at the beginning of the project, but actually customers' requirements keep on changing with time. It is difficult to accommodate any change requests after the requirements specification phase is complete.
- **No overlapping of phases:** This model recommends that new phase can start only after the completion of the previous phase. But in real projects, this can't be maintained. To increase the efficiency and reduce the cost, phases may overlap.



### Web Selling Online

You Can Use Model:

- + Waterfall model
  - + SDLC V-Model
- And Use Management Software :
- + Jira
  - + Trello
  - + MyXteam

[Show Detail Model](#)



### Building Management System

You Can Use Model:

- + Agile Development Models
  - + Spiral Model
- And Use Management Software :
- + Jira
  - + Trello
  - + MyXteam

[Show Detail Model](#)



### Attendance System By AI

You Can Use Model:

- + Classical Waterfall Model
  - + Iterative Model
- And Use Management Software :
- + Jira
  - + Trello
  - + MyXteam

[Show Detail Model](#)

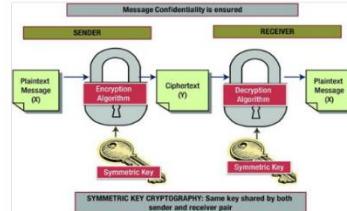


### Navigation and Navigation System

You Can Use Model:

- + Spiral Model
- And Use Management Software :
- + Jira
  - + Trello
  - + MyXteam

[Show Detail Model](#)



### Study Encryption Algorithms

You Can Use Model:

- + Iterative Model
- And Use Management Software :
- + Jira
  - + Trello
  - + MyXteam

[Show Detail Model](#)



### Build a Service Receiving and Management

You Can Use Model:

- + Agile Development Models
  - + Spiral Model
- And Use Management Software :
- + Jira
  - + Trello
  - + MyXteam

[Show Detail Model](#)

## Button/ Hyperlinks

No	Function	Description	Validation	Outcome
1	View model	Click to “About”	No	Show About model page
2	Research model	Click to “Tutorial model”	No	Show Tutorial model page
3	View detail about model	Click to button “Detail more”	No	Show detail about model
4	View detail tutorial model	Click to button “Show detail model”	No	Show detail tutorial model

#### 4.5.1.6. Show list supervisors and booking

- Screen Images

The screenshot shows a web interface for selecting supervisors. A modal dialog box is open, asking "Are you sure you want to choose Lecture?". Below the modal, there is a yellow warning box containing the following text:

Warning:  
You can only choose two Supervisors and they can not be identical.  
Your selection will become effective upon confirmation by the Training Department.  
When you select supervisors, you can't change anyone else without confirmation from the Training Department.

The main page displays three supervisor profiles:

- anhbngv00014**: Lecturer at FPT University, 0928837748, anhbngv00014@fpt.edu.vn. Buttons: Supervisor 1, Supervisor 2.
- chilpgv00013**: Lecturer at FPT University, 0928764788, chilpgv00013@fpt.edu.vn. Buttons: Supervisor 1, Supervisor 2.
- duongtbvg00012**: Lecturer at FPT University, 0928837749, duongtbvg00012@fpt.edu.vn. Buttons: Supervisor 1, Supervisor 2.

On the right side of the screen, there is a sidebar titled "Global News" listing various announcements and a "Notification" section with a single invite.

Button/ Hyperlinks

No	Function	Description	Validation	Outcome
1	Booking	Click to button “Supervisor 1”	No	Display notification confirm
2	Booking	Click to button “Supervisor 2”	No	Display notification confirm
3	Confirm booking	Click to button “Ok”	No	Display notification booking successful
4	Confirm booking	Click to button “Huy”	No	Keep the list supervisors page

#### 4.5.1.7. View GUIDE

- Screen Images

The screenshot shows a top navigation bar with links for STARS, Forum, Capstone Project, Supervisors, Reports, Model, Guide, and a user profile for 'Do Duc'. Below this is a 'Global News' sidebar containing several news items. At the top of the main content area, there is a 'Create Report' button. The main content area displays two forum posts: one titled 'TÌM NHÓM ĐO ÁN' and another titled 'CHUNG TÔI MUỐN TÌM ĐO ÁN...'. Both posts have a timestamp of 2020-12-06 20:15:48.0.



##### 1. Dành cho Member

###### Bước 1 : Access vào màn hình Create Report

Click vào "Create Report" như hình để tạo Report

The screenshot shows a top navigation bar with links for STARS, Forum, Capstone Project, Lectures, Reports, Model, and a user profile for 'Minh Khang'. Below this is a 'Global News' sidebar containing several news items. At the top of the main content area, there is a 'Create Report' button, which is highlighted with a red arrow. The main content area displays two forum posts: one titled 'CHUNG TÔI MUỐN TÌM ĐO ÁN...' and another titled 'RA TRƯỜNG THÔI ANH EM'. Both posts have a timestamp of 2020-12-06 16:39:01.0.



### Bước 1 : Access vào minh hình register capstone

Click vào "Create Capstone" như hình để tạo capstone

The screenshot shows a forum interface with a navigation bar at the top. Below the bar, there's a section titled 'Forum' with a 'Create Capstone' button. A red arrow points to this button with the label 'Click Here'. The main content area displays two posts: 'CHUNG TOI MUON TIM DO AN...' and 'RA TRƯỜNG THÔI ANH EM'. To the right, there's a 'Global News' sidebar and a 'Notification' sidebar.

### IMPORT JIRA TO EXCEL

### Bước 1 : Access vào Jira chứa Capstone của bạn

The screenshot shows a Jira project management interface. At the top, there's a header with various navigation options like 'Jira Software', 'Your work', 'Projects', 'Filters', 'Dashboards', 'People', 'Apps', and 'Create'. Below the header, there's a 'Projects' section where a single project named 'FPT Capstone Project Management' is listed. The project has a key 'FCPM' and is categorized as 'Classic software'. There's also a 'Lead' field with the name 'Đức Đỗ'.

#### 4.5.1.8. Upload file

- Screen Images

Member

The screenshot shows a member profile interface. At the top right is a green "Add" button. Below it is a dropdown menu showing "Leader". On the left, there's a placeholder for a profile picture and the text "thaodtse0007". A large text area labeled "Description Project" is empty. Below this is a section for file uploads with the label "Add a files". A button labeled "Chọn tệp" (Select file) has the message "Không có tệp nào được chọn" (No file selected). At the bottom right are "Submit" and "Reset" buttons.

The screenshot shows a "Create post" dialog box overlaid on a forum interface. The dialog has fields for "Title" and "Description", both currently empty. Below these is a "Files" section with a "Chọn tệp" button and the message "Không có tệp nào được chọn". At the bottom are "Post" and "Reset" buttons. The background forum interface shows a sidebar with "Global News" and "Notification" sections, and a main area with a post titled "TEST UPLOAD FILE 4".

### Button/ Hyperlinks

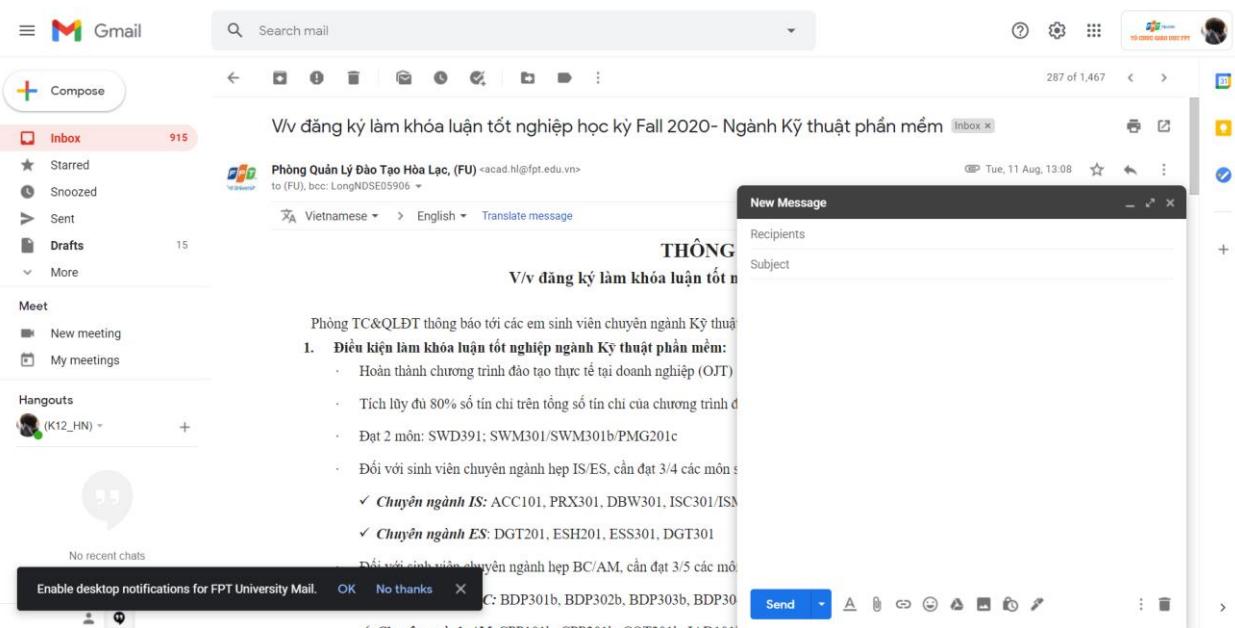
No	Function	Description	Validation	Outcome
1	Upload file	Click to choose File	No	Show file
2	Post	Click to post	No	Navigate to forum
3	Reset post	Click to reset	No	Re-post

### Fields

No	Field Name	Description	Read Only	Mandatory	Control Type	Data Type	Length
7	Title	Title post	No	Yes	Text	String	120
8	Description	Description post	No	Yes	Text	String	120

#### 4.5.1.9. Send mail

- Screen Images



#### 4.5.1.10 Chat

- Screen Images

A screenshot of a web-based application interface. At the top, there are two dropdown menus: "All Properties" and "Today". A green button on the right says "+ ADD POST". Below this, a post by "kienbtse05182" from "2020-12-06 16:39:01.0" contains the text "chung toi". Three other users have commented: "ducddse04936" (sdasd), "ducdo1214" (dsfdsf), and "kienbtse05182" (n). A red arrow points to the search icon next to the user list. At the bottom, there's a text input field "Write a comment.." and a green "Send" button.

A screenshot of a direct messaging interface. The title of the message is "chung toi muon tim do an...". It shows a single message from "longndse05906 joined!". At the bottom, there's a text input field "Type a message..." and a green "Send" button.

### Button/ Hyperlinks

No	Function	Description	Validation	Outcome
1	View group chat to chat	Click to icon	No	Navigate to group chat
2	Chat	Click to button “Send”	No	Display content chat

### Fields

No	Field Name	Description	Read Only	Mandatory	Control Type	Data Type	Length
3	Content	Content chat	No	Yes	Text	String	120

#### 4.5.1.11. Create chat

- Screen Images

The screenshot shows a university forum interface. At the top, there is a navigation bar with links for Forum, Capstone Project, Lectures, Notification, Reports, and a user profile for 'Do Thao'. The main area is divided into two sections: 'Forum' on the left and 'Global News' on the right.

**Forum Section:**

- Chatroom [32]:** A large window titled "Chatroom [32]" containing a message input field ("Type a message...") and a green "Send" button.
- Forum Link:** A blue link labeled "Forum" below the chatroom window.
- Copyright:** "Copyright © 2020 FPT" at the bottom of the section.

**Global News Section:**

- Global News:** A heading for the news feed.
- Messages:** A list of messages from users like "qweq", "e", "eeeeeeeeeeeeeee", "sadasdad", and "FU-HL: THÔNG BÁO: KẾ HOẠCH LỊCH DAO TẠO HỆ ĐẠI HỌC CHÍNH QUY NAM 2021".
- More...** A link to view more messages.
- Notification:** A heading for notifications.
- Notifications:** A list of notifications from "SE16111 report" at various dates and times, such as "Sun Nov 08 03:27:47 ICT 2020" and "Sun Nov 08 03:11:46 ICT 2020".

Button/ Hyperlinks

No	Function	Description	Validation	Outcome
1	Create Group for chatting	Click to send	No	Send message to group

## 4.5.1.12. Confirm join team feature

- Screen Images

The screenshot shows the FPT University Capstone Project platform interface. At the top, there are navigation links: STARS, FPT UNIVERSITY, Forum, Capstone Project, Supervisors, Reports, Model, Guide, and a user profile for Tran Long. Below the navigation bar, the 'Forum' section is displayed. It includes a search bar, a 'Create Capstone' button, and a 'My Capstone' link. A green '+ ADD POST' button is prominently displayed. The 'TÌM NHÓM ĐO ÁN' (Find Team) section shows a post by 'khangnmse05904' from December 20, 2020, at 22:22:00.0, asking for a team. The 'CHUNG TOI MUON TIM DO AN...' (We want to find a team...) section shows a post by 'klientbtse05182' from December 6, 2020, at 16:39:01.0, also asking for a team. To the right, the 'Global News' feed lists several news items from the Fall 2020 semester, such as 'Thông báo điểm thi lần 1 môn VOV141 và điểm thi lần 2 HK Fall 2020 (No. 1)' and 'Thông báo DSSV thi lần 2 môn VOV114 HK Fall 2020'.

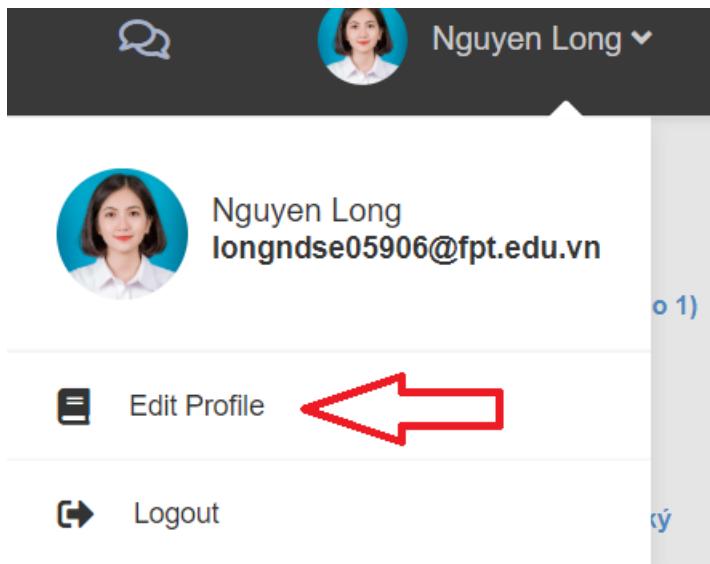
This screenshot shows the details of a specific capstone project. On the left, there is a table with columns for 'Name Project Vietnamese', 'Name Project Abbreviation', 'Profession', 'Program', 'Specialty', 'Document', 'Description', and 'Status'. The 'Status' column shows 'Pending By Supervisor'. On the right, there is a 'Google Map' section and a 'More...' link. Below this, the 'Member' section displays a table with columns for 'User', 'Role', and 'Status'. The table lists several users: 'khanhnse050452' (Leader, Confirmed), 'khanhnse050453' (Member, Wait for confirmation), 'khanhnse050454' (Member, Wait for confirmation), 'khanhnse050455' (Member, Wait for confirmation), 'ducken1412' (Supervisor, Wait for confirmation), 'thangpdgv00008' (Supervisor, Wait for confirmation), and 'longtvhe00001' (Member, Wait for confirmation). At the bottom right, there are 'Confirm' and 'Reject' buttons. The footer of the page includes the copyright notice 'Copyright © 2020 FPT'.

### Button/ Hyperlinks

No	Function	Description	Validation	Outcome
1	Confirm join Team feature	Click to button “Confirm”	No	Display confirm Dialog
2	Reject	Click button “Reject”	No	Display confirm Dialog

#### 4.5.1.13 Edit profile

- Screen Images:



The screenshot shows a user profile page for "Nguyen Duc Long". At the top left is a placeholder for a profile picture. To its right is the name "Nguyen Duc Long". Below the name is a red arrow pointing to a "Upload" button next to a file input field. A large red arrow points downwards from this area towards the form fields. The form includes fields for "Description" (empty), "Address" (containing "Số nhà 36, đường Trần Hưng Đạo, Thị trấn Kinh Môn, H. Kinh Môn, tỉnh Hải Dương"), "Phone" (containing "33233333333"), and "Date of birth" (containing "06/10/2020"). At the bottom right is a green "Update" button with a circular icon. A red arrow points to the right from the "Update" button. The URL "https://fcpm.herokuapp.com/notification-detail/13" is visible at the bottom left.

### Button/ Hyperlinks

No	Function	Description	Validation	Outcome
1	Edit profile	Click to button “Edit profile”	No	Navigate to Profile page
2	Upload image	Click button “Upload”	No	Display folder that you choose image
3	Update profile	Click button “Update”	No	Display notification Update successful

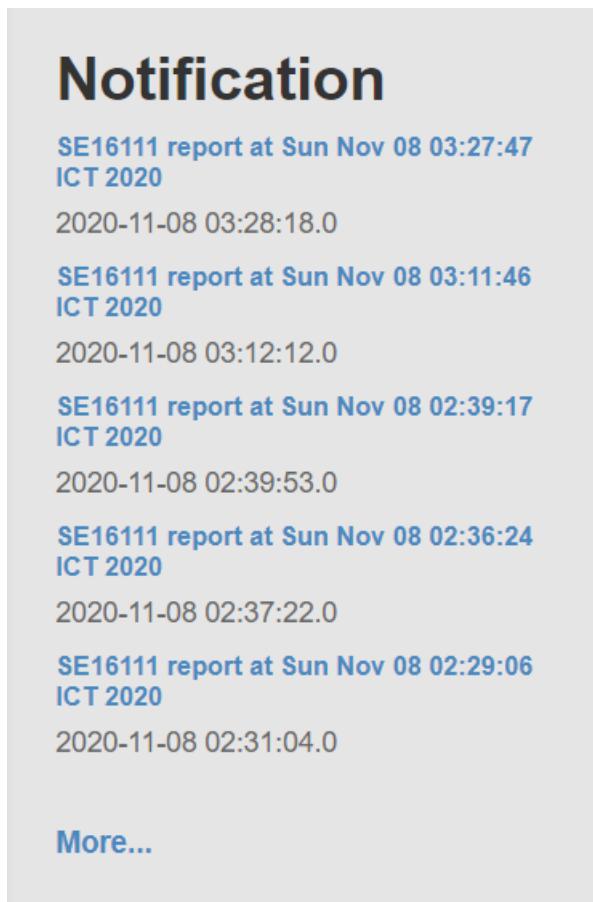
### Fields

No	Field Name	Description	Read Only	Mandatory	Control Type	Data Type	Length
4	Description	describe hobbies, forte	No	Yes	Text	String	120

5	Phone	Phone	No	Yes	Text	String	120
6	Date of birth	Date of birth	No	Yes	Text	Date	
7	Address	Address	No	Yes	Text	String	120

#### 4.5.1.14. Notification component

- Screen Images



## News

### Kienbtse05182 Report At Sun Nov 15 01:21:42 ICT 2020

Report by kienbtse05182 at Sun Nov 15 01:21:42 ICT 2020 Click [view](#)

Copyright © 2020 FPT

#### Button/ Hyperlinks

No	Function	Description	Validation	Outcome
1	View Notification	Click to name Of notification	No	Navigate to Notification detail page
2	View detail notification	Click to “view”	No	Navigate to detail information notification page
3	View list Notification	Click to “more”	No	Navigate to list Notification page

#### 4.5.1.15. Comment

- Screen Images

TEST UPLOAD FILE 4

khanhse16111  
2020-11-08 01:55:17.0  
adalIntelliJ IDEA là một IDE Java để phát triển các phần mềm máy tính. Nó được phát triển bởi JetBrains, nó được cấp phép Apache 2 cho phiên bản cộng đồng, và một phiên bản thương mại độc quyền.Cả hai có thể được sử dụng cho phát triển thương mại

File attachment:  
[sdf-160477532034039.sql](#)

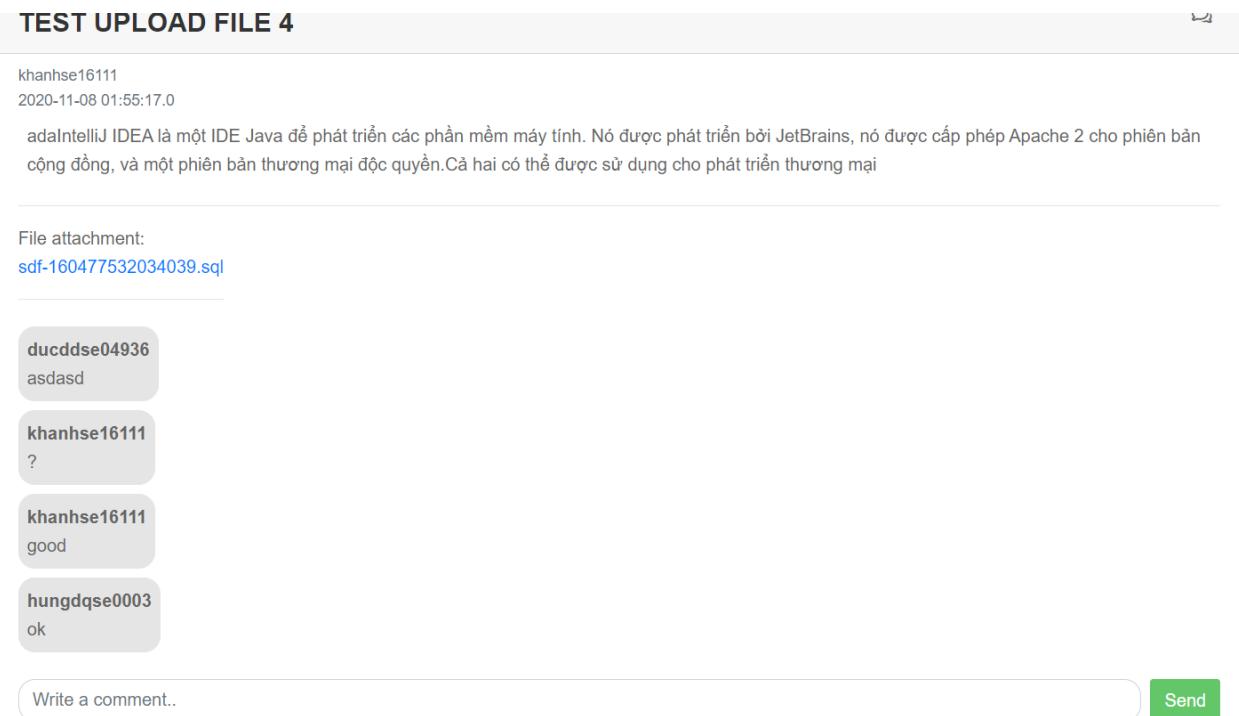
ducddse04936  
asdasd

khanhse16111  
?

khanhse16111  
good

hungdqse0003  
ok

Write a comment.. Send



Button/ Hyperlinks

No	Function	Description	Validation	Outcome
1	Comment	Click to send	No	Send comment to Post

#### 4.5.1.16. Daily report to member to leader

- Screen Images

**Report**

**TITLE**

**CONTENT**

Editor toolbar:

Styles: **B** **I** **U** **S** **A<sub>s</sub>** **A<sup>s</sup>** **T<sub>x</sub>** **Font** **Size** **Color** **Image** **Table** **Link** **Code**

Table:

Item Name	Plan	Actual	Progress	Issue	Cover plan
Today Task					
Next Task					

**ADD A FILES**  Không có tệp nào được chọn

## List Report

Report by	Title	Created date
Khanh	sdsda	2020-11-08 03:27:47.0
Khanh	asdsadasd	2020-11-08 03:11:47.0
Khanh	1231212	2020-11-08 02:39:17.0
Khanh	12312312	2020-11-08 02:36:25.0
Khanh	eqweqw	2020-11-08 02:29:07.0
Duc	sadasdasd	2020-11-08 02:28:08.0
Khanh	w	2020-11-08 02:15:00.0
Khanh	sdsda	2020-11-08 03:27:47.0
Khanh	asdsadasd	2020-11-08 03:11:47.0
Khanh	1231212	2020-11-08 02:39:17.0

## Report Detail

Sdsda

Item Name	Plan	Actual	Progress	Issue	Cover plan
Today Task					
Next Task					

Write a comment..

Send

### Button/ Hyperlinks

No	Function	Description	Validation	Outcome
1	Add file	Click to choose File	No	Show file
2	Report	Click to submit	No	Navigate to List-report page

### Fields

No	Field Name	Description	Read Only	Mandatory	Control Type	Data Type	Length
1	Title	Title report	No	Yes	Text	String	N/A
2	Content	Content report	No	Yes	Text	String	N/A

#### 4.5.1.17. Weekly report to leader to supervisor

- Screen Images

**Report**

**TITLE**

**CONTENT**

Editor toolbar:

Styles: **B** **I** **U** **S** **A<sub>1</sub>** **A<sub>2</sub>** **T<sub>x</sub>** **Font** **Size** **Color** **Image** **Table** **Link** **Code**

Table:

Item Name	Plan	Actual	Progress	Issue	Cover plan
Today Task					
Next Task					

**ADD A FILES**  Không có tệp nào được chọn

## List Report

Report by	Title	Created date
Khanh	sdsda	2020-11-08 03:27:47.0
Khanh	asdsadasd	2020-11-08 03:11:47.0
Khanh	1231212	2020-11-08 02:39:17.0
Khanh	12312312	2020-11-08 02:36:25.0
Khanh	eqweqw	2020-11-08 02:29:07.0
Duc	sadasdasd	2020-11-08 02:28:08.0
Khanh	w	2020-11-08 02:15:00.0
Khanh	sdsda	2020-11-08 03:27:47.0
Khanh	asdsadasd	2020-11-08 03:11:47.0
Khanh	1231212	2020-11-08 02:39:17.0

## Report Detail

Sdsda

Item Name	Plan	Actual	Progress	Issue	Cover plan
Today Task					
Next Task					

Write a comment..

Send

### Button/ Hyperlinks

No	Function	Description	Validation	Outcome
1	Add file	Click to choose File	No	Show file
2	Report	Click to submit	No	Navigate to List-report page

### Fields

No	Field Name	Description	Read Only	Mandatory	Control Type	Data Type	Length
1	Title	Title report	No	Yes	Text	String	N/A
2	Content	Content report	No	Yes	Text	String	N/A

## 4.5.1.18 Manage user

- Screen Images

Forum

TÌM NHÓM ĐO ÁN

khangnmse05904  
2020-12-20 22:22:00.0  
khang

khangnmse05904  
d

Write a comment...

CHUNG TOI MUON TIM DO AN...

kientbte05182  
2020-12-06 16:39:01.0  
chung toi

Global News

FU-HL: Thông báo điểm thi lần 1 môn VOV141 và điểm thi lần 2 HK Fall 2020 (No 1)  
2020-12-06 20:15:58.0

FU-HL: Thông báo DSSV thi lần 2 môn VOV114 HK Fall 2020  
2020-12-06 20:15:39.0

FU-HL: Thông báo về việc giá hạn đăng ký mua BHYT đợt 4 năm 2020  
2020-12-06 20:15:14.0

THÔNG BÁO NỘP HỌC PHÍ KỲ SPRING 2021  
2020-12-06 20:14:58.0

FU-HL: Thông báo lịch thi cuối kỳ lần 1 và lần 2 môn JPD112 HK Fall 2020.  
2020-12-06 20:12:08.0

FU-HL: VV: Mở thêm lớp LAB231.E1-BLS  
2020-12-06 20:11:48.0

More...

Student Management

Students are eligible for the scheme Capstone Project: 126 / 129

Total student doing capstone project: 0

Total student has no team capstone project: 121

Show 50 entries  Search:

Student ID	Username	Full Name	Gender	Created Date	Email	Capstone Project	Status	Semester	Site	Image
SE050452	khanhnse050452	Nguyen Van Khanh	Male	2020-12-22 23:11:56.0	khanhnse050452@gmail.com	<a href="#">Google Map</a>	eligible_capstone	Fall2022	FU-Ho Chi Minh	
SE050453	khanhnse050453	Nguyen Van Cuong	Male	2020-12-22 23:11:56.0	khanhnse050453@gmail.com	<a href="#">Google Map</a>	eligible_capstone	Fall2022	FU-Ho Chi Minh	
SE050454	khanhnse050454	Nguyen Van Kien	Male	2020-12-22 23:11:56.0	khanhnse050454@gmail.com	<a href="#">Google Map</a>	eligible_capstone	Fall2022	FU-Ho Chi Minh	
SE050455	khanhnse050455	Nguyen Van Khang	Male	2020-12-22 23:11:56.0	khanhnse050455@gmail.com	<a href="#">Google Map</a>	eligible_capstone	Fall2022	FU-Ho Chi Minh	

SE05694	khangnmse0004	Ngo Manh Khang	Male	2020-12-13 05:20:31.0	khangnmse0004@gmail.com		eligible_capstone	Fall2020	FU-Hoa Lac		
SE05515	kiendtse05515	Dong Trung Kien	Male	2020-12-13 05:11:41.0	kiendtse05515@fpt.edu.vn		eligible_capstone	Fall2020	FU-Hoa Lac		
SE05126	datnqse05126	Nguyen Quoc Dat	Male	2020-12-13 05:10:41.0	datnqse051261@fpt.edu.vn		eligible_capstone	Fall2020	FU-Hoa Lac		
SE05116	manhpxse05016	Pham Xuan Manh	Male	2020-12-13 05:09:44.0	manhpxse050161@fpt.edu.vn		eligible_capstone	Fall2020	FU-Hoa Lac		

Showing 1 to 50 of 129 entries

Previous 1 2 3 Next

Copyright © 2020 FPT

### Button/ Hyperlinks

No	Function	Description	Validation	Outcome
1	Search capstone project	Click “Search” button	No	Show list capstone project

### Fields

No	Field Name	Description	Read Only	Mandatory	Control Type	Data Type	Length
1	ID	ID	No	Yes	Text	Integer	N/A
2	Username	Username	No	Yes	Text	String	N/A
3	Full Name	Full Name	No	Yes	Text	String	N/A
4	Gender	Gender	No	Yes	Text	String	N/A
5	Created date	Created date	No	Yes	Text	Date	N/A

6	Email	Email	No	Yes	Text	String	N/A
7	Capstone Project	Capstone Project	No	Yes	Text	String	N/A
8	Status	Status	No	Yes	Text	String	N/A
9	Semester	Semester	No	Yes	Text	Integer	N/A
10	Site	Site	No	Yes	Text	String	N/A

#### 4.5.1.19. View information, status of list student

- Screen Images

The screenshot shows a web interface for a university system. At the top, there is a navigation bar with links for STARS, FPT UNIVERSITY, Forum, Capstone Project, Lectures, Notification, Reports, and a user profile for 'Do Thao'. The main content area is divided into two sections: 'User Information' on the left and 'Global News' on the right.

**User Information:**

- Profile Picture:** A portrait of a man named Do Duc.
- Name:** Do Duc
- Role:** Leader
- Birth Date:** 14-12-1997
- Description:** 4 years of experience in software devel
- Email:** duddse04936@fpt.edu.vn
- Gender:** male
- Phone:** 0968480997
- User Name:** duddse04936
- Capstone Project:** FCPM
- Address:** 302 Hai Bà Trưng, Cát Dài, Lê Chân, Hải Phòng
- Status:** Pending

**Global News:**

- qweq 2020-10-31 15:32:47.0
- e 2020-10-31 15:31:50.0
- eeeeeeeeeeeeeeeeee 2020-10-31 15:29:16.0
- sadasdad 2020-10-31 13:49:47.0
- FU-HL THÔNG BÁO: KẾ HOẠCH LỊCH ĐÀO TẠO HỆ ĐẠI HỌC CHÍNH QUY NĂM 2021. 2020-10-31 12:02:20.0
- sd 2020-10-31 05:25:13.0

**Notification:**

- SE16111 report at Sun Nov 08 03:27:47 ICT 2020 2020-11-08 03:28:18.0
- SE16111 report at Sun Nov 08 03:11:46 ICT 2020 2020-11-08 03:12:12.0

## Fields

No	Field Name	Description	Read Only	Mandatory	Control Type	Data Type	Length
1	User Name	User Name	No	Yes	Text	String	N/A
2	Capstone Project	Capstone Project	No	Yes	Text	String	N/A
3	Address	Address	No	Yes	Text	String	N/A
4	Status	Status	No	Yes	Text	String	N/A
5	Birth date	Birth date	No	Yes	Text	Date	N/A
6	Description	Description	No	Yes	Text	String	N/A
7	Email	Email	No	Yes	Text	String	N/A
8	Gender	Gender	No	Yes	Text	String	N/A
9	Phone	Phone	No	Yes	Text	INT	N/A

#### 4.5.1.20. View and edit the list of registered project

- Screen Images

The screenshot shows a web-based application interface. At the top, there are three dropdown menus: 'All Profession', 'All Status', and 'Name Project'. Below these is a table with columns: NAME, DESCRIPTION, NAME\_VI, and NAME. The first row contains data: Quan Ly Do An, Quan Ly Do An, QLDA, QLDA. To the right of this row is an 'Add Student' modal window. The modal has fields for 'NAME' and 'DESCRIPTION', with 'NAME' currently empty. It includes 'Add', 'Cancel', and 'Add' buttons. Above the modal are 'Approve' and 'Reject' buttons. Below the table, there are two more rows of data: 'khanh' and 'FCPM', each with their respective details and a small circular icon to the right. At the bottom, there is a navigation bar with 'Previous', page numbers (1, 2, 3), and 'Next'.

Button/ Hyperlinks

No	Function	Description	Validation	Outcome
1	Choose all profession	Click to all profession	No	Show professions
2	Choose all status	Click to all status	No	Show statuses
3	Search name project	Click to search	No	Show name project
4	Approve Project	Click to approve	No	Approve project
5	Reject project	Click to reject	No	Reject project
6	See next page	Click to next	No	Show next page
7	Edit project	Click to “v”	No	Edit project
8	Add Student	Click to add	No	Add student
9	Cancel Student	Click to cancel	No	Cancel student

## Fields

No	Field Name	Description	Read Only	Mandatory	Control Type	Data Type	Length
1	Name	Name project	No	Yes	Text	String	N/A
2	Description	Description project	No	Yes	Text	String	N/A
3	Name-vi	Name Vietnam project	No	Yes	Text	String	N/A
4	Name-Abbreviation	Name Abbreviation	No	Yes	Text	String	N/A
5	Status	Status	No	Yes	Text	String	N/A

#### 4.5.1.21. View list capstone project

- Screen Images

The screenshot shows a web application interface for managing capstone projects. At the top, there is a navigation bar with links for Forum, Capstone Project, Lectures, Notification, and Reports. Below the navigation bar, the title "Capstone Project" is displayed. Underneath the title is a search bar with dropdowns for "All Profession" and "All Status", a "Name Project" input field, and a "Search" button. To the right of the search bar are two green buttons: "Approve" and "Reject". The main content area displays a table with three rows of project data. Each row includes a checkbox, project name, description, name in Vietnamese, name abbreviation, status, and a set of three circular status buttons. At the bottom of the table is a navigation bar with buttons for "Previous", page numbers (1, 2, 3), and "Next".

	NAME	DESCRIPTION	NAME_VI	NAME_ABBREVIATION	STATUS	
<input type="checkbox"/>	Quan Ly Do An	Quan Ly Do An	QLDA	QLDA	approve_capstone_lecturer	
	khanh	qeqwe	wqe	qweqwe	registering_capstone	
	FCPM		FCPM	FCPM	registering_capstone	

Button/ Hyperlinks

No	Function	Description	Validation	Outcome
1	Choose all profession	Click to all profession	No	Show professions
2	Choose all profession	Click to all status	No	Show statuses
3	Search name project	Click to search	No	Show name project
4	Approve Project	Click to approve	No	Approve project
5	Reject project	Click to reject	No	Reject project
6	See next page	Click to next	No	Show next page

## Fields

No	Field Name	Description	Read Only	Mandatory	Control Type	Data Type	Length
1	Name	Name project	No	Yes	Text	String	N/A
2	Description	Description project	No	Yes	Text	String	N/A
3	Name-vi	Name Vietnam project	No	Yes	Text	String	N/A
4	Name-Abbreviation	Name Abbreviation	No	Yes	Text	String	N/A
5	Status	Status	No	Yes	Text	String	N/A

#### 4.5.1.22. View detail project

- Screen Images

Project Detail						2020-10-31 15:32
ROLE	FIRST NAME	LAST NAME	PHONE	EMAIL	STATUS	
lecturers	Doan	Nam	331234345566	gv010@fpt.edu.vn	approve_capstone_lecturer	 
lecturers	Nguyen	Hiep	23123123133	gv009@fpt.edu.vn	approve_capstone_lecturer	 
student_member	Nguyen	Khanh	0000000231	nguyenkhanh161196@gmail.com	approve_capstone_lecturer	 
student_member	Nguyen	Thai	4343434343	khanhnse05045@gmail.com	approve_capstone_lecturer	 
<a href="#" style="color: blue; text-decoration: none;">+ADD STUDENT</a>						
						<a href="#" style="color: green; text-decoration: none;">Cancel</a>

Button/ Hyperlinks

No	Function	Description	Validation	Outcome
1	Add student	Click to add student	No	Show information of add student
2	Cancel	Click to cancel	No	Cancel
3	Delete project	Click to “x”	No	Delete project

Fields

No	Field Name	Description	Read Only	Mandatory	Control Type	Data Type	Length
1	Role	Role	No	Yes	Text	String	N/A
2	First Name	First Name	No	Yes	Text	String	N/A

3	Last Name	Last Name	No	Yes	Text	String	N/A
4	Phone	Phone	No	Yes	Text	INT	N/A
5	Email	Email	No	Yes	Text	String	N/A
6	Status	Status	No	Yes	Text	String	N/A

### 4.5.1.23 Manage Capstone Project

- Screen Images

The screenshot shows the 'Capstone Project' section of the FPT University system. The interface includes a header with the FPT University logo and navigation links for Dashboard, Forum, Capstone Project, Supervisors, Reports, and a user profile for 'Nguyen Long'. Below the header is a search bar with dropdowns for 'All Profession' and 'All Status', a 'Name Project' input field, a 'Search' button, and two action buttons: 'Approve Selected' and 'Reject Selected'. The main content area displays a table of capstone projects. The columns are: SUBJECT CODE, NAME, NAME\_VI, NAME\_CHANGING, NAME\_ABBREVIATION, DESCRIPTION, and STATUS. One project is listed: 'SWP\_20' (Management System for Small/Family Business), which is described in both English and Vietnamese. The project has 'MSS/FB' as its abbreviation, 'FPT Capstone Project Management' as its description, and 'Registered Capstone' as its status. To the right of the project row are three small green circles with white checkmarks. At the bottom of the page, there is a copyright notice 'Copyright © 2020 FPT' and a URL 'https://fcpm.herokuapp.com/ad/capstoneproject#'

#### Button/ Hyperlinks

No	Function	Description	Validation	Outcome
1	View detail project	Click to icon	No	Display detail project
2	Accept project	Click to icon V or button “Approve Selected”	No	Display notification “Do you want approve project”
3	Reject project	Click to icon X or button “Reject Selected”	No	Display notification “Do you want reject project”
4	Search project	Click to button “Search”	No	Display project
5	Choose Profession	Click to dropdown “Profession”	No	Display list profession

6 Choose Status Click to dropdown “Status” No Display list status

### Fields

No	Field Name	Description	Read Only	Mandatory	Control Type	Data Type	Length
1	Name project	Name project	No	Yes	Text	String	N/A
2	Subject Code	Subject Code	No	Yes	Text	String	N/A
3	Name	Name	No	Yes	Text	String	N/A
4	Name-Vi	Name Vietnamese	No	Yes	Text	String	N/A
5	Name changing	Name changing	No	Yes	Text	String	N/A
6	Name changing vi	Name changing Vietnamese	No	Yes	Text	String	N/A
7	Name abbreviation	Name abbreviation	No	Yes	Text	String	N/A
8	Description	Description	No	Yes	Text	String	N/A
9	Status	Status	No	Yes	Text	String	N/A

## 4.5.1.24 View task detail of Capstone Project

- Screen Images

The Progress Of The Projects

Statistics

1. Number of project 1

2. On schedule 0

3. Warning 1

4. Serious 0

**Notification**

khanhnhsse05045 invites you to participate in a capstone project  
2020-12-06 10:24:12.0

**Global News**

FU-HL: Thông báo điểm thi lần 1 môn VOV141 và điểm thi lần 2 HK Fall 2020 (No 1)  
2020-12-06 20:15:39.0

FU-HL: Thông báo DSSV thi lần 2 môn VOV114 HK Fall 2020.  
2020-12-06 20:15:39.0

FU-HL: Thông báo về việc giá hạn đăng ký mua BHYT đợt 4 năm 2020  
2020-12-06 20:15:14.0

THÔNG BÁO NƠI HỌC PHÍ KỲ SPRING 2021  
2020-12-06 20:14:58.0

FU-HL: Thông báo lịch thi cuối kỳ lần 1 và lần 2 môn JPH112 HK Fall 2020.  
2020-12-06 20:12:08.0

FU-HL: VV: Mở thêm lớp LAB231.E1-BLS  
2020-12-06 20:11:48.0

More...

All Semesters All Sites Name Project Search user of Projects Search

App Map Directions

Name Vietnamese: Ứng dụng chỉ đường

Project Participants: khanhnhsse05045 gv010 gv008

Status: 26.89% 17.24% 62.87%

Data

Click here view task detail

Dashboard Forum Capstone Project Supervisors Nguyen Khang

Tasks

App Map Directions

Week 13

Show 10 entries Search:

Summary	Start Date	End Date	Time Spent	Time Tracking	Status	Assignee	Week
Comment	2020-thg 10-02	2020-thg 10-04	2d	100.0	Done	Đức Đỗ	13
Search and filter forum	2020-thg 10-05	2020-thg 10-08	4d	100.0	Done	Đức Đỗ	13
Create common upload file	2020-thg 10-05	2020-thg 10-08	1m	100.0	Done	(FUHL STUDENT) Bùi Trung Kiên	13
Create notification component	2020-thg 10-05	2020-thg 10-11	1w 2d	100.0	Done	Nguyễn Ngọc Khanh - K11 FUG HN	13
Create booking lecturers feature	2020-thg 10-05	2020-thg 10-11	1w 2d	100.0	Done	Nguyễn Ngọc Khanh - K11 FUG HN	13
Create capstone project detail page	2020-thg 10-05	2020-thg 10-11	1w 2d	100.0	Done	(K12_HN) Nguyễn Minh Khang	13
Create common send email	2020-thg 10-09	2020-thg 10-11	3m	100.0	Done	(FUHL STUDENT) Bùi Trung Kiên	13
Create group for chatting	2020-thg 10-09	2020-thg 10-11	1w 3d	100.0	Done	Đức Đỗ	13
Append send email to register project	2020-thg 10-12	2020-thg 10-18	1w 2d	100.0	Done	(FUHL STUDENT) Bùi Trung Kiên	13
Append send email to booking lecturers	2020-thg 10-12	2020-thg 10-18	1w 2d	100.0	Done	(K12_HN) Nguyễn Minh Khang	13

Showing 1 to 10 of 29 entries Previous 1 2 3 Next

Global News

FU-HL: Thông báo điểm thi lần 1 môn VOV141 và điểm thi lần 2 HK Fall 2020 (No 1)  
2020-12-06 20:15:58.0

FU-HL: Thông báo DSSV thi lần 2 môn VOV114 HK Fall 2020.  
2020-12-06 20:15:39.0

FU-HL: Thông báo về việc giá hạn đăng ký mua BHYT đợt 4 năm 2020  
2020-12-06 20:15:14.0

THÔNG BÁO NƠI HỌC PHÍ KỲ SPRING 2021  
2020-12-06 20:14:58.0

FU-HL: Thông báo lịch thi cuối kỳ lần 1 và lần 2 môn JPH112 HK Fall 2020.  
2020-12-06 20:12:08.0

FU-HL: VV: Mở thêm lớp LAB231.E1-BLS  
2020-12-06 20:11:48.0

More...

Notification

khanhnhsse05045 invites you to participate in a capstone project  
2020-12-06 10:24:12.0

More...

## Fields

No	Field Name	Description	Read Only	Mandatory	Control Type	Data Type	Length
1	Summary	Summary	No	Yes	Text	String	N/A
2	Start Date	Start Date	No	Yes	Text	Date	N/A
3	End Date	End Date	No	Yes	Text	Date	N/A
4	Time Spent	Time Spent	No	Yes	Text	String	N/A
5	Status	Status	No	Yes	Text	String	N/A
6	Assignee	Assignee	No	Yes	Text	String	N/A
7	Week	Week	No	Yes	Text	Integer	N/A

#### 4.5.1.25. Dashboard statistical of project

- Screen Images

The screenshot shows the FPT University Project Management System (FPM) dashboard. At the top, there is a navigation bar with links for STARS, Dashboard, Forum, Capstone Project, Supervisors, Reports, and a user profile for Nguyen Long. Below the navigation bar, the main content area is divided into several sections:

- Dashboard:** A large section titled "The Progress Of The Projects" displays three categories: On Schedule (green), Waring (yellow), and Serious (red). There is also a "Statistics" table with the following data:

Category	Value
1. Number of project	0
2. On schedule	0
3. Warning	0
4. Serious	0

- Global News:** A sidebar on the right lists recent news items with their titles, dates, and brief descriptions. Some examples include:
  - FU-HL: Thông báo điểm thi lần 1 môn VOV141 và điểm thi lần 2 HK Fall 2020 (No 1) 2020-12-06 20:15:58.0
  - FU-HL: Thông báo DSSV thi lần 2 môn VOV114 HK Fall 2020 2020-12-06 20:15:39.0
  - FU-HL: Thông báo về việc giá hạn đăng ký mua BHYT đợt 4 năm 2020 2020-12-06 20:15:14.0
  - THÔNG BÁO NỘP HỌC PHÍ KỲ SPRING 2021 2020-12-06 20:14:58.0
  - FU-HL: Thông báo lịch thi cuối kỳ lần 1 và lần 2 môn JPD112 HK Fall 2020. 2020-12-06 20:12:08.0
  - FU-HL: VV: Mở thêm lớp LAB231.E1- BL5 2020-12-06 20:11:48.0
- Bottom Navigation:** At the very bottom, there are dropdown menus for "All Semesters" and "All Sites", a search bar for "Name Project", a search bar for "Search user of Projects", and a "Search" button.

The URL https://fcpm.herokuapp.com/db/dashboard is visible at the bottom left of the browser window.

### Button/ Hyperlinks

No	Function	Description	Validation	Outcome
1	Search user of project	Click to button “Search”	No	Display dashboard
2	Choose semester	Click to dropdown “Semesters”	No	Display list semester
3	Choose site	Click to dropdown “Sites”	No	Display list sites

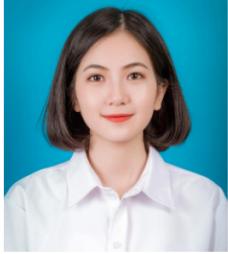
### Fields

No	Field Name	Description	Read Only	Mandatory	Control Type	Data Type	Length
1	Name project	Name project	No	Yes	Text	String	N/A
2	Search user of project	Search user of project	No	Yes	Text	String	N/A

#### 4.5.1.26. View information of user

- Screen Images

### User Information



**Doan Nam**  
Role: Lecturer

Birth Date:	31-10-2020	User Name:	gv010
Description:		Capstone Project:	khanh
Email:	gv010@fpt.edu.vn	Address:	302 Hai Bà Trưng, Cát Dài, Lê Chân, Hải Phòng
Gender:	male	Status:	
Phone:	331234345566		

Fields

No	Field Name	Description	Read Only	Mandatory	Control Type	Data Type	Length
1	User Name	User Name	No	Yes	Text	String	N/A
2	Capstone Project	Capstone Project	No	Yes	Text	String	N/A
3	Address	Address	No	Yes	Text	String	N/A

4	Status	Status	No	Yes	Text	String	N/A
5	Birth date	Birth date	No	Yes	Text	Date	N/A
6	Description	Description	No	Yes	Text	String	N/A
7	Email	Email	No	Yes	Text	String	N/A
8	Gender	Gender	No	Yes	Text	String	N/A
9	Phone	Phone	No	Yes	Text	INT	N/A

#### 4.5.1.27. Approve capstone project in the project registration stage

- Screen Images

	NAME	DESCRIPTION	NAME_VI	NAME_ABBREVIATION	STATUS
<input type="checkbox"/>	Quan Ly Do An	Quan Ly Do An	QLDA	QLDA	approve_capstone_lecturer
	khanh	qeqwe	wqe	qweqwe	registering_capstone
	FCPM		FCPM	FCPM	registering_capstone

Previous **1** 2 3 Next

Approve Reject

Button/ Hyperlinks

No	Function	Description	Validation	Outcome
1	Choose all profession	Click to all profession	No	Show professions
2	Choose all profession	Click to all status	No	Show statuses
3	Search name project	Click to search	No	Show name project
4	Approve Project	Click to approve	No	Approve project
5	Reject project	Click to reject	No	Reject project
6	See next page	Click to next	No	Show next page

## Fields

No	Field Name	Description	Read Only	Mandatory	Control Type	Data Type	Length
1	Name	Name project	No	Yes	Text	String	N/A
2	Description	Description project	No	Yes	Text	String	N/A
3	Name-vi	Name Vietnam project	No	Yes	Text	String	N/A
4	Name-Abbreviation	Name Abbreviation	No	Yes	Text	String	N/A
5	Status	Status	No	Yes	Text	String	N/A

## 4.5.1.28 Change pass / fail results

- Screen Images

The screenshot shows a forum interface with three posts listed:

- Post 1:** CCC  
ducdt1214  
2020-12-22 00:24:31.0  
CCC  
Write a comment...  
Send
- Post 2:** AAA  
ducdtse04936  
2020-12-21 21:48:50.0  
aa  
ducdt1214  
aaaaa  
Write a comment...  
Send
- Post 3:** GGG  
ducdtse04936  
localhost:8080/ed/capstoneproject  
Write a comment...  
Send

A red arrow points to the "Click here" link located in the top right corner of the first post's header.

The screenshot shows a capstone project management interface with a dropdown menu open:

- All Profession
- SUBJECT CC
- SWP\_19

Eligible Defence By Supervisor

- All Status
- Registering Capstone
- Registered Capstone
- Approved By Supervisor
- Approved By Training Department
- Approved By Head
- Doing
- Not Eligible Defence
- Eligible Defence
- Rejected
- Changing Name
- Accepted Rename
- Pending By Head
- Eligible Defence By Supervisor

A red arrow points to the "Click here" link located in the bottom right corner of the dropdown menu.

**Capstone Project**

Click here

SUBJECT CODE	NAME	NAME_VI	NAME CHANGING	NAME CHANGING VI	NAME_ABBREVIATION	DESCRIPTION	STATUS
SWP_19	asd	asd			asd	Eligible Defence By Supervisor	

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**Capstone Project**

Click here set to pass result

Click here set to fail result

SUBJECT CODE	NAME	NAME_VI	NAME_CHANGING	NAME_CHANGING VI	NAME_ABBREVIATION	DESCRIPTION	STATUS	
SWP_6	Parking Management	Quản lý gửi xe			PMCPM	FPT Capstone Project Management	Eligible Defence By Supervisor	
SWP_7	App Map Directions	Ứng dụng chỉ đường			AMD	Ứng dụng chỉ đường trên điện thoại di động	Eligible Defence By Supervisor	
SWP_8	FPT capstone	Fpt capstone			Fpt capstone		Eligible Defence By Supervisor	
JS_10	Management System for Small/Family Business	Hệ thống quản lý cho doanh nghiệp nhỏ / gia đình			MSB	FPT Capstone Project Management	Eligible Defence By Supervisor	
JS_12	Lmemo	Lmemo			LMM	FPT Capstone Project Management	Eligible Defence By Supervisor	

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### Button/ Hyperlinks

No	Function	Description	Validation	Outcome
1	Choose all profession	Click to all profession	No	Show professions
2	Choose all profession	Click to all status	No	Show statuses
3	Search name project	Click to search	No	Show name project
4	Approve Project	Click to approve	No	Approve project
5	Reject project	Click to reject	No	Reject project
6	See next page	Click to next	No	Show next page

### Fields

No	Field Name	Description	Read Only	Mandatory	Control Type	Data Type	Length
1	Name	Name project	No	Yes	Text	String	N/A
2	Description	Description project	No	Yes	Text	String	N/A
3	Name-vi	Name Vietnam project	No	Yes	Text	String	N/A
4	Name-Abbreviation	Name Abbreviation	No	Yes	Text	String	N/A
5	Status	Status	No	Yes	Text	String	N/A

## 4.5.1.29 Create notification

- Screen Images

The screenshot shows a web-based application for managing capstone projects. At the top, there's a navigation bar with links for Forum, Capstone Project, Supervisors, Manage User, Notifications, History, and a user profile for 'Nguyen Khang'. Below the navigation is a search bar and a table listing various projects. The table columns include SUBJECT CODE, NAME, NAME\_VI, NAME\_CHANGING, NAME\_CHANGING\_VI, NAME\_ABBREVIATION, DESCRIPTION, and STATUS. Projects listed include SWP\_1 through JS\_10, each with a unique name and description. A red arrow points to a 'Create Notifications' button located above the table. The text 'Click here' is overlaid on the arrow.

This screenshot shows the process of creating a new notification. The main area has fields for 'TITLE' (with a placeholder 'Title...') and 'CONTENT' (which contains a rich text editor with the text 'Điền thông tin cần thiết' highlighted). Below these is a 'SUBJECT OF APPLICATION' section with radio buttons for 'All', 'Post a user', and 'Post a team', with 'All' selected. A dropdown menu shows 'FPT Capstone Project Management'. At the bottom is a large green 'Post' button. To the right, there's a sidebar titled 'Global News' displaying recent news items from FPT University, and another sidebar titled 'Notification' showing a single notification entry.

### Button/ Hyperlinks

No	Function	Description	Validation	Outcome
1	Choose all profession	Click to all profession	No	Show professions
2	Choose all profession	Click to all status	No	Show statuses
3	Search name project	Click to search	No	Show name project
4	Approve Project	Click to approve	No	Approve project
5	Reject project	Click to reject	No	Reject project
6	See next page	Click to next	No	Show next page

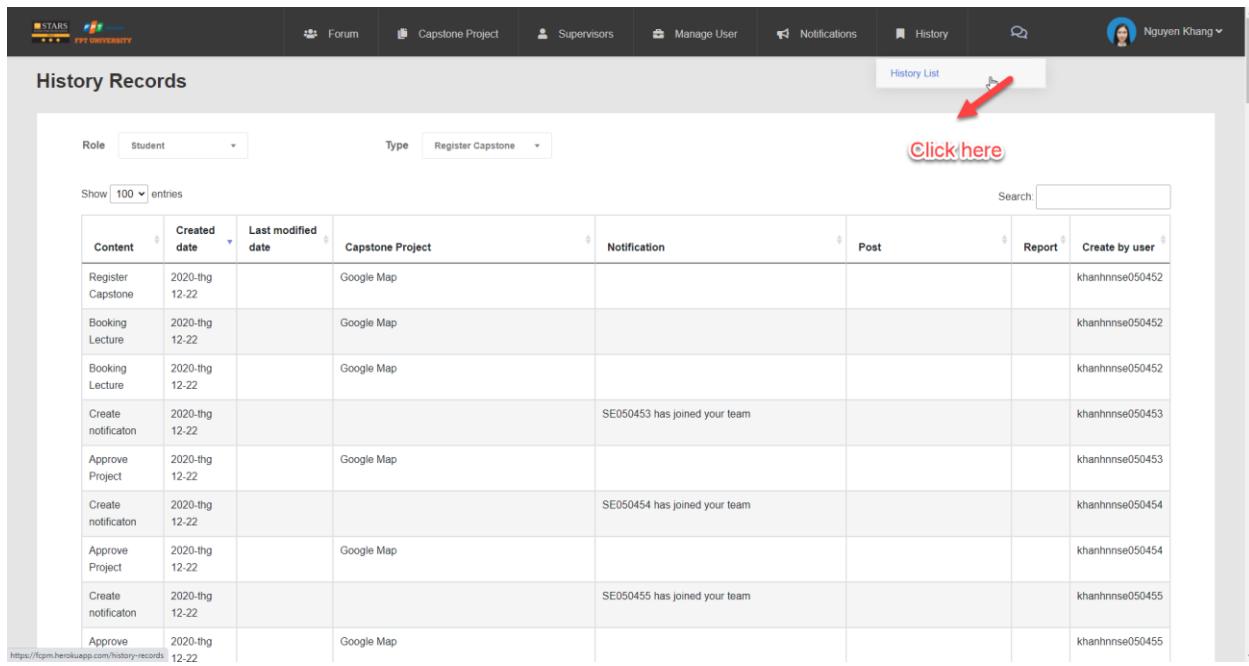
### Fields

No	Field Name	Description	Read Only	Mandatory	Control Type	Data Type	Length
1	Name	Name project	No	Yes	Text	String	N/A
2	Description	Description project	No	Yes	Text	String	N/A
3	Name-vi	Name Vietnam project	No	Yes	Text	String	N/A

4	Name-Abbreviation	Name Abbreviation	No	Yes	Text	String	N/A
5	Status	Status	No	Yes	Text	String	N/A
6	Title	Title	No	Yes	Text	String	N/A
7	Content	Content	No	Yes	Text	String	N/A

### 4.5.1.30 View History Record

- Screen Images



The screenshot shows a web application interface for managing history records. At the top, there is a navigation bar with links for Forum, Capstone Project, Supervisors, Manage User, Notifications, History, and a user profile for 'Nguyen Khang'. Below the navigation bar is a search bar and a 'History List' button. The main content area is titled 'History Records' and contains a table with the following columns: Content, Created date, Last modified date, Capstone Project, Notification, Post, Report, and Create by user. The table lists various activities such as 'Register Capstone', 'Booking Lecture', and 'Create notification', each with a timestamp and a 'Google Map' link. A red arrow points to a 'Click here' button located above the table's search bar.

Content	Created date	Last modified date	Capstone Project	Notification	Post	Report	Create by user
Register Capstone	2020-thg 12-22		Google Map				khanhnse050452
Booking Lecture	2020-thg 12-22		Google Map				khanhnse050452
Booking Lecture	2020-thg 12-22		Google Map				khanhnse050452
Create notification	2020-thg 12-22			SE050453 has joined your team			khanhnse050453
Approve Project	2020-thg 12-22		Google Map				khanhnse050453
Create notification	2020-thg 12-22			SE050454 has joined your team			khanhnse050454
Approve Project	2020-thg 12-22		Google Map				khanhnse050454
Create notification	2020-thg 12-22			SE050455 has joined your team			khanhnse050455
Approve	2020-thg 12-22		Google Map				khanhnse050455

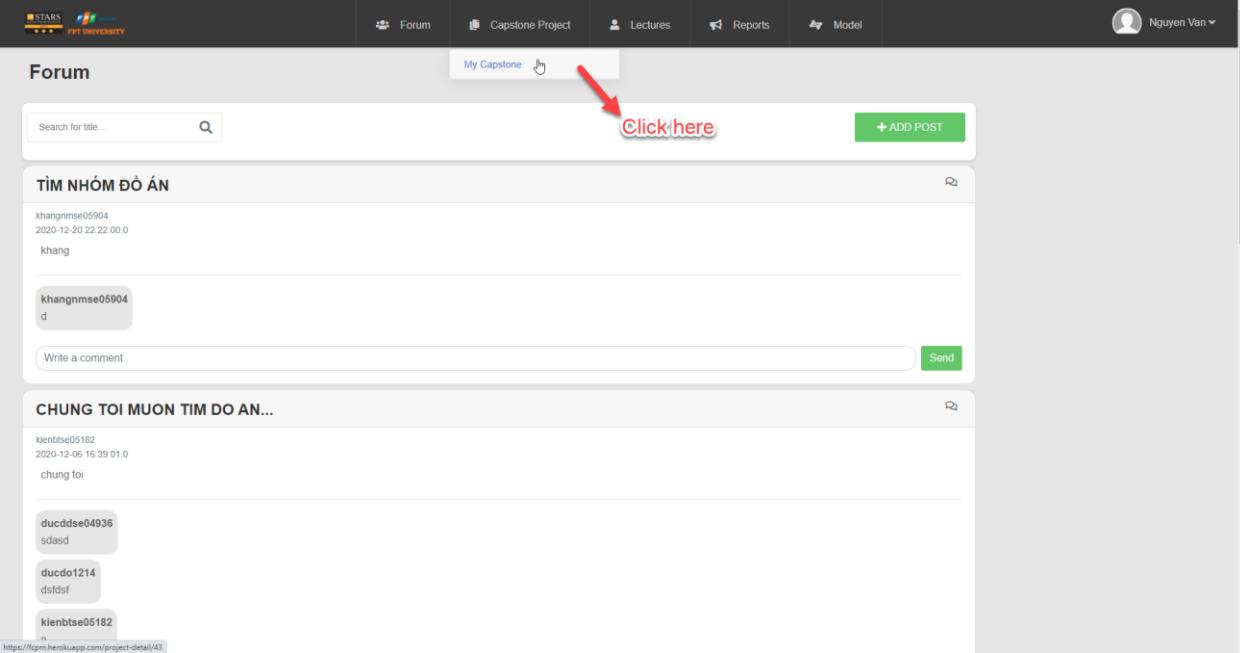
#### Fields

No	Field Name	Description	Read Only	Mandatory	Control Type	Data Type	Length
1	Content	Content	No	Yes	Text	String	N/A
2	Create date	Create date	No	Yes	Text	Date	N/A
3	Last modified date	Last modified date	No	Yes	Text	Date	N/A
4	Capstone project	Capstone project	No	Yes	Text	String	N/A

5	Notification	Notification	No	Yes	Text	String	N/A
6	Post	Post	No	Yes	Text	String	N/A
7	Report	Report	No	Yes	Text	String	N/A

#### 4.5.1.31 Change name capstone project

- Screen Images



The screenshot shows a forum interface with two posts. The top post is titled "TÌM NHÓM ĐO ÁN" and was posted by "khangnmse05904" on "2020-12-20 22:22:00.0". The message content is "khangnmse05904 d". Below the message is a text input field with placeholder "Write a comment.." and a green "Send" button. The bottom post is titled "CHUNG TOI MUON TIM DO AN..." and was posted by "kienbtse05182" on "2020-12-06 16:39:01.0". The message content is "chung toi". Below the message is a text input field with placeholder "Write a comment.." and a green "Send" button. A red arrow points to the "Click here" button in the first post's header.

**Project Information**

**Information**

Name Project	Google Map
Name Project Other language	Google Map
Name Project Vietnamese	Google Map
Name Project Abbreviation	Google Map
Profession	SE
Program	Google Map
Specialty	Google Map
Document	Google Map
Description	
Status	Pending By Supervisor

**Member**

User	Role	Status
khanhnse050452	Leader	Confirmed

warning:  
You can only edit information without submitting this form for Training Department.

**Điền thông tin cần sửa**

**Click here**

**Click here để update**

**Global News**

- FU-HL: Thông báo điểm thi lần 1 môn VOV141 và điểm thi lần 2 HK Fall 2020 (No 1)  
2020-12-06 20:15:58.0
- FU-HL: Thông báo DSSV thi lần 2 môn VOV114 HK Fall 2020.  
2020-12-06 20:15:39.0
- FU-HL: Thông báo về việc giá hạn đăng ký mua BHYT đợt 4 năm 2020  
2020-12-06 20:14:53.0
- FU-HL: Thông báo lịch thi cuối kỳ lần 1 và lần 2 môn JPD112 HK Fall 2020.  
2020-12-06 20:12:08.0
- FU-HL: VV: Mở thêm lớp LAB231.E1-BLS  
2020-12-06 20:11:48.0

**Notification**

- SE050457 has rejected your team  
2020-12-22 23:36:53.0
- SE050455 has joined your team  
2020-12-22 23:36:13.0
- SE050454 has joined your team  
2020-12-22 23:34:45.0
- SE050453 has joined your team  
2020-12-22 23:30:13.0

**More...**

**Global News**

- FU-HL: Thông báo DSSV thi lần 2 môn VOV114 HK Fall 2020.  
2020-12-06 20:15:39.0
- FU-HL: Thông báo về việc giá hạn đăng ký mua BHYT đợt 4 năm 2020  
2020-12-06 20:14:53.0
- FU-HL: Thông báo lịch thi cuối kỳ lần 1 và lần 2 môn JPD112 HK Fall 2020.  
2020-12-06 20:12:08.0
- FU-HL: VV: Mở thêm lớp LAB231.E1-BLS  
2020-12-06 20:11:48.0

**Notification**

- SE050457 has rejected your team  
2020-12-22 23:36:53.0
- SE050455 has joined your team  
2020-12-22 23:36:13.0
- SE050454 has joined your team  
2020-12-22 23:34:45.0
- SE050453 has joined your team  
2020-12-22 23:30:13.0

**More...**

### Button/ Hyperlinks

No	Function	Description	Validation	Outcome
1	Change name	Click to Change name	No	Change game
2	Edit	Click to Edit	No	Navigate to Edit capstone project page
3	Update	Click to Update	No	Display successful notification

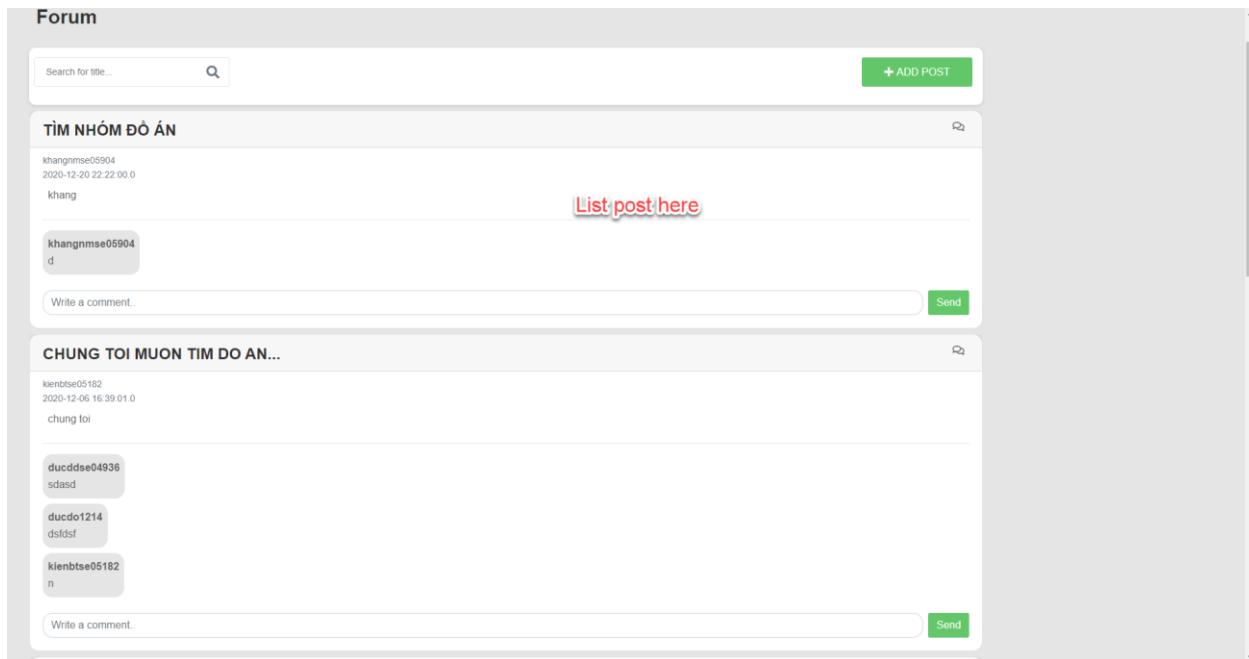
### Fields

No	Field Name	Description	Read Only	Mandatory	Control Type	Data Type	Length
7	Name Project	Name of project	No	Yes	Text	String	120
8	Name project other language	Name project other language	No	Yes	Text	String	120
9	Name project Vietnamese	Name project Vietnam	No	Yes	Text	String	120
10	Name project Abbreviation	Name project Abbreviation	No	Yes	Text	String	120
11	Profession	Profession	No	Yes	Text	String	120

	project	Project						
12	Program project	Program Project	No	Yes	Text	String	120	
13	Specialty project	Specialty Project	No	Yes	Text	String	120	
14	Document project	Document Project	No	Yes	Text	String	120	
12	Member	Member add	No	Yes	Text	String	120	
13	Description project	Description Project	No	Yes	Text	String	120	

#### 4.5.1.32 View list post

- Screen Images



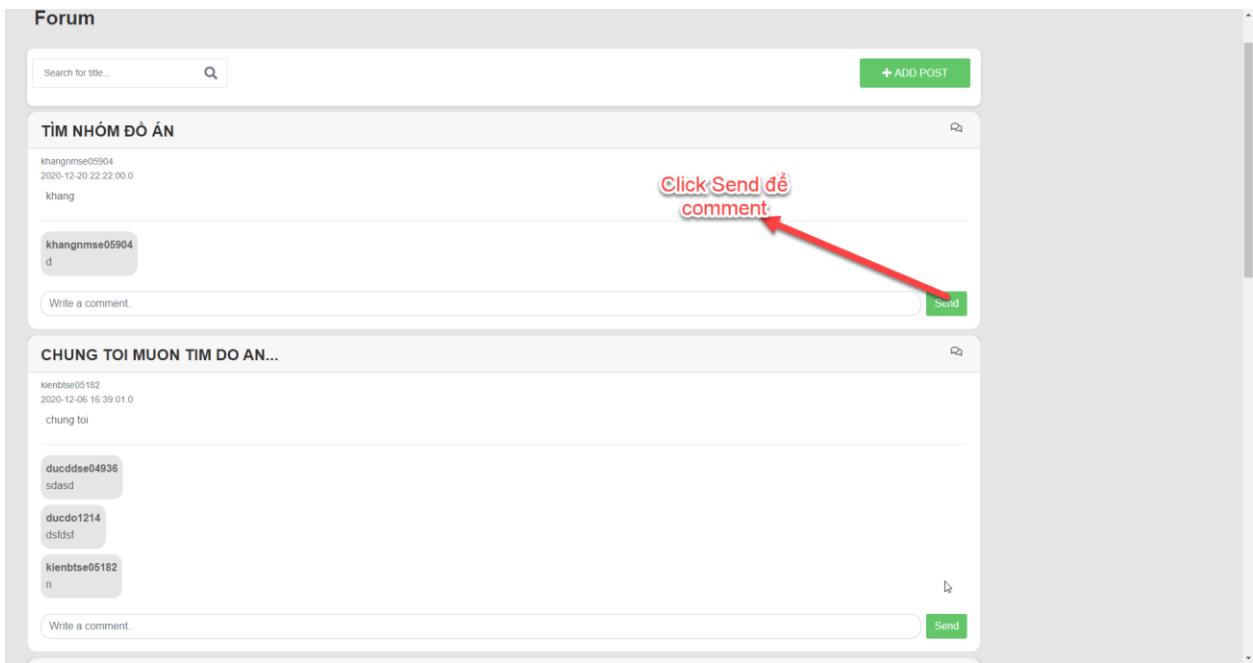
Button/ Hyperlinks

No	Function	Description	Validation	Outcome
1	Search for title	Click to Search	No	Search for title
2	Add post	Click to Add post	No	Display screen add post
3	Send comment	Click to send	No	Comment

#### 4.5.1.33 Get comment

- Screen Images

The screenshot shows a forum interface with two posts. The top post is titled "TÌM NHÓM ĐÔ ÁN" and was posted by "khangmse05904" on "2020-12-20 22:22:00". The bottom post is titled "CHUNG TÔI MUON TIM DO AN..." and was posted by "kienbtse05182" on "2020-12-06 16:39:01". Both posts have a comment input field labeled "Write a comment...". A red arrow points to the input field of the top post, with the text "Input vào bài viết muốn comment" overlaid.



### Button/ Hyperlinks

No	Function	Description	Validation	Outcome
1	Search for title	Click to Search	No	Search for title
2	Add post	Click to Add post	No	Display screen add post
3	Send comment	Click to send	No	Comment

#### 4.5.1.34 Add post

- Screen Images

The screenshot shows the 'Forum' section of a university website. At the top right, there is a user profile for 'Nguyen Van'. Below the header, there are several forum threads. The first thread is titled 'TÌM NHÓM ĐO ÁN' and was posted by 'khangmse05904' on '2020-12-20 22:22:00.0' with the message 'khang'. The second thread is titled 'CHUNG TOI MUON TIM DO AN...' and was posted by 'kienbtse05182' on '2020-12-06 16:39:01.0' with the message 'chung toi'. At the top right of the page, there is a green button labeled '+ ADD POST' with a red arrow pointing to it and the text 'Click here'.

The screenshot shows the 'Create post' modal window over the 'Forum' page. The modal has fields for 'Title' (with placeholder 'Enter Title') and 'Description' (with placeholder 'Enter Description' and the text 'Điền đầy đủ thông tin' overlaid). There is also a 'Files' section with a 'Chọn tệp' button and a note 'Không có tệp nào được chọn'. At the bottom of the modal are two buttons: 'Post' (highlighted with a red arrow and the text 'Click post để post bài') and 'Reset'.

### Button/ Hyperlinks

No	Function	Description	Validation	Outcome
1	Add post	Click to add post	No	Show file
2	Post	Click to reset	No	Navigate to forum
3	Reset post		No	Re-post

### Fields

No	Field Name	Description	Read Only	Mandatory	Control Type	Data Type	Length
7	Title	Title post	No	Yes	Text	String	120
8	Description	Description post	No	Yes	Text	String	120

### 4.5.1.35 Edit post

- Screen Images

Forum

TÌM NHÓM ĐO ÁN

khangnmse05904  
2020-12-20 22:22:00.0  
khang

khangnmse05904  
d

Write a comment...

CHUNG TOI MUON TIM DO AN...

kienbtse05182  
2020-12-06 16:39:01.0  
chung toi

ducdse04936  
sdasd

ducdo1214  
dsdfsf

kienbtse05182  
n

**Click here**

Forum

TÌM NHÓM ĐO ÁN

khangnmse05904  
2020-12-20 22:22:00.0  
khang

khangnmse05904  
d

Write a comment...

CHUNG TOI MUON TIM DO AN...

kienbtse05182  
2020-12-06 16:39:01.0  
chung toi

ducdse04936  
sdasd

ducdo1214  
dsdfsf

kienbtse05182  
n

**Click post để edit**

Create post

Title: TÌM NHÓM ĐO ÁN  
Chỉnh sửa thông tin bài post

Description: khang

Files: Chọn tệp | Không có tệp nào được chọn

### Button/ Hyperlinks

No	Function	Description	Validation	Outcome
1	Add post	Click to add post	No	Show file
2	Post	Click to reset	No	Navigate to forum
3	Reset post		No	Re-post

### Fields

No	Field Name	Description	Read Only	Mandatory	Control Type	Data Type	Length
7	Title	Title post	No	Yes	Text	String	120
8	Description	Description post	No	Yes	Text	String	120

### 4.5.1.36 Delete post

- Screen Images

This screenshot shows a forum interface. At the top, there are navigation links for STARS, FPT UNIVERSITY, Forum, Capstone Project, Lectures, Reports, and Model. A user profile for 'Nguyen Minh' is visible on the right. The main area is titled 'Forum'. It displays two posts:

- TÌM NHÓM ĐÔ ÁN**  
khangnmse05904  
2020-12-20 22:22:00.0  
khang  
khanganmse05904  
d  
Write a comment...  
Send
- CHUNG TÔI MUON TIM DO AN...**  
kienbtse05182  
2020-12-06 16:39:01.0  
chung toi  
ducdsse04936  
sdasd  
ducdt1214  
dsdfsf  
kienbtse05182  
n

A red arrow points to the delete icon (a trash can) next to the first post's title.

This screenshot shows the same forum interface as the previous one, but with a confirmation dialog box overlaid. The dialog box asks, "Do you want to delete this?" with "Cancel" and "Delete" buttons. A red arrow points to the "Delete" button. The background forum posts are partially visible.

## Button/ Hyperlinks

No	Function	Description	Validation	Outcome
1	Add post	Click to add post	No	Show file
2	Delete	Click to Delete	No	Display successful notification
3	Cancel	Click to Cancel	No	Back to the page

### 4.5.1.37 Search code

- Screen Images

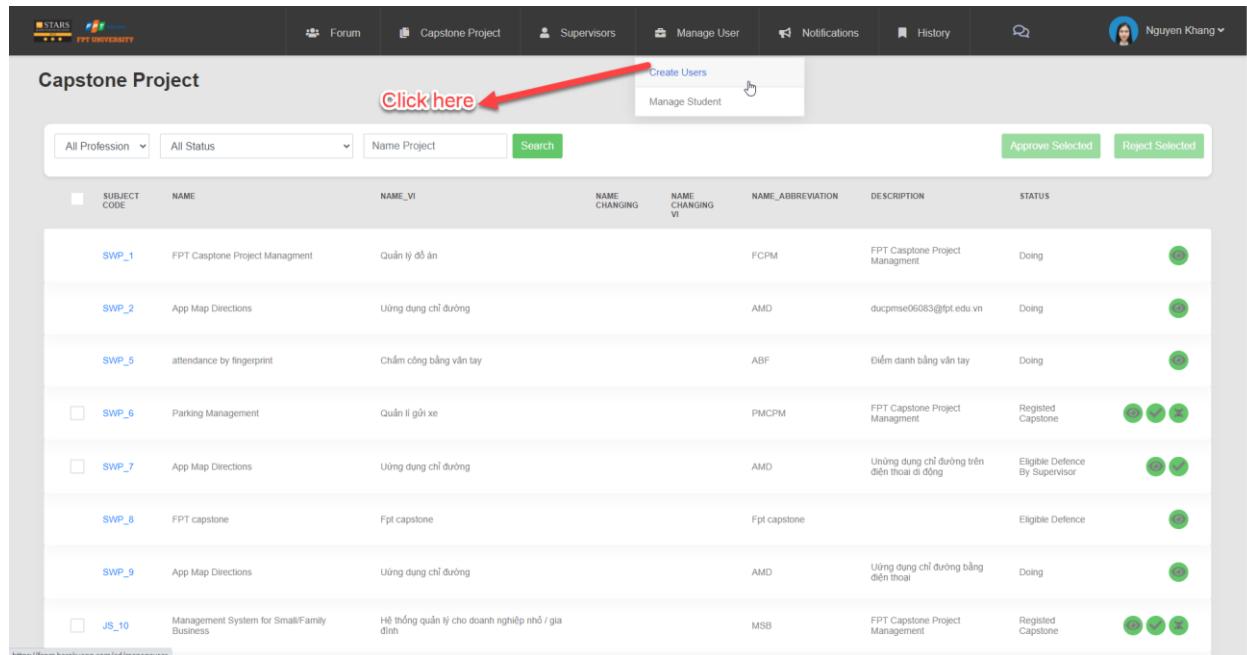
The screenshot shows a forum search interface. At the top, there is a search bar with the placeholder "Nhập title bài post muốn tìm" (Enter the title of the post you want to find) and a magnifying glass icon. Below the search bar is a green button labeled "+ ADD POST". The main area displays search results for posts containing the text "TÌM NHÓM ĐO ÁN". One result is shown, posted by "khangnmse05904" on "2020-12-20 22:22:00.0" with the message "khang". Below this, there is a comment input field with "Write a comment..." and a "Send" button. Further down, another search result is shown for "CHUNG TÔI MUON TIM DO AN...", posted by "kienbtse05182" on "2020-12-06 16:39:01.0" with the message "chung toi". The interface includes standard navigation buttons like back, forward, and refresh.

## Button/ Hyperlinks

No	Function	Description	Validation	Outcome
1	Search for title	Click to Search	No	Search for title
2	Add post	Click to Add post	No	Display screen add post
3	Send comment	Click to send	No	Comment

### 4.5.1.38 Add user

- Screen Images



The screenshot shows a web-based application for managing capstone projects. At the top, there's a navigation bar with links for Forum, Capstone Project, Supervisors, Manage User, Notifications, History, and a user profile for 'Nguyen Khang'. Below the navigation, a sub-menu for 'Manage User' is open, showing options 'Create Users' (highlighted with a red arrow) and 'Manage Student'. The main content area is titled 'Capstone Project' and displays a list of projects. Each project row includes columns for SUBJECT\_CODE, NAME, NAME\_VI, NAME\_CHANGING, NAME\_CHANGING\_VI, NAME\_ABBREVIATION, DESCRIPTION, and STATUS. To the right of each project row is a set of three circular icons: a green one with a checkmark, a blue one with a checkmark, and a red one with an X. At the bottom left of the page, there's a URL: <https://fcpm.herokuapp.com/ad/manageuser>.

SUBJECT_CODE	NAME	NAME_VI	NAME_CHANGING	NAME_CHANGING_VI	NAME_ABBREVIATION	DESCRIPTION	STATUS
SWP_1	FPT Capstone Project Management	Quản lý đồ án	FCPM	FPT Capstone Project Management	Doing		
SWP_2	App Map Directions	Ứng dụng chỉ đường	AMD	ducpmse06083@fpt.edu.vn	Doing		
SWP_5	attendance by fingerprint	Chấm công bằng vân tay	ABF	Điểm danh bằng vân tay	Doing		
SWP_6	Parking Management	Quản lý gửi xe	PMCPM	FPT Capstone Project Management	Registered Capstone		
SWP_7	App Map Directions	Ứng dụng chỉ đường	AMD	Ứng dụng chỉ đường trên điện thoại di động	Eligible Defence By Supervisor		
SWP_8	FPT capstone	Fpt capstone	Fpt capstone		Eligible Defence		
SWP_9	App Map Directions	Ứng dụng chỉ đường	AMD	Ứng dụng chỉ đường bằng điện thoại	Doing		
JS_10	Management System for Small/Family Business	Hệ thống quản lý cho doanh nghiệp nhỏ / gia đình	MSB	FPT Capstone Project Management	Registered Capstone		

**Add User**

Role: Student

Status: Eligible Capstone

Site: FU-Ho Chi Minh

Semester: Do you want to create semester?  
Yes  No

Name Semester: Name Semester

Period Of Semesters: Start Date: MM/DD/YYYY End Date: MM/DD/YYYY

Period of registration: Start Date: MM/DD/YYYY End Date: MM/DD/YYYY

Add a files: Chon tệp (Không có tệp nào được chọn) Download template to import

**Điền tất cả thông tin cần thiết**

**Global News**

- FU-HL: Thông báo điểm thi lần 1 môn VOV141 và điểm thi lần 2 HK Fall 2020 (No 1)  
2020-12-06 20:15:58.0
- FU-HL: Thông báo DSSV thi lần 2 môn VOV114 HK Fall 2020.  
2020-12-06 20:15:39.0
- FU-HL: Thông báo về việc giá hạn định kỳ mua BHYT đợt 4 năm 2020  
2020-12-06 20:15:14.0
- THÔNG BÁO NƠI HỌC PHÍ KỲ SPRING 2021  
2020-12-06 20:14:58.0
- FU-HL: Thông báo lịch thi cuối kỳ lần 1 và lần 2 môn JPH112 HK Fall 2020.  
2020-12-06 20:12:08.0

**Notification**

khanhnnse65045 invites you to participate in a capstone project  
2020-12-06 10:24:12.0

More...

## Button/ Hyperlinks

No	Function	Description	Validation	Outcome
1	Choose all profession	Click to all profession	No	Show professions
2	Choose all status	Click to all status	No	Show statuses
3	Search name project	Click to search	No	Show name project
4	Approve Project	Click to approve	No	Approve project
5	Reject project	Click to reject	No	Reject project
6	See next page	Click to next	No	Show next page
7	Submit	Click to submit	No	Display successful notification

## Fields

No	Field Name	Description	Read Only	Mandatory	Control Type	Data Type	Length
1	Name	Name project	No	Yes	Text	String	N/A
2	Description	Description project	No	Yes	Text	String	N/A
3	Name-vi	Name Vietnam project	No	Yes	Text	String	N/A
4	Name-Abbreviation	Name Abbreviation	No	Yes	Text	String	N/A
5	Status	Status	No	Yes	Text	String	N/A
6	Title	Title	No	Yes	Text	String	N/A
7	Content	Content	No	Yes	Text	String	N/A

### 4.5.1.39: Approve capstone project in the changing name stage

- Screen Images

The screenshot shows a forum interface with several posts listed. At the top right of the header, there is a button labeled "Manage Capstone". A red arrow points to this button with the text "Click here".

**Posts:**

- Post 1:** CCCCCCCCCCCCCCCCCC by ducdo1214 on 2020-12-22 00:24:31.0. CCC.
- Post 2:** AAA by ducdo1214 on 2020-12-21 21:48:50.0. aa
- Post 3:** GGG by ducdo1214 on 2020-12-21 21:48:50.0. ggg

**Bottom:** Windows taskbar and system tray.

The screenshot shows a list of capstone projects. On the left, there is a sidebar with filters for "All Profession" and "SUBJECT CODE". The main area displays a table of projects with columns: VI, NAME CHANGING, NAME CHANGING VI, NAME\_ABBREVIATION, DESCRIPTION, and STATUS. A red arrow points to the "NAME CHANGING VI" column header with the text "Click here".

**Projects:**

VI	NAME CHANGING	NAME CHANGING VI	NAME_ABBREVIATION	DESCRIPTION	STATUS	
VI	asd	asd	asd	Doing	<span style="color: green;">(green dot)</span>	
SWP_19	Not Eligible Defence	Eligible Defence	FCPM	FPT Capstone Project Management	Registered Capstone	<span style="color: green;">(green dot)</span>
SWP_18	Rejected	Accepted Renaming By Supervisor	FCPM	FPT Capstone Project Management 2	Registering Capstone	<span style="color: green;">(green dot)</span>
SWP_1	FPT Capstone Project Management	Quản lý đồ án	FCPM	FPT Capstone Project Management	Doing	<span style="color: green;">(green dot)</span>
SWP_2	FPT Capstone Project Management 2	Quản lý đồ án 2	FCPM	FPT Capstone Project Management 2	Doing	<span style="color: green;">(green dot)</span>
SWP_3	The web sells clothes online	trang bán quần áo trên mạng	SCC	bán hàng online	Doing	<span style="color: green;">(green dot)</span>
SWP_4	App Map Directions	Ứng dụng chỉ đường	AMD	bản đồ chỉ đường	Accepted Renaming By Supervisor	<span style="color: green;">(green dot)</span>
SWP_5	salary calculator software	phần mềm tính tiền lương	SCC	Phần mềm tính tiền lương cho công ty nhà nước	Doing	<span style="color: green;">(green dot)</span>
SWP_6	Take attendance with facial recognition	Điểm danh bằng nhận diện khuôn mặt	TAWFR	Điểm danh thông minh cho các công ty công nghệ	Doing	<span style="color: green;">(green dot)</span>

**Bottom:** Windows taskbar and system tray.

**Capstone Project**

Click here 

SUBJECT CODE	NAME	NAME_VI	NAME CHANGING	NAME CHANGING VI	NAME_ABBREVIATION	DESCRIPTION	STATUS
SWP_19	Registering Capstone	Đăng ký đề án			asd		Doing
SWP_18	Approved By Supervisor	Đã được giám sát chấp thuận			asd		Doing
SWP_19	Approved By Training Department	Đã được bộ phận huấn luyện chấp thuận			asd		Doing
SWP_19	Approved By Head	Đã được trưởng ban chấp thuận			asd		Doing
SWP_19	Doing	Đang làm			asd		Doing
SWP_19	Not Eligible Defence	Không đủ điều kiện phòng thủ			asd		Doing
SWP_19	Eligible Defence	Đủ điều kiện phòng thủ			asd		Doing
SWP_19	Rejected	Tuất			asd		Doing
SWP_18	Changing Name	Đổi tên			asd		Doing
SWP_18	Accepted Renaming By Supervisor	Đã được giám sát chấp thuận đổi tên			asd		Doing
SWP_1	FPT Capstone Project Management	Quản lý đề án			FCPM	FPT Capstone Project Management	Registered Capstone
SWP_2	FPT Capstone Project Management 2	Quản lý đề án 2			FCPM	FPT Capstone Project Management 2	Registering Capstone
SWP_3	The web sells clothes online	trang bán quần áo trên mạng			SCO	bán hàng online	Doing
SWP_4	App Map Directions	Ứng dụng chỉ đường			AMD	bản đồ chỉ đường	Accepted Renaming By Supervisor
SWP_5	salary calculator software	phần mềm tính tiền lương			SCC	Phần mềm tính tiền lương cho công ty nhà nước	Doing
SWP_6	Take attendance with facial recognition	Điểm danh bằng nhận diện khuôn mặt			TAWFR	Điểm danh thông minh cho các công ty công nghệ	Doing

**Capstone Project**

Click here 

SUBJECT CODE	NAME	NAME_VI	NAME CHANGING	NAME CHANGING VI	NAME_ABBREVIATION	DESCRIPTION	STATUS
SWP_4	App Map Directions	Ứng dụng chỉ đường			AMD	bản đồ chỉ đường	Accepted Renaming By Supervisor

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Click here 

### Button/ Hyperlinks

No	Function	Description	Validation	Outcome
1	Choose all profession	Click to all profession	No	Show professions
2	Choose all profession	Click to all status	No	Show statuses
3	Search name project	Click to search	No	Show name project
4	Approve Project	Click to approve	No	Approve project
5	Reject project	Click to reject	No	Reject project
6	See next page	Click to next	No	Show next page

### Fields

No	Field Name	Description	Read Only	Mandatory	Control Type	Data Type	Length
1	Name	Name project	No	Yes	Text	String	N/A
2	Description	Description project	No	Yes	Text	String	N/A
3	Name-vi	Name Vietnam project	No	Yes	Text	String	N/A
4	Name-Abbreviation	Name Abbreviation	No	Yes	Text	String	N/A
5	Status	Status	No	Yes	Text	String	N/A

# 5. Software Test Documentation

## 5.1. Introduction

### 5.1.1 Purpose

- The primary purpose of this chapter is to detect and prevent defects which may be created by developers while developing the software and this may lead to software failures. Through testing, system defects can be discovered and fixed, then help to build better software quality. Using the contents of this chapter, developers and testers can work together to ensure that the system is thoroughly tested and performs functions as intended.
  - ✓ Scope of Testing.
  - ✓ Test Plan
  - ✓ Test Case
  - ✓ Test Report

### 5.1.2 Scope of testing

#### 5.1.2.1 States of testing

The testing process is divided into 3 phases: Unit testing, Integration testing and System testing.

States of testing	Description
Unit test	Unit Tests are performed to guarantee that individual units of source code work well. In this phase, a unit can refer to a function, individual program or even a procedure, and a White-box Testing method is usually used to get the job done
Integration test	Integration testing allows individuals the opportunity to combine all of the units within a program and test them as a group. This testing level is designed to find interface defects between the modules/functions. Putting integration tests of all modules into the application is performed by CPM tester to check if the combined units were working as expected.
System test	System testing is performed to monitor and evaluate the behaviour of a completely integrated software product or software system, based on predefined specification and functional requirements. The goal at this level is to evaluate whether the system has

complied with all of the outlined requirements and to see that it meets Quality Standards.

*Table 5.1 Scope of testing*

### **5.1.2.2 Types of testing**

The following types of testing are performed:

- Function testing:
  - ✓ Unit test
  - ✓ Integration test
  - ✓ System test

### **5.1.2.3 Range of testing**

All features described in the System Requirement Specification are tested.

## **5.2. Test Plan**

### **5.2.1 Testing tools and Environment**

#### **5.2.1.1 Testing tools**

Tool	Purpose
Junit	Used to view app, bug login, etc..
Excel	Used to manage test cases
Google Chrome	Used to view the web page, bug logging page
IntelliJ	Used to view app, bug login, etc..
Jira	Used to manage bugs

*Table 5.2 Testing tools*

### 5.2.1.1 Testing environment

Type of testing	Software	Hardware
Unit test	Junit IntelliJ IDEA 2020.2.3	Dell Window 10 Intel core i7 RAM 8G 1T Disk Space
Integration test	Junit Google Chrome Microsoft Office 2016	Dell Window 10 Intel core i7 RAM 8G 1T Disk Space
System test	Google Chrome	Dell Window 10 Intel core i7 RAM 8G 1T Disk Space

Table 5.3 Testing environment

### 5.2.2 Resources and Responsibilities

ID	Resource	Responsibilities
1	Test Leader	<ul style="list-style-type: none"> <li>• Review test cases and test reports.</li> <li>• Review overall quality of the project.</li> <li>• Define test strategy.</li> <li>• Define test plan, test approach.</li> </ul>
2	Tester	<p>Performing the actual system testing</p> <ul style="list-style-type: none"> <li>• Understand the requirements of the project.</li> <li>• Implement integration test following requirement.</li> <li>• Create test plan</li> <li>• Create test cases</li> <li>• Perform tests</li> <li>• Write test reports</li> </ul>

3

Developer

- Log bugs

Create and perform Unit Tests.

- Fix bugs.

Table 5.4 Resources and Responsibilities

### 5.2.3 Test Strategy

#### 5.2.3.1 Test model

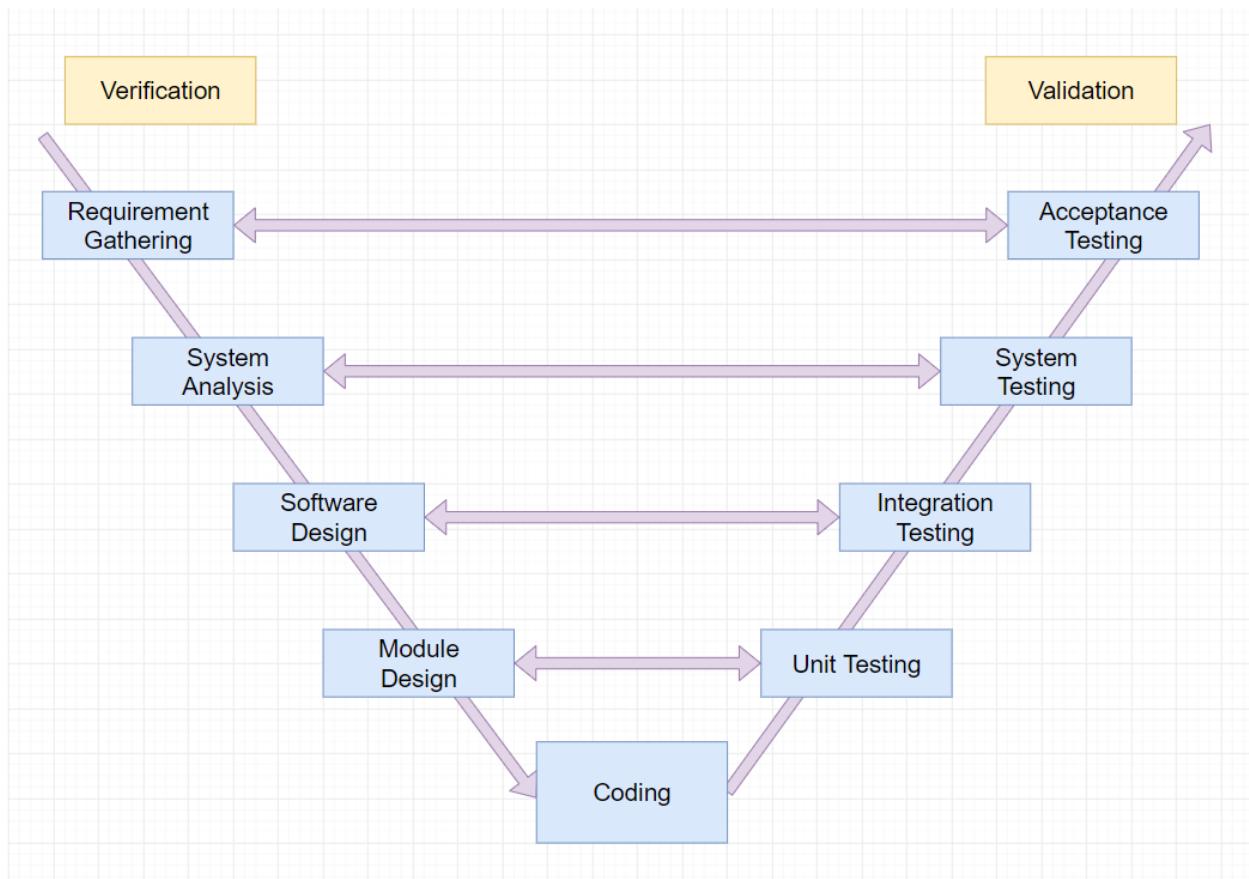


Figure 5.1 Test model

More information: [https://en.wikipedia.org/wiki/V-Model\\_\(software\\_development\)](https://en.wikipedia.org/wiki/V-Model_(software_development))

### 5.2.3.2 Test types

ID	Type of test	Description
1	GUI (Graphical user interface) testing	<ul style="list-style-type: none"> <li>• GUI test is used to test the user interface of the software. It will be performed fully on all screens. The target is to cover the verification of mocks defined before. It also includes fields:</li> <li>✓ Test whether the interface is displayed correctly or not.</li> <li>✓ Test if you can perform the intended functionality of the application using the GUI.</li> <li>✓ Test if the error messages are displayed correctly.</li> <li>✓ Test if the font used in the system is readable.</li> <li>✓ Test the fonts and warning messages.</li> <li>✓ Test if the images are clear or not.</li> <li>✓ Test if that the images are properly aligned</li> </ul>
2	Regression testing	<ul style="list-style-type: none"> <li>• Regression testing is necessary, even when making very small changes to the code.</li> <li>• Regression test ensures that the bugs are fixed.</li> <li>• Regression testing ensures bugs fixing does not affect other parts of the system.</li> </ul>
3	Functional testing	<ul style="list-style-type: none"> <li>• Functional test is used to test for each logical path of use case.</li> <li>• Tests if functions of the system work as intended on the CPM system.</li> <li>• Functional testing is a type of black-box testing and as such, internal structure is rarely considered.</li> </ul>

Table 5.4 Resources and Responsibilities

### 5.2.3.3 State of testing

Test Type	States of testing		
	Unit Test	Integration Test	System Test
Unit test	✓		
GUI testing		✓	✓
Functional testing		✓	✓

Table 5.5 States of testing

### 5.2.3.4 Test schedule

Table below are the Test Schedule for CPM Project. That consist of two round:

Test Schedule	Round 1		Round 2	
	Start Date	End Date	Start Date	End Date
Unit Test	10/10	10/11		
Integration test	27/10	15/11	16/11	22/11
System test				

### 5.2.3.5 Deliverable

Table below is the Deliverables for FCPM Project:

Deliverables	Responsibilities	Completion date
Test plan	Test Leader	09-10-2020
Test cases	Testers	20-10-2020
Test case review	Testers + Test Leader	02-11-2020
Test data( Data Set)	Testers	19-11-2020
Defect report	All members	02-12-2020
Final test report	Test Leader	10-12-2020

## **5.3. Test Approach**

### **5.3.1 Unit test**

- Unit Test is a method of testing software by breaking the source code into separate parts and testing each part. Unit testing is done by developers. FCPM developer team embraces this feature to gain the following advantages:
  - ✓ Ensuring code quality
  - ✓ Early error detection
  - ✓ Reducing the Number of Bugs
  - ✓ Automation tests can be run as frequently as required.
  - ✓ Saving development time.
  - ✓ Reducing product costs
  - ✓ Improving code design, especially in test-driven developments
  - ✓ Being able to review each other's code, the teamwork is more cohesive and Agile.
  - ✓ Providing clear documentation
  - ✓ It is easier to maintain than Front-end tests which are difficult to maintain with the short release cycles and frequent changes and with a complex system.
  - ✓ Reducing the cost of a resource to corresponding Front-end testing.

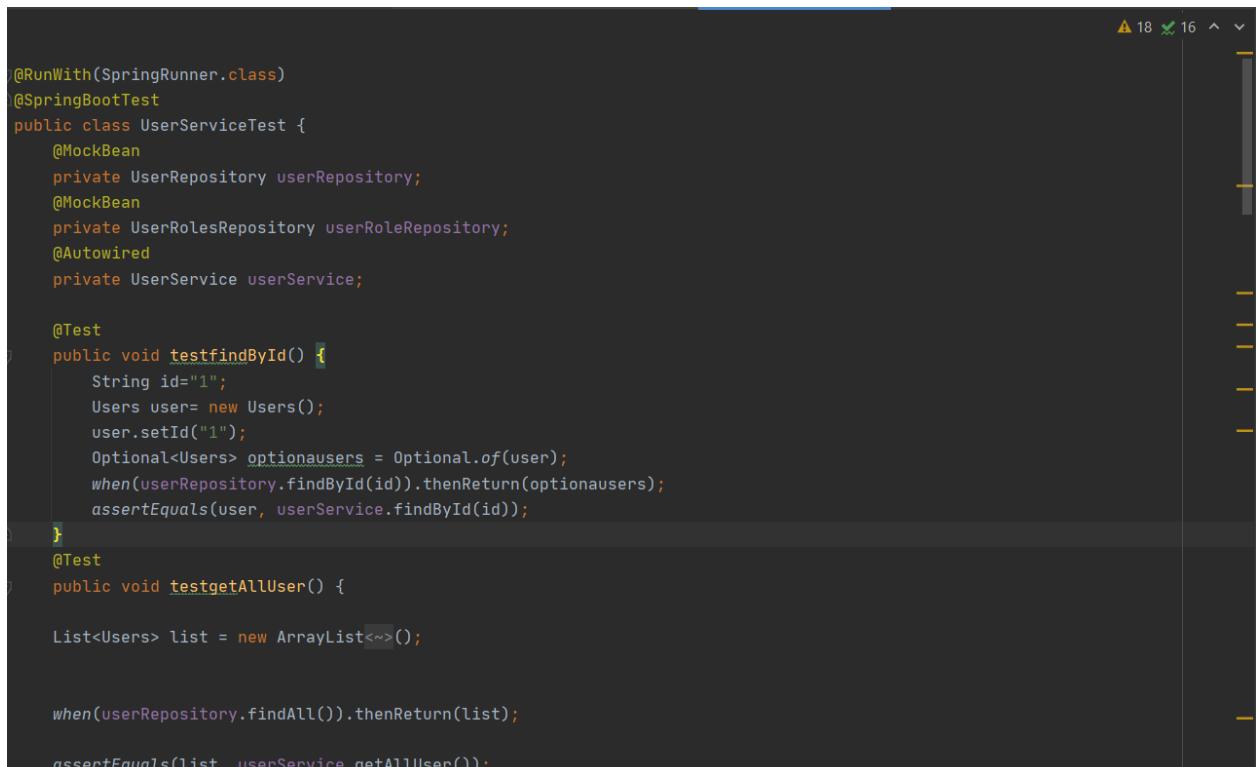
### **5.3.2 Integration and System test**

- Integration and system tests are done by testers to ensure that combined units work correctly and that the system as a whole function as intended. Each test case is tested using Google Chrome, Android Devices. FCPM define that a test case is:
  - ✓ Verifying the Layouts
  - ✓ Testing user access privileges.
  - ✓ Testing all the network features, like a request is passed over a HTTPS protocol or not.
  - ✓ Verifying menu items and their functionality.
  - ✓ Adherence to coding standards and practices.
  - ✓ Testing whether after an action is performed, cleanup of data is performed. Database operations like insertion, deletion and updates should be done with an intimidation to the user.

- GUI testing is also done during this process to ensure that elements load and function correctly, text is readable, and the app interface looks good in various devices sizes.
- Test case details are described in the file: Report5\_System Test Case.xlsx

## 5.4. Test Report

### 5.4.1 Unit test



```

@RunWith(SpringRunner.class)
@SpringBootTest
public class UserServiceTest {
    @MockBean
    private UserRepository userRepository;
    @MockBean
    private UserRolesRepository userRoleRepository;
    @Autowired
    private UserService userService;

    @Test
    public void testfindById() {
        String id="1";
        Users user= new Users();
        user.setId("1");
        Optional<Users> optionusers = Optional.of(user);
        when(userRepository.findById(id)).thenReturn(optionusers);
        assertEquals(user, userService.findById(id));
    }

    @Test
    public void testgetAllUser() {
        List<Users> list = new ArrayList<>();

        when(userRepository.findAll()).thenReturn(list);

        assertEquals(list, userService.getAllUser());
    }
}

```

Figure: Unit test case sample UserServiceTest

The contents of the Unit Test Report are shown in the table below:

Test Case	Pass	Fail
Unit Test- TestfindByID	16	0
Unit Test- TestgetAllUser	26	0
Unit Test- TestdeleteeUserSuccess	18	0
Unit Test- TestGetAllDepartmentByID	19	0
Unit Test- TestSaveUserSuccess	74	0
Unit Test- TestFindAll	12	0
Unit Test- Test GetUserByRoleID	15	0

Unit Test- TestFindbyUsername	27	0
Unit Test- TestFindbyEmail	66	0
<b>Total all test case</b>	<b>273</b>	<b>0</b>

For each of the tested unit, controller are tested.

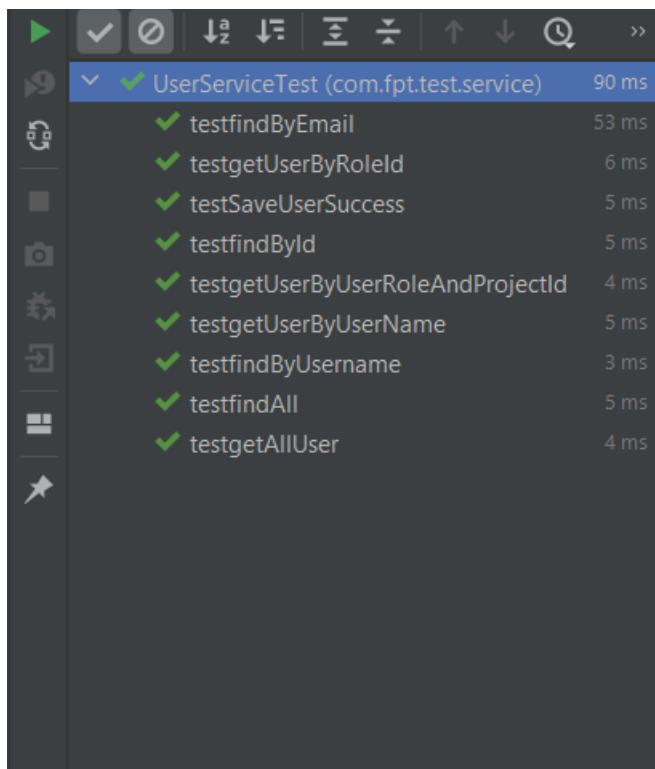


Figure: Unit test case completed

## 5.4.2 System test

No	Module code	Pas s	Fail	Unteste d	N/ A	Number of test cases
1	Login	7	0	0	0	7
2	Forum	38	0	0	0	38
3	Register	32	0	0	0	32
4	Supervisor					
5	List Report	14	0	0	0	14
6	Notification					
7	Model	47	0	0	0	47
8	My Report	14	0	0	0	14
9	Create Report					
10	Dashboard	103	0	0	0	103
11	User Information	11	0	0	0	11
12	Manage Capstone Project					
13	My Capstone	17	0	0	0	17
14	Manage User	57	0	0	0	57
15	Header	19	0	0	0	19
<b>Sub total</b>		<b>557</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>557</b>

**Test coverage** **100.00** %  
**Test successful coverage** **100.00** %

## Test case list:

ID	Test Case Description	Test Case Procedure	Expected Output	Inter-test case Dependence	Result	Test date	Note
<b>Create report Member</b>							
001	Cấu trúc màn hình, bố trí object màn hình, định nghĩa style	Access vào màn hình "Create Report "	Confirm :Layout màn hình đúng với mô tả ở mockup	Đang ở màn hình Create Report	Pass	11/19/2020	
002	Header-Footer	Access vào màn hình "Create Report "	Confirm :Phần header- footer hiển thị đầy đủ	Đang ở màn hình Create Report	Pass	11/19/2020	
003	Độ phân giải tiêu chuẩn trên window và tắt cá các thiết bị di động	Access vào màn hình "Create Report "	Confirm :Màn hình hiển thị không bị vỡ layout, không bị mất chữ	Đang ở màn hình Create Report	Pass	11/19/2020	
004	Resize màn hình	Access vào màn hình "Create Report "	Confirm :Màn hình hiển thị không bị vỡ layout, không bị mất chữ	Đang ở màn hình Create Report	Pass	11/19/2020	
005	Create report	Access vào màn hình Create report Input title Input content Click "Submit"	Confirm :Tạo report thành công	Đang ở màn hình Create Report	Pass	11/25/2020	
006	Save report	Access vào màn hình Create report Click vào biểu tượng save	Confirm : Report được lưu lại	Đang ở màn hình Create Report	Pass	11/25/2020	
007	Format report	Access vào màn hình Create report Click vào biểu tượng Form Nhập các trường cần thiết để tạo form Click vào Ok để tạo form	Confirm : Report được format	Đang ở màn hình Create Report	Pass	11/25/2020	
008	Preview report	Access vào màn hình Create report Click vào biểu tượng Preview	Confirm : Report được mở ra tab preview report	Đang ở màn hình Create Report	Pass	11/25/2020	
009	Print report	Access vào màn hình Create report Click vào biểu tượng Print	Confirm :Mở ra màn print để Print Report	Đang ở màn hình Create Report	Pass	11/25/2020	
010	Template report	Access vào màn hình Create report Click vào biểu tượng Template	Confirm :Mở ra màn template để chọn tem plate	Đang ở màn hình Create Report	Pass	11/25/2020	
011	Search report	Access vào màn hình Create report Click vào biểu tượng Search Nhập ký tự cần tìm vào textbox Click vào find để tìm kiếm	Confirm :Các ký tự tìm kiếm được tô đậm màu trên màn report	Đang ở màn hình Create Report	Pass	11/26/2020	

012	Replace report	Access vào màn hình Create report Click vào biểu tượng Search- Nhập ký tự cần thay thế vào textbox "Find what" Nhập ký tự để thay thế vào textbox "Replace with" Click vào replace để thay thế từng ký tự	Confirm :Ký tự được thay thế trong report	Đang ở màn hình Create Report	Pass	11/26/2020	
013	Replace report	Access vào màn hình Create report Click vào biểu tượng Search- Nhập ký tự cần thay thế vào textbox "Find what" Nhập ký tự để thay thế vào textbox "Replace with" Click vào replace All để thay thế tất cả ký tự	Confirm :Ký tự được thay thế trong report	Đang ở màn hình Create Report	Pass	11/26/2020	
014	Form report	Access vào màn hình Create report Click vào biểu tượng Form Nhập các trường cần thiết để tạo form Click vào Ok để tạo form	Confirm :Form được tạo trên màn report	Đang ở màn hình Create Report	Pass	11/26/2020	
015	Textbox report	Access vào màn hình Create report Click vào biểu tượng Textbox Nhập các trường cần thiết để tạo textbox Chọn kiểu textbox là Select or Required Click vào Ok để tạo textbox	Confirm :Textbox được tạo trên màn report	Đang ở màn hình Create Report	Pass	11/26/2020	
016	Radio button report	Access vào màn hình Create report Click vào biểu tượng Radio Button Nhập các trường cần thiết để tạo textbox Chọn kiểu textbox là Select or Required Click vào Ok để tạo radio button	Confirm :Radio button được tạo trên màn report	Đang ở màn hình Create Report	Pass	11/26/2020	

Figure Test Case: Create report

ID	Test Case Description	Test Case Procedure	Expected Output	Inter-test case Dependence	Result	Test date	Note
<b>Manage_Capstone Head</b>							
001	Cấu trúc màn hình, bố trí object màn hình, định nghĩa style	Access vào màn hình "Manage_Capstone Head"	Confirm :Layout màn hình đúng với mô tả ở mockup	Đang ở màn hình Manage_Capstone Head	Pass	11/19/2020	
002	Header-Footer	Access vào màn hình "Manage_Capstone Head"	Confirm :Phần header- footer hiển thị đầy đủ	Đang ở màn hình Manage_Capstone Head	Pass	11/19/2020	
003	Độ phân giải tiêu chuẩn trên window và tắt cả cá thiết bị di động	Access vào màn hình "Manage_Capstone Head"	Confirm :Màn hình hiển thị không bị vỡ layout, không bị mất chữ	Đang ở màn hình Manage_Capstone Head	Pass	11/19/2020	
004	Resize màn hình	Access vào màn hình "Manage_Capstone Head"	Confirm :Màn hình hiển thị không bị vỡ layout, không bị mất chữ	Đang ở màn hình Manage_Capstone Head	Pass	11/19/2020	
005	Phân trang	Access vào màn hình "Manage Capstone"	Confirm :Hiển thị các capstone của trang thứ nhất	Đang ở màn hình Manage_Capstone Head	Pass	11/19/2020	
006	Phân trang	Access vào màn hình "Manage Capstone"	Click vào trang thứ hai	Đang ở màn hình Manage_Capstone Head	Pass	11/19/2020	
007	Phân trang	Access vào màn hình "Manage Capstone"	Click vào trang thứ ba	Đang ở màn hình Manage_Capstone Head	Pass	11/19/2020	
008	Phân trang	Access vào màn hình "Manage Capstone"	Click vào Previous của phân trang	Đang ở màn hình Manage_Capstone Head	Pass	11/19/2020	
009	Phân trang	Access vào màn hình "Manage Capstone"	Click vào Next của phân trang	Đang ở màn hình Manage_Capstone Head	Pass	11/19/2020	
010	Search	Access vào màn hình "Manage Capstone"	Chọn All Profession	Confirm :Tất cả các project hiện ra	Đang ở màn hình Manage_Capstone Head	Pass	11/19/2020
		Chọn All Status					
		Không input name					
011	Search	Access vào màn hình "Manage Capstone"	Chọn mã ngành SE	Confirm :Tất cả các project ngành SE hiện ra	Đang ở màn hình Manage_Capstone Head	Pass	11/19/2020
		Chọn All Status					
		Không input name					
012	Search	Access vào màn hình "Manage Capstone"	Chọn mã ngành SE	Confirm :Các project có status not_eligible_capstone hiện ra	Đang ở màn hình Manage_Capstone Head	Pass	11/19/2020
		Chọn status not_eligible_capstone					
		Không input name					

013	Search	Access vào màn hình "Manage Capstone"	Chọn mã ngành SE	Confirm :Các project có status eligible_capstone hiện ra	Đang ở màn hình Manage_Capstone Head	Pass	11/19/2020
		Chọn status not_eligible_capstone					
		Không input name					
014	Search	Access vào màn hình "Manage Capstone"	Chọn mã ngành SE	Confirm :Các project có status inActive_user hiện ra	Đang ở màn hình Manage_Capstone Head	Pass	11/19/2020
		Chọn status inActive_user					
		Không input name					
015	Search	Access vào màn hình "Manage Capstone"	Chọn mã ngành SE	Confirm :Các project có status registering_capstone hiện ra	Đang ở màn hình Manage_Capstone Head	Pass	11/19/2020
		Chọn status registering_capstone					
		Không input name					
016	Search	Access vào màn hình "Manage Capstone"	Chọn mã ngành SE	Confirm :Các project có status registered_capstone hiện ra	Đang ở màn hình Manage_Capstone Head	Pass	11/19/2020
		Chọn status registered_capstone					
		Không input name					
017	Search	Access vào màn hình "Manage Capstone"	Chọn mã ngành SE	Confirm :các project có status not_eligible_capstone hiện ra	Đang ở màn hình Manage_Capstone Head	Pass	11/19/2020
		Chọn status not_eligible_capstone					
		Không input name					
018	Search	Access vào màn hình "Manage Capstone"	Chọn mã ngành SE	Confirm :các project có status approve_capstone_lecturer hiện ra	Đang ở màn hình Manage_Capstone Head	Pass	11/19/2020
		Chọn status approve_capstone_lecturer					
		Không input name					
019	Search	Access vào màn hình "Manage Capstone"	Chọn mã ngành SE	Confirm :các project có status approve_capstone_training hiện ra	Đang ở màn hình Manage_Capstone Head	Pass	11/19/2020
		Chọn status approve_capstone_training					
		Không input name					
020	Search	Access vào màn hình "Manage Capstone"	Chọn mã ngành SE	Confirm :các project có status approve_capstone_head hiện ra	Đang ở màn hình Manage_Capstone Head	Pass	11/19/2020
		Chọn status approve_capstone_head					
		Không input name					
021	Search	Access vào màn hình "Manage Capstone"	Chọn mã ngành SE	Confirm :các project có status doing_capstone hiện ra	Đang ở màn hình Manage_Capstone Head	Pass	11/19/2020
		Chọn status doing_capstone					
		Không input name					

*Figure Test Case: Manage Capstone Project*

For more details about all test suites, please look at folder “FCPM\_TestCase”

## 6. Software User's Manual

### 6.1. Installation Guide

### 6.2. User's Guide

#### 6.2.1 General function

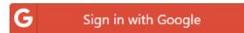
##### 6.2.1.1 Login

Step 1: At the home page, click on “Sign in with Google” to navigate to Authenticate email FPT page

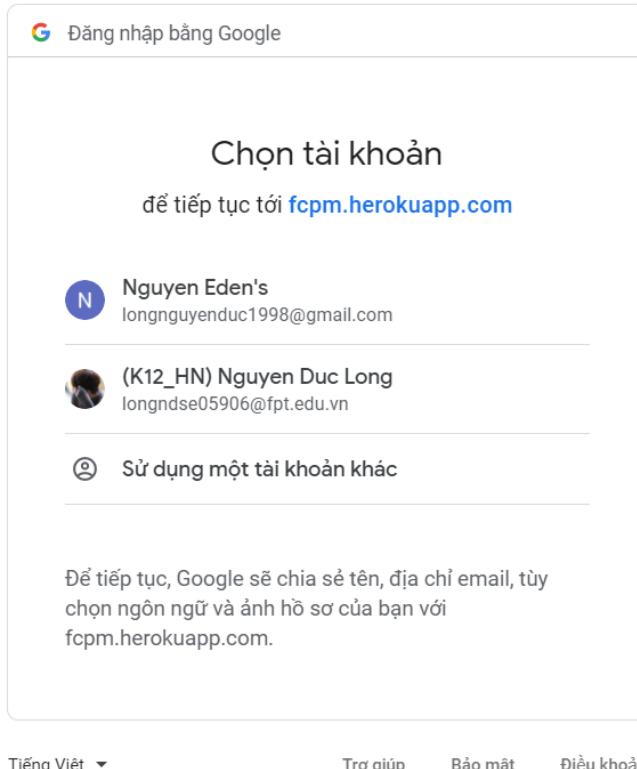


#### Capstone Project Management Login

Helping the school to have the tools to register and manage project making and grading while making it as easy, convenient and fast as possible for students, teachers, and training rooms.



Step 2: After entering the Authenticate email FPT page, Select email FPT to login



Tiếng Việt ▾

Trợ giúp

Bảo mật

Điều khoản

Step 3: After login email FPT, to navigate to the forum

Forum

All Properties Today + ADD POST

HIHI

ducdse04936  
2020-11-27 00:07:11.0  
hihi

Write a comment.. Send

AA

ducdse04936  
2020-11-27 00:06:36.0

Global News

FU-HL: THÔNG BÁO VIV ĐÃNG KÝ TẠM TRÚ ĐÓI VỚI SINH VIÊN K16 Ở KTX  
2020-11-22 03:23:16.0

FU-HL: V/v: Tham dự buổi định hướng làm khóa luận tốt nghiệp cho sinh viên ngành SE  
2020-11-22 03:16:49.0

FU-HL: V/v: Tham dự buổi định hướng làm khóa luận tốt nghiệp cho sinh viên ngành GD  
2020-11-22 03:16:46.0

FU-HL: V/v: Tham dự buổi định hướng làm khóa luận tốt nghiệp cho sinh viên ngành Ngôn ngữ Nhật  
2020-11-22 03:14:54.0

More...

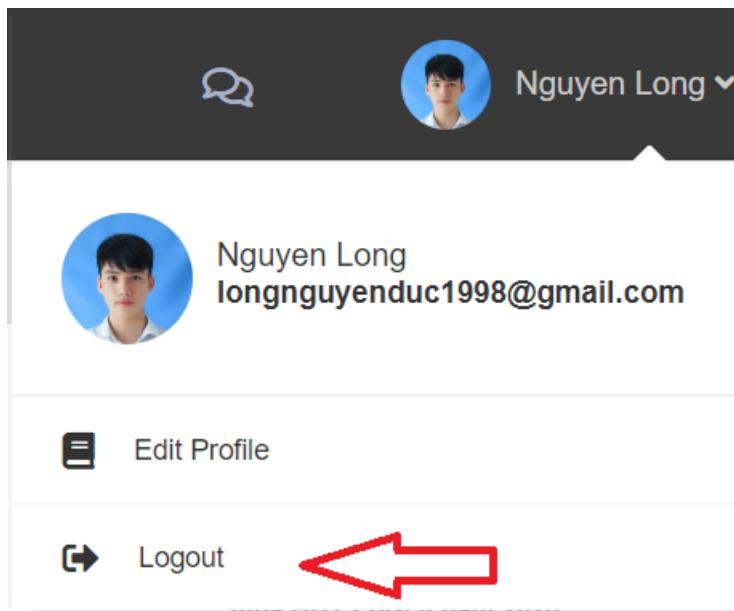
Notification

khanhnse05045 report at Sat Nov 21 23:29:22 ICT 2020  
2020-11-21 23:29:22.0

More...

### 6.2.1.2 Logout

Step 1: Click on the username in the upper right corner of the screen, Choose logout



### 6.2.1.3 Register Capstone Project

Step 1: Click the Capstone Project in the top of the page, choose Create Capstone Project

The screenshot shows the FPT University STARS system interface. At the top, there is a navigation bar with links for Forum, Capstone Project, Lectures, Reports, and Model. On the far right, there is a user profile for 'Do Thao'. Below the navigation bar, the main content area has a title 'Register Project' and two tabs: 'Create Capstone' and 'My Capstone'. A yellow warning box contains the text: 'Warning: You can only register once. Be careful with the information you enter. You will not be able to edit it after sending it. If you need any information please contact the admin.' Below this, there are input fields for 'Name Project' and 'Name Project Other language'. To the right, there is a 'Global News' sidebar with several news items in Vietnamese, each with a timestamp.

News Title	Date
FU-HL: THÔNG BÁO V/V ĐĂNG KÝ TẠM TRÚ ĐÓI VỚI SINH VIÊN K1 6 Ở KTX	2020-11-22 03:23:16.0
FU-HL: V/v: Tham dự buổi định hướng làm khóa luận tốt nghiệp cho sinh viên ngành SE	2020-11-22 03:16:49.0
FU-HL: V/v: Tham dự buổi định hướng làm khóa luận tốt nghiệp cho sinh viên ngành GD	2020-11-22 03:16:46.0
FU-HL: V/v: Tham dự buổi định hướng làm khóa luận tốt nghiệp cho sinh viên ngành Ngôn ngữ Nhật	2020-11-22 03:14:54.0

Step 2: Enter information to register project

This screenshot shows the same 'Create Capstone' page as the previous one, but with the 'Name Project' field populated with 'qweq'. The other fields ('Name Project Other language', 'Name Project Vietnamese', and 'Name Project Abbreviation') are empty. The 'Global News' sidebar is visible on the right side of the screen.

News Title	Date
qweq	2020-10-31 15:32:47.0
e	2020-10-31 15:31:50.0
eeeeeeeeeeeeeee	2020-10-31 15:29:16.0
sadasdad	2020-10-31 13:49:47.0
FU-HL: THÔNG BÁO: KẾ HOẠCH LỊCH ĐÀO TẠO HÈ ĐẠI HỌC CHÍNH QUY NĂM 2021.	2020-10-31 12:02:20.0
sd	2020-10-31 05:25:13.0

Program Project

Specialty Project

Document Project

Member

 Add

thoadtse0007 Leader ▾

Description Project

Add a files

Chọn tệp Không có tệp nào được chọn

Submit Reset

This image shows a user interface for project registration. It features several input fields: 'Program Project', 'Specialty Project', and 'Document Project', each with its own text input box. Below these is a 'Member' field, which includes a text input box and a green 'Add' button. To the left of the member field is a dropdown menu showing 'thoadtse0007' and 'Leader'. Underneath the member field is a large text area labeled 'Description Project'. At the bottom of the form is a file upload section with a placeholder 'Add a files' and a button labeled 'Chọn tệp'. A message below the button states 'Không có tệp nào được chọn'. On the far right are two buttons: a green 'Submit' button and a yellow 'Reset' button.

Step 3: Click button submit to register project

Add a files

Chọn tệp Không có tệp nào được chọn

Submit Reset

This image is a simplified version of the previous one, focusing on the lower portion of the form. It shows the 'Add a files' button, the 'Chọn tệp' button with the message 'Không có tệp nào được chọn', and the 'Submit' and 'Reset' buttons at the bottom.

#### 6.2.1.4 Add member

Step 1: Click the Capstone Project in the top of the page, choose Create Capstone Project

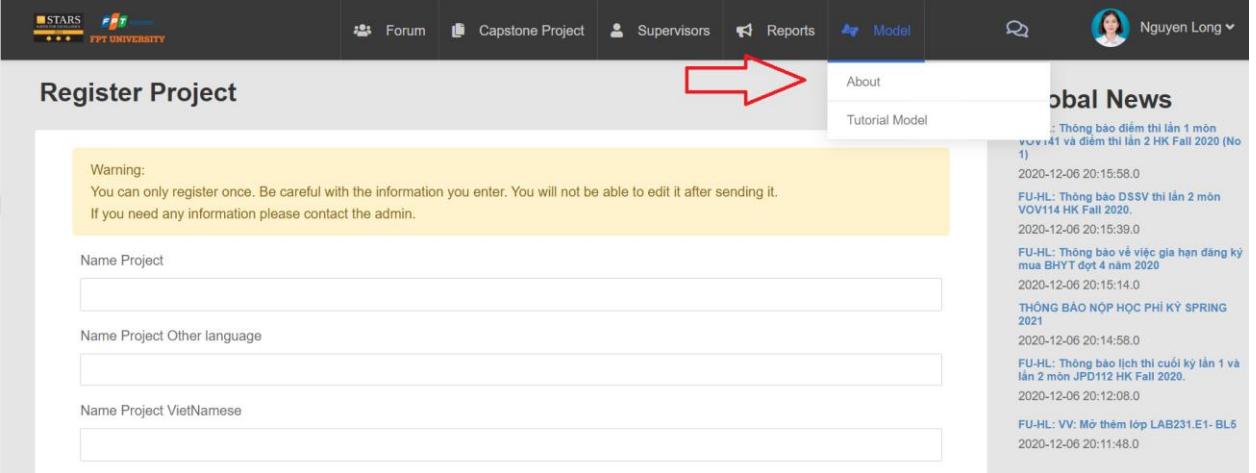
The screenshot shows a navigation bar with links for STARS, Forum, Capstone Project (which is highlighted in blue), Lectures, Reports, and Model. On the right, there's a user profile for 'Do Thao'. Below the navigation bar, a 'Register Project' section has two tabs: 'Create Capstone' (selected) and 'My Capstone'. A yellow warning box states: 'Warning: You can only register once. Be careful with the information you enter. You will not be able to edit it after sending it. If you need any information please contact the admin.' To the right, a 'Global News' sidebar lists several news items from FPT University.

Step 2: Enter account of member, click button “Add”

The screenshot shows the 'Create Capstone' form. It includes fields for 'Document Project' (with a large text area), 'Member' (with a text area and a red arrow pointing to a green 'Add' button), and 'Description Project' (with a large text area). Below the member field, a note says: 'You can only add minimum 1 member and maximum 10 members (SE)'. A dropdown menu next to the member input shows 'longndse05906' and 'Leader'.

### 6.2.1.5 View model

Step 1: Access to forum, click button Model, choose About



The screenshot shows the FPT University STARS system interface. At the top, there is a navigation bar with links for Forum, Capstone Project, Supervisors, Reports, Model, and a user profile for Nguyen Long. A red arrow points to the 'About' link under the 'Model' dropdown. The main content area is titled 'Register Project' and contains fields for 'Name Project' (with a placeholder), 'Name Project Other language', and 'Name Project Vietnamese'. To the right, there is a sidebar titled 'Global News' displaying various news items with dates and titles.

Step 2: System display About Model



The screenshot shows the FPT University website homepage. It features a large image of a modern building at sunset. Below the image, there is a diagram of the 'Classical Waterfall Model' and a brief description of it. To the right, there is a section titled 'Spiral Model' with its own diagram and description.

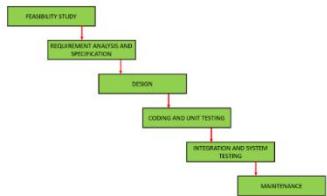
**Classical Waterfall Model**

Classical waterfall model is the basic software development life cycle model. It is very simple but idealistic. Earlier this model was very popular but nowadays it is not used. But it is very important because all the other software development life cycle models are based on the classical waterfall model. Classical waterfall model divides the life cycle into a set of phases. This model considers that one phase can be started after completion of the previous phase. That is the output of one phase will be the input to the next phase. Thus the development process can be considered as a sequential flow in the waterfall. Here the phases do not overlap with each other. The different sequential phases of the classical waterfall model are shown in the below figure.

[Detail More](#)

**Spiral Model**

Spiral model is one of the most important Software Development Life Cycle models, which provides support for Risk Handling. In its diagrammatic representation, it looks like a spiral with many loops. The exact number of loops of the spiral is unknown and can vary from project to project. Each loop of the spiral is called a Phase of the software development process. The exact number of phases



Step 3: Click button “Detail More” to view detail



### Software Engineering | Classical Waterfall Model

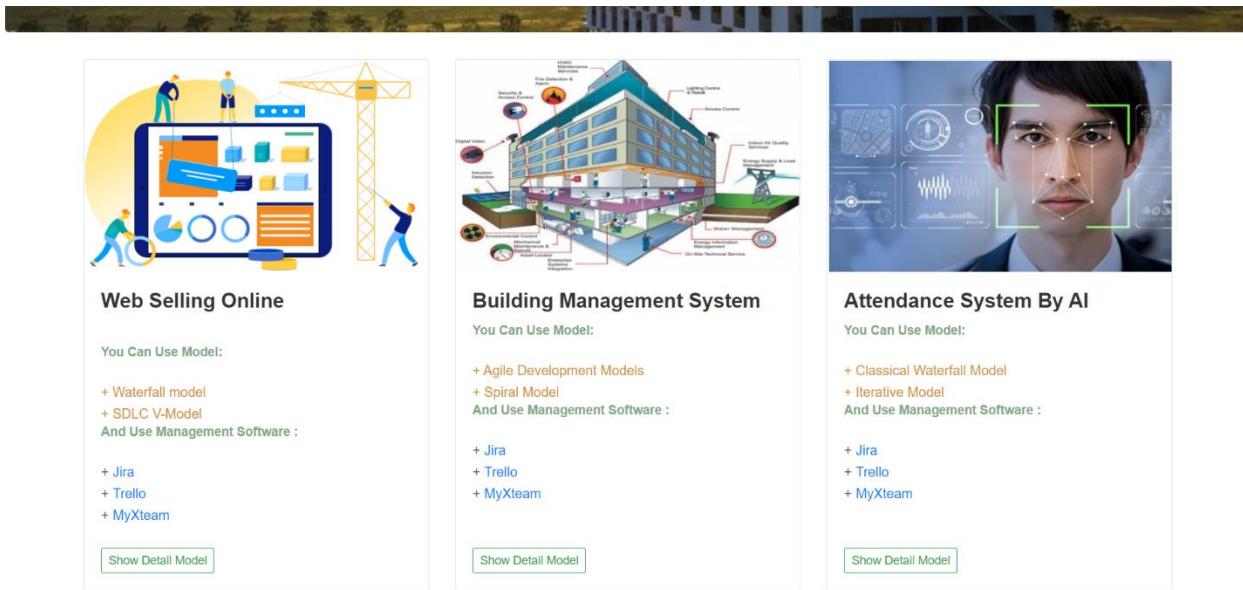
Classical waterfall model is the basic **software development life cycle** model. It is very simple but idealistic. Earlier this model was very popular but nowadays it is not used. But it is very important because all the other software development life cycle models are based on the classical waterfall model.

Classical waterfall model divides the life cycle into a set of phases. This model considers that one phase can be started after completion of the previous phase. That is the output of one phase will be the input to the next phase. Thus the development process can be considered as a sequential flow in the waterfall. Here the phases do not overlap with each other. The different sequential phases of the classical waterfall model are shown in the below figure:

Step 4: Return forum, click button Model, choose Tutorial Model

A screenshot of a web-based forum interface. At the top, there is a navigation bar with links for STARS, Forum, Capstone Project, Supervisors, Reports, Model, and a user profile for Nguyen Long. Below the navigation bar, there is a section titled "Register Project" with a warning message: "Warning: You can only register once. Be careful with the information you enter. You will not be able to edit it after sending it. If you need any information please contact the admin." To the right of this section, there is a "Tutorial Model" link with a red arrow pointing to it. On the far right, there is a sidebar titled "Global News" containing several news items with dates and titles.

Step 5: System display Tutorial Model page to view



### 6.2.1.6 Show list supervisors and booking

Step 1: Click the Capstone Project in the top of the page, choose Create Capstone Project

The screenshot shows the "Capstone Project" section of a web application. At the top, there is a navigation bar with links for STARS, FPT UNIVERSITY, Forum, Capstone Project (which is highlighted), Lectures, Reports, and Model. A user profile for "Do Thao" is also visible. The main content area has tabs for "Register Project" and "Create Capstone". The "Create Capstone" tab is active, showing a "Create Capstone" input field and a "My Capstone" link. A yellow warning box contains the text: "Warning: You can only register once. Be careful with the information you enter. You will not be able to edit it after sending it. If you need any information please contact the admin." Below this, there are fields for "Name Project" and "Name Project Other language". To the right, a "Global News" sidebar displays recent news items:

- FU-HL: THÔNG BÁO V/V ĐĂNG KÝ TẠM TRÚ ĐỐI VỚI SINH VIÊN K1 & KTX  
2020-11-22 03:23:16.0
- FU-HL: V/v: Tham dự buổi định hướng làm khóa luận tốt nghiệp cho sinh viên ngành SE  
2020-11-22 03:16:49.0
- FU-HL: V/v: Tham dự buổi định hướng làm khóa luận tốt nghiệp cho sinh viên ngành GD  
2020-11-22 03:16:46.0
- FU-HL: V/v: Tham dự buổi định hướng làm khóa luận tốt nghiệp cho sinh viên ngành Ngôn ngữ Nhật  
2020-11-22 03:14:54.0

## Step 2: Enter information to register project

The screenshot shows a web application interface for registering a project. At the top, there is a navigation bar with links for Forum, Capstone Project, Lectures, Notification, and Reports. On the right side of the header, there is a user profile for 'Do Thao'. Below the header, the main content area is titled 'Register Project'. It contains several input fields:

- Name Project: A text input field.
- Name Project Other language: A text input field.
- Name Project Vietnamese: A text input field.
- Name Project Abbreviation: A text input field.
- Program Project: A text input field.
- Specialty Project: A text input field.
- Document Project: A text input field.
- Member: A dropdown menu currently set to 'Leader'. To its right is a green 'Add' button.
- Description Project: A large text area for project description.
- Add a files: A section with a 'Chọn tệp' button and a message stating 'Không có tệp nào được chọn' (No file selected).

On the right side of the page, there are two sidebar sections:

- Global News**: A list of recent news items with dates:
  - qweq 2020-10-31 15:32:47,0
  - e 2020-10-31 15:31:50,0
  - \*\*\*\*\* 2020-10-31 15:29:16,0
  - sadasdad 2020-10-31 13:49:47,0
  - FU-HL: THÔNG BÁO: KẾ HOẠCH LỊCH ĐÀO TẠO HÈ ĐẠI HỌC CHINH QUY NĂM 2021. 2020-10-31 12:02:20,0
  - sd 2020-10-31 05:25:13,0
- Notification**: A link labeled 'More...'.

At the bottom right of the main form area, there are two green buttons: 'Submit' and 'Reset'.

## Step 3: Click button submit to register project

This screenshot shows a simplified version of the 'Add a files' section from the previous step. It includes a 'Chọn tệp' button and a message indicating 'Không có tệp nào được chọn' (No file selected). At the bottom right, there are two green buttons: 'Submit' and 'Reset'.

Step 4: After register successfully, system display list supervisor to booking, click button Supervisor 1

**Supervisors**

**Warning:**  
You can only choose two Supervisors and they can not be identical.  
Your selection will become effective upon confirmation by the Training Department.  
When you select supervisors, you can't change anyone else without confirmation from the Training Department.

	anhbnvgv00014 Lecturer at FPT University 0928837748 anhbnvgv00014@fpt.edu.vn <b>Supervisor 1</b>		chilpgv00013 Lecturer at FPT University 0928764788 chilpgv00013@fpt.edu.vn <b>Supervisor 1</b>		duongtbgv00012 Lecturer at FPT University 0928837749 duongtbgv00012@fpt.edu.vn <b>Supervisor 1</b>
--	--	--	--	--	--

**Global News**

- FU-HL: Thông báo điểm thi lần 1 môn VOV141 và điểm thi lần 2 HK Fall 2020 (No 1)  
2020-12-06 20:15:58.0
- FU-HL: Thông báo DSSV thi lần 2 môn VOV114 HK Fall 2020.  
2020-12-06 20:15:39.0
- FU-HL: Thông báo về việc gia hạn đăng ký mua BHYT đợt 4 năm 2020  
2020-12-06 20:15:14.0
- THÔNG BÁO NỘP HỌC PHÍ KỲ SPRING 2021  
2020-12-06 20:14:58.0
- FU-HL: Thông báo lịch thi cuối kỳ lần 1 và lần 2 môn JPD112 HK Fall 2020.  
2020-12-06 20:12:08.0
- FU-HL: VV: Mở thêm lớp LAB231.E1- BL5  
2020-12-06 20:11:48.0

**Notification**

khanhnse05045 invites you to participate in a capstone project

Step 5: Display notification “Are you sure you want to choose lecturer”, click “OK”

**Supervisors**

**Warning:**  
You can only choose two Supervisors and they can not be identical.  
Your selection will become effective upon confirmation by the Training Department.  
When you select supervisors, you can't change anyone else without confirmation from the Training Department.

	anhbnvgv00014 Lecturer at FPT University 0928837748 anhbnvgv00014@fpt.edu.vn <b>Supervisor 1</b>		chilpgv00013 Lecturer at FPT University 0928764788 chilpgv00013@fpt.edu.vn <b>Supervisor 1</b>		duongtbgv00012 Lecturer at FPT University 0928837749 duongtbgv00012@fpt.edu.vn <b>Supervisor 1</b>
--	--	--	--	--	--

**Global News**

- FU-HL: Thông báo điểm thi lần 1 môn VOV141 và điểm thi lần 2 HK Fall 2020 (No 1)  
2020-12-06 20:15:58.0
- FU-HL: Thông báo DSSV thi lần 2 môn VOV114 HK Fall 2020.  
2020-12-06 20:15:39.0
- FU-HL: Thông báo về việc gia hạn đăng ký mua BHYT đợt 4 năm 2020  
2020-12-06 20:15:14.0
- THÔNG BÁO NỘP HỌC PHÍ KỲ SPRING 2021  
2020-12-06 20:14:58.0
- FU-HL: Thông báo lịch thi cuối kỳ lần 1 và lần 2 môn JPD112 HK Fall 2020.  
2020-12-06 20:12:08.0
- FU-HL: VV: Mở thêm lớp LAB231.E1- BL5  
2020-12-06 20:11:48.0

**Notification**

khanhnse05045 invites you to participate in a capstone project

Step 6: After book supervisor 1 successfully, System display remain supervisors and don't supervisor 1 to book supervisor 2, click button "Supervisor 2"

**Supervisors**

Warning:  
You can only choose two Supervisors and they can not be identical.  
Your selection will become effective upon confirmation by the Training Department.  
When you select supervisors, you can't change anyone else without confirmation from the Training Department.

trungntgv00007 Lecturer at FPT University 0927737748 trungntgv00007@fpt.edu.vn <b>Supervisor 2</b>	kienntgv00006 Lecturer at FPT University 0927738849 kienntgv00006@fpt.edu.vn <b>Supervisor 2</b>	tritdgv0005 Lecturer at FPT University 0928837647 tritdgv0005@fpt.edu.vn <b>Supervisor 2</b>

**Global News**

- FU-HL: Thông báo điểm thi lần 1 môn VOV141 và điểm thi lần 2 HK Fall 2020 (No 1)  
2020-12-06 20:15:58.0
- FU-HL: Thông báo DSSV thi lần 2 môn VOV114 HK Fall 2020.  
2020-12-06 20:15:39.0
- FU-HL: Thông báo về việc giá hạn đăng ký mua BHYT đợt 4 năm 2020  
2020-12-06 20:15:14.0
- THÔNG BÁO NỘP HỌC PHÍ KỲ SPRING 2021  
2020-12-06 20:14:58.0
- FU-HL: Thông báo lịch thi cuối kỳ lần 1 và lần 2 môn JPD112 HK Fall 2020.  
2020-12-06 20:12:08.0
- FU-HL: VV: Mở thêm lớp LAB231.E1-BL5  
2020-12-06 20:11:48.0

**Notification**

khanhnse05045 invites you to participate in a capstone project  
2020-12-06 20:10:11.0

**More...**

### 6.2.1.7 View GUIDE

Step 1: Access forum, click GUIDE

**Forum**

Search for title...

**TÌM NHÓM ĐO ÁN**  
khangnmse05904  
2020-12-20 22:22:00.0  
khang

**CHUNG TÔI MUON TIM DO AN...**  
kienbtse05182  
2020-12-06 16:39:01.0  
chung toi

**Global News**

- IL: Thông báo điểm thi lần 1 môn VOV141 và điểm thi HK Fall 2020 (No 1)  
2020-12-06 20:15:58.0
- IL: Thông báo DSSV thi lần 2 môn VOV114 HK Fall 2020.  
2020-12-06 20:15:39.0
- FU-HL: Thông báo về việc giá hạn đăng ký mua BHYT đợt 4 năm 2020  
2020-12-06 20:15:14.0
- THÔNG BÁO NỘP HỌC PHÍ KỲ SPRING 2021  
2020-12-06 20:14:58.0
- FU-HL: Thông báo lịch thi cuối kỳ lần 1 và lần 2 môn JPD112 HK Fall 2020.  
2020-12-06 20:12:08.0
- FU-HL: VV: Mở thêm lớp LAB231.E1-BL5  
2020-12-06 20:11:48.0

**More...**

## Step 2: System display GUIDE Page



### 1.Dành cho Member

#### Bước 1 : Access vào minh hình Create Report

Click vào "Create Report" như hình để tạo Report

A screenshot of a forum interface. At the top, there is a navigation bar with links for Forum, Capstone Project, Lectures, Reports, Model, and a user profile. Below the navigation bar, there is a search bar and a "Report Lists" section with links for My Reports and Create Report. A red arrow points to the "Create Report" button. The main content area shows two posts: one titled "CHUNG TOI MUON TIM DO AN..." and another titled "RA TRƯỜNG THÔI ANH EM". On the right side, there is a "Global News" section with several news items and a "Notification" section with a single item from "khushmaan0000".



#### Bước 1 : Access vào Jira chứa Capstone của bạn

A screenshot of the Jira Software interface. At the top, there is a navigation bar with links for Your work, Projects, Filters, Dashboards, People, Apps, and Create. Below the navigation bar, there is a search bar and a "Create project" button. The main content area shows a table titled "Projects" with one entry: "Capstone Project Management" (Key: FCPM, Type: Classic software, Lead: Đức Đỗ). There is also a small "Import" icon next to the project name.



### Bước 1 : Access vào minh hình register capstone

Click vào "Create Capstone" như hình để tạo capstone

The screenshot shows a forum interface with two posts:

- CHUNG TÔI MUON TIM DO AN...** by kientruktt302, posted on 2020-12-06 16:59:01.0. It has 1 reply.
- RA TRƯỜNG THÔI ANH EM** by kientruktt306, posted on 2020-12-06 11:30:24.0. It has 1 reply.

A red arrow points to the green "+ ADD POST" button located above the second post.

### 6.2.1.8 Upload file

Step 1: Click button “ADD POST”

The screenshot shows a forum interface with several sections:

- Forum** tab is selected.
- Global News** section on the right lists recent posts:
  - FU-HL: THÔNG BÁO VIV ĐÁNG KÝ TẠM TRƯỞ DỒI VỚI SINH VIÊN K1 6 Ở KTX 2020-11-22 03:23:16.0
  - FU-HL: Viv: Tham dự buổi định hướng làm khóa luận tốt nghiệp cho sinh viên ngành SE 2020-11-22 03:16:49.0
  - FU-HL: Viv: Tham dự buổi định hướng làm khóa luận tốt nghiệp cho sinh viên ngành GD 2020-11-22 03:16:46.0
  - FU-HL: Viv: Tham dự buổi định hướng làm khóa luận tốt nghiệp cho sinh viên ngành Ngôn ngữ Nhật 2020-11-22 03:14:54.0
- Notification** section on the right lists recent notifications:
  - khanhnse05045 report at Sun Nov 29 16:26:25 ICT 2020 2020-11-29 16:26:26.0
  - khanhnse05045 report at Sun Nov 29 16:24:05 ICT 2020 2020-11-29 16:24:05.0

A large blue arrow points to the green "+ ADD POST" button in the top right corner of the forum interface.

Step 2: After click button “ADD POST”, show form to create post

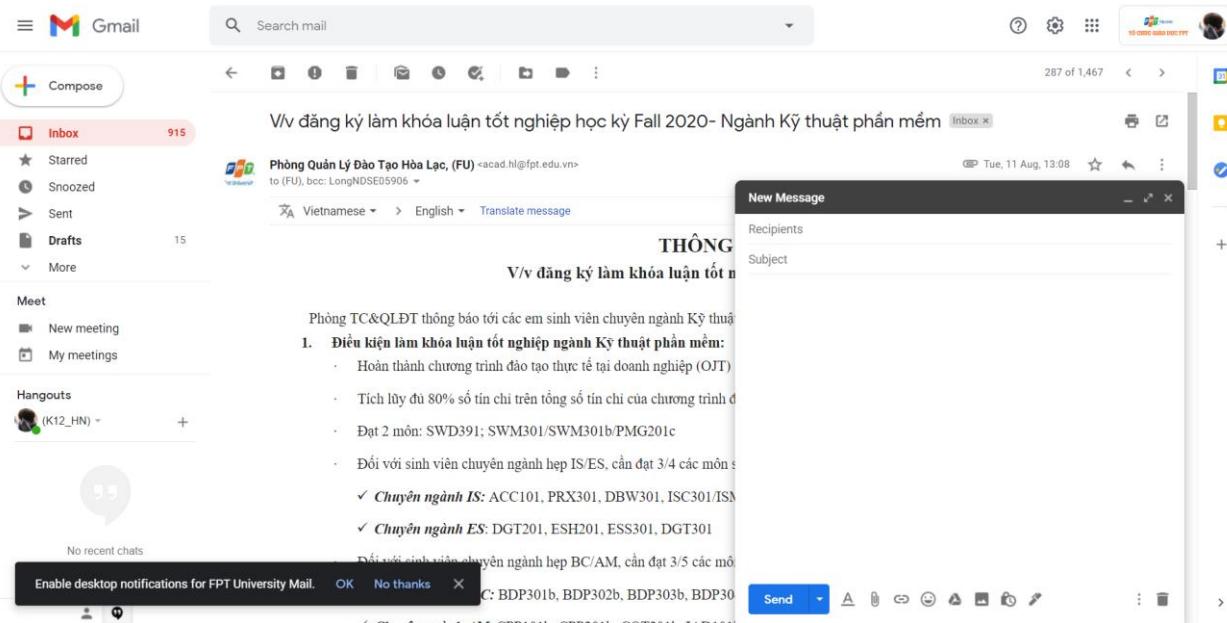
The screenshot shows a 'Create post' dialog box overlaid on a forum interface. The dialog box contains fields for 'Title' (labeled 'Enter Title'), 'Description' (labeled 'Enter Description'), and 'Files' (button labeled 'Chọn tệp' with the message 'Không có tệp nào được chọn'). Below the files field are 'Post' and 'Reset' buttons. The background shows a sidebar with 'Global News' and 'Notification' sections.

Step 3: Enter the required information, click button “Post” to upload file to forum

The screenshot shows the same 'Create post' dialog box as Step 2, but with red arrows highlighting the 'Title', 'Description', and 'Files' fields. A final red arrow points to the 'Post' button at the bottom right of the dialog box. The background sidebar remains the same as in Step 2.

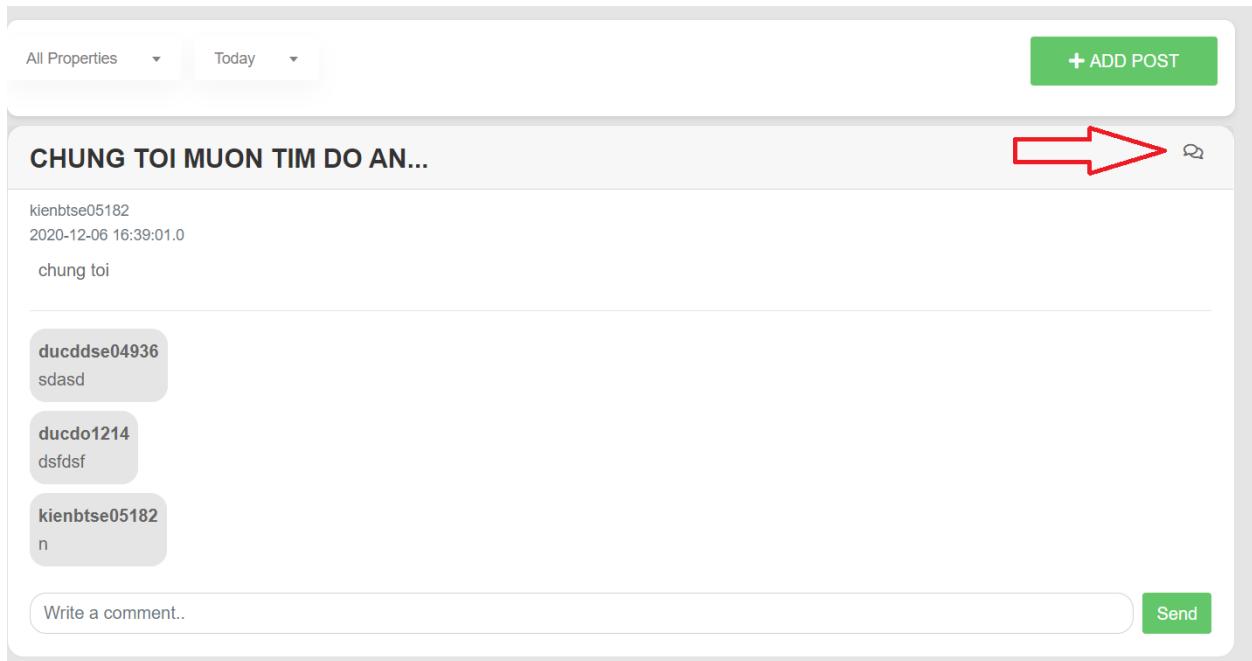
### 6.2.1.9 Send mail

Step 1: Go to the email page, choose compose to send mail to register capstone project and booking supervisor

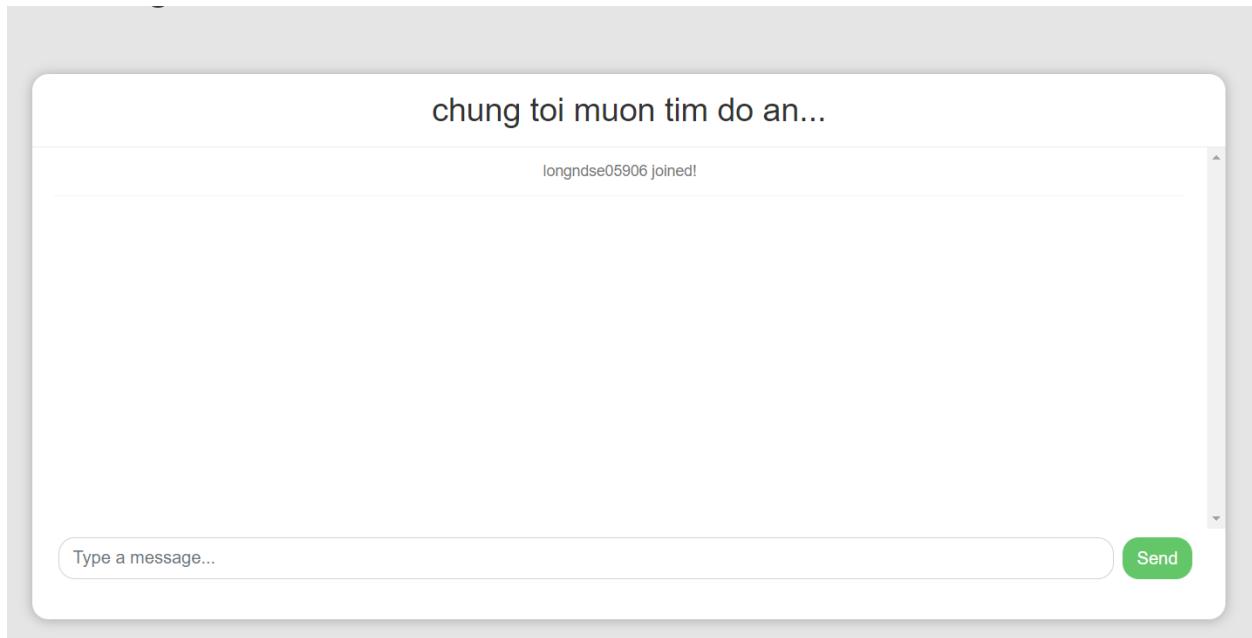


### 6.2.1.10 Chat

Step 1: Access forum, Click icon in the right screen

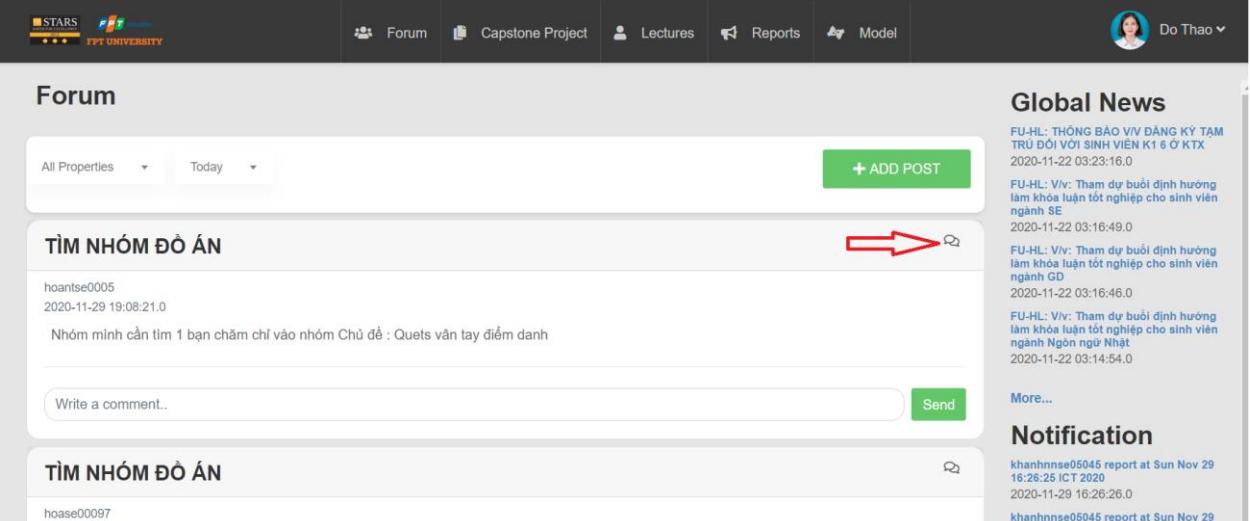


Step 2: System display group chat to chat together



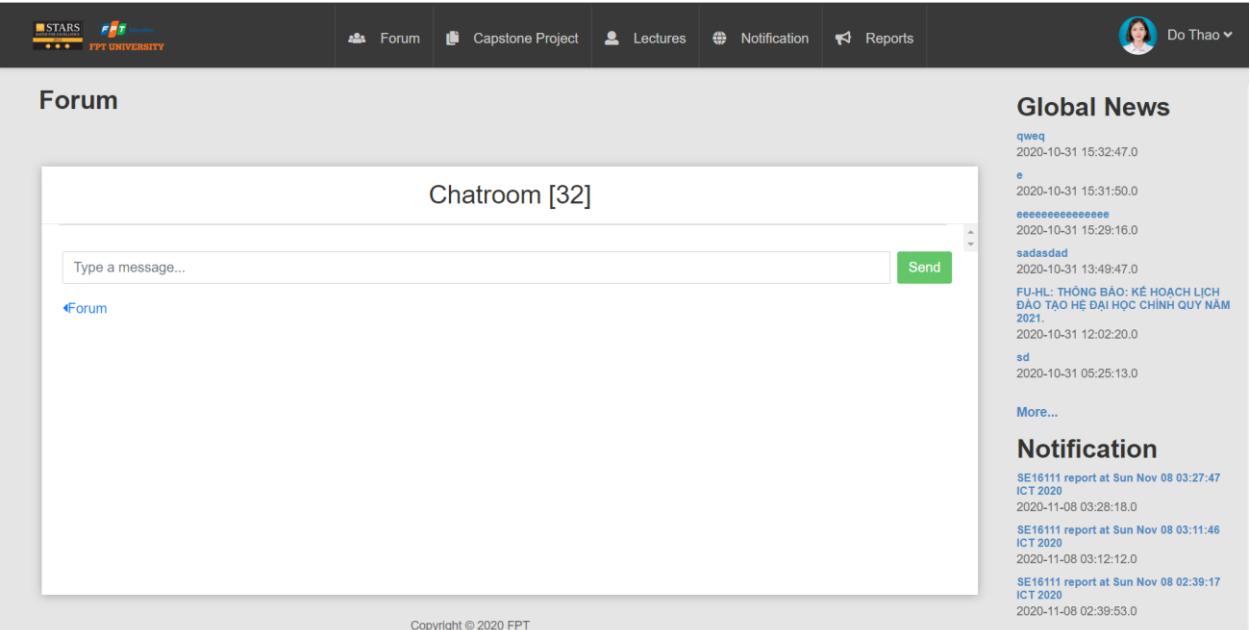
### 6.2.1.11 Create chat

Step 1: Click icon on screen



The screenshot shows the FPT University STARS platform interface. At the top, there are navigation tabs: Forum, Capstone Project, Lectures, Reports, and Model. On the right side, there is a user profile for 'Do Thao'. Below the tabs, the 'Forum' section is displayed. A green button labeled '+ ADD POST' is visible. There are two posts under the heading 'TÌM NHÓM ĐÔ ÁN': one from 'hoantse0005' and another from 'hoase00097'. To the right of the posts, there is a 'Global News' sidebar with several news items and a 'Notification' sidebar with recent reports.

Step 2: Show room to student chat



The screenshot shows the FPT University STARS platform interface. At the top, there are navigation tabs: Forum, Capstone Project, Lectures, Notification, Reports, and a user profile for 'Do Thao'. Below the tabs, the 'Forum' section is displayed. A green button labeled '+ ADD POST' is visible. There is a single post titled 'Chatroom [32]' with a message input field and a 'Send' button. To the right of the post, there is a 'Global News' sidebar with recent news items and a 'Notification' sidebar with recent reports.

## 6.2.1.12 Confirm join team feature

Step 1: Access forum, Click Capstone Project, Choose My Capstone

The screenshot shows the FPT University platform interface. At the top, there are navigation tabs: STARS, Forum, Capstone Project (which is currently selected), Supervisors, Reports, Model, Guide, and a user profile for Tran Long. Below the navigation bar, there's a search bar and a green '+ ADD POST' button. The main content area displays two posts under the 'Capstone Project' tab:

- TÌM NHÓM ĐO ÁN**  
User: khangnmse05904  
Date: 2020-12-20 22:22:00.0  
Content: khang  
  
A reply from user khangnmse05904: d
- CHUNG TOI MUON TIM DO AN...**  
User: kienbtse05182  
Date: 2020-12-06 16:39:01.0  
Content: chung toi

To the right of the posts, there's a 'Global News' sidebar with several news items:

- FU-HL: Thông báo điểm thi lần 1 môn VOV141 và điểm thi lần 2 HK Fall 2020 (No 1)  
2020-12-06 20:15:58.0
- FU-HL: Thông báo DSSV thi lần 2 môn VOV114 HK Fall 2020.  
2020-12-06 20:15:39.0
- FU-HL: Thông báo về việc gia hạn đăng ký mua BHYT đợt 4 năm 2020  
2020-12-06 20:15:14.0
- THÔNG BÁO NỘI HỌC PHÍ KÝ SPRING 2021  
2020-12-06 20:14:58.0
- FU-HL: Thông báo lịch thi cuối kỳ lần 1 và lần 2 môn JPD112 HK Fall 2020.  
2020-12-06 20:12:08.0
- FU-HL: VV: Mở thêm lớp LAB231.E1-BL5  
2020-12-06 20:11:48.0

At the bottom right of the sidebar, there's a 'More...' link.

Step 2: Click “Confirm” button

This screenshot shows the 'Capstone Project' details page. On the left, there's a table for project information and a 'Member' table. On the right, there's a large text area with a 'More...' link.

**Project Information Table:**

Name Project Vietnamese	Google Map
Name Project Abbreviation	Google Map
Profession	SE
Program	Google Map
Specialty	Google Map
Document	Google Map
Description	Google Map
Status	Pending By Supervisor

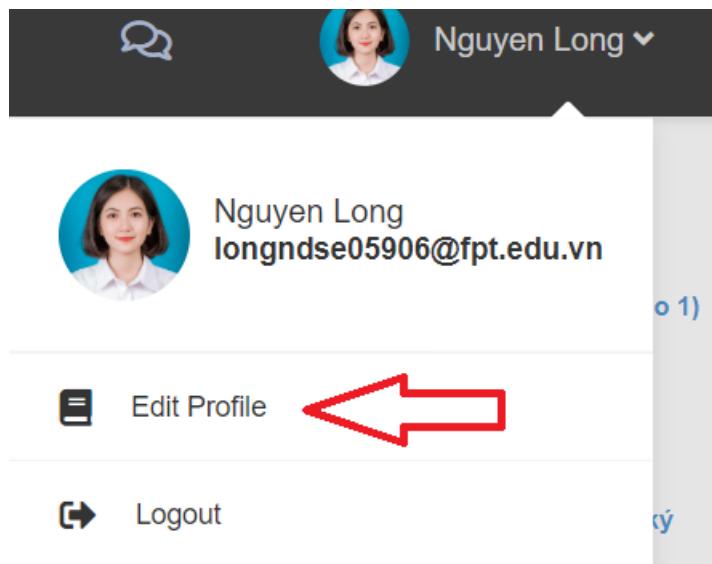
**Member Table:**

User	Role	Status
khanhnse050452	Leader	Confirmed
khanhnse050453	Member	Wait for confirmation
khanhnse050454	Member	Wait for confirmation
khanhnse050455	Member	Wait for confirmation
ducken1412	Supervisor	Wait for confirmation
thangpdgv00008	Supervisor	Wait for confirmation
longtvhe00001	Member	Wait for confirmation

At the bottom right of the member table, there are 'Confirm' and 'Reject' buttons.

### 6.2.1.13 Edit profile

Step 1: Access forum, click account, choose “Edit Profile”



Step 2 : System display detail information of user, enter information, click “Update” to edit profile

A screenshot of the "Edit Profile" form. At the top, it shows the user's profile picture and name "Nguyen Duc Long". Below the profile picture, there is a "Upload" button with an upward arrow icon, which is highlighted by a red arrow. The form contains several input fields: "Description" (empty), "Address" (containing the text "Số nhà 36, đường Trần Hưng Đạo, Thị trấn Kinh Môn, H. Kinh Môn, tỉnh Hải Dương"), "Phone" (containing the number "33233333333"), and "Date of birth" (containing the date "06/10/2020"). At the bottom right of the form, there is a green "Update" button with a circular icon, which is also highlighted by a red arrow. The URL "https://fcpm.herokuapp.com/notification-detail/13" is visible at the bottom left of the browser window.

### 6.2.1.14 Notification component

Step 1: Select the notifications you want to see

The screenshot shows a forum page with two posts. The first post is titled "TÌM NHÓM ĐỒ ÁN" and was made by user "hoantse0005" on November 29, 2020, at 19:08:21.0. It contains the text: "Nhóm mình cần tìm 1 bạn châm chỉ vào nhóm Chủ đề : Quets vân tay điểm danh". The second post is also titled "TÌM NHÓM ĐỒ ÁN" and was made by user "hoase00097" on November 29, 2020, at 19:06:51.0. It contains the text: "Nhóm mình cần tìm 1 bạn vào nhóm đồ án kỲ này, chỉ cần nghiêm túc với công việc Chủ đề : App chỉ đường". To the right of the posts, there is a "Global News" sidebar. A red arrow points from the second post towards the "Notification" section of the sidebar. The sidebar lists three notifications:

- FU-HL: THÔNG BÁO V/V ĐĂNG KÝ TẠM TRÚ ĐỘI VỚI SINH VIÊN K1 6 Ở KTX  
2020-11-22 03:23:16.0
- FU-HL: V/v: Tham dự buổi định hướng làm khóa luận tốt nghiệp cho sinh viên ngành SE  
2020-11-22 03:16:49.0
- FU-HL: V/v: Tham dự buổi định hướng làm khóa luận tốt nghiệp cho sinh viên ngành GD  
2020-11-22 03:16:46.0
- FU-HL: V/v: Tham dự buổi định hướng làm khóa luận tốt nghiệp cho sinh viên ngành Ngôn ngữ Nhật  
2020-11-22 03:14:54.0

More...

**Notification**

- khanhnse05045 report at Sun Nov 29 16:26:25 ICT 2020  
2020-11-29 16:26:26.0
- khanhnse05045 report at Sun Nov 29 16:24:05 ICT 2020  
2020-11-29 16:24:05.0
- kiembie05182 report at Sat Nov 28 19:08:38 ICT 2020  
2020-11-28 19:08:38.0

Step 2: Displays details of the notifications you want to see

The screenshot shows a news page with a navigation bar at the top featuring the FPT University logo, a user profile for "Do Thao", and links for Forum, Capstone Project, Lectures, Reports, and Model.

The main content area has tabs for "News" and "Global News". The "News" tab is active, showing a single news item: "Khanhnse05045 Report At Sun Nov 29 16:26:25 ICT 2020". Below the title, it says "Report by khanhnse05045 at Sun Nov 29 16:26:25 ICT 2020 Click [view report detail](#)".

The "Global News" tab is also visible, showing the same list of notifications as in the previous screenshot. A red arrow points from the "News" tab towards the "Global News" sidebar.

**Global News**

- FU-HL: THÔNG BÁO V/V ĐĂNG KÝ TẠM TRÚ ĐỘI VỚI SINH VIÊN K1 6 Ở KTX  
2020-11-22 03:23:16.0
- FU-HL: V/v: Tham dự buổi định hướng làm khóa luận tốt nghiệp cho sinh viên ngành SE  
2020-11-22 03:16:49.0
- FU-HL: V/v: Tham dự buổi định hướng làm khóa luận tốt nghiệp cho sinh viên ngành GD  
2020-11-22 03:16:46.0
- FU-HL: V/v: Tham dự buổi định hướng làm khóa luận tốt nghiệp cho sinh viên ngành Ngôn ngữ Nhật  
2020-11-22 03:14:54.0

More...

**Notification**

- khanhnse05045 report at Sun Nov 29 16:26:25 ICT 2020  
2020-11-29 16:26:26.0
- khanhnse05045 report at Sun Nov 29 16:24:05 ICT 2020  
2020-11-29 16:24:05.0
- kiembie05182 report at Sat Nov 28 19:08:38 ICT 2020  
2020-11-28 19:08:38.0

### 6.2.1.15 Comment

Step 1: Enter information you want comment, click send

The image displays two screenshots of a mobile application interface for commenting.

**Screenshot 1: TÌM NHÓM ĐỒ ÁN**

- Header: TÌM NHÓM ĐỒ ÁN
- User: hoase00097  
Date: 2020-11-29 19:06:51.0
- Text: Nhóm mình cần tìm 1 bạn vào nhóm đồ án kỳ này, chỉ cần nghiêm túc với công việc Chủ đề : App chỉ đường
- Comment input field: longndse05906  
Text: a
- Comment input field placeholder: Write a comment..
- Send button: A red arrow points to the green "Send" button.
- Right sidebar: A list of comments from other users:
  - khanhnmse05045 report at Sun Nov 29 16:26:25 ICT 2020  
2020-11-29 16:26:26.0
  - khanhnmse05045 report at Sun Nov 29 16:24:05 ICT 2020  
2020-11-29 16:24:05.0
  - kienbtse05182 report at Sat Nov 28 19:08:38 ICT 2020  
2020-11-28 19:08:38.0

**Screenshot 2: TÌM NHÓM ĐỒ ÁN NGÀNH JS**

- Header: TÌM NHÓM ĐỒ ÁN NGÀNH JS
- User: namdsse0010  
Date: 2020-11-29 19:06:17.0
- Text: Nhóm mình hiện tại có 3 người, cần tìm 2 bạn nữa Chủ đề: Phần mềm tính lương cho công ty
- Comment input field placeholder: Write a comment..
- Send button: A green "Send" button.

### 6.2.1.16 Daily report to member to leader

Step 1: Select the Reports section at the top of the page, then select create report

The screenshot shows the FPT University forum homepage. At the top, there is a navigation bar with links for STARS, Forum, Capstone Project, Lectures, Reports (which is currently selected), Model, and a user profile for 'Do Thao'. Below the navigation bar, there is a search bar and a dropdown menu for 'Report Lists' and 'My Reports'. A red arrow points to the 'Create Report' button, which is highlighted with a green box. On the left side, there are two posts under the 'TÌM NHÓM ĐO ÁN' category. The first post is from 'hoantse0005' and the second from 'hoase00097'. Both posts mention looking for a member to add to their group. On the right side, there is a 'Global News' section with several news items and a 'Notification' section listing reports from other users.

Step 2: Enter information report, then click button submit

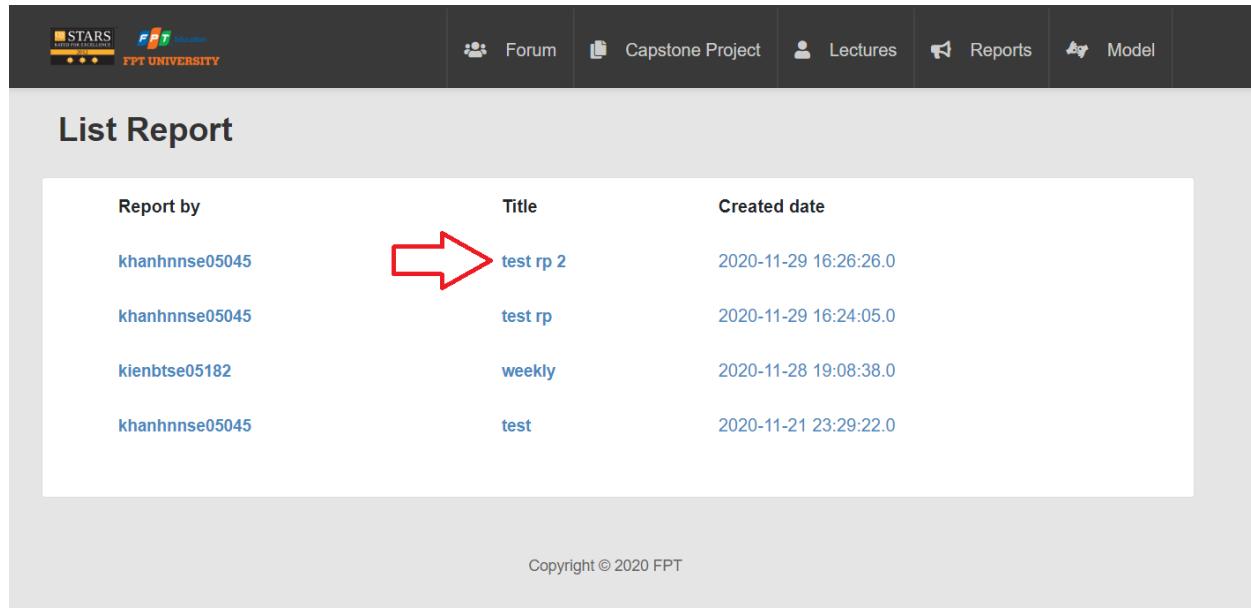
The screenshot shows the 'Report' creation form. It has sections for 'TITLE' and 'CONTENT'. A red arrow points to the 'Title...' input field. Another red arrow points to the rich text editor below it. A third red arrow points to the 'Submit' button at the bottom right. To the right of the form, there is a 'Global News' section and a 'Notification' section, which are identical to the ones in the previous screenshot.

Item Name	Plan	Actual	Progress	Issue	Cover plan
Today Task					
Next Task					

Step 3: Display reports of yourself and team members

List Report		
Report by	Title	Created date
Khanh	sdsda	2020-11-08 03:27:47.0
Khanh	asdsadasd	2020-11-08 03:11:47.0
Khanh	1231212	2020-11-08 02:39:17.0
Khanh	12312312	2020-11-08 02:36:25.0
Khanh	eqweqw	2020-11-08 02:29:07.0
Duc	sadasdasd	2020-11-08 02:28:08.0
Khanh	w	2020-11-08 02:15:00.0
Khanh	sdsda	2020-11-08 03:27:47.0
Khanh	asdsadasd	2020-11-08 03:11:47.0
Khanh	1231212	2020-11-08 02:39:17.0

Step 4: Click name of title to view detail information of report



The screenshot shows a web interface for managing reports. At the top, there is a navigation bar with logos for STARS, FPT University, and other site features like Forum, Capstone Project, Lectures, Reports, and Model. Below the navigation bar, the page title 'List Report' is displayed. The main content area contains a table with three columns: 'Report by', 'Title', and 'Created date'. The table lists several reports, with the second report's title, 'test rp 2', highlighted by a large red arrow pointing to it.

Report by	Title	Created date
khanhnse05045	test rp 2	2020-11-29 16:26:26.0
khanhnse05045	test rp	2020-11-29 16:24:05.0
kienbtse05182	weekly	2020-11-28 19:08:38.0
khanhnse05045	test	2020-11-21 23:29:22.0

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Step 5: Display report detail

### Report Detail

#### Test Rp 2

Item Name	Plan	Actual	Progress	Issue	Cover plan
Today Task					
Next Task					

Write a comment..

Send

### 6.2.1.17 Weekly report to leader to supervisor

Step 1: Select the Reports section at the top of the page, then select create report

The screenshot shows a university forum interface. At the top, there are navigation links: STARS, Forum, Capstone Project, Lectures, Reports (which is highlighted in blue), Model, and a user profile for 'Do Thao'. Below the navigation bar, there is a search bar with dropdown menus for 'All Properties' and 'Today'. To the right of the search bar, a red arrow points to a green button labeled 'Create Report'. On the left, there are two posts under the heading 'TÌM NHÓM ĐO ÁN'. The first post is from 'hoantse0005' on November 29, 2020, at 19:08:21.0. It says: 'Nhóm mình cần tìm 1 bạn chăm chỉ vào nhóm Chủ đề : Quets vân tay điểm danh'. The second post is from 'hoase00097' on November 29, 2020, at 19:06:51.0. It says: 'Nhóm mình cần tìm 1 bạn vào nhóm đồ án kỲ này, chỉ cần nghiêm túc với công việc Chủ đề : App chỉ đường'. On the right side of the screen, there is a 'Global News' section with several news items and a 'Notification' section listing reports from various users.

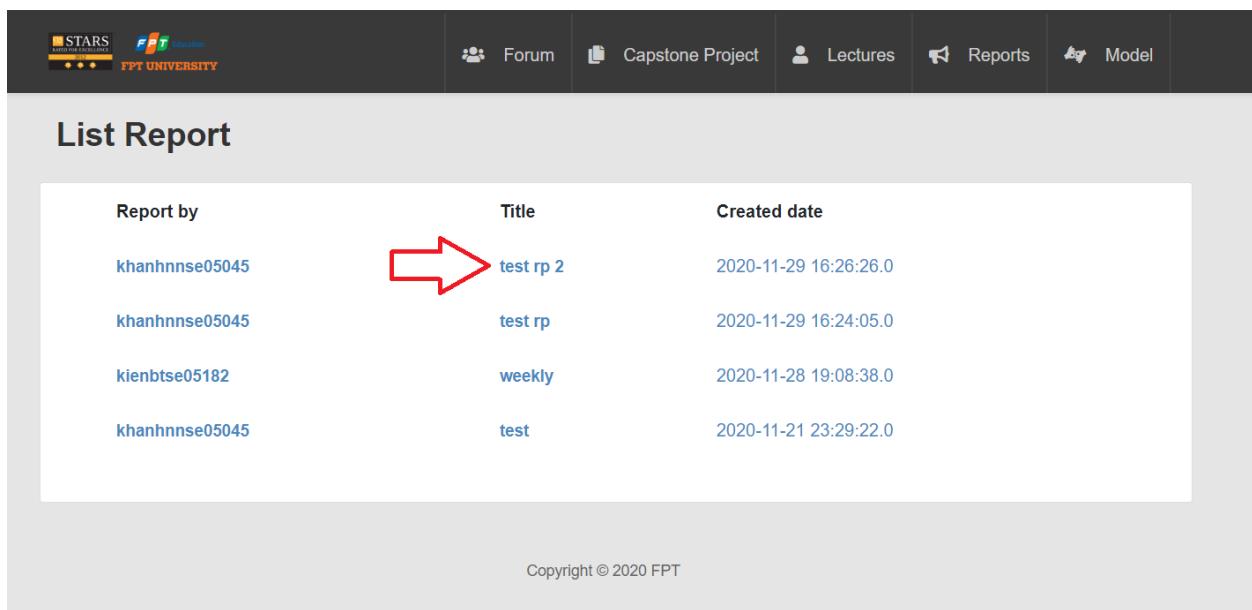
Step 2: Enter information report, then click button submit

The screenshot shows a 'Report' creation form. The form has two main sections: 'TITLE' and 'CONTENT'. The 'TITLE' section contains a text input field with the placeholder 'Title...'. A red arrow points to this field. The 'CONTENT' section contains a rich text editor toolbar and a table for task management. The table has columns: Item Name, Plan, Actual, Progress, Issue, and Cover plan. It contains two rows: 'Today Task' and 'Next Task'. A red arrow points to the table area. In the bottom right corner of the form, there is a green 'Submit' button with a red arrow pointing to it. On the right side of the screen, there is a 'Global News' section with several news items and a 'Notification' section listing reports from various users.

Step 3: Display reports of yourself and team members

Report by	Title	Created date
Khanh	sdsda	2020-11-08 03:27:47.0
Khanh	asdsadasd	2020-11-08 03:11:47.0
Khanh	1231212	2020-11-08 02:39:17.0
Khanh	12312312	2020-11-08 02:36:25.0
Khanh	eqweqw	2020-11-08 02:29:07.0
Duc	sadasdasd	2020-11-08 02:28:08.0
Khanh	w	2020-11-08 02:15:00.0
Khanh	sdsda	2020-11-08 03:27:47.0
Khanh	asdsadasd	2020-11-08 03:11:47.0
Khanh	1231212	2020-11-08 02:39:17.0

Step 4: Click name of title to view detail information of report



The screenshot shows a user interface for managing reports. At the top, there is a navigation bar with links for STARS, FPT Education, Forum, Capstone Project, Lectures, Reports, and Model. Below the navigation bar, the title "List Report" is displayed. A table lists ten reports, each with columns for "Report by", "Title", and "Created date". A red arrow points to the "Title" column of the second report, which is "test rp 2".

Report by	Title	Created date
khanhnse05045	test rp 2	2020-11-29 16:26:26.0
khanhnse05045	test rp	2020-11-29 16:24:05.0
kienbtse05182	weekly	2020-11-28 19:08:38.0
khanhnse05045	test	2020-11-21 23:29:22.0

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## Step 5: Display report detail

### Report Detail

#### Test Rp 2

Item Name	Plan	Actual	Progress	Issue	Cover plan
Today Task					
Next Task					

Write a comment..

Send

### 6.2.1.18 Manage user

Step 1: Access forum, Click Manage User, choose Manage Student

The screenshot shows the FPT University STARS platform. At the top, there are navigation tabs: Forum, Capstone Project, Supervisors, Manage User (which is currently selected), Notifications, History, and a user profile for 'Do Duc'. Below the tabs, there's a search bar and a green '+ ADD POST' button. The main content area is divided into two sections: 'TÌM NHÓM ĐO ÁN' and 'CHUNG TÔI MUON TIM DO AN...'. Each section contains a list of users with their names and short profiles. On the right side, there's a 'Global News' sidebar with several news items from 'FU-HL'.

Step 2: System display Student Management Page

The screenshot shows the 'Student Management' page. At the top, there are filters for Site (All), Semester (All), Type (All), and a 'SEARCH' button. Below the filters, it displays the message: 'Students are eligible for the scheme Capstone Project: 126 / 129'. It also shows 'Total student doing capstone project: 0' and 'Total student has no team capstone project: 121'. A table below lists 50 entries of students, each with their ID, name, gender, creation date, email, capstone project status, semester, site, and a placeholder image. The table columns are: Student ID, Username, Full Name, Gender, Created Date, Email, Capstone Project, Status, Semester, Site, and Image.

Student ID	Username	Full Name	Gender	Created Date	Email	Capstone Project	Status	Semester	Site	Image
SE050452	khanhnse050452	Nguyen Van Khanh	Male	2020-12-22 23:11:56.0	khanhnse050452@gmail.com	Google Map	eligible_capstone	Fall2022	FU-Ho Chi Minh	
SE050453	khanhnse050453	Nguyen Van Cuong	Male	2020-12-22 23:11:56.0	khanhnse050453@gmail.com	Google Map	eligible_capstone	Fall2022	FU-Ho Chi Minh	
SE050454	khanhnse050454	Nguyen Van Kien	Male	2020-12-22 23:11:56.0	khanhnse050454@gmail.com	Google Map	eligible_capstone	Fall2022	FU-Ho Chi Minh	
SE050455	khanhnse050455	Nguyen Van Khang	Male	2020-12-22 23:11:56.0	khanhnse050455@gmail.com	Google Map	eligible_capstone	Fall2022	FU-Ho Chi Minh	

### 6.2.1.19 View information, status of list student

Step 1: View information, status of list student

STARS FPT University FPT UNIVERSITY

Forum Capstone Project Lectures Notification Reports Do Thao

#### User Information



**Do Duc**  
Role: Leader

Birth Date:	14-12-1997	User Name:	ducdse04936
Description:	4 years of experience in software devel	Capstone Project:	FCPM
Email:	ducdse04936@fpt.edu.vn	Address:	302 Hai Bà Trưng, Cát Dài, Lê Chân, Hải Phòng
Gender:	male	Status:	Pending
Phone:	0968480997		

#### Global News

qweq  
2020-10-31 15:32:47.0  
  
e  
2020-10-31 15:31:50.0  
  
eeeeeeeeeeeeeeee  
2020-10-31 15:29:16.0  
  
sadasdad  
2020-10-31 13:49:47.0  
  
FU-HL: THÔNG BÁO: KẾ HOẠCH LỊCH ĐÀO TẠO HỆ ĐẠI HỌC CHÍNH QUY NĂM 2021.  
2020-10-31 12:02:20.0  
  
sd  
2020-10-31 05:25:13.0

More...

#### Notification

SE16111 report at Sun Nov 08 03:27:47  
ICT 2020  
2020-11-08 03:28:18.0  
  
SE16111 report at Sun Nov 08 03:11:46  
ICT 2020  
2020-11-08 03:12:12.0

### 6.2.1.20 View and edit the list of registered project

Step 1: View and edit the list of registered project

The screenshot shows a web-based application interface for managing registered projects. At the top, there are three dropdown menus: 'All Profession' (with a dropdown arrow), 'All Status' (with a dropdown arrow), and 'Name Project'. Below these is a search bar labeled 'Name Project'. A large modal window titled 'Add Student' is open in the center. It contains fields for 'NAME' (with value 'QLDA'), 'DESCRIPTION' (with value 'QLDA'), 'NAME\_VI' (with value 'QLDA'), and 'NAME\_ENG' (partially visible). There are 'Cancel' and 'Add' buttons at the bottom of the modal. To the right of the modal are 'Approve' and 'Reject' buttons. The main content area displays a table with three rows of data. The columns are labeled 'NAME', 'DESCRIPTION', 'NAME\_VI', and 'NAME\_ENG'. The first row has values: 'Quan Ly Do An', 'Quan Ly Do An', 'QLDA', and 'QLDA'. The second row has values: 'khanh', 'qeqwe', 'wqe', and 'qweqwe'. The third row has values: 'FCPM', 'FCPM', 'FCPM', and 'registering\_capstone'. Each row has a green circular icon with a checkmark and a trash can icon to its right. At the bottom of the table, there are navigation buttons: 'Previous', page numbers '1' (highlighted in green), '2', '3', and 'Next'.

NAME	DESCRIPTION	NAME_VI	NAME_ENG
Quan Ly Do An	Quan Ly Do An	QLDA	QLDA
khanh	qeqwe	wqe	qweqwe
FCPM	FCPM	FCPM	registering_capstone

### 6.2.1.21 View list capstone project

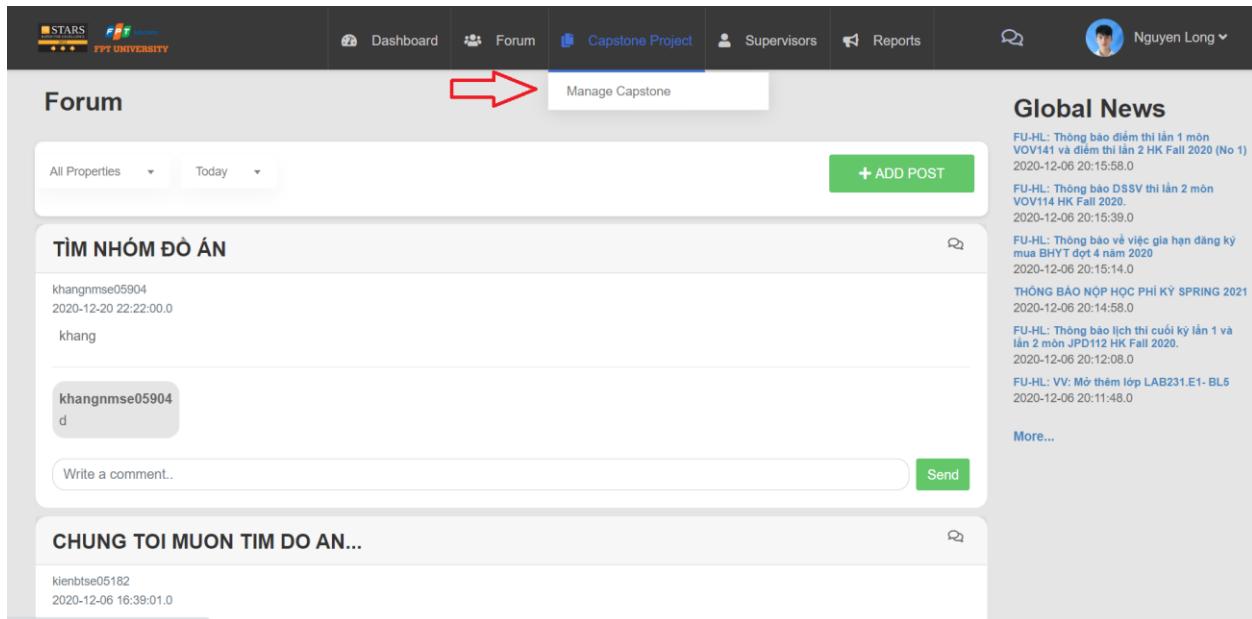
Step 1: View list capstone project

The screenshot shows a web application interface for managing capstone projects. At the top, there is a navigation bar with links for Forum, Capstone Project, Lectures, Notification, and Reports. Below the navigation bar, the title "Capstone Project" is displayed. On the left, there are dropdown menus for "All Profession" and "All Status", a search bar with placeholder "Name Project" and a "Search" button, and two buttons labeled "Approve" and "Reject". The main content area displays a table with three rows of project data. Each row includes a checkbox, columns for NAME, DESCRIPTION, NAME\_VI, NAME\_ABBREVIATION, and STATUS, and a set of three green circular status buttons on the right. The first project has the status "approve\_capstone\_lecturer". The second project has the status "registering\_capstone". The third project also has the status "registering\_capstone". At the bottom of the table, there are navigation buttons for "Previous", page numbers "1", "2", "3", and "Next".

	NAME	DESCRIPTION	NAME_VI	NAME_ABBREVIATION	STATUS	
<input type="checkbox"/>	Quan Ly Do An	Quan Ly Do An	QLDA	QLDA	approve_capstone_lecturer	
<input type="checkbox"/>	khanh	qeqwe	wqe	qweqwe	registering_capstone	
<input type="checkbox"/>	FCPM		FCPM	FCPM	registering_capstone	

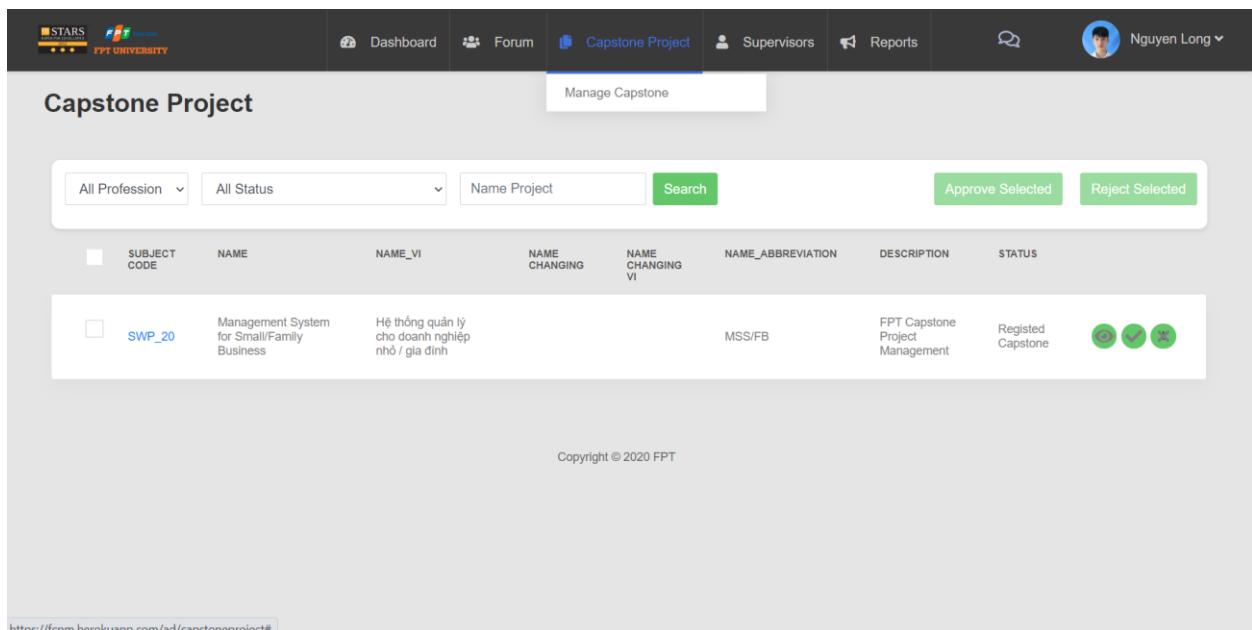
### 6.2.1.22 View detail project

Step 1: Access forum, click Capstone Project, choose Manage Capstone



The screenshot shows the FPT University forum homepage. At the top, there is a navigation bar with links for Dashboard, Forum, Capstone Project, Supervisors, Reports, and a user profile for Nguyen Long. A red arrow points to the 'Manage Capstone' button in the Capstone Project section. Below the navigation bar, there is a search bar and a 'Forum' section titled 'TÌM NHÓM ĐO ÁN'. This section contains a post from 'khangnmse05904' dated 2020-12-20 22:22:00. The post content is 'khang'. There is also a reply from 'khangnmse05904' with the message 'd'. A text input field 'Write a comment...' and a 'Send' button are present. Below this is another section titled 'CHUNG TOI MUON TIM DO AN...', which contains a post from 'kienbtse05182' dated 2020-12-06 16:39:01.0. To the right of these sections, there is a 'Global News' sidebar with several news items. A green '+ ADD POST' button is located at the top right of the forum area.

Step 2: System display Capstone Project Page



The screenshot shows the Capstone Project page. At the top, there is a navigation bar with links for Dashboard, Forum, Capstone Project, Supervisors, Reports, and a user profile for Nguyen Long. A red arrow points to the 'Manage Capstone' button in the Capstone Project section. Below the navigation bar, there is a search bar and a 'Capstone Project' section titled 'Capstone Project'. This section contains a table with columns: SUBJECT CODE, NAME, NAME\_VI, NAME\_CHANGING, NAME\_CHANGING\_VI, NAME\_ABBREVIATION, DESCRIPTION, and STATUS. One row is visible, showing 'SWP\_20' as the SUBJECT CODE, 'Management System for Small/Family Business' as the NAME, 'Hệ thống quản lý cho doanh nghiệp nhỏ / gia đình' as the NAME\_VI, 'MSS/FB' as the NAME\_ABBREVIATION, 'FPT Capstone Project Management' as the DESCRIPTION, and 'Registered Capstone' as the STATUS. To the right of the table, there are three small circular icons with checkmarks. At the bottom of the page, there is a copyright notice: 'Copyright © 2020 FPT'.

### Step 3: Click to icon as screen

The screenshot shows the 'Capstone Project' section of a web application. At the top, there are navigation links for Dashboard, Forum, Capstone Project, Supervisors, Reports, and a user profile for 'Nguyen Long'. Below the header is a search bar with dropdowns for 'All Profession' and 'All Status', a 'Name Project' input field, and 'Search' and 'Approve Selected' buttons. The main area displays a table of projects:

SUBJECT CODE	NAME	NAME_VI	NAME_CHANGING	NAME_CHANGING_VI	NAME_ABBREVIATION	DESCRIPTION	STATUS	Actions
SWP_20	Management System for Small/Family Business	Hệ thống quản lý cho doanh nghiệp nhỏ / gia đình			MSS/FB	FPT Capstone Project Management	Registered Capstone	

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### Step 4: System display detail project

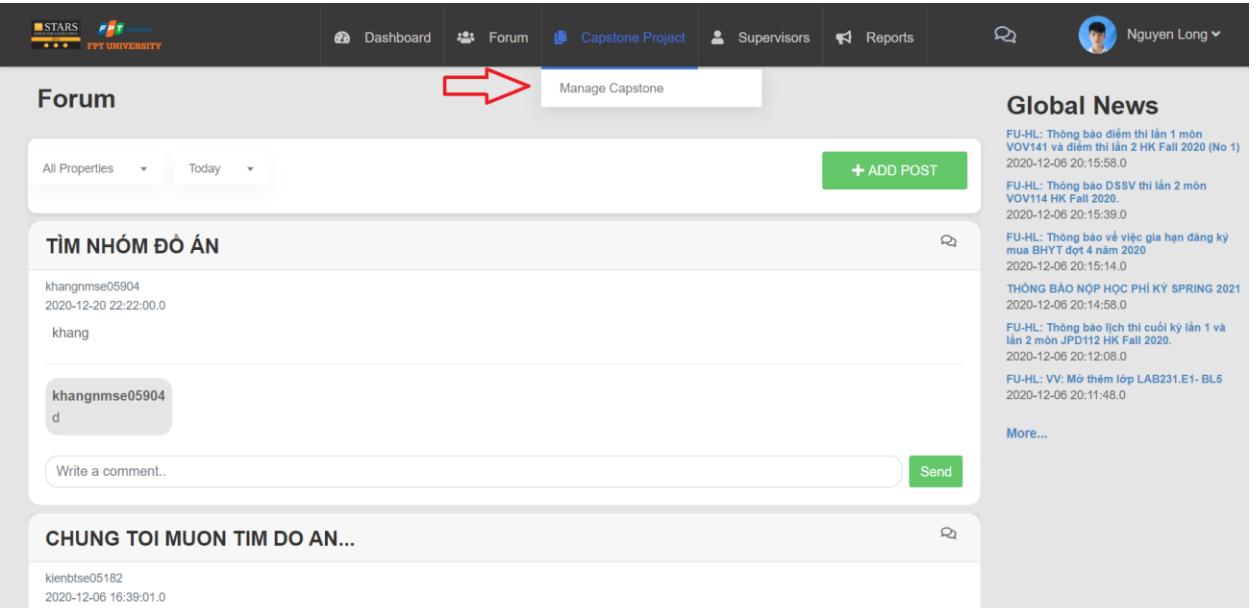
The screenshot shows a 'Project Detail' modal window. The background shows the 'Capstone Project' list with one item selected ('SWP\_20'). The modal contains a table with columns: USERNAME, ROLE, FIRST NAME, LAST NAME, PHONE, EMAIL, and STATUS. It lists three users:

USERNAME	ROLE	FIRST NAME	LAST NAME	PHONE	EMAIL	STATUS
longnd1998	lecturers	Nguyen Duc	Long	0987466618	longnguyenduc1998@gmail.com	Registered Capstone
hungpdgv00001	lecturers	Phan Duy	Hung	0982773667	hungpdgv00001@fpt.edu.vn	Registering Capstone
sangnvgv00002	lecturers	Nguyen Van	Sang	0927736488	sangnvgv00002@fpt.edu.vn	Registering Capstone

At the bottom right of the modal is a 'Cancel' button. Copyright © 2020 FPT.

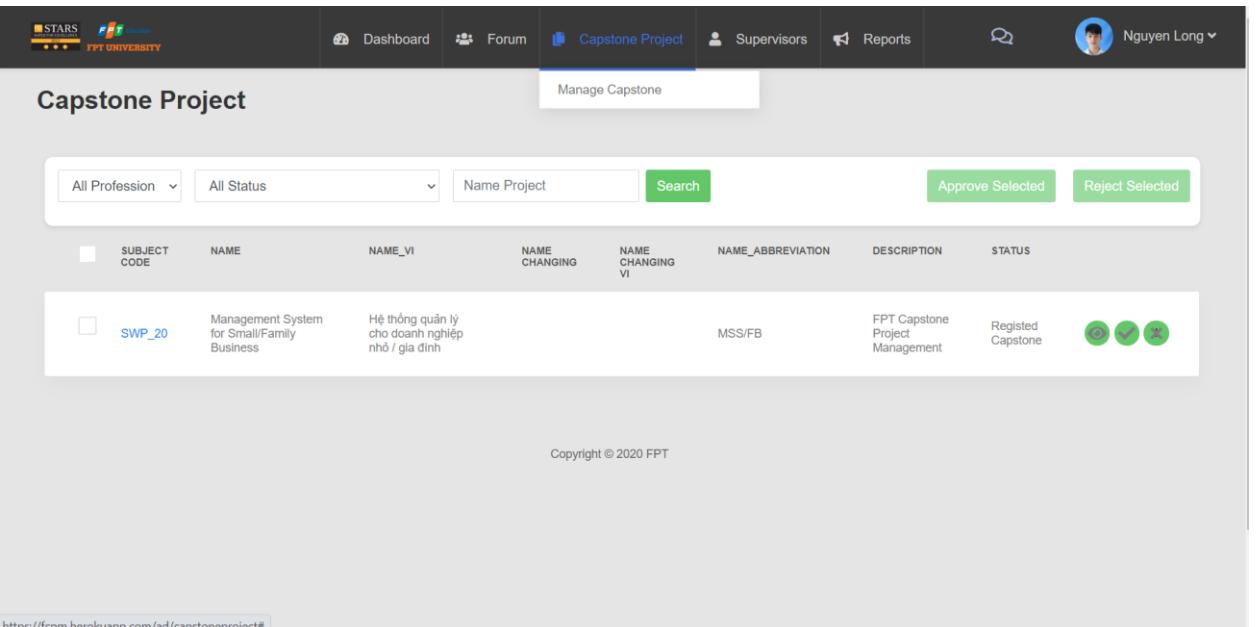
### 6.2.1.23 Manage Capstone Project

Step 1: Access forum, click Capstone Project, choose Manage Capstone



The screenshot shows the FPT University forum interface. At the top, there is a navigation bar with links for Dashboard, Forum, Capstone Project, Supervisors, Reports, and a user profile for Nguyen Long. A red arrow points to the 'Manage Capstone' button in the Capstone Project section. Below the navigation bar, there is a search bar and a 'Forum' section titled 'TÌM NHÓM ĐO ÁN'. This section contains a post from 'khangnmse05904' dated 2020-12-20 22:22:00. The post content is 'khang'. There is also a reply from 'khangnmse05904' with the message 'd'. A text input field 'Write a comment...' and a 'Send' button are present. Another section titled 'CHUNG TOI MUON TIM DO AN...' is partially visible. On the right side of the screen, there is a 'Global News' sidebar with several news items.

Step 2: System display Capstone Project Page



The screenshot shows the Capstone Project management page. At the top, there is a navigation bar with links for Dashboard, Forum, Capstone Project, Supervisors, Reports, and a user profile for Nguyen Long. A red arrow points to the 'Manage Capstone' button in the Capstone Project section. Below the navigation bar, there is a search bar and a table displaying a list of capstone projects. The table columns include SUBJECT\_CODE, NAME, NAME\_VI, NAME\_CHANGING, NAME\_CHANGING\_VI, NAME\_ABBREVIATION, DESCRIPTION, and STATUS. One project is listed: SUBJECT\_CODE SWP\_20, NAME Management System for Small/Family Business, NAME\_VI Hệ thống quản lý cho doanh nghiệp nhỏ / gia đình, NAME\_CHANGING, NAME\_CHANGING\_VI MSS/FB, NAME\_ABBREVIATION FPT Capstone Project Management, DESCRIPTION Registered Capstone, and STATUS. To the right of the project details are three green circular icons with checkmarks. At the bottom of the page, there is a copyright notice: Copyright © 2020 FPT.

### 6.2.1.24 View task detail of Capstone Project

Step 1: Access Dashboard, click Detail in list project

The screenshot shows the 'The Progress Of The Projects' section with a donut chart. Below it is a search bar and a 'Statistics' table. On the right, there's a 'Global News' and 'Notification' sidebar.

Category	Count
1. Number of project	1
2. On schedule	0
3. Warning	1
4. Serious	0

**Notification:**  
khanhnse05045 invites you to participate in a capstone project  
2020-12-06 10:24:12.0

**More...**

**App Map Directions**

Name Vietnamese: Ứng dụng chỉ đường

Project Participants: khangnse0504 gv010 gv008

Status: 20.69% 17.24% 62.07%

**Click here view task detail**

Step 2: System display Task Detail Page

The screenshot shows the 'Tasks' section with a table of tasks. The table has columns: Summary, Start Date, End Date, Time Spent, Time Tracking, Status, Assignee, and Week.

Summary	Start Date	End Date	Time Spent	Time Tracking	Status	Assignee	Week
Comment	2020-thg 10-02	2020-thg 10-04	2d	100.0	Done	Đức Đỗ	13
Search and filter forum	2020-thg 10-05	2020-thg 10-08	4d	100.0	Done	Đức Đỗ	13
Create common upload file	2020-thg 10-05	2020-thg 10-08	1m	100.0	Done	(FUHL STUDENT) Bùi Trung Kiên	13
Create notification component	2020-thg 10-05	2020-thg 10-11	1w 2d	100.0	Done	Nguyen Ngoc Khanh - K11 FUG HN	13
Create booking lecturers feature	2020-thg 10-05	2020-thg 10-11	1w 2d	100.0	Done	Nguyen Ngoc Khanh - K11 FUG HN	13
Create capstone project detail page	2020-thg 10-05	2020-thg 10-11	1w 2d	100.0	Done	(K12_HN) Nguyen Minh Khang	13
Create common send email	2020-thg 10-09	2020-thg 10-11	3m	100.0	Done	(FUHL STUDENT) Bùi Trung Kiên	13
Create group for chatting	2020-thg 10-09	2020-thg 10-11	1w 3d	100.0	Done	Đức Đỗ	13
Append send email to register project	2020-thg 10-12	2020-thg 10-18	1w 2d	100.0	Done	(FUHL STUDENT) Bùi Trung Kiên	13
Append send email to booking lecturers	2020-thg 10-12	2020-thg 10-18	1w 2d	100.0	Done	(K12_HN) Nguyen Minh Khang	13

Showing 1 to 10 of 29 entries

Global News

FU HL: Thông báo điểm thi lần 1 môn VOV141 và điểm thi lần 2 HK Fall 2020 (No 1)  
2020-12-06 20:15:58.0

FU HL: Thông báo DSSV thi lần 2 môn VOV114 HK Fall 2020.  
2020-12-05 20:15:39.0

FU HL: Thông báo về việc già hạn đăng ký mua BHYT đợt 4 năm 2020  
2020-12-05 20:15:40.0

THÔNG BÁO NƠI HỌC PHÍ KÝ SPRING 2021  
2020-12-05 20:14:58.0

FU HL: Thông báo lịch thi cuối kỳ lần 1 và lần 2 môn JPHD12 HK Fall 2020.  
2020-12-05 20:14:00.0

FU HL: Vv: Mở thêm lớp LAB231.E1-BL5  
2020-12-05 20:11:48.0

**More...**

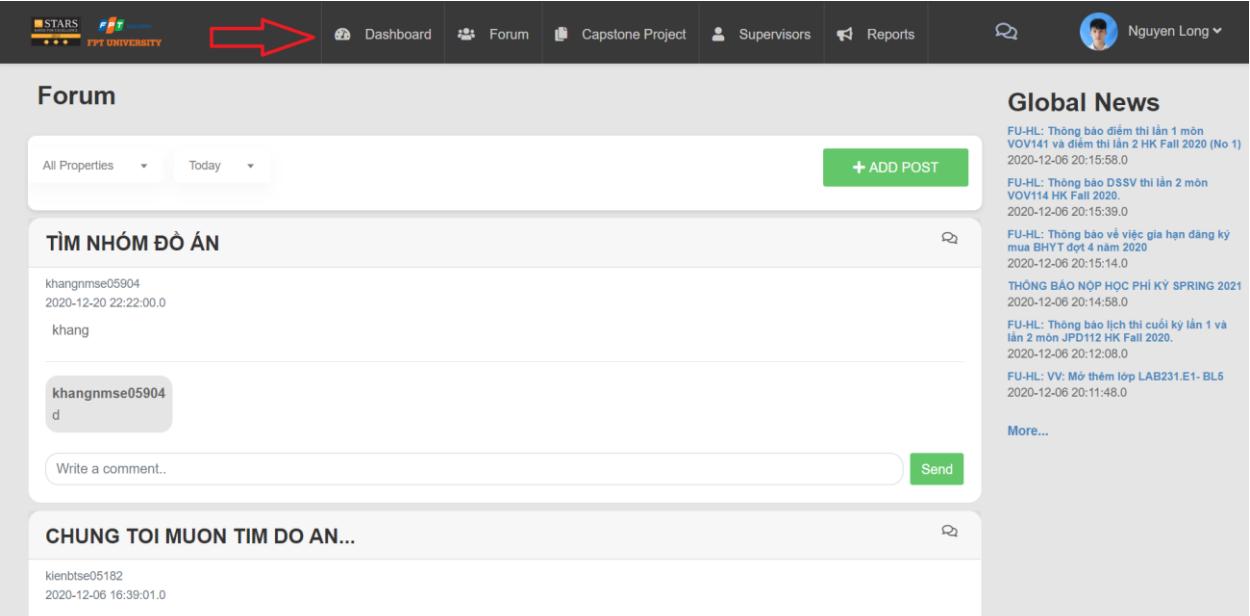
**Notification**

khanhnse05045 invites you to participate in a capstone project  
2020-12-06 10:24:12.0

**More...**

### 6.2.1.25. Dashboard statistical of project

Step 1: Access forum, Click to Dashboard



The screenshot shows the 'Forum' section of a web application. At the top, there is a navigation bar with the 'Dashboard' button highlighted by a red arrow. Other buttons in the navigation bar include 'Forum', 'Capstone Project', 'Supervisors', 'Reports', and a user profile for 'Nguyen Long'. Below the navigation bar, there is a search bar and a green 'ADD POST' button. The main content area displays two posts:

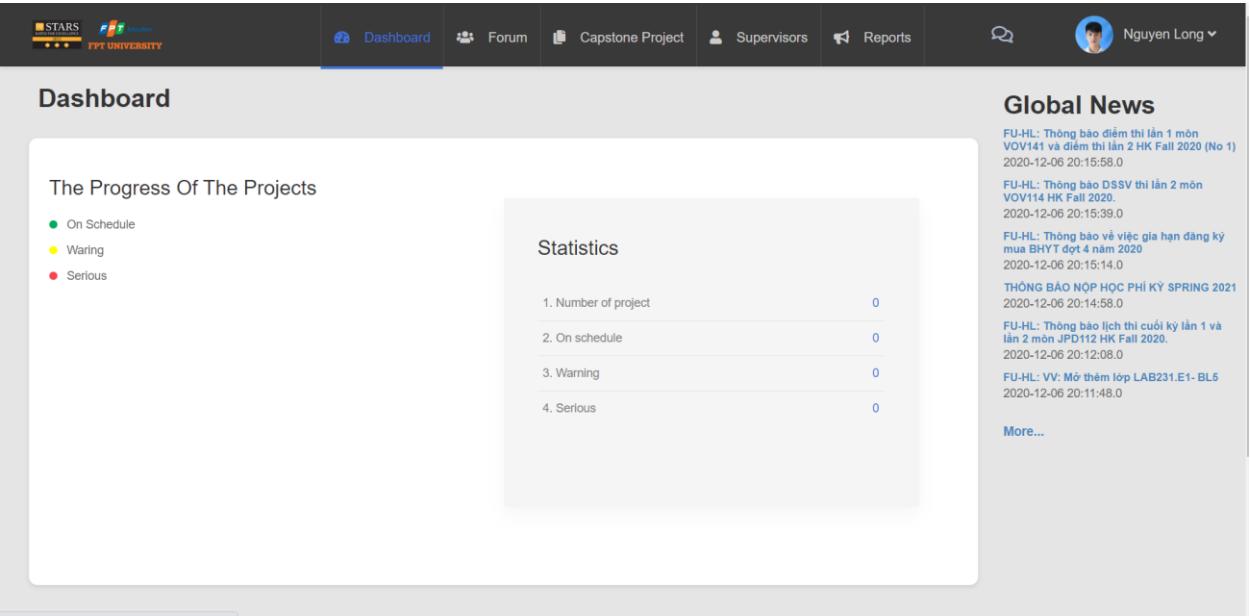
- TÌM NHÓM ĐO ÁN**  
khangnmse05904  
2020-12-20 22:22:00.  
khang
- CHUNG TOI MUON TIM DO AN...**  
kienbtse05182  
2020-12-06 16:39:01.0  
chuna toi

On the right side, there is a 'Global News' sidebar with several news items:

- FU-HL: Thông báo điểm thi lần 1 môn VOV141 và điểm thi lần 2 HK Fall 2020 (No 1)  
2020-12-06 20:15:58.0
- FU-HL: Thông báo DSSV thi lần 2 môn VOV114 HK Fall 2020.  
2020-12-06 20:15:39.0
- FU-HL: Thông báo về việc gia hạn đăng ký mua BHYT đợt 4 năm 2020  
2020-12-06 20:15:14.0
- THÔNG BÁO NỘP HỌC PHÍ KỲ SPRING 2021  
2020-12-06 20:14:58.0
- FU-HL: Thông báo lịch thi cuối kỳ lần 1 và lần 2 môn JPD112 HK Fall 2020.  
2020-12-06 20:12:08.0
- FU-HL: VV: Mở thêm lớp LAB231.E1- BL5  
2020-12-06 20:11:48.0

A 'More...' link is also present at the bottom of the news sidebar.

Step 2: System display Dashboard page



The screenshot shows the 'Dashboard' section of the web application. At the top, there is a navigation bar with the 'Dashboard' button highlighted. Other buttons in the navigation bar include 'Forum', 'Capstone Project', 'Supervisors', 'Reports', and a user profile for 'Nguyen Long'. Below the navigation bar, there is a chart titled 'The Progress Of The Projects' and a 'Statistics' section.

**The Progress Of The Projects**

- On Schedule
- Waring
- Serious

**Statistics**

1. Number of project	0
2. On schedule	0
3. Warning	0
4. Serious	0

On the right side, there is a 'Global News' sidebar with several news items:

- FU-HL: Thông báo điểm thi lần 1 môn VOV141 và điểm thi lần 2 HK Fall 2020 (No 1)  
2020-12-06 20:15:58.0
- FU-HL: Thông báo DSSV thi lần 2 môn VOV114 HK Fall 2020.  
2020-12-06 20:15:39.0
- FU-HL: Thông báo về việc gia hạn đăng ký mua BHYT đợt 4 năm 2020  
2020-12-06 20:15:14.0
- THÔNG BÁO NỘP HỌC PHÍ KỲ SPRING 2021  
2020-12-06 20:14:58.0
- FU-HL: Thông báo lịch thi cuối kỳ lần 1 và lần 2 môn JPD112 HK Fall 2020.  
2020-12-06 20:12:08.0
- FU-HL: VV: Mở thêm lớp LAB231.E1- BL5  
2020-12-06 20:11:48.0

A 'More...' link is also present at the bottom of the news sidebar.

<https://fcpm.herokuapp.com/db/dashboard>

The screenshot shows a web interface for managing projects. At the top right, there's a sidebar with a list of notifications and a "More..." link. Below the sidebar, a "Statistics" section displays four categories: 1. Number of project (0), 2. On schedule (0), 3. Warning (0), and 4. Serious (0). At the bottom left, there are dropdown menus for "All Semesters" and "All Sites", a search bar for "Name Project", and a "Search" button.

### 6.2.1.26 View information of user

Step 1: Access forum, click to account of user

The screenshot shows a forum page with several posts. One post by "khangnmse05904" is highlighted with a red arrow. The post content is "2020-12-20 22:22:00". Below the post, there's a comment input field with "d" typed in and a "Send" button. Other posts visible include one from "kienbtse05182" and another from "chung toi". On the right side of the screen, there's a "Global News" sidebar with various announcements and a "Notification" sidebar with a message from "khanhnse05045".

## Step 2: Display information of user

### User Information



**Nguyen Minh Khang**  
Role: Leader

Birth Date	07-10-2020	User Name	khangnmse05904
Description		Capstone Project	App Map Directions
Email	khangnmse05904@fpt.edu.vn	Address	Số 128, đường Nguyễn Trãi, P. Sao Đỏ, Thị xã Chi Linh.
Gender	male	Status	Pending By Supervisor
Phone	2222222222		

### Global News

FU-HL: Thông báo điểm thi lần 1 môn VOV141 và điểm thi lần 2 HK Fall 2020 (No 1)  
2020-12-06 20:15:58.0

FU-HL: Thông báo DSSV thi lần 2 môn VOV114 HK Fall 2020.  
2020-12-06 20:15:39.0

FU-HL: Thông báo về việc gia hạn đăng ký mua BHYT đợt 4 năm 2020  
2020-12-06 20:15:14.0

THÔNG BÁO NỘP HỌC PHÍ KỲ SPRING 2021  
2020-12-06 20:14:58.0

FU-HL: Thông báo lịch thi cuối kỳ lần 1 và lần 2 môn JPD112 HK Fall 2020.  
2020-12-06 20:12:08.0

FU-HL: VV: Mở thêm lớp LAB231.E1- BL6  
2020-12-06 20:11:48.0

[More...](#)

### Notification

khanhnse05045 invites you to participate in a capstone project  
2020-12-06 10:24:14.0

### 6.2.1.27 Approve capstone project in the project registration stage

Step 1: Click button “Approve” or “Reject” project

The screenshot shows a web-based application interface for managing capstone projects. At the top, there is a navigation bar with links for Forum, Capstone Project, Lectures, Notification, and Reports. Below the navigation bar, the title "Capstone Project" is displayed. A search bar allows filtering by profession, status, and project name, along with "Search" and "Approve/Reject" buttons. The main content area displays a table of projects with columns for NAME, DESCRIPTION, NAME\_VI, NAME\_ABBREVIATION, and STATUS. Each row includes a checkbox, project details, and three circular buttons for approval (green with checkmark) or rejection (red with X). The table footer shows page navigation with links for Previous, 1, 2, 3, and Next.

NAME	DESCRIPTION	NAME_VI	NAME_ABBREVIATION	STATUS	
Quan Ly Do An	Quan Ly Do An	QLDA	QLDA	approve_capstone_lecturer	
khanh	qeqwe	wqe	qweqwe	registering_capstone	
FCPM		FCPM	FCPM	registering_capstone	

### 6.2.1.28 Change pass / fail results

Step 1: Access forum, Click Capstone Project, Choose Manage Capstone

The screenshot shows a web-based application interface for forums. At the top, there is a navigation bar with links for Forum, Capstone Project, Lectures, Reports, and Model. A user profile for "Do Duc" is visible on the right. The main content area is titled "Forum" and features a search bar and a "+ ADD POST" button. Below the search bar, a red arrow points to a "Manage Capstone" button. The forum feed displays several posts from users like "ducdot1214" and "ducdot04936" with their respective timestamps and content. Each post has a "Send" button. The bottom of the screen shows a Windows taskbar with various icons and system status indicators.

## Step 2: Choose status

The screenshot shows a dropdown menu open under the 'Eligible Defence By Supervisor' button. The menu contains several options: 'All Profession', 'Eligible Defence By Supervisor', 'Not Eligible Defence', 'Accepted Renaming By Supervisor', 'Pending By Head', 'Doing', 'Rejected', 'Changing Name', 'Approved By Supervisor', 'Approved By Training Department', 'Approved By Head', 'Registered Capstone', and 'Status'. A red arrow points to the 'Click here' label next to the 'Eligible Defence By Supervisor' option.

Capstone Project

All Profession ▾ Eligible Defence By Supervisor ▾

SUBJECT CODE SWP\_19

Name Project Search

NAME CHANGING NAME CHANGING VI NAME\_ABBREVIATION DESCRIPTION STATUS

asd Eligible Defence By Supervisor

Copyright © 2020 FPT

Approve Selected Reject Selected

## Step 3: Click “Search” button

The screenshot shows the search results for the project 'SWP\_19'. The search term 'as' was entered in the 'Name Project' field. A red arrow points to the 'Click here' label next to the 'Search' button.

Capstone Project

All Profession ▾ Eligible Defence By Supervisor ▾ Name Project Search

SUBJECT CODE NAME NAME\_VI NAME CHANGING NAME CHANGING VI NAME\_ABBREVIATION DESCRIPTION STATUS

SWP\_19 asd asd asd Eligible Defence By Supervisor

Copyright © 2020 FPT

Approve Selected Reject Selected

Step 4: Click icon as screen to pass result or fail result

**Capstone Project**

SUBJECT_CODE	NAME	NAME_VI	NAME_CHANGING	NAME_CHANGING_VI	NAME_ABBREVIATION	DESCRIPTION	STATUS	
SWP_6	Parking Management	Quản lý gửi xe			PMCPM	FPT Capstone Project Management	Eligible Defence By Supervisor	
SWP_7	App Map Directions	Ứng dụng chỉ đường			AMD	Ứng dụng chỉ đường trên điện thoại di động	Eligible Defence By Supervisor	
SWP_8	FPT capstone	Fpt capstone			Fpt capstone		Eligible Defence By Supervisor	
JS_10	Management System for Small/Family Business	Hệ thống quản lý cho doanh nghiệp nhỏ / gia đình			MSB	FPT Capstone Project Management	Eligible Defence By Supervisor	
JS_12	Lmemo	Lmemo			LMM	FPT Capstone Project Management	Eligible Defence By Supervisor	

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Click here set to pass result

Click here set to fail result

### 6.2.1.29 Create notification

Step 1: Access forum, click Notifications, choose Create Notifications

The screenshot shows a list of capstone projects. At the top right, there is a 'Create Notifications' button with a red arrow pointing to it. Below the button, the text 'Click here' is overlaid. The table has columns for SUBJECT\_CODE, NAME, NAME\_VI, NAME\_CHANGING, NAME\_ABBREVIATION, DESCRIPTION, and STATUS.

SUBJECT_CODE	NAME	NAME_VI	NAME_CHANGING	NAME_ABBREVIATION	DESCRIPTION	STATUS
SWP_1	FPT Capstone Project Management	Quản lý đồ án	FCPM	FPT Capstone Project Management	Doing	<span style="color: green;">●</span>
SWP_2	App Map Directions	Ứng dụng chỉ đường	AMD	ducpmse06083@fpt.edu.vn	Doing	<span style="color: green;">●</span>
SWP_5	attendance by fingerprint	Chấm công bằng vân tay	ABF	Điểm danh bằng vân tay	Doing	<span style="color: green;">●</span>
<input type="checkbox"/> SWP_6	Parking Management	Quản lý gửi xe	PMCPM	FPT Capstone Project Management	Registered Capstone	<span style="color: green;">●</span> <span style="color: green;">●</span> <span style="color: green;">●</span>
<input type="checkbox"/> SWP_7	App Map Directions	Ứng dụng chỉ đường	AMD	Ứng dụng chỉ đường trên điện thoại di động	Eligible Defence By Supervisor	<span style="color: green;">●</span> <span style="color: green;">✓</span>
SWP_8	FPT capstone	Fpt capstone	Fpt capstone		Eligible Defence	<span style="color: green;">●</span>
SWP_9	App Map Directions	Ứng dụng chỉ đường	AMD	Ứng dụng chỉ đường bằng điện thoại	Doing	<span style="color: green;">●</span>
<input type="checkbox"/> JS_10	Management System for Small/Family Business	Hệ thống quản lý cho doanh nghiệp nhỏ / gia đình	MSB	FPT Capstone Project Management	Registered Capstone	<span style="color: green;">●</span> <span style="color: green;">●</span> <span style="color: green;">●</span>

Step 2: Enter information, click “Post” button

The screenshot shows the 'Notification' creation form. It includes fields for TITLE, CONTENT (with a rich text editor), SUBJECT OF APPLICATION (radio buttons for All, Post a user, or Post a team), and a dropdown for FPT Capstone Project Management. A large green 'Post' button is at the bottom. On the right side, there is a sidebar titled 'Global News' with several news items and a 'More...' link. There is also a 'Notification' section with a message from khuanhme05045.

**Notification**

**TITLE**

**CONTENT**

**SUBJECT OF APPLICATION**

All

Post a user

Post a team

**input data to create a notification**

**Post**

**Global News**

FU HL: Thông báo điểm thi lần 1 môn VOV141 và điểm thi lần 2 HK Fall 2020 (No 1)  
2020-12-06 20:15:58.0

FU HL: Thông báo DSSV thi lần 2 môn VOV114 HK Fall 2020.  
2020-12-06 20:15:39.0

FU HL: Thông báo về việc già hạn đăng ký mua BHYT đợt 4 năm 2020  
2020-12-06 20:15:14.0

THÔNG BÁO NỘP HỌC PHÍ KỲ SPRING 2021  
2020-12-06 20:14:58.0

FU HL: Thông báo lịch thi cuối kỳ lần 1 và lần 2 môn JPD112 HK Fall 2020.  
2020-12-06 20:12:08.0

FU HL: VV: Mở thêm lớp LAB231.E1-BLS  
2020-12-06 20:11:48.0

**More...**

**Notification**

khuanhme05045 invites you to participate in a capstone project!  
2020-12-06 10:24:12.0

**More...**

### 6.2.1.30 View History Record

Step 1: Access forum, click History, choose History List, system display History Records

History Records

Role: Student Type: Register Capstone

Show 100 entries

Search:

Content	Created date	Last modified date	Type	Notification	Post	Report	Create by user
Register Capstone	2020-1hg 12-22		Capstone Project	Google Map			khanhnse050452
Booking Lecture	2020-1hg 12-22			Google Map			khanhnse050452
Booking Lecture	2020-1hg 12-22			Google Map			khanhnse050452
Create notification	2020-1hg 12-22				SE050453 has joined your team		khanhnse050453
Approve Project	2020-1hg 12-22			Google Map			khanhnse050453
Create notification	2020-1hg 12-22				SE050454 has joined your team		khanhnse050454
Approve Project	2020-1hg 12-22			Google Map			khanhnse050454
Create notification	2020-1hg 12-22				SE050455 has joined your team		khanhnse050455
Approve	2020-1hg 12-22			Google Map			khanhnse050455

https://fcpm.herokuapp.com/history-records

### 6.2.1.31 Change name capstone project

Step 1: Access forum, click Capstone Project, choose My Capstone

Forum

My Capstone

Search for title...

+ ADD POST

TÌM NHÓM ĐO ÁN

khangnmse05904  
2020-12-20 22:22:00.0  
khang

khangnmse05904  
d

Write a comment.  Send

CHUNG TOI MUON TIM DO AN...

kiembtse05182  
2020-12-06 16:39:01.0  
chung toi

ducdse04936  
sdasd

ducd01214  
dsdsdf

kiembtse05182  
n

https://fcpm.herokuapp.com/project-detail/43

## Step 2: Click “Edit” button

The screenshot shows the 'Project Information' section of a web application. At the top right, there is a user profile for 'Nguyen Khanh'. Below the header, there are tabs for 'Forum', 'Capstone Project', 'Supervisors', 'Reports', and 'Model'. The main content area has two sections: 'Information' and 'Member'. The 'Information' section contains a table with various project details like Name Project, Description, and Status. The 'Status' row shows 'Pending By Supervisor'. To the right of the table are 'Global News' and 'Notification' sections. A red arrow points to the 'Edit' button in the top right corner of the table.

## Step 3: Enter information to correct, click “Update” button

The screenshot shows the 'Edit' form for the project information. A yellow warning box at the top states: 'warning: You can only edit information without submitting this form for Training Department.' Below this are several input fields for 'Name Project', 'Name Project VietName', 'Name Project Other language', 'Name Project Abbreviation', 'Program Project', 'Specialty Project', 'Document Project', and 'Description Project'. In the center, there is a red arrow pointing to the text 'Điền thông tin cần sửa' (Enter the information to be corrected). To the right of the form is a sidebar with 'Global News' and 'Notification' sections. The 'Update' button at the bottom right is highlighted with a red arrow.

### 6.2.1.32 View list post

Step 1: Access forum display list post

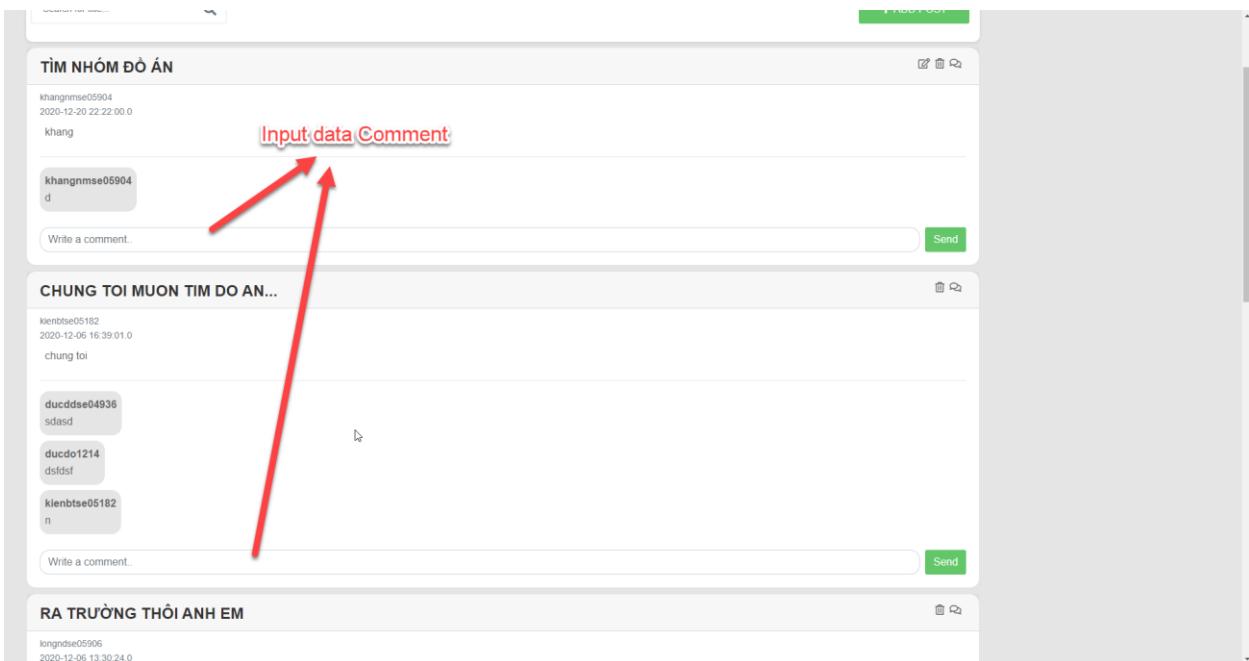
The screenshot shows a forum interface with two visible posts:

- TÌM NHÓM ĐÔ ÁN**  
khangnmse05904  
2020-12-20 22:22:00.0  
khang  
**List post here**
- CHUNG TOI MUON TIM DO AN...**  
kienbtse05182  
2020-12-06 16:39:01.0  
chung toi  
ducdse04936  
sdasd  
ducdo1214  
dsfdf  
kienbtse05182  
n

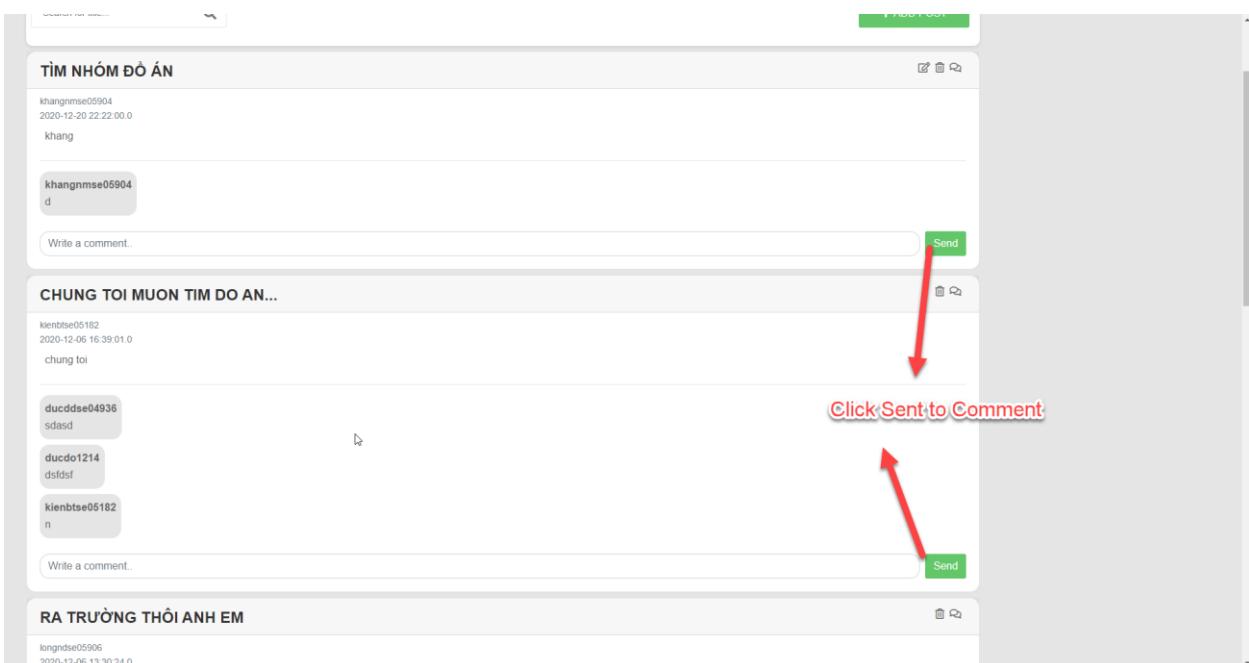
Both posts have a "List post here" button at the bottom right, which is highlighted with a red border.

### 6.2.1.33 Get comment

Step1: Access forum, enter the article you want to comment on post

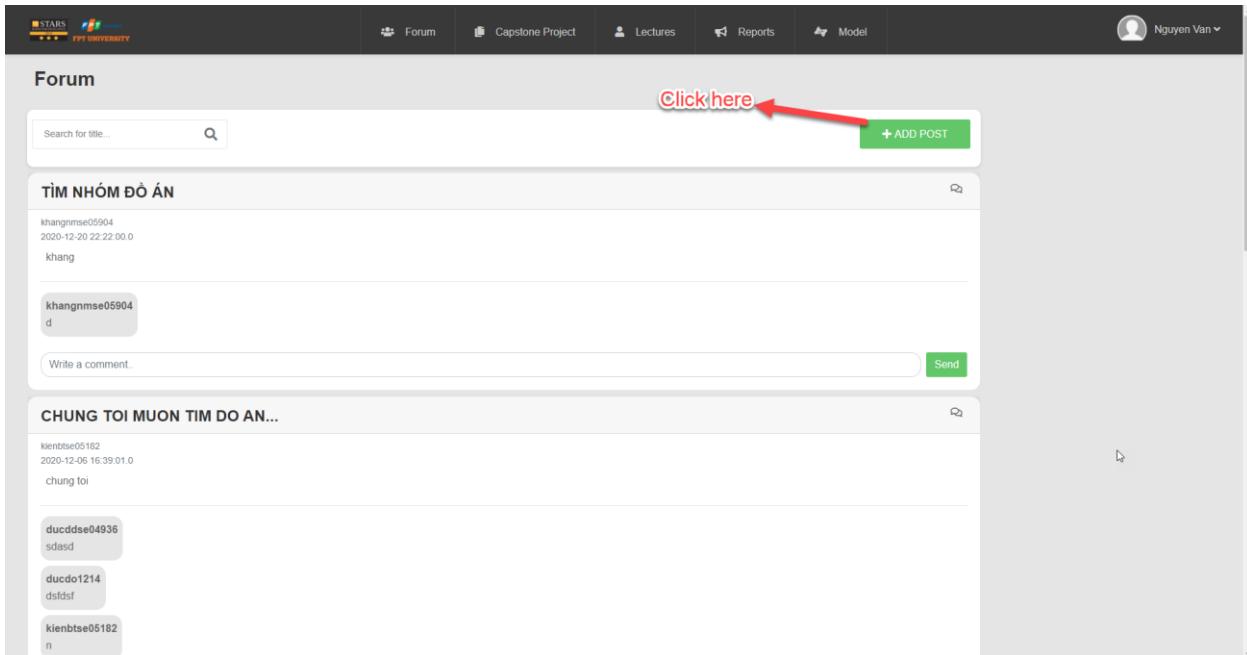


Step 2: Click “Send” button



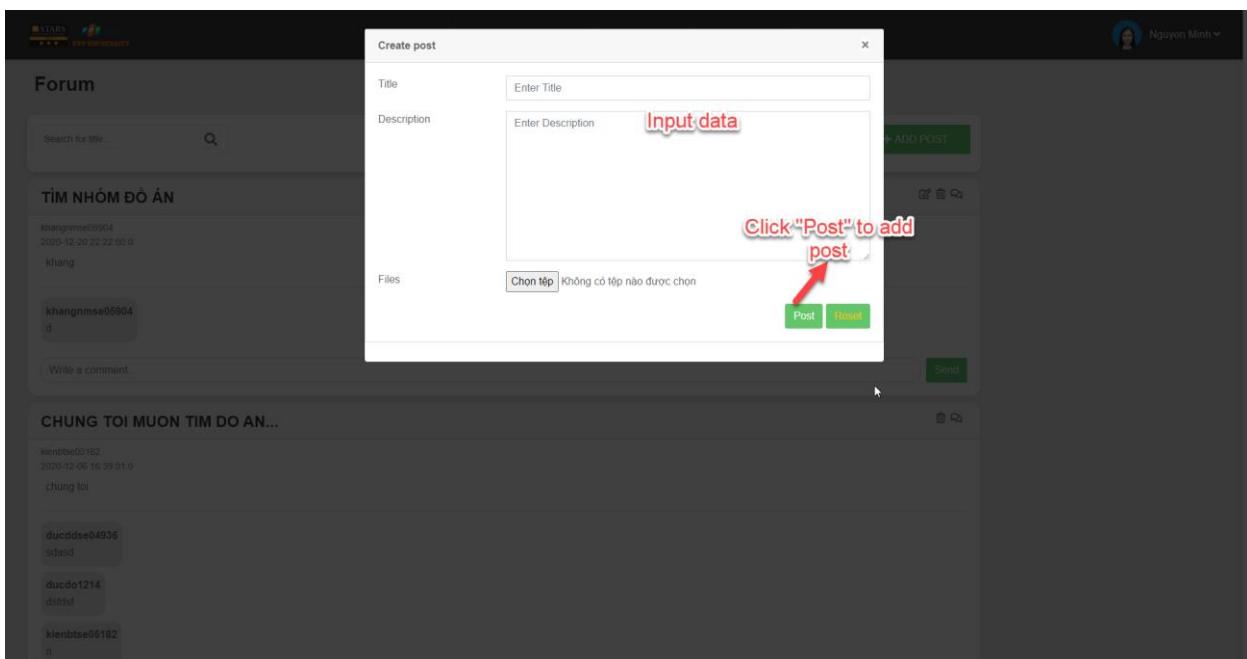
### 6.2.1.34 Add post

Step 1: Access forum, click “Add Post” button



The screenshot shows the FPT University STARS platform's Forum section. At the top, there are navigation links for Forum, Capstone Project, Lectures, Reports, and Model. On the right, a user profile for 'Nguyen Van' is visible. The main area displays two posts: one titled 'TÌM NHÓM ĐỒ ÁN' and another titled 'CHUNG TÔI MUON TIM DO AN...'. Below these posts, there is a search bar and a comment input field with a 'Send' button. In the top right corner of the forum interface, there is a green button labeled '+ ADD POST' with a red arrow pointing to it, indicating where to click to add a new post.

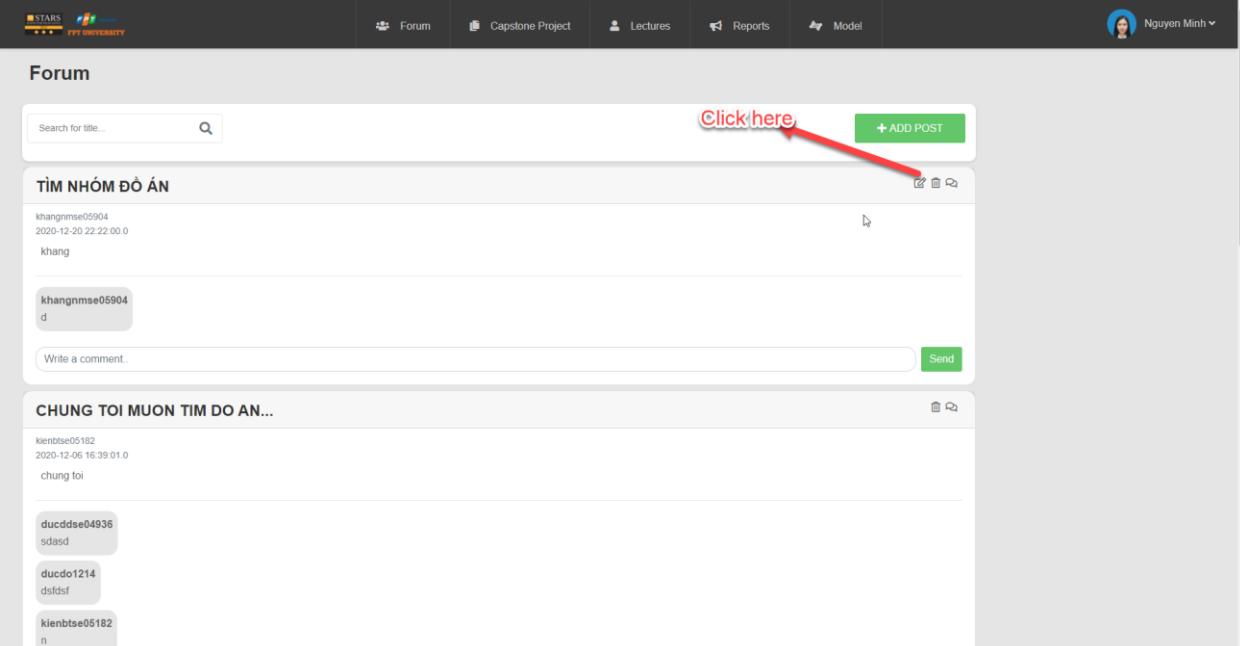
Step 2: Fill full the information, click “Post” button



The screenshot shows the 'Create post' modal window. Inside the modal, there are fields for 'Title' (with placeholder 'Enter Title') and 'Description' (with placeholder 'Enter Description'). Below these fields is a 'Files' section with a 'Chọn tệp' (Select file) button and a message 'Không có tệp nào được chọn' (No files selected). At the bottom right of the modal, there are two buttons: 'Post' (highlighted with a red arrow and the text 'Click "Post" to add post') and 'Reset'. The background of the modal is dark, while the buttons and text are white or light-colored for contrast.

### 6.2.1.35 Edit post

Step 1: Access forum, click on the icon as screen

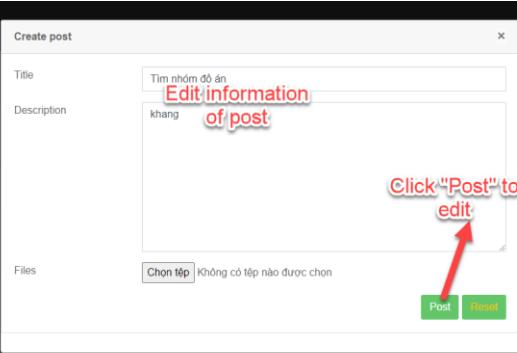


The screenshot shows the 'Forum' section of a university website. At the top, there are navigation links for STARS, FPT UNIVERSITY, Forum, Capstone Project, Lectures, Reports, Model, and a user profile for 'Nguyen Minh'. Below the header, there are two forum posts:

- TÌM NHÓM ĐO ÁN**  
khangnmse05904  
2020-12-20 22:22:00.0  
khang  
  
khanganmse05904  
d
- CHUNG TÔI MUON TIM DO AN...**  
kienbtse05182  
2020-12-06 16:39:01.0  
chung tui  
  
ducdse04936  
sdasd  
ducko1214  
dsdfsf  
kienbtse05182  
n

A red arrow points from the text 'Click here' to the green '+ ADD POST' button located at the top right of the forum area.

Step 2: Edit post information, click “Post” button to edit



The screenshot shows the 'Create post' modal window overlaid on the forum page. The modal has fields for Title and Description, both of which are currently filled with placeholder text ('Edit information' and 'khang of post'). There is also a 'Files' section with a 'Chọn tệp' button and a note that no files have been selected. At the bottom of the modal, there are two buttons: 'Post' and 'Reset'. A red arrow points from the text 'Click "Post" to edit' to the 'Post' button.

### 6.2.1.36 Delete post

Step 1: Access forum, click on the icon as screen

Forum

TÌM NHÓM ĐỒ ÁN

khangnmse05904  
2020-12-20 22:22:00.0  
khang

khangnmse05904  
d

Write a comment... Send

Click here

CHUNG TOI MUON TIM DO AN...

kienbtse05182  
2020-12-06 16:39:01.0  
chung toi

ducdse04936  
sdasd

ducdse04936  
dsdfsf

kienbtse05182  
n

Step 2: Click “Delete” button

Forum

TÌM NHÓM ĐỒ ÁN

khangnmse05904  
2020-12-20 22:22:00.0  
khang

khangnmse05904  
d

Write a comment... Send

Do you want to delete this?

Cancel Delete

Click here to delete post

CHUNG TOI MUON TIM DO AN...

kienbtse05182  
2020-12-06 16:39:01.0  
chung toi

ducdse04936  
sdasd

ducdse04936  
dsdfsf

kienbtse05182  
n

### 6.2.1.37 Search code

Step 1: Access forum, enter title, click “Search”

The screenshot shows a forum search interface. At the top, there is a navigation bar with links for STARS, FPT UNIVERSITY, Forum, Capstone Project, Lectures, Reports, Model, and a user profile for Nguyen Minh. Below the navigation bar is a search bar with the placeholder "Search for title...". To the right of the search bar is a magnifying glass icon and a green "ADD POST" button. A red arrow points to the search bar with the text "Input title post". Another red arrow points to the magnifying glass icon with the text "Click 'Search' to search". The main content area displays two search results:

- TÌM NHÓM ĐO ÁN**  
khangnmse05904  
2020-12-20 22:22:00 0  
khang  
  
khanganmse05904  
d  
  
Write a comment... Send
- CHUNG TÔI MUỐN TÌM ĐO AN...**  
kienbtse05182  
2020-12-06 16:39:01 0  
chung toi  
  
ducddse04936  
sdasd  
  
ducco1214  
dsdsdf  
  
kienbtse05182  
n

### 6.2.1.38 Add user

Step 1: Access forum, click Manage User, choose Other User

The screenshot shows the 'Capstone Project' management interface. At the top, there are navigation links: Forum, Capstone Project, Supervisors, Manage User, Notifications, History, and a user profile for 'Nguyen Khang'. Below the navigation bar is a search bar and a 'Create Users' button with a red arrow pointing to it. The main area displays a table of projects with columns: SUBJECT\_CODE, NAME, NAME\_VI, NAME\_CHANGING, NAME\_CHANGING\_VI, NAME\_ABBREVIATION, DESCRIPTION, and STATUS. Projects listed include SWP\_1 through JS\_10, each with a unique name and status like 'Doing' or 'Eligible Defence'. At the bottom left, there is a URL: <https://fcpm.herokuapp.com/ad/manageuser>.

Step 2: Fill full the information

The screenshot shows the 'Add User' form. It includes fields for Role (Student), Status (Eligible Capstone), Site (FU-Ho Chi Minh), and Semester (with options Yes, No, and a checkbox). There are also fields for Name Semester, Period Of Semesters (Start Date and End Date), Period of registration (Start Date and End Date), and a file upload section ('Add a files'). On the right side, there is a 'Global News' sidebar with various university announcements and a 'Notification' sidebar with a message from 'khanhnhme05045'.

### Step 3: Click “Submit” button

The screenshot shows the 'Add User' form on a university website. The 'Role' dropdown is set to 'Student'. The 'Status' dropdown is set to 'Eligible Capstone'. The 'Site' dropdown is set to 'FU-Ho Chi Minh'. Under 'Semester', there is a note: 'Do you want to create semester? Yes  No '. Below this, there is a 'Name Semester' input field and two date inputs for 'Period Of Semesters' and 'Period of registration'. A file upload section 'Add a files' is present with a 'Chọn tệp' button and a note 'Không có tệp nào được chọn'. To the right of the file input is a link 'Download template to import'. A green 'Submit' button is located at the bottom right of the form. A red arrow points from the text 'Click "Submit"' to the 'Submit' button.

#### 6.1.1.39: Approve capstone project in the changing name stage

Step 1: Access forum, Click Capstone Project, Choose Manage Capstone

The screenshot shows the 'Forum' page on the university website. At the top, there are navigation links: Forum, Capstone Project, Lectures, Reports, Model, and a user profile for 'Do Duc'. Below the navigation, there is a search bar and a 'Manage Capstone' button. A red arrow points from the text 'Click here' to the 'Manage Capstone' button. The main area displays several posts:

- Post 1:** CCC...  
ducdse04936  
2020-12-22 00:24:31.0  
ccc
- Post 2:** AAA  
ducdse04936  
2020-12-21 21:48:50.0  
aa
- Post 3:** GGG  
ducdse04936  
2020-12-21 21:48:50.0  
aaaa

Each post has a 'Send' button at the bottom right. The status bar at the bottom of the screen shows 'localhost:8080/.../index.html' and the time '4:49 AM'.

## Step 2: Choose status

The screenshot shows the 'Capstone Project' interface. At the top, there's a navigation bar with links like 'Forum', 'Capstone Project', 'Supervisors', 'Manage User', 'Notifications', 'History', 'Guide', and a user profile for 'Do Duc'. Below the navigation is a search bar with 'Name Project' and a 'Search' button. To the right of the search bar are two buttons: 'Approve Selected' and 'Reject Selected'. On the left, there's a sidebar with 'All Profession' and 'SUBJECT CODE' filters. The main area displays a table of projects. One project, 'SWP\_18', has a status 'Accepted Renaming By Supervisor' highlighted with a blue background. A red arrow points to this status with the text 'Click here'.

SUBJECT CODE	NAME	NAME CHANGING VI	NAME_ABBREVIATION	DESCRIPTION	STATUS
SWP_19	FPT Capstone Project Management	Quản lý đồ án	FCPM	FPT Capstone Project Management	Registered Capstone
SWP_2	FPT Capstone Project Management 2	Quản lý đồ án 2	FCPM	FPT Capstone Project Management 2	Registering Capstone
SWP_3	The web sells clothes online	trang bán quần áo trên mạng	SCO	bán hàng online	Doing
SWP_4	App Map Directions	Ứng dụng chỉ đường	AMD	bản đồ chỉ đường	Accepted Renaming By Supervisor
SWP_5	salary calculator software	phần mềm tính tiền lương	SCC	Phần mềm tính tiền lương cho công ty nhà nước	Doing
SWP_6	Take attendance with facial recognition	Điểm danh bằng nhận diện khuôn mặt	TAWFR	Điểm danh thông minh cho các công ty công nghệ	Doing

## Step 3: Click “Search” button

This screenshot is identical to the one above, showing the 'Capstone Project' interface. The red arrow now points to the green 'Search' button in the top right corner of the search bar area, with the text 'Click here'.

## Step 4: Click icon as screen to approve

The screenshot shows a web-based application titled "Capstone Project". At the top, there is a navigation bar with links for "Forum", "Capstone Project", "Supervisors", "Manage User", "Notifications", "History", "Guide", and a user profile for "Do Duc". Below the navigation bar, the main content area is titled "Capstone Project". It features a search bar with dropdown filters for "All Profession", "Accepted Renaming By Supervisor", and a "Name Project" input field with a "Search" button. To the right of the search bar are two buttons: "Approve Selected" and "Reject Selected". Below the search bar is a table header with columns: SUBJECT CODE, NAME, NAME\_VI, NAME CHANGING, NAME CHANGING VI, NAME\_ABBREVIATION, DESCRIPTION, and STATUS. A single row of data is shown in the table, corresponding to the filter "Accepted Renaming By Supervisor". The data row includes columns for SUBJECT\_CODE (SWP\_4), NAME (App Map Directions), NAME\_VI (Ứng dụng chỉ đường), NAME\_CHANGING (AMD), NAME\_CHANGING\_VI (bản đồ chỉ đường), NAME\_ABBREVIATION, DESCRIPTION (Accepted Renaming By Supervisor), and STATUS. To the right of the table, there are three small circular icons: a blue one with a checkmark, a green one with a checkmark, and a grey one with a minus sign. A red arrow points from the text "Click here" to the green checkmark icon. The bottom of the screen shows a Windows taskbar with various pinned icons and system status indicators.