



جامعة جدة
University of Jeddah

UJ Breaks

Student names:

- 1- Fatinah Alhartani
- 2- Nusaybah Altrabolsi
- 3- Haneen Alghamdi
- 4- Reem Alsayed
- 5- Hala Sarwi

Subject: Principals of software engineering

Section: YAL

Instructor: Omniya Wajeesh

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Introduction

One of the main issues students can encounter in their university journey is needing a dedicated area to rest or complete their daily tasks. So they will need help to utilize their breaks more efficiently. We came up with a solution that provides an application called UJ Breaks, a sub-system of the "mustaqbaly" app, offers many rooms. Each room is made for UJ students to meet their needs and will have multiple types of rooms for the student to choose from based on their needs. The room is only accessible by hourly reservation, which stops when the room is full. The room accommodates a certain number of students (15-20). We will have four rooms, each specialized for a specific purpose: Study Room, Rest Room, Reading Room, and Gaming Room. The app allows students to book a room according to their needs. After choosing a room, the student will select the number of hours they want to be in the room for a maximum of four hours. When the booking is complete, the student will have a ticket that expires when the time is over. Room is distinct for UJ students to meet their needs and will have multiple types of rooms for the student to choose from based on their needs. Adding these rooms will make the campus more organized and efficient, and that contains many rooms.



LAB-2



a. Description of the problem:

This Application provides many rooms. Each room is distinct for UJ students to meet their needs and will have multiple types of rooms for the student to choose from based on their needs. The room is only accessible by hourly reservation, which stops when the room is full. The room accommodates a certain number of students (15-20). We will have four rooms, each specialized for a specific purpose: Study Room, Rest Room, Reading Room, and Gaming Room.

b. The interview:

1-Information:

Name: Amatulrhman Alhardi

Job: Instructor

Data: December 27, 2022

Phone number: aalharbi3@uj.edu.sa

2-The question of the interview:

1- What are the disadvantages on the campus view of not providing rooms for student activities?

The way the students behave in the building is uncomfortable for those who want to move around to attend classes because they sit around anywhere. It is also noisy for the students and instructors that have classes.

2- What are the disadvantages effects on you of not providing rest rooms for students?

Other than just having a place inside the building, it is better to provide multiple locations around the university campus so more students can have a place to study or rest.

3- What do you think about the idea of this software?

I like the idea because it helps the students and the university's image.

Analysis:

After the interview, I realized that this system would help more than just the student. It will also help the instructors by making the building quieter and less chaotic, which will help them when they are teaching other students.

b. The interview:

1-Information:

Name: Danah Bawajeeh

Job: Student

Data: December 27, 2022

Phone number: 0551188135

2-The question of the interview:

1- What are the long-term consequences of a lack of student activity rooms on campus?

Students find it difficult to find a place to eat, study, or do other activities. Most students sit on the floor, causing the campus to look crowded and chaotic, and that might waste their time in trying to find a proper place to sit.

2- What are the disadvantages effects on you of not providing rest rooms for students?

As a student, I find it improper not to have a convenient place for students that need them for specific activities like eating, studying, waiting for their other classes and more.

3- What suggestions do you propose to the university to solve this problem?

I would suggest that the campus have separate places for each activity not to confuse students that want to study While others want to talk or eat

Analysis:

After this interview, I realized how important it is to have dedicated areas for students. Based on the student's complaint, no designated places are available to him, which prevents students from performing their duties due to chaos and inconvenience. As a result, providing rooms with different characteristics, such as a room for rest, study, entertainment, etc., will provide comfort for students while reducing chaos and external inconvenience.

b. The interview:

1-Information:

Name: Wedyan Essam

Job: Student

Data: December 26, 2022

Phone number: 0554670167

2-The question of the interview:

1- What are the disadvantages on the campus view of not providing rooms for student activities or restrooms?

Inconvenience and lack of accommodation places compels students to sit in unsuitable places for sitting or eating such as prayer room which leads to noising the prayers.

2- What suggestions do you propose to the university to solve this problem?

I would suggest that the university Provide comfortable chairs and variety of restaurants and cafes.

3-What do you think do you think about the idea of this software?

The idea of the project is useful to create a comfortable university environment for students and motivate them to complete their studies

Analysis:

Through my interview, I realized how much students needed the project to minimize the problems of not providing student space during breaks.

b. The interview:

1-Information:

Name: Samya Alnajar

Job: Security

Data: December 27, 2022

Phone number: 054232099

2-The question of the interview:

1- What are the disadvantages on the campus view of not providing rooms for student activities or restrooms?

Movement is hampered by seating in non-seating spaces, causing chaos and lack of control over the building's cleanliness.

2- What are the disadvantages effects on you of not providing rest rooms for students?

Feeling frustrated because it impedes organizational movement and consumes a lot of physical effort due to lack of control over students.

3- What suggestions do you propose to the university to solve this problem?

The idea of the project is useful to create a comfortable university environment for students and motivate them to complete their studies.

Analysis:

After the interview I realized that movement disability is big problem and i think the university should move forward with providing places to the students to have an organized and clean place.

b. The interview:

1-Information:

Name: Samar Kilfaden

Job: Student

Data: December 28, 2022

Phone number: 0549478243

2-The question of the interview:

1- What are the disadvantages on the campus view of not providing rooms for student activities or restrooms?

Noise and lack of concentration when students studies during the break.

2- What do you think of the idea of (UJ break)?

A very convenient idea for students, doctors, and organizers. I hope to implement this idea and allocate and prepare rooms dedicated to the needs of each student.

3- How do you expect the campus will be after implementation (UJ breaks)?

The campus will be more organized, quiet, and comfortable in movement.

Analysis:

Through my interview with a student, it caught my attention to develop a project and make the rooms noise-isolated so that the class would be more focused.



LAB-3



Content:

This software will be a subsystem from the university application (Mustaqbaly). It allows the student to book a room according to their needs. After choosing a room the student will select the number of hours, they want to be in the room for a maximum of four hours. When the booking is complete the student will have a ticket that expires when the time is over.

Motivation:

Our system will provide rooms with various characteristics, and it will deliver comfort to the students.

Consideration:

The lack of dedicated areas for students to rest or complete their daily tasks has caused chaos, resulting in poor campus organization. Implementing the application will solve this problem.

Goal of the project:

This software provides areas for students to complete their tasks on campus during their breaks. According to the students' complaints, they need specific areas to be available, allowing them to perform their tasks calmly and comfortably. Applying this idea is essential to students' educational needs. Also, the campus will become more arranged and less random. Students' achievements can also increase the activities and clubs of the college, benefiting the university positively.

Finding:

- The lack of organization in the building
- The instructors might be late to the classes because of the messiness of the building
- The students will not be able to focus on their studies and can't spend their breaks in a useful way

Recommendation:

- Provide a convenient area with comfortable seats for the students
- Provide more places on the university campus like cafeterias or cafes
- Make the university whitespace more appropriate for seating

1. Report writing

4- Cost and benefits of Alternatives:

		Cost	Duration
Specification	Where customers and engineers define the software that is to be produced and the constraints on its operation	20,000 Riyals	2 Months
Development	where the software is designed and programmed.	40,000 Riyals	3 Months
Validation	Software validation, where the software is checked to ensure that it is what the customer requires	12,000 Riyals	3 Months
Evolution	Software evolution, where the software is modified to reflect changing customer and market requirements	More than 40,000 Riyals	6 Months
		Total cost	Total duration
		112,000 Riyals	14 Months



LAB-4



1. Report writing

1- Problem Definition:

There are no dedicated areas for students to rest or complete their daily tasks, causing the campus to be disorganized. Messiness in the building might delay the instructors for their classes. It will be difficult for students to concentrate on their studies and they won't be able to utilize their breaks effectively.

2- Scope Objectives of “UJ Breaks ”:

UJ Breaks is a sub system of the "mustaqbaly" app that allows the students to reserve a room for specific need

3- Alternative Solutions:

- The seating area should be convenient and comfortable for students.
- There should be more places to eat and relax on campus, such as cafes and cafeterias.
- Create a more appropriate seating area in the university's whitespace.

1. Report writing

4- Cost and benefits of Alternatives:

		Cost	Duration
Specification	Where customers and engineers define the software that is to be produced and the constraints on its operation	25,000 Riyals	2 Months
Development	where the software is designed and programmed.	45,000 Riyals	3 Months
Validation	Software validation, where the software is checked to ensure that it is what the customer requires	17,000 Riyals	3 Months
Evolution	Software evolution, where the software is modified to reflect changing customer and market requirements	More than 45,000 Riyals	6 Months
		Total cost	Total duration
		132,000 Riyals	14 Months

1. Report writing

5- Software impacts:

- the software will be a subsystem of "mustaqbaly" application that means it will be found in every UJ student's phone.
- the student information will be linked to the university database.
- Increases students' productivity in terms of their ability to use their leisure time properly and usefully to develop their skills and abilities
- Students will reserve easily by adopting a simple and smooth interface

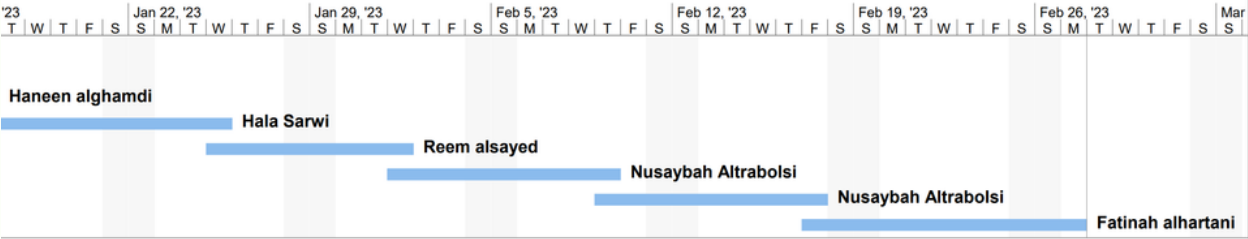
6- Potential Changes in the Organization:

The campus will be more organized, corridors will be easier to walk in, classroom corridors will be quieter, the security staff work will be easier, and the students will get their tasks done quickly and comfortably.

7- Recommended Alternative of the course of Action:

in our opinion the best alternative is to create a more appropriate seating area in the university's whitespace.

2. Project plan



ID	Duration	Start	Finish	Predecessors	Resource Names
1	1 day	Wed 12/28/22	Wed 12/28/22		
2	4 days	Wed 1/4/23	Mon 1/9/23		Fatinah alhartani
3	6 days	Mon 1/9/23	Mon 1/16/23		Haneen alghamdi
4	8 days	Mon 1/16/23	Wed 1/25/23		Hala Sarwi
5	6 days	Wed 1/25/23	Wed 2/1/23		Reem alsayed
6	7 days	Wed 2/1/23	Thu 2/9/23		Nusaybah Altrabol
7	7 days	Thu 2/9/23	Fri 2/17/23		Nusaybah Altrabol
8	7 days	Fri 2/17/23	Mon 2/27/23		Fatinah alhartani



LAB-5



1. Stockholder definition

a. The Client

The client is university of Jeddah

b. The Customer

The students at the university

c. Other Stakeholder

the instructors , security staff , administrators

2. The scope of the work

a. The Current Situation

▪ Content

There is a lack of organization on campus, making it difficult for students to do their work and take their breaks.

▪ Motivation

We will provide an application that contains many rooms. Each room is distinct for UJ students to meet their needs and will have multiple types of rooms for the student to choose from based on their needs. adding these rooms will make the campus more organized and efficient.

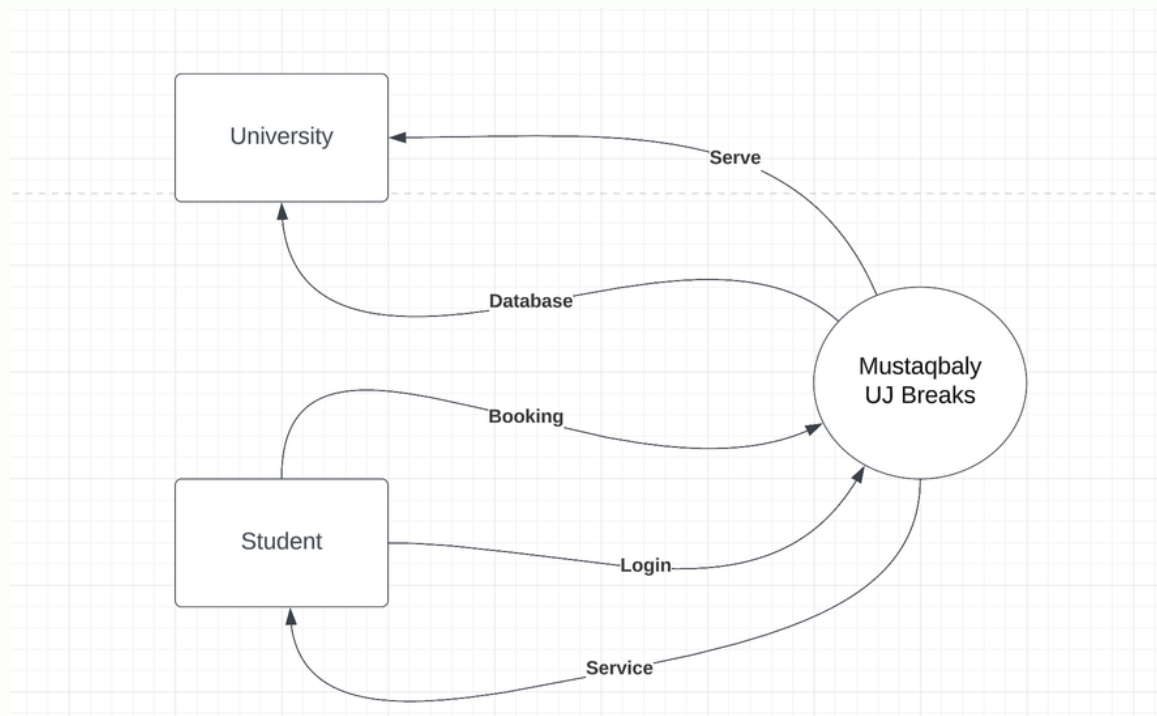
b. The Context of the Work

▪ Content

after applying this system, the university campus became cleaner, organized, and efficient. also, the students will be more comfortable in their long breaks and can complete their tasks more efficiently.

▪ Motivation

- Provide organizers.
- set fines for those who damage the place.
- facilitate the booking process by confirming this booking by sending a message to the student.



3.Business Event List

Event Name	Input and Output	Summary
Service	out	application provide service for students
Login	in	student login the application
Booking	in	student book a room from the application
Database	out	application uses the database of the university
Serve	in	application serve the university



LAB-6



Functional requirement:

ID	Requirement Definition
FR1	Login
FR1.1	The system should permit all student to log in using a fictitious username and password.
FR2	Verify Password
FR2.1	The system should verify the password that the student enters for the log in
FR3	Display Error
FR3.1	The student shall receive an error message generated from the system informing that the login credentials are wron
FR4	Request Service
FR4.1	The student shall be able to Book a room or register a request for a need for the booking.
FR5	verify booking
FR5.1	the student receives a message verifying the reservation.
FR6	Edit booking
FR6.1	the student can edit their reservation information.
FR7	Log Out
FR7.1	The Uj breaks system allows the student to log out after completing all of the application requirements for privacy and security reasons.

Non-Functional requirement:

- **User Interface**

UI1: The system should support both Arabic and English Language

UI2: The system shall provide an easy-to-use interface

UI3: The user interface of the application shall be Graphical User Interface (GUI)

- **Hardware Interface**

HI1: the system relay on University of Jeddah database.

HI2: the system relay on University of Jeddah servers.

- **Software Interface**

SE1: the system uses the same database that is used in Mustaqbaly application.

SE2: the Uj breaks is a subsystem of the Mustaqbaly application.

- **Security and Reliability Requirements**

SE1: The application must provide log in page.

SE2: The student must enter their name in the student ID.

SE3: The system must provide two-factor authentication.

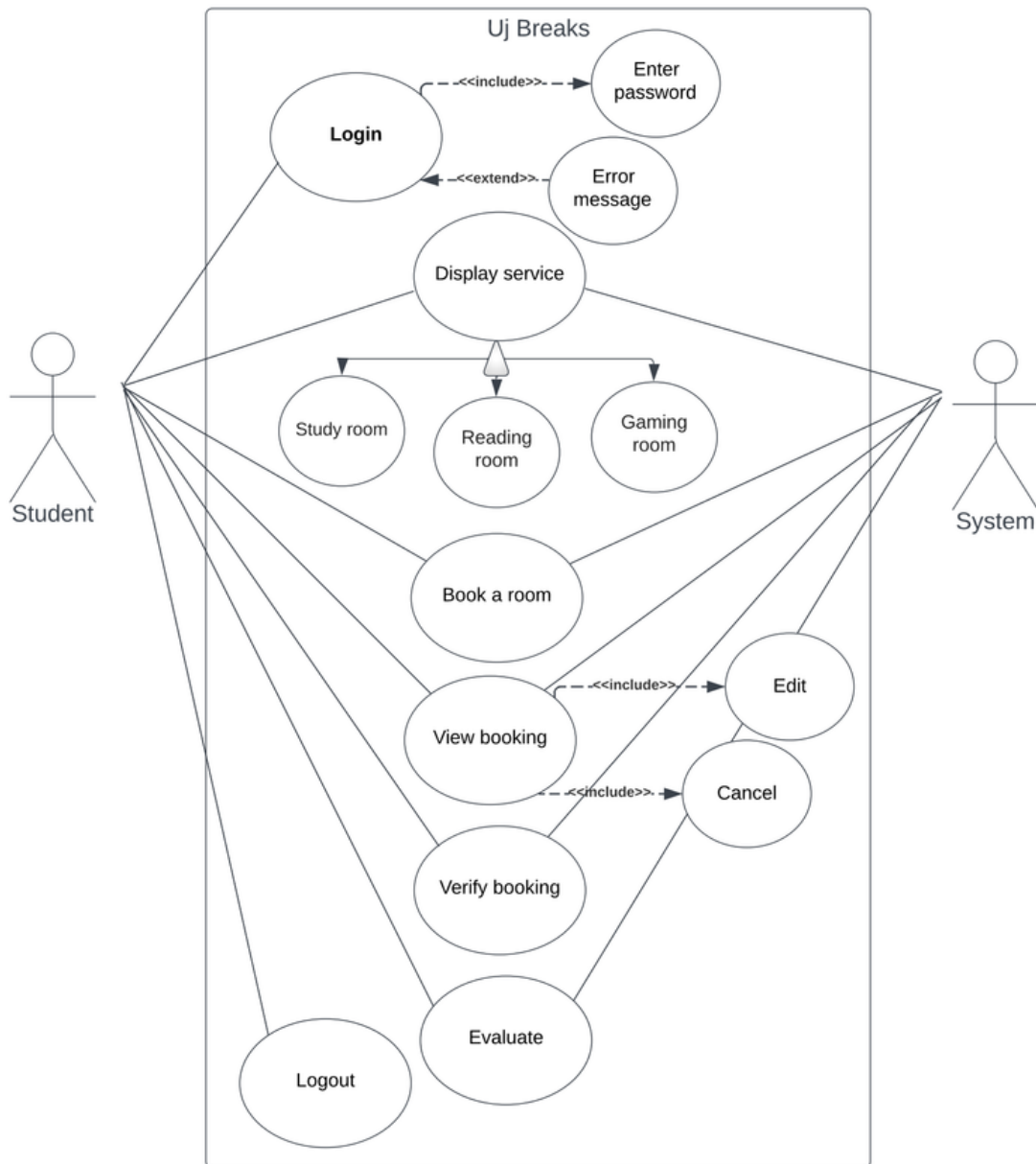
SE4: the booking will only be open during working hours.



LAB-7



Use case diagram:



Use case description:

UC1: Login

Scope: Student

Level: primitive

Primary Actor: Student, System

Precondition: after the student have an account

Stakeholders and Interests: Student, System

Scenario of UC1

- 1- After the student have an account.
- 2- They have ability to gain the application.

UC2: The System verify the Password

Scope: System

Level: The system verifies the password for the log in

Primary Actor: Student

Precondition: the student enter password for the log in

Stakeholders and Interests: Student

Scenario of UC2

- 1-The student create account
- 2- the student enter password for the log in
- 3- the system verify password for the log in

Use case description:

UC3: The System Display Error

Scope: System, Student

Level: The system display error in the log in

Primary Actor: Student

Precondition: the student logged in

Stakeholders and Interests: System, Student

Scenario of UC3

1- the student logged in

2-The student either enter the username or the password wrong

3- The system display error message

UC4: Display services:

Scope: Student, University Of Jeddah.

Level: The Student Request Service for booking a room.

Primary Actor: Student

Precondition: The Student have an account

Stakeholders and Interests: Student, University Of Jeddah

Scenario of UC4

1-After the student logged in

2-The Student place request for room.

Use case description:

UC5: Verify booking

Scope: Student, University Of Jeddah

Level: The Student receive email to verify

Primary Actor: Student

Precondition: The Student have a booking

Stakeholders and Interests: Student, University Of Jeddah

Scenario of UC5

1-After the student booked a room

2-The student will receive email to verify the booking.

UC6: Edit booking:

Scope: Student, University of Jeddah.

Level: The Student Request Service for edit booking a room.

Precondition: The Student have a booking.

Stakeholders and Interests: Student, University of Jeddah.

Scenario of UC6

1-After the student has booked a room, it can be editing the booking.

2-The student will receive email to verify the edit booking.

Use case description:

UC7: the student must logout

Scope: Student, University of Jeddah

Level: Primitive

Primary Actor: Student

Precondition: the student logged in first

Stakeholders and Interests: Student, University of Jeddah

Scenario of UC7

1-After the student completed all of the application requirement

2-The student must log out of the application for security and privacy reasons

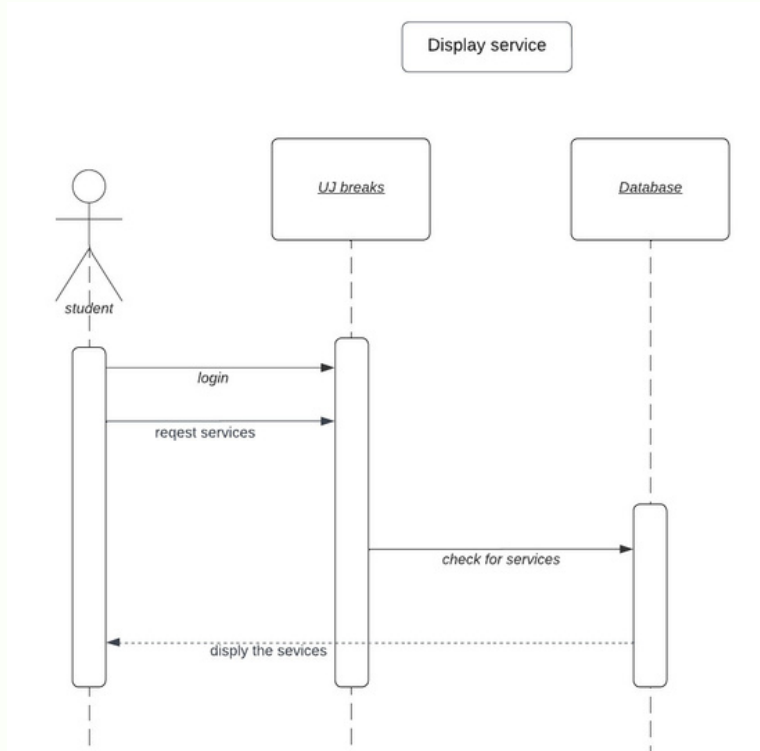


LAB-8

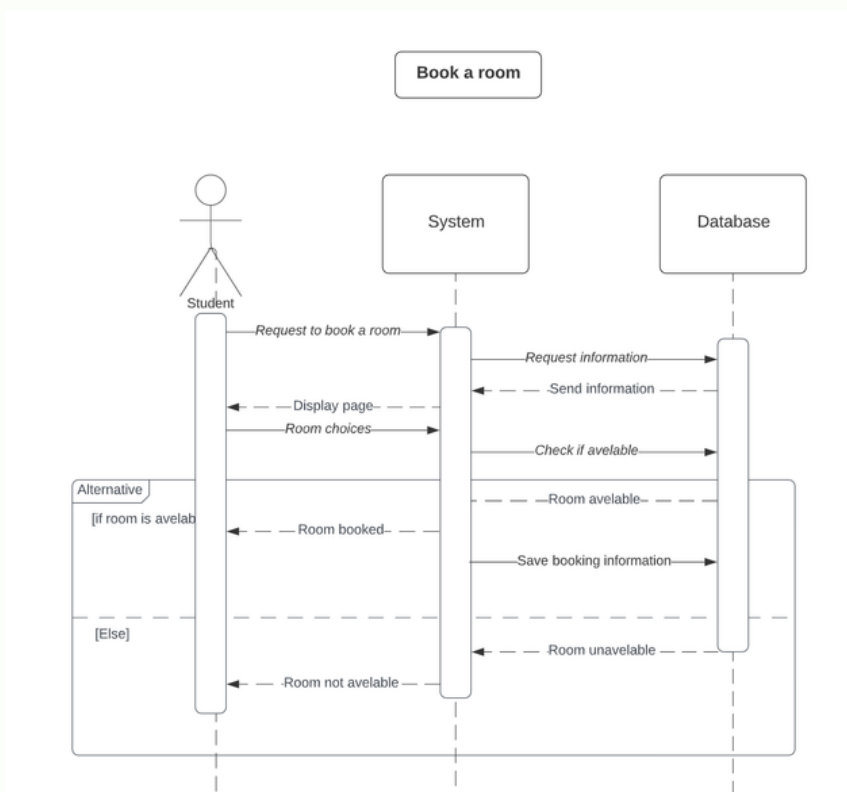


Sequence diagram:

UC1: Display service

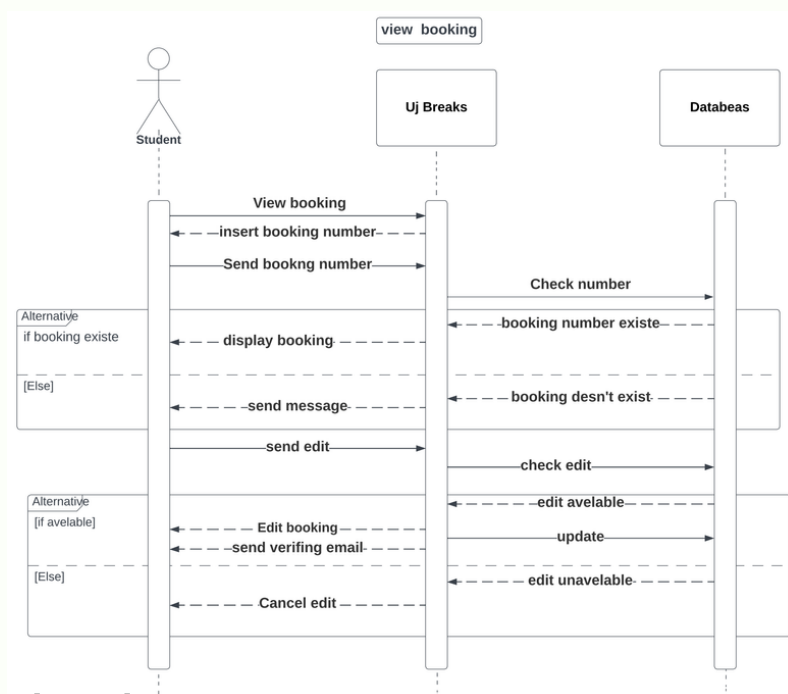


UC2: Book a room

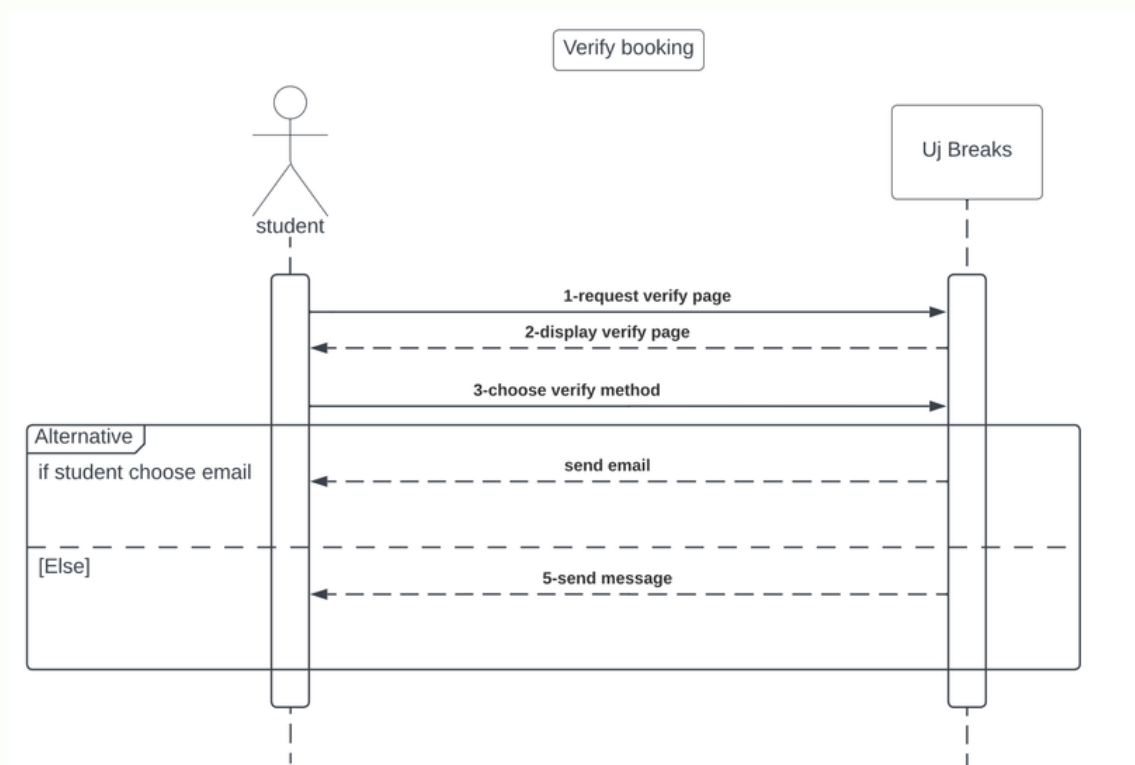


Sequence diagram:

UC4: view booking

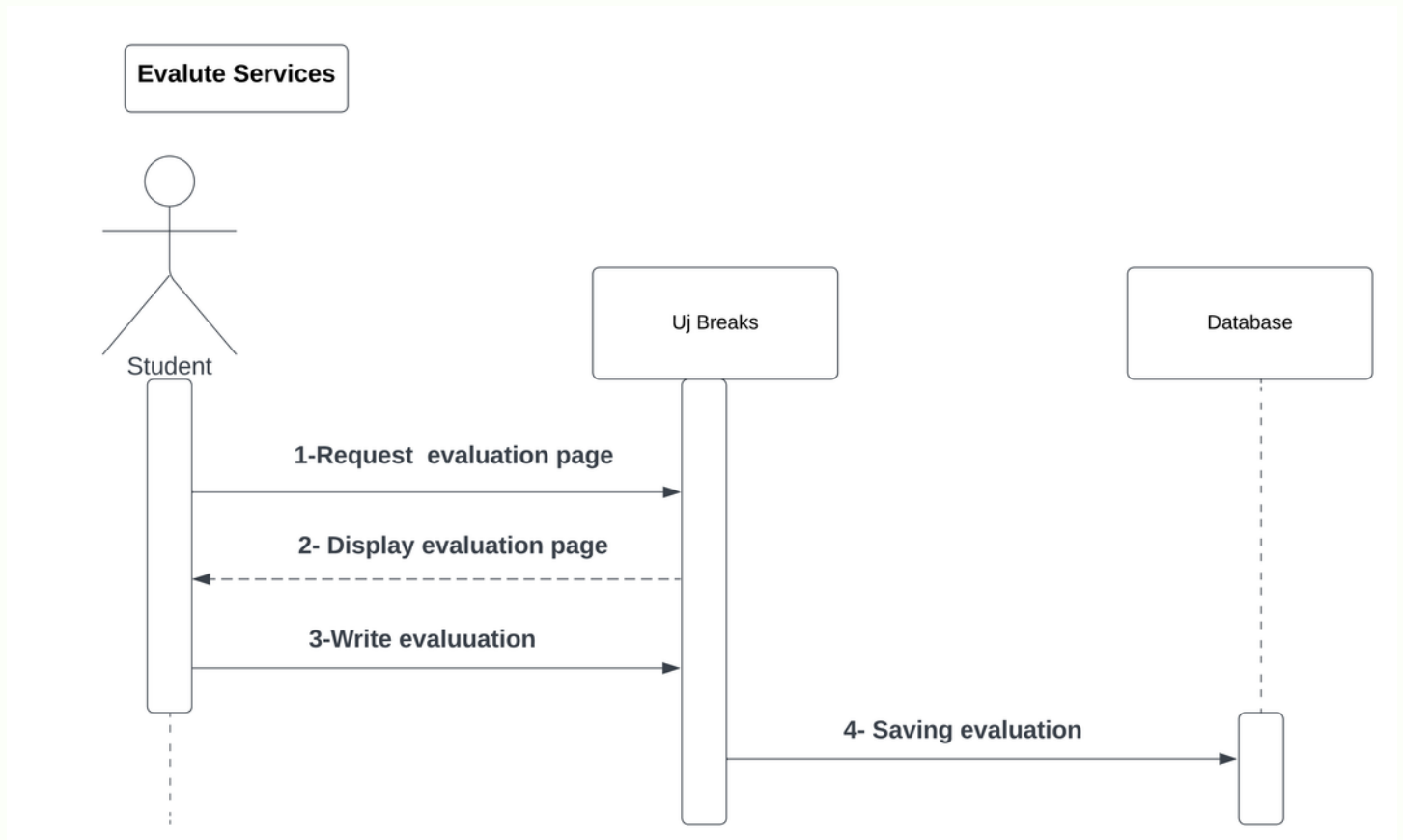


UC3: Verify booking

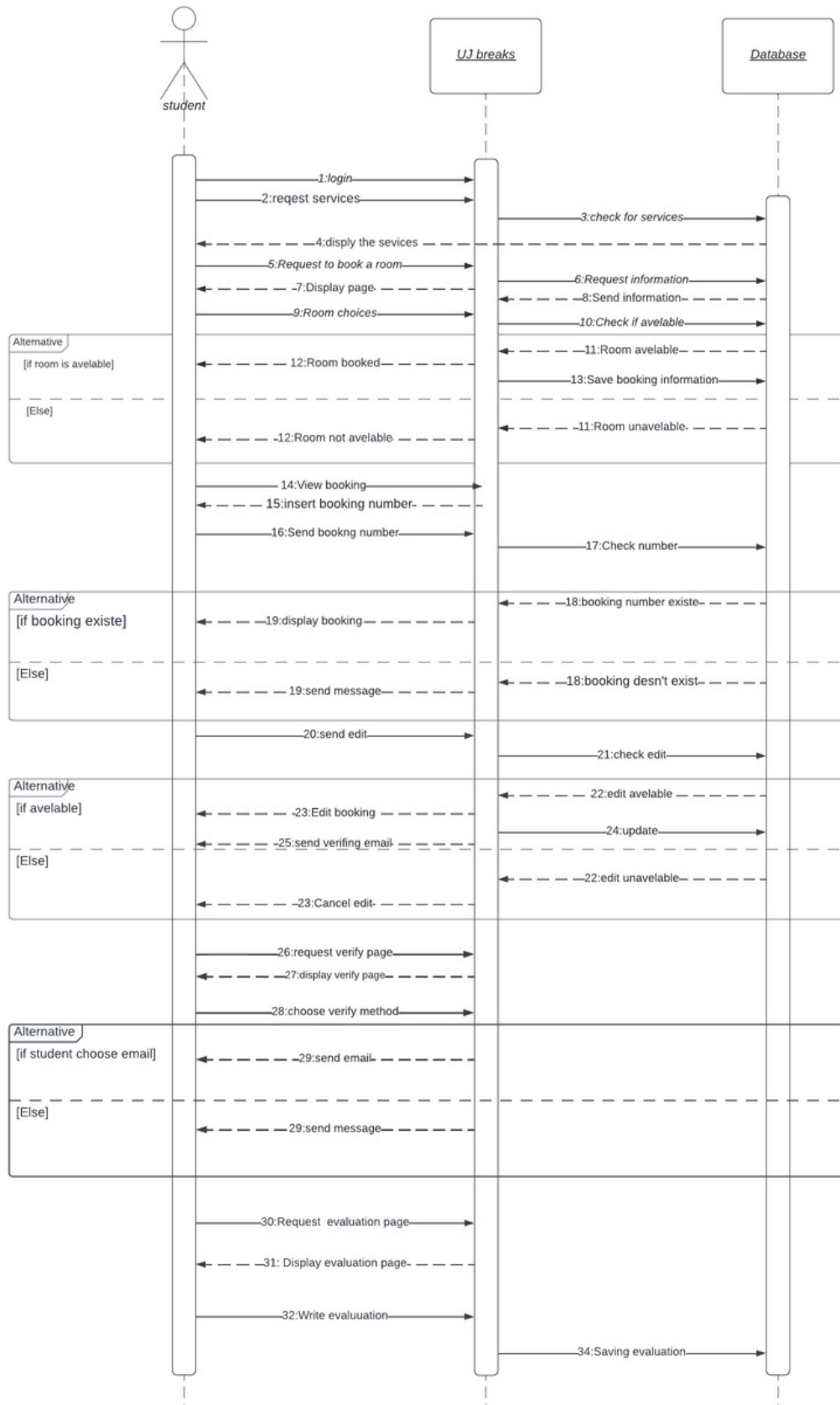


Sequence diagram:

UC5: Evaluate

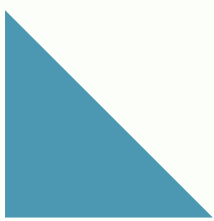


Sequence diagram:

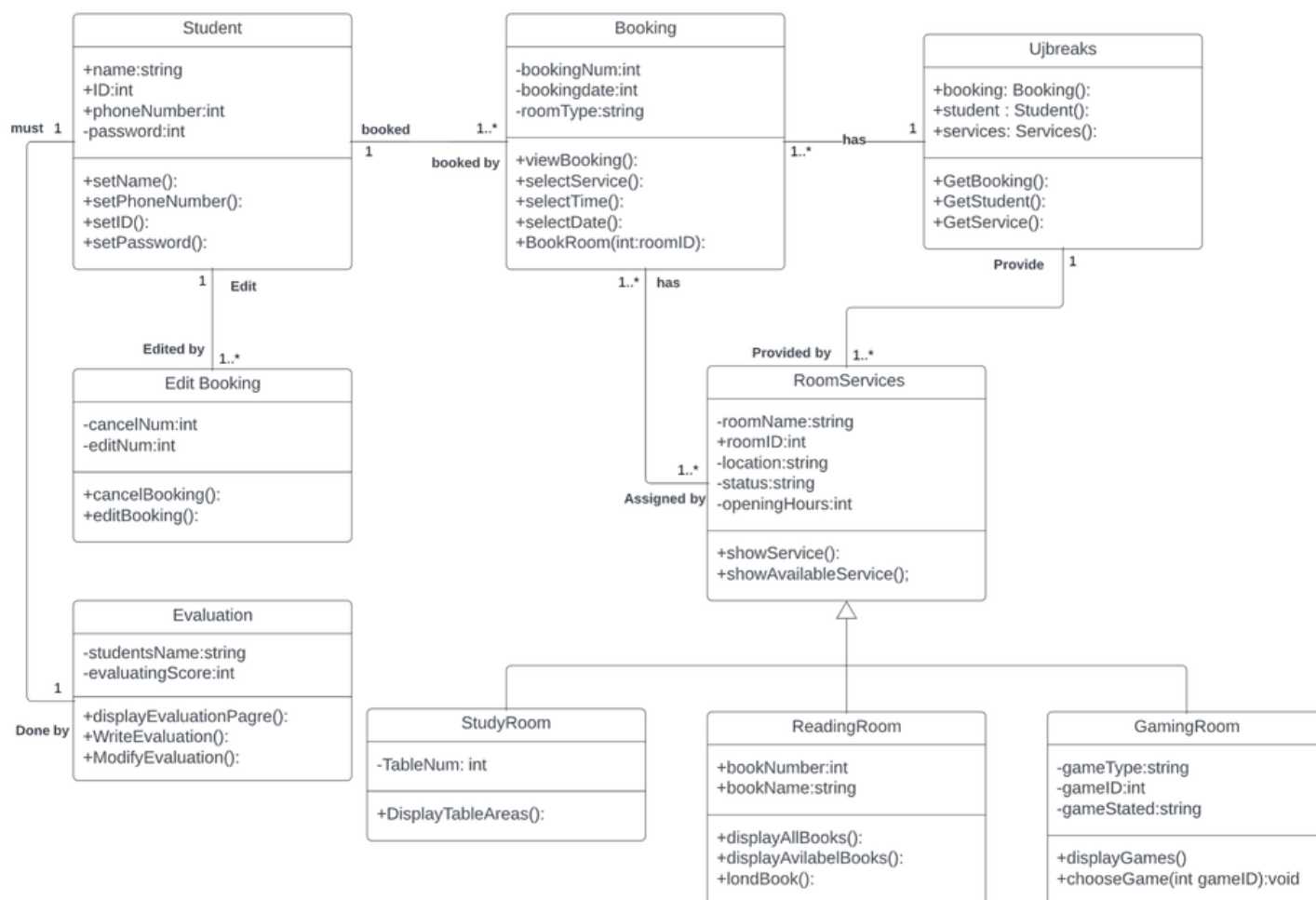




LAB-9



Class diagram:



Class diagram description:

Student:

This class allows the student to log in the system and setup their account.

Edit Booking:

This class allows the student to edit or cancel their room booking.

Evaluation:

This class allows students to rate services; the system displays the evaluation page, and the student writes her own evaluation, that is saved in the system. The student can modify and resubmit the evaluation to the system. At the end of this process, all evaluations are saved in the system database.

Booking:

This class allow the student to select a room and book it then display the booking information.

Class diagram description:

UjBreaks:

The UJ entity represent our sub system and its attribute and it's method The attribute it's the Booking ,student and services which is provided by the system and the method Get services which is the student ask for services, get booking this method for booking a room and get student to ask about the student information.

RoomServices:

This show to the student the types of rooms ,information about each room, and what is different in each room

Class diagram relation description:

Every student can have one or more booking

Every booking is booked by only one student

The edit bone by only one student

Every student can edit many booking

The evaluation done only buy one student

Every student can done only one evaluation

UJ breaks provide many room services

The room services provided by UJ Breaks

UJ breaks can have many booking

Every booking done UJ Breaks

Conclusion

Our goal is to provide an approachable, easy-to-use subsystem that provides areas for students to complete their tasks on campus during their breaks. According to the students' complaints, they need specific areas to be available, allowing them to perform their tasks calmly and comfortably. Applying this system is essential to students' educational needs. Also, the campus will become more arranged and less random.

Suggestions:

We can improve the development of the subsystem further by making it a standalone system that serve all Jeddah university buildings in all of their different branches. also, we can make the rooms rentable to improve and provide more services in each room.

Task table

Student	Task
Nusaybah Altrabolsi	introduction and conclusion
Haneen Alghamdi	Functional and Non-functional
Reem alsayed	Use case diagram
Fatinah Alhartani	Sequence diagram
Hala Sarwi	class diagram