



جامعة جدة

University of Jeddah

UJ MYFUTURE APPLICATION

Principles of software engineering

Prepared by

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Approved by

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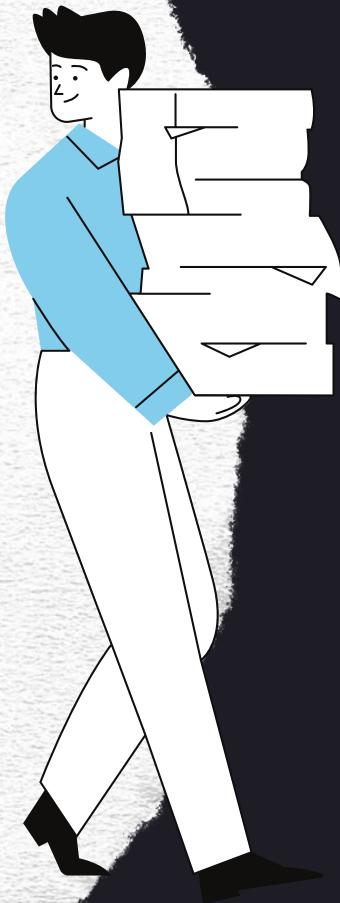
1. INTRODUCTION

The topic we choose for our project is the (UJ myfuture) application. We choose this topic because we have noticed the effectiveness and utility of the application. And we seek to refine (UJ myfuture) application where we design, develop, and apply creative solutions to the pre-existing problems. In addition to new services that increase the effectiveness of the application.



2. ALL LABS

- lab 1
- lab 2
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LAB 1



Project Topics
Software Engineering Lab (CCSW 223)
Class B5

Project 1.

project name: UJ MyFuture

Description: The future of the University of Jeddah application, which enables university students to review the most important academic services...

Student group:

-Arwa Alzahrani (Leader)
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LAB 2

UJ MyFuture



CANDIDATE NAME	DR. Fidaa Abed	CONDUCTED BY	Shahad – Rana - Arwa		
INTERVIEW DATE	Wednesday	INTERVIEW START TIME	11:00 AM	INTERVIEW END TIME	12:00 PM
CONTACT INFORMATION					
Phone number: +966 56 100 3386 Email: fabed@uj.edu.sa					

INTRODUCTORY

- Welcome the candidate.
- Introduce all the interview participants by name and title.
- Describe the project.
- Explain the interview process.

DESCRIPTION OF THE PROBLEM

-Lack of appropriate services that help students and faculty.
-The application needs to develop and deliver what students and faculty need over time and years.

INTERVIEW QUESTIONS

As a Faculty member at the University of Jeddah. What services would you like to provide within the application?

The services that I'd like to be available in the application are to facilitate the communication between the teacher and the students.

- Like sending a teacher announcement to everyone.
- A mechanism that facilitates taking students attendance and absence in the application
- Uploading subjects and managing assignments

How do you think we can develop the application? And how long can that be?

The steps are like what's been taught in the (introduction of software engineering), and the duration I think is 6 months to a year.

How can the app activate communication between students and faculty members?

- Provide Online office hours for communication between students and teachers
- Announcement of grades
- Exam score review
- Complaints and Suggestions Box.

We'd like to add the following services.

- A barcode links between student ID and Tawakkalna
- A map from the inside of the university shows the Buildings, library, gates, labs, halls, Coffee machines, cafeteria, etc.

Noting its vacant/effective situation

- Listing of faculty members in each building
- A complete list of available clubs for pre-inscription.
- A locker for each student with their ID number
- Inclusion of the University rewards.
- Inclusion University Annual calendar with the Important Dates

Any comments or suggestions?

Very nice. These are all new ideas and services. I would like you to add a chat to communicate between the educational affairs or the academic advisor.

How do we test the app before it's released?

How can we reduce security risks?

- Testing is an important part, and it will be tested a lot of times before it's released, the first experience will be by the teachers and students then developed several times
- This will be done by making the app secure and there is no hacking of information

ANALYST COMMENTS

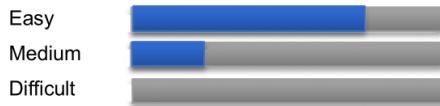
This is what we reached with this application was created and developed to meet the needs of students and faculty members As it will develop and add some services and work on them to suit the requirements of everyone who uses the application and that it will be worked on with a well-thought-out plan and a specific timetable and organization of the ideas and suggestions that were suggested to us by those who use the application to achieve the goals that were set for its development

CONCLUSION

- Verify the contact information.
- Thanks for their time.

SURVEY QUESTIONS - for UJ students -

How easy is the application to use?



Which of the following services would you like to provide? "choice 3"



Do you find the electronic services provided through the application that meet all your needs?



A service not mentioned that you would like to provide?

- Adding and deleting subjects, alerting exam dates, and calculating the rate.
- Evaluation of faculty members and their information and the ease of communication with them in more than one way the application supports more than one system and works without the Internet.
- Create discounts and free websites for students, such as: websites, Microsoft services, etc., and resources that benefit the student, such as books in pdf format, slides, or references ... etc.
- Reminders for the start or end of the lecture, or if it is canceled or delayed by teachers, alert of exam dates.
- Adding activities for students, developing their talents, and setting the dates for Olympiads and international competitions.
- Know the dates, times, and locations of events and clubs at the university.
- The freedom to choose to show or hide the personal picture in the e-card.
- Preparing a guide for mental health for students.
- Improving the internal browser of the application and integrating Odsus uj and Blackboard, and tawakkalna us in a future application.
- Providing places for rest.
- Possibility to reserve a car park through the application
- A financial statement and a reward for success if the student is eligible to take it or not.
- Develop the table format to put the most important dates in it

What Problems did you encounter while using the application?

Nothing

LAB 3

Content

We seek to refinement my future UJ application where we design, develop, and apply innovative solutions to the pre-existing problems. In addition to new services that increase the effectiveness of the application.

Motivation

We have noticed the effectiveness and utility of the application, but it needs to develop and the addition some services that will make my future UJ the ideal application for university staff over time and years .

Considerations

It's an important part of students' lives. Where they are facing problems like scattering of sources and loss of valuable time etc. since the basic daily academic services are fragmented into multiple sources (blackboard, odus, myfuture UJ). Therefore, we can consider it as a series problem.



Goals

This project is to develop UJ myfuture application for the students and faculty members.

so that they can get all the academic services in one place in the easiest and simplest way.

Preliminary report

► Problem:

The lack of appropriate services that help students and faculty members, which made it clear that the application needs to add services that cover the needs of students and faculty members and develop them over time and years.

► Findings:

- The application interface is not clear in accessing or displaying services.
- It is not possible to return between pages when using services (return in OUDS - Blackboard, etc..).
- The personal card does not appear directly with tawakkalna
- The study schedule appears as different days.

► Recommendation or proposed solution:

Improving the performance of the application and adding and developing many services to suit students and faculty members so that:

- Improving the application interface and adding the aesthetic character because it is a reason for satisfaction and satisfaction and attract the user while browsing the application.
- Add the option to choose the page and return from it in all external links.
- Integrating the personal card with tawakkalna through a barcode that is scanned at the entrance gate.
- Integrate the study schedule with the building site and display it together as one Page.





Cost & schedule Estimates:

SDLC	Description	Cost&Time
Requirement Analysis	<ul style="list-style-type: none">-Like achieving goals and requirements that have been taken from different users through a survey .- Create a simpler, faster and more efficient interface.- Develop the division of services in the program making it easy to access ...Etc	20% 4months
Design	we put ideas on how to design the program such as: The best programming language or usable programming environment in order to implement the desired program with specific requirements and objectives such as: java c/c++	30% 3months
Implementation	we implement a "Prototype" of the program to be used by various users and use all the services and features placed in it... Etc	20% 2months
Testing	we test the program and make sure that it performs all the functions required of it, within the standards and requirements set for its development and the quality of services and features and make sure that it has implemented the required role and the goal of adding them.	10% 1months
Evolution	making sure that the program is effective, and performs the required function of it with the best efficiency and the least cost, we are working on looking for ways to develop the program, add new features to it, and make it more effective and more efficient	20% 3months
Total		100% Year and 3months

LAB 4

REPORT WRITING

1

PROBLEM DEFINITION :

- Main problem: Lack of appropriate services that help students and faculty members.
- Sub problem: Difficulty using the available services.

2

SCOPE OBJECTIVES OF “NEW SYSTEM”:

Transferring access to academic services from manual to electronic through only one application.

- Put all the services of students and faculty members in one application that facilitates access and communication between them.
- Providing all platforms within the application that occupy their needs (OUDS - Blackboard - Hayyak - Communication with faculty members - Registration in clubs - etc...)

3

ALTERNATIVE SOLUTIONS:

- Development of previously available services
- Organizing the interface easier
- Selecting other platforms that are easy to communicate with (Teams - Blackboard - WhatsApp...)
- Determining office hours for faculty members

Cost & benefits alternatives:

During this phase, we as a team responsible for the development of the program determine the requirements and objectives that we want to reach through the program, but if the application does not succeed we will make another application that meets the same idea and is to meet the needs of a particular category:

SDLC	Description	Cost&Time
Requirement Analysis	<ul style="list-style-type: none"> - achieving the goals and requirements of students, teachers, children or the elderly..... etc - Create a simpler, faster and more efficient interface and learn from the mistakes of the first application - Develop the division of services in the program, which is easy to reach by the required category 	20% 4months
Design	<p>we put ideas on how to design the program such as: The best programming language or usable programming environment in order to implement the desired program with specific requirements and objectives such as: java c/c++</p>	30% 3months
Implementation	<p>we implement a "Prototype" of the program to be used by various users and use all the services and features placed in it... Etc</p>	20% 2months
Testing	<p>we test the program and make sure that it performs all the functions required of it, within the standards and requirements set for its development and the quality of services and features and make sure that it has implemented the required role and the goal of adding them.</p>	10% 1months
Evolution	<p>making sure that the program is effective, and performs the required function of it with the best efficiency and the least cost, we are working on looking for ways to develop the program, add new features to it, and make it more effective and more efficient</p>	20% 3months
Total		100% Year and 3months

5

SOFTWARE IMPACTS:

We plan to Improve the application interface by adding the aesthetic character because it is a reason for satisfaction and satisfaction and attract the user while browsing the application, Add the option to choose the page and return from it in all external links, Integrating the personal card with tawakkalna through a barcode that is scanned at the entrance gate, Integrate the study schedule with the building site and display it together as one Page etc.

6

POTENTIAL CHANGES IN THE ORGANIZATION:

The positive differences that the application will make is

- solutions to the problems facing students in their daily university life will be provided such as : A barcode links between student ID and Tawakkalna , A complete list of available clubs for pre-inscription in the application etc.
- Accelerate and facilitate academic services such as :Inclusion University Annual calendar with the Important Dates

And this will be in the interest of students and university employees because it saves a lot of time and effort.

7

RECOMMENDED ALTERNATIVE OF THE COURSE OF ACTION:

Currently it is an application, but in the future it can be converted into an integrated platform that serves all students in all Saudi universities

PROJECT PLAN

		Task Name	Resource Names	Duration	Start	Finish	Work
1		Project Plan		30 days	Mon 18/10/21 8:00	Thu 25/11/21 5:00	240 hrs
2		Feasibility study	All group	30 days	Mon 18/10/21 8:00 a	Thu 25/11/21 5:00 p	240 hrs
3		Analysis phase		90 days?	Fri 26/11/21 8:00 a	Wed 30/03/22 5:00	720 hrs
4		gathring	Shahad	30 days	Fri 26/11/21 8:00 am	Thu 06/01/22 5:00 p	240 hrs
5		case diagram	arwa	30 days	Fri 07/01/22 8:00 am	Wed 16/02/22 5:00 p	240 hrs
6		case description	Rna	30 days	Thu 17/02/22 8:00 a	Wed 30/03/22 5:00 p	240 hrs
7		Desgin phase		90 days	Sat 02/04/22 8:00	Wed 03/08/22 5:00	712 hrs
8		Class diagram	Shahad	45 days	Sat 02/04/22 8:00 am	Thu 02/06/22 5:00 p	352 hrs
9		programming	All group	45 days	Thu 02/06/22 8:00 a	Wed 03/08/22 5:00 p	360 hrs
10		Implementation		60 days	Mon 01/08/22 8:00	Fri 21/10/22 5:00 p	480 hrs
11		coding	Rna	60 days	Mon 01/08/22 8:00 a	Fri 21/10/22 5:00 pm	480 hrs
12		Testing phase		30 days	Tue 18/10/22 8:00	Fri 25/11/22 5:00 p	240 hrs
13		quality of services	arwa	15 days	Tue 18/10/22 8:00 a	Mon 07/11/22 5:00 p	120 hrs
14		features	All group	15 days	Mon 07/11/22 8:00 a	Fri 25/11/22 5:00 pm	120 hrs



LAB 5



STOCKHOLDER DEFINITION

a. The Client

University administration, Food & Beverage Companies.

b. The Customer

Faculty, students, staff, alumni.

c. Other Stakeholder

University ,Faculty, students, staff, alumni, Food &Beverage Companies, University Clubs, University's library.

THE SCOPE OF THE WORK

a. The Current Situation:

-Content:

It is the existence of a UJ myfuture application , but we would like to add some developments and modifications to it.

-Motivation:

Transferring access to academic services from manual to electronic through only one application.

- Put all the services of students and faculty members in one application that facilitates access and communication between them.

- Providing all platforms within the application that occupy their needs (OUDS -
Blackboard - Hayyak - Communication with faculty members -
Registration in clubs -
etc...)

-achieving the goals and requirements .

-Develop the division of services in the program, which is easy to reach by the required category

-Student's dependence on the application

b. The Context of the Work

-Content:

After implementing the program, it will become an integrated program that meets all the needs of faculty members, students, and everyone who needs it

The situation will become more organized and the time it takes for other applications will be reduced because an application has been created that provides all the needs in one place

Save more space for the device

Online transactions will be easier and faster

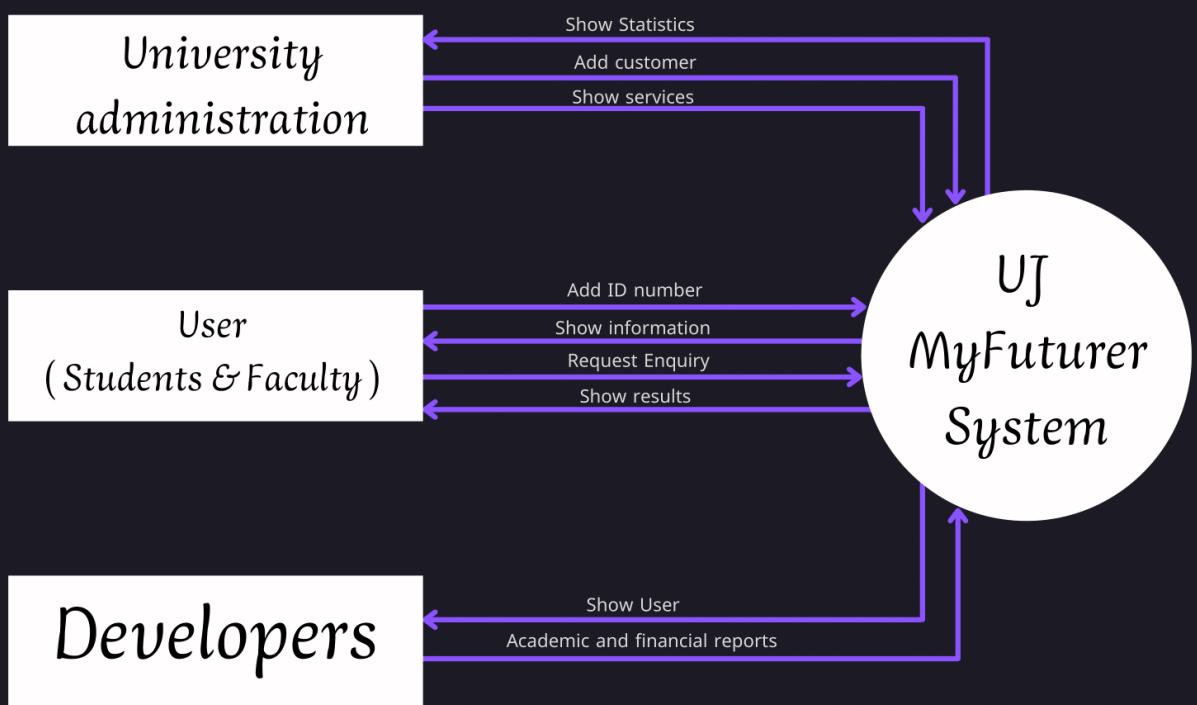
Both students and teachers will find their needs such as: places of halls, buildings, people, ease of monitoring and knowledge of grades, attendance, absence, subjects, drop and addition, and test times

Locations of buildings....etc.

-Motivation:

Develop the application more so as to increase the services or develop them or increase the categories and provide them with the requirements they need

Or providing electronic devices on the ground that meet the same needs of the application, for example, providing each building with electronic touch screens that contain the application or the services inside it.

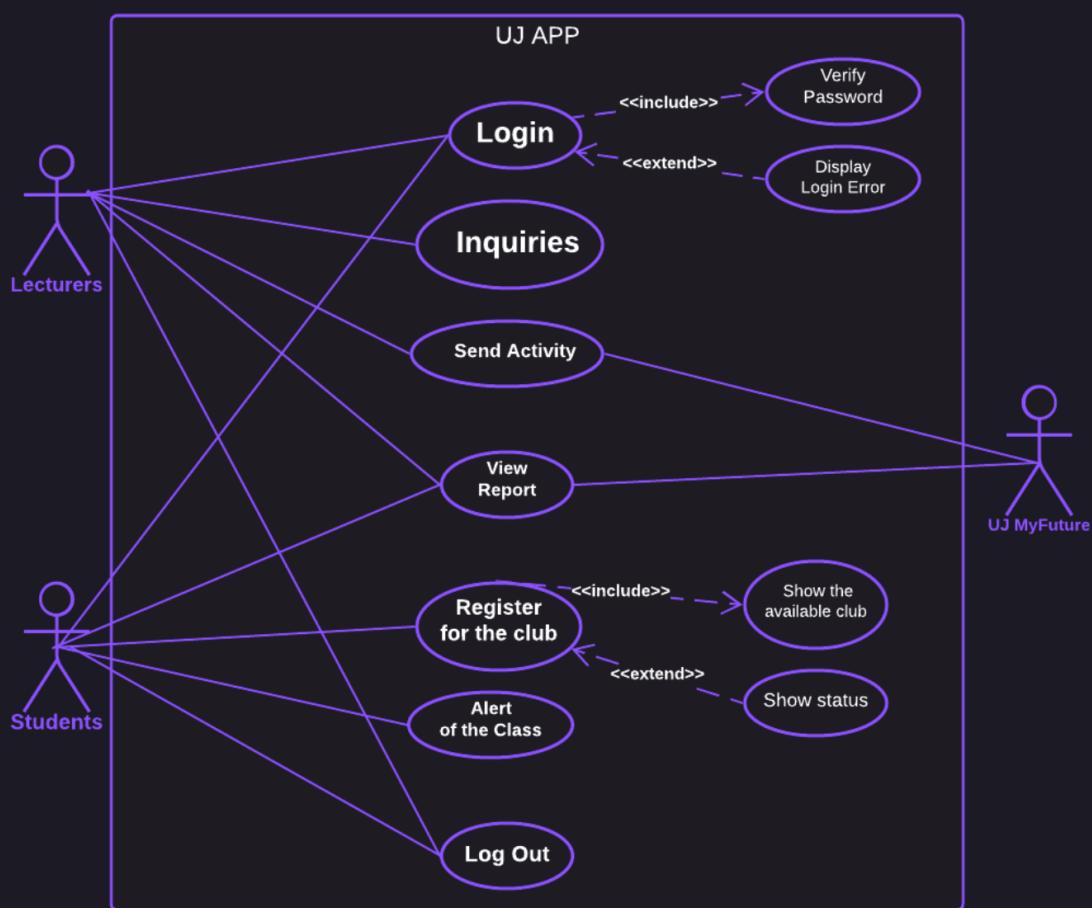


Business event list

Event Name	Input and Output	Summary
Showing statistics	Showing statistics (out)	Showing statistics from University administration
Adding Customer	Adding Customer(in)	Adding Customer from University administration
Showing Services	Showing Services (in)	Showing Services from University administration
Adding ID Number	Adding ID Number (in)	User (Students & Faculty) entering ID Number
Showing Information	Showing Information (out)	User (Students & Faculty) receiving Personal Information
Request Enquiry	Request Enquiry (in)	User (Students & Faculty) entering Enquires
Showing Results	Showing Results (Out)	User (Students & Faculty) receiving Results
Showing User	Showing User (Out)	Developers receiving User data
Academic and Functional Reports	Academic and Functional Reports (in)	Developers entering Academic and Functional Reports

LAB 6

Use case model



Functional requirements

I	Requirement Definition
FR1	Login
FR1.1	The system shall enable students and lecturers to log in, verify password and display login error
FR2	Inquiries
FR2.1	The system shall allow the lecturers to send inquiries
FR3	Send activity
FR3.1	The system shall allow the lecturers to send activity through the system
FR4	View report
FR4.1	The system shall allow Student and lecturers to show the report through the system
FR5	Register for the club
FR5.1	The system shall allow student to Register for the club and show the available club and show approval or rejection through the system
FR6	Alert of the class
FR6.1	The system shall allow the student show an Alert of the class through the system
FR7	Log out
FR7.1	The system shall enable students and lecturers to log out

Non-Functional requirements

User interface:

UI 1: The user must enter the correct password within two seconds

UI2 : The system shall provide a user-friendly interface and clearly

Hardware Interface:

HI1: The system shall be implemented in a hardware-independent fashion and should not rely on any particular hardware interfaces.

Software Interface:

SI1:The system should be able to support more than 500 simultaneous users

Security Requirements:

SE1: The system shall provide log in page

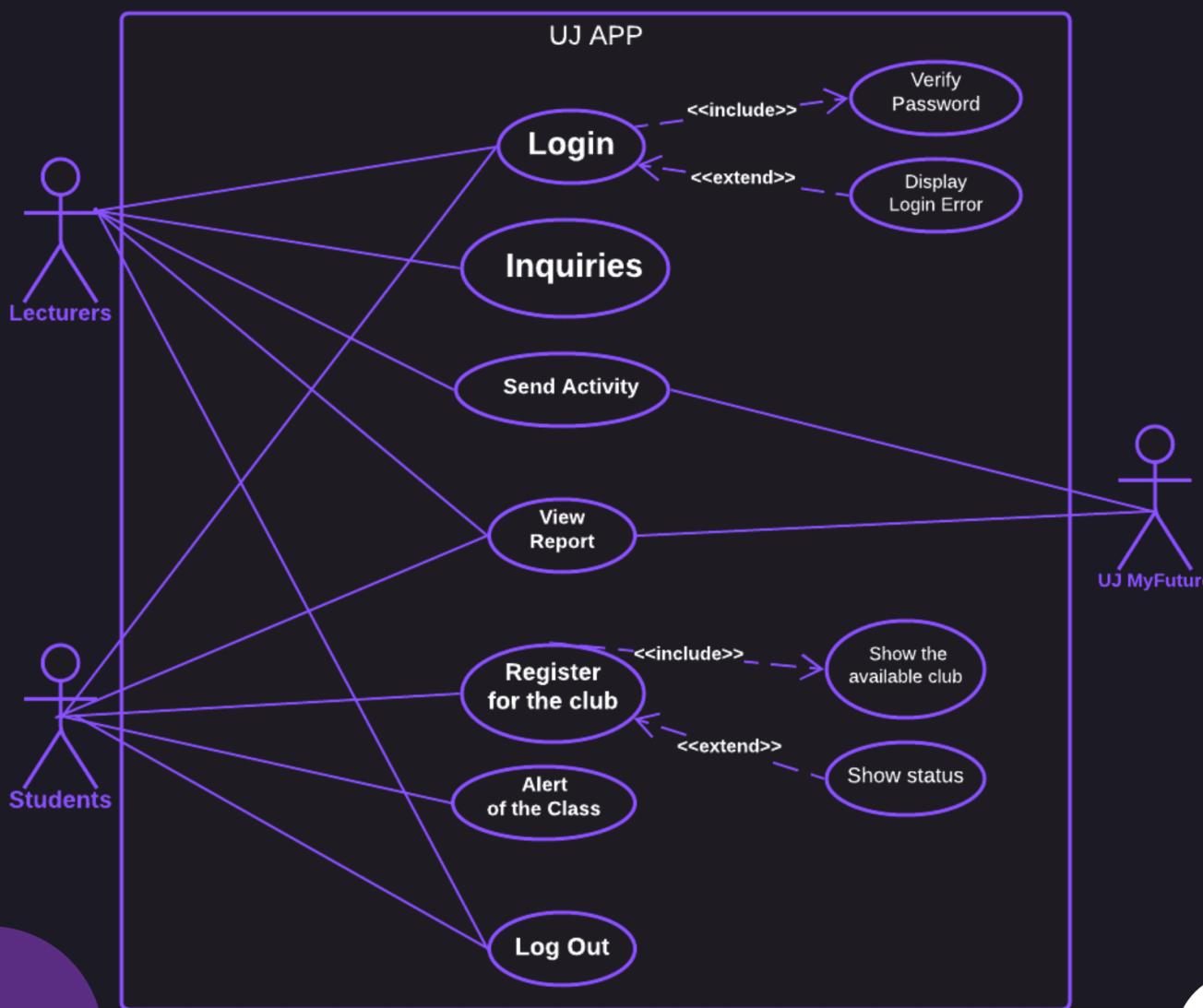
SE2: The system shall allow user to access only the services which he/she authorize to access

SE2.1: The system shall allow only authorized user to make and edit, delete

SE3: The system shall provide password-protected access to web pages that are to be viewed only by users.

LAB 7

Use case model



Use case description

UC1: Login

Scope: lecturers and students

Level: primitive

Primary Actor: lecturers,students

Precondition: user must exist in the database of university

Stakeholder and Interests: lecturers,Students,University staff

Scenario:

- system display the login page
- user enter ID and Password of UJ
- the system will verify ID and Password if verified open the main page if not display error message

UC2: Inquiries

Scope: lecturers

Level: inquiries for lecturers

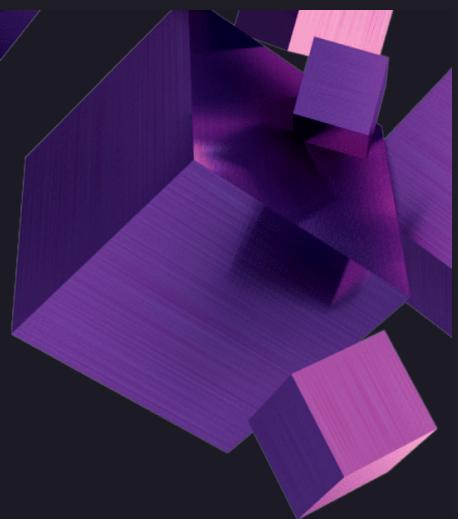
Primary Actor: lecturers

Precondition: the actors have an account in our system as lecturers

Stakeholder and Interests: lecturers,University staff

Scenario:

- the user clicks on the inquiry bottom
- choose to add or view the inquiry
- enter full inquiry information
- send the inquiry



UC3: Send activity

Scope: lecturers and UJ MyFuture.

Level: send activity to the system.

Primary Actor: lecturers.

Precondition: after the actors have an account.

Stakeholders and Interests: Students, University staff.

Scenario:

- After the actors have an account in our system.
- The lecture can send activity to all system actors .

UC4: view report

Scope: Lecturers , students and UJ MyFuture staff.

Level: Conclusion of system state.

Primary Actor: employee of UJ MyFuture.

Precondition: after the Lecturers and students place request.

Stakeholders and Interests: Lecturers, Students, University staff.

Scenario:

- After the company staff place request in the UJ MyFuture application
- Lecturers and students can check the status of their orders



UC5: Register for the club

Scope: students

Level: show the available club

Primary Actor: students

Precondition: Have an account and show the available club to register it

Stakeholders and Interests: Students and staff responsible for the club

Scenario :

- Log in with your ID number and email
- Know the list of clubs and their times, places, and coaches
- Choosing the club according to the preferences and registering in it
- Commitment to attend within the specified time and obtain the certificate

UC6: Alert of the class

Scope: students and staff

Level: primitive

Primary Actor: students

Precondition: the students and staff have an account and show status

Stakeholders and Interests: Students and staff

Scenario :

- Log in with your ID number and email
- The staff and the student should have a schedule and show status
- According to the time of the class, the teacher or student is alerted of the start and end date of the class by means of a notification with an alarm sound and the name of the course, its place and duration appear.

UC7: Logout

Scope: Lecturers, students and UJ MyFuture staff.

Level: primitive.

Primary Actor: employee of UJ MyFuture.

Precondition: after the actors have an account.

Stakeholders and Interests: Lecturers,students ,UJ MyFuture staff

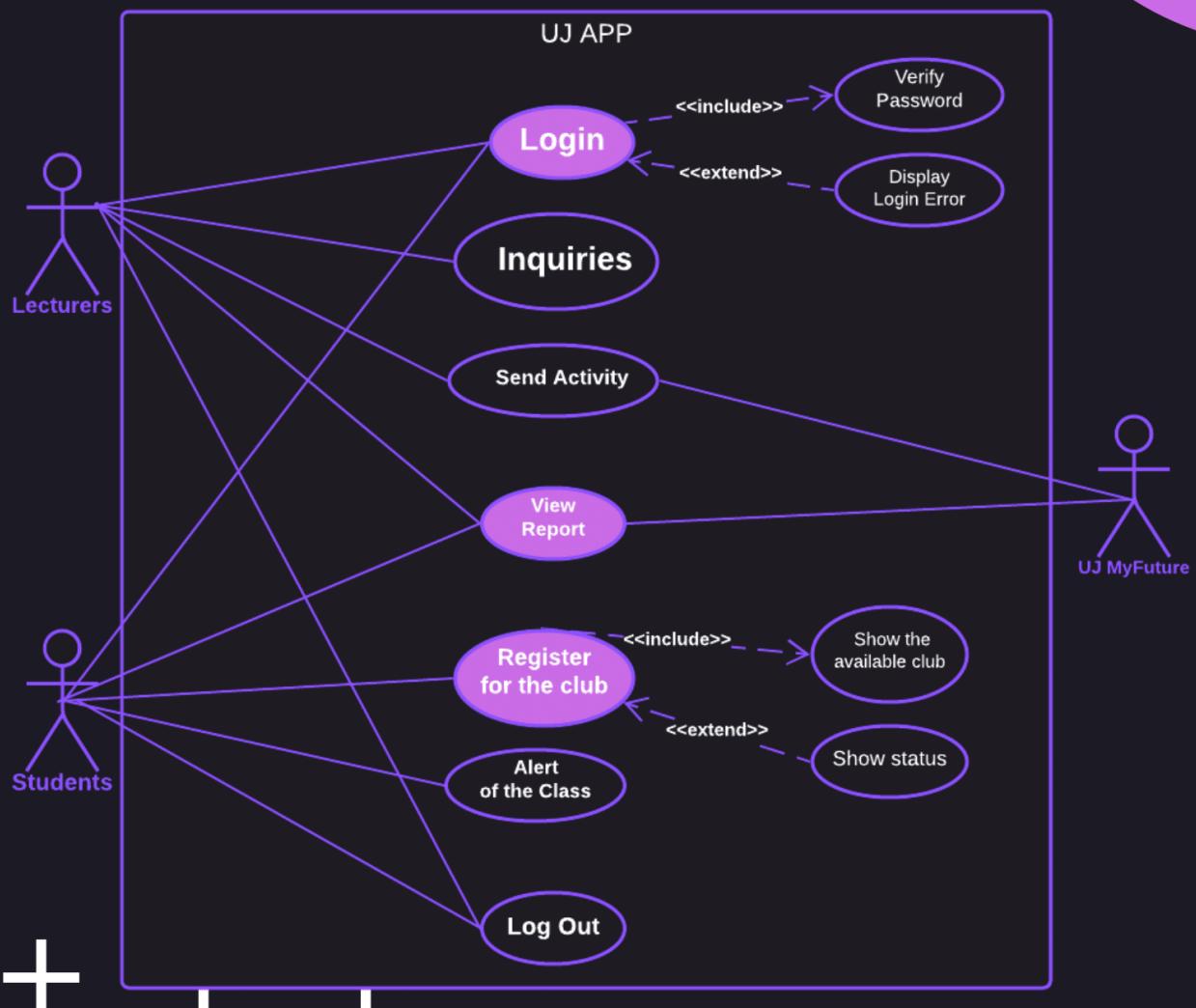
Scenario:

- After the actors have an account.
- They have ability to logout from the application.

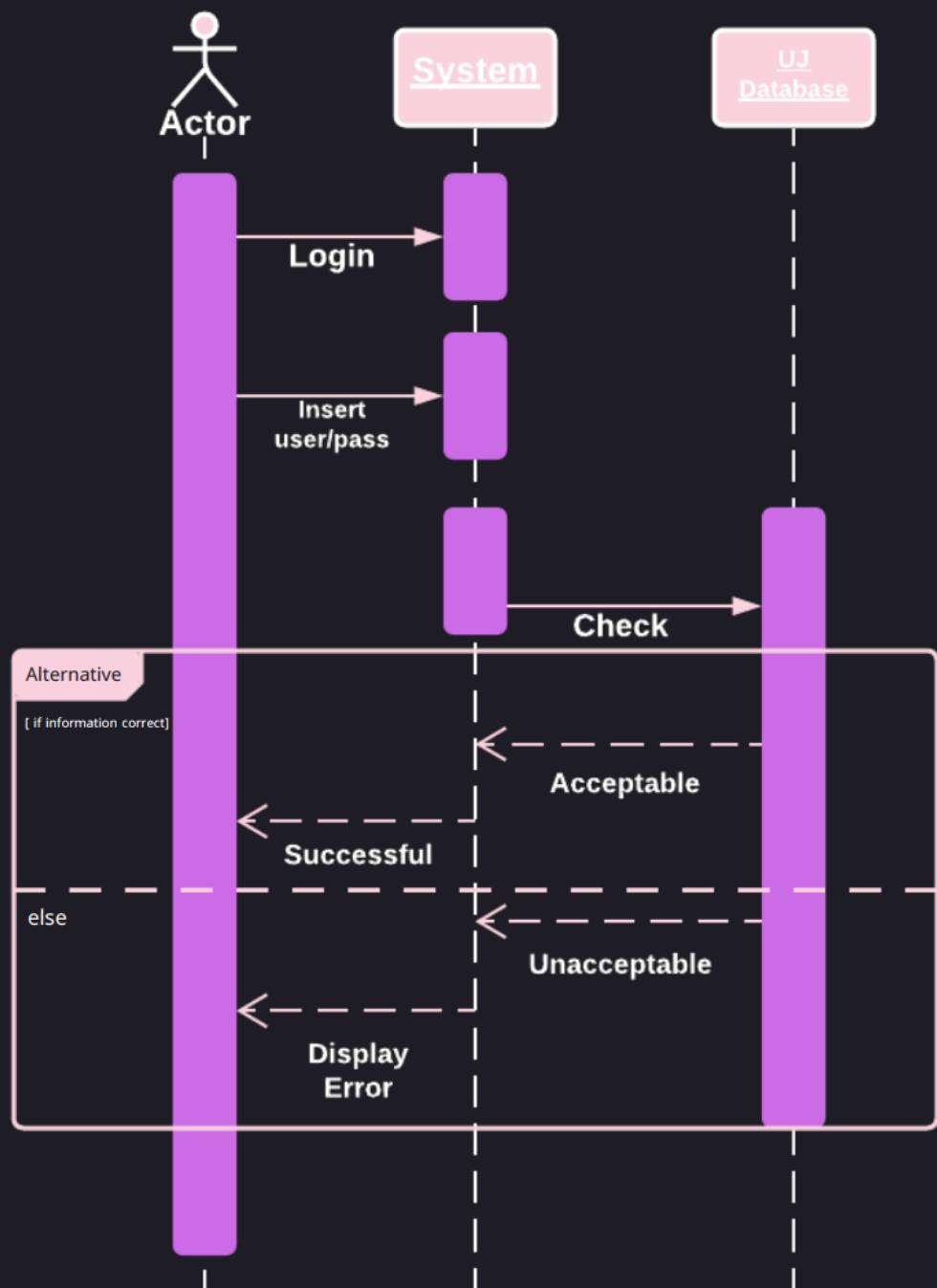
LAB 8



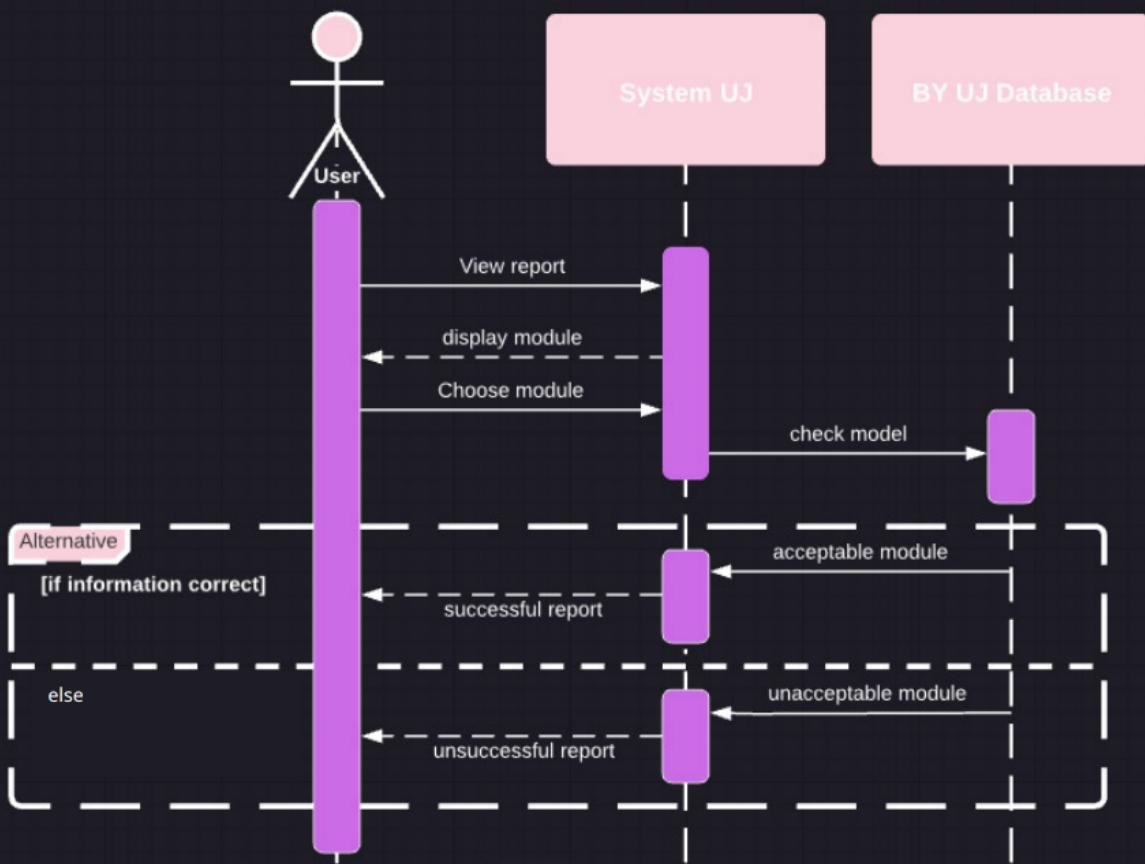
Use case diagram



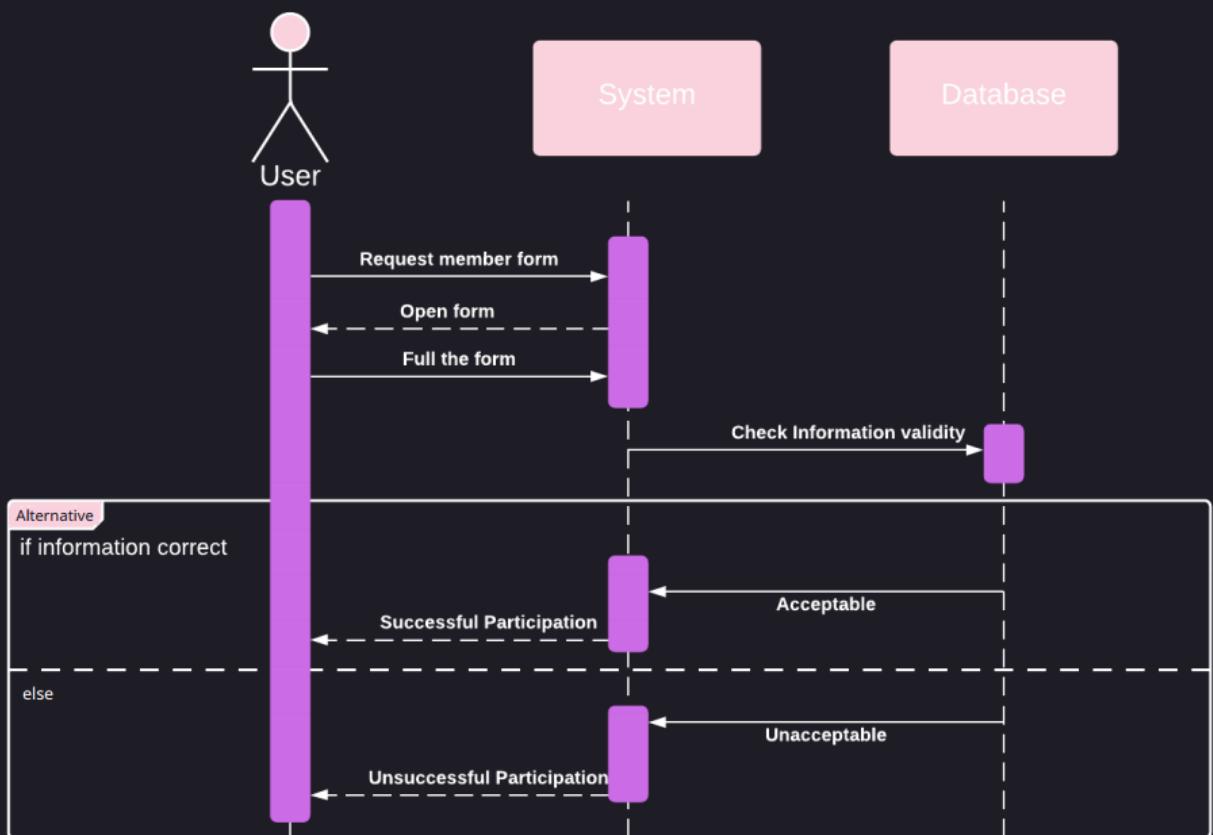
Login sequence diagram



View report sequence diagram

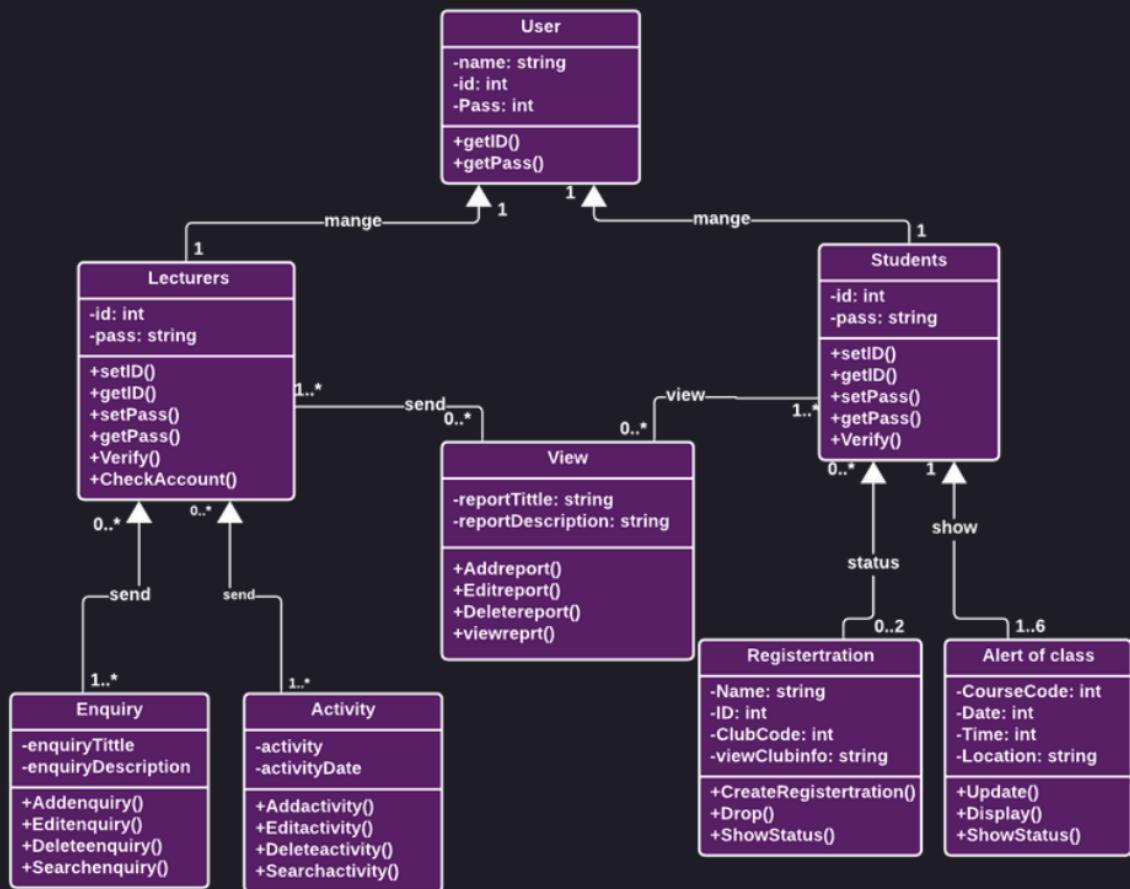


Register for the club sequence diagram



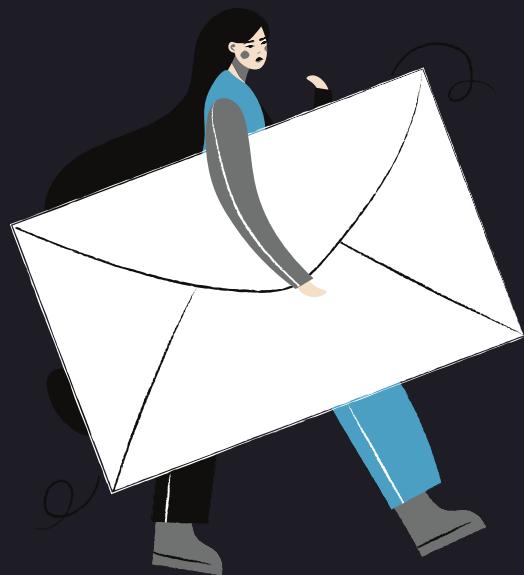
LAB 9

Class diagram



3. CONCLUSION AND SUGGESTION

This is what we reached with this application which was created and developed to meet the needs of students and faculty members As it will develop and add some services and work on them to suit the requirements of everyone who uses the application and that it will be worked on with a well-thought-out plan and a specific timetable and organization of the ideas and suggestions that were suggested to us by those who use the application to achieve the goals that were set for its development.



4. TASK ALLOCATION TABLE

LAB ARWA RANA SHAHAD

TEAMWORK		
1		
2	<ul style="list-style-type: none">• CONTENT• MOTIVATION• CONSIDERATIONS• GOALS	<p>COST & SCHEDULE ESTIMATES</p> <p>PRELIMINARY REPORT</p>
3		
4	<ul style="list-style-type: none">• SOFTWARE IMPACTS• POTENTIAL CHANGES IN THE ORGANIZATION• RECOMMENDED ALTERNATIVE OF THE COURSE OF ACTION	<p>COST & BENEFITS ALTERNATIVES</p> <ul style="list-style-type: none">• PROBLEM DEFINITION• SCOPE OBJECTIVES OF "NEW SYSTEM"• ALTERNATIVE SOLUTIONS• PROJECT PLAN
5	<ul style="list-style-type: none">• STOCKHOLDER DEFINITION• BUSINESS EVENT LIST	<p>THE SCOPE OF THE WORK</p> <p>CONTEXT DIAGRAM</p>
6	<p>FUNCTIONAL REQUIREMENTS</p>	<p>NON-FUNCTIONAL REQUIREMENTS</p> <p>USE CASE DIAGRAM</p>
7	<p>USE CASE DESCRIPTION UC3-UC4-UC7</p>	<p>USE CASE DESCRIPTION UC5-UC6</p> <p>USE CASE DESCRIPTION UC1-UC2</p>
8	<p>REGISTERFORTHE CLUB SEQUENCE DIAGRAM</p>	<p>VIEW REPORTSEQUENCE DIAGRAM</p> <p>LOGIN SEQUENCE DIAGRAM</p>
9	<p>CLASS DIAGRAM (ACTIVITY,ENQUIRY)</p>	<p>CLASS DIAGRAM (LECTURERS,UJ DATABASE,STUDENTS)</p> <p>CLASS DIAGRAM(VIEW REPORT,REGISTERTRATION .ALERT OF CLASS)</p>

