

Project Report

Principle of Software Engineering

(CCCW-223)-(10765)-(YBL)

PREPARED BY:

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PREPARED FOR:

OMNIYA WAJEEH

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INTRODUCTION

Shjjie is an application for the 2030 World Cup that provides services to the fans and facilitates their entry to stadiums transportation and accommodation. The application will include the user's personal data, tickets to attend matches, in addition to the place of accommodation and many other services.

LAB 2 INFORMATION GATHERING

Shjje Application

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First interview

Interviewee Name: Louai Samman

Interviewee Title: student

Interviewee Contact: +966 56 689 9110

Interviewee Date: 22/12/2022

Interview Through: face to face

Interviewed by: Lara

1. Would you prefer to use a website or application for the 2030 World Cup in Saudi Arabia?

I prefer to use the application on mobile.

2. Do you prefer that the application be in Arabic or English or both?

Both languages.

3. Did you have any problems with the HAYYA application ?

I didn't face any problems, but my friend had trouble issuing with Entry permit.

4. Do you prefer to book match tickets in the same application or a separate site?

Same application.

5. What services do you suggest adding to the 2030 World Cup application in the Kingdom of Saudi Arabia?

Taxi transportation service, a list of events, famous places, gathering sites for each team, and the competitions that will be held by the team.

Analysis:

By interviewing the fan who went to the 2022 World Cup in Qatar

He gave us a lot of new ideas that may help us in our design, which include the following, designing a mobile application and not a website, adding an icon to book tickets within the application and not moving to a separate site during booking, adding a list of events held and making the application in Arabic and English. We will certainly take the answers into account to try to design the application in the best possible way that serves the fan while it is at the 2030 World Cup in Saudi Arabia.

Second interview

Interviewee Name: Wafa

Interviewee Title: Frontend Developer

Interviewee Contact: wafa.frontend@gmail.com

Interviewee Date: 23/12/2022

Interviewee Through: Emails

Interviewed by: Reem Alharbi

- 1- From your point of view, as a software engineer, how do you prefer the application interface to be?

It should be clear so that it is easy for users to interact with it easily. Also, it should be responsive and quickly interact with the user. Finally, the interface must be flexible in case of any modification to personal and other information.

- 2- What are the tools that we can use in designing the program?

World-press of frame work like bootstrap.

- 3- What features would you suggest to have?

Prediction feature gives prizes to whoever predicts the correct result.

- 4- Would you prefer it to be an application or a website?

I prefer it to be an application because it is easier to interact with users.

Analysis:

By meeting a professional person in interface design, we will take into account that the application interface is easy and flexible in use, and we will add the feature of predicting results to make it more attractive.

Third interview

Interviewee Name: Abdulaziz

Interviewee Title: Football fan

Interviewee Contact: Twitter Account/ @zzazbb

Interview Date: 22/12/2022

Interviewed Through: Twitter Application

Interviewed by: Taif

- 1- How was the initial booking experience through the app? In your opinion, did you find it more effective than the traditional methods of booking?

The only thing that I actually benefited from the Hayya application was activating the card.

The residence was from another platform called "Qatar Residence".

Tickets for the matches were from the "FIFA" ticket platform.

Transportation was available in the application, but using it requires obtaining a Qatari number, so I have not tried it.

Flying was from another application as well.

- 2- Did you encounter any problem while issuing the card?

Maybe the only problem that I notice was setting some conditions for issuing the Hayya card I personally did not encounter any problems, the application was very clear, I didn't even encounter technical problems because I was one of the first people to issue the Hayya card. Often, people who made reservations recently encountered technical problems as a result of the high pressure from the application users.

- 3- Your point of view as a fan and visitor of the World Cup event in Qatar, in the future, if the Kingdom of Saudi Arabia hosts the World Cup and it is in an application similar to the Hayya application, what service will distinguish the application compared to the capabilities and status of our country?

The existing services, such as housing and match tickets, were not in the application itself, but it was linked so that if I needed to book accommodation, the application would refer me to a website. And if I want to use the tickets, the application will transfer me to another site, and this service for me was of no use, while if it was offered in the application itself, it would be very wonderful. There is a page for events, but I didn't open it because I didn't need it. If the event booking service was available in the application itself and showed people's ratings for each event, the service would be very useful.

- 4- Your opinion as a football fan, and you had the opportunity to suggest an application that facilitates your visits to matches. What are the most important features that you want to provide in the application?

- That the application contains applications of services located in the same country, and it is not forbidden for applications to be sponsors of the application itself, Such as popular transportation applications, food delivery applications, telecom companies' applications, etc...

- Simple health services such as calculating daily activity and others.

Analysis:

First, I found the best way to search for information is to interview a football fan as well as a user of an application that supports an idea similar to the application we are working on.

The interview helped me identify the problems that FIFA World Cup 2022 fans faced with the app for the event's services and avoid them in designing our app.

I concluded from the user's answers that we highlight all services within the application itself and do not link them to external sites that dispense with the goal and idea of the application itself, in addition to showing all tickets in the application interface to facilitate transit for visitors and those responsible for the organization. We also intend to design the application by adding the service of booking events and evaluating them from the visitors themselves. Finally, providing a feature to show local delivery applications, either for transportation or restaurant orders, and other local applications that help visitors to our country hosting the 2030 World Cup.

Fourth interview

Interviewee Name: Ayoee

Interviewee Title: Football fan

Interviewee Contact: Twitter Account/ @na1482145

Interview Date: 23/12/2022

Interviewed Through: Twitter Application

Interviewed by: Bayader

- 1- As a person who came from another country, what difficulties did you face in the World Cup?

Honestly its very hard to say, because everything went so perfectly. They gave us free sim cards with LTE data, the transportation was free and very fast, finding accommodation was easy, no language barriers since everyone spoke English

- 2- What are the services that helped you while using the Hayya application?

Well there is a lot of services for example There was a service that showed events, and there was also a map of public transportation places, and its use was free

- 3- As a person who used Hayya application, do you suggest building an application for 2030 World Cup similar to Hayya, but with more features?

Of course, the app will make it easier to attend the World Cup

- 4- What are the features you wish to add in our app?

Maybe a social aspect to help fans from all over the world meet each other? Also, Live broadcast service for the match for people who cannot attend the match or for people who prefer to listen to the comments of the match commentator

Analysis:

After interviewing a football fan who had attended the World Cup in Qatar, I concluded what services helped her while attending the matches, such as having a map of public transportation and using transportation was free and the information about the events that would be held, so the fan could go to them in his free time. Also, she gave us some service will make the world cup in 2030 easier to attend such as Live broadcast service.

Fifth interview

Interviewee Name: Jacob Costin

Interviewee Title: football fan

Interviewee Contact : jacobcos1998@gmail.com

Interviewee Date: 25/12/2022

Interview Through: Email

Interviewed by: Wasaif

- 1- What are the biggest difficulties you think you will face as a tourist if the world cup for 2030 was in the kingdom of Saudi Arabia?

I am from Australia , Saudi Arabia is a really far country from traveling to finding suitable accommodation and dealing with a new culture that has its own rules I think that's my main concerns

- 2- What do you suggest to make those difficulties easier for all tourists in different countries?

I guess various housing options with good prices for tourists and various transportation, Special services for people with disabilities from housing to special places in the stadium and daily transportation for them, full introduction about the country her rules and culture and tourist hotspots something like that

- 3- From your point of view, how can we make it an unforgettable experience, what services do you suggest?

if I'm going to Saudi Arabia for the world cup beside attending the matches I really want to see the culture of the country and the famous hotspots, arrange some events and unique activities, and facilitate transportation to it will make the experience at another level for sure

- 4- As a football fan, if we want to build an app that will serve all the football fans , what are the features that you wish the application will include it?

Live stream for matches and live chat, show the states of the matches within the app It will be a good addition for people who can't go to the stadium

Analysis:

from the above-mentioned points in the interview, after questioning a football fan we can take benefit and satisfy the suggestions he gave to build a successful application that serves all the tourists for a better experience, represent the accommodation and transportation, special services for people with disabilities, live stream beside online chat for the viewers to communicate and interact with all involved in the application, and some useful ideas like representing tourism guide to provide all the information the tourists need, we can develop all those ideas to make the best application for the world cup 2030.

LAB 3 PLANNING PHASE ONE

Shjje Application

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1.The purpose of the project

a. The User Business or Background of the Project Effort

Content

Shjje is an application for the 2030 World Cup that provides services to the fans and facilitates their entry to stadiums, transportation and accommodation. The application will include the user's personal data, tickets to attend matches, in addition to the place of accommodation and many other services.

Motivation

An application to host the World Cup in Saudi Arabia 2030.

Considerations

This application resolves the problem of coordinating the travel of fans to the Kingdom of Saudi Arabia to attend the World Cup by providing all the necessary procedures and reservations before they arrive in the Kingdom.

b. Goals of the Project

A World Cup application for 2030 that offers fans services and makes it easier for them to get to stadiums, go around, and find places to stay. The app will offer the user's personal information, match tickets, lodging information, as well as a variety of additional services.

2.Preliminary report

1- The problem :

The problem is the difficulty of coordinating the travel of fans to the Kingdom of Saudi Arabia to attend the World Cup, and the solution to the problem is this application who will provide all the necessary procedures and reservations before the fan comes to the Kingdom of Saudi Arabia or to the matches.

2- Findings:

They faced a problem in the lack of a list of events venues and some in the delay in issuing an entry permit

3- Recommendation or proposed solution:

- List of events held
- Providing customer service for entry permit problems
- Put the contact numbers of taxi offices
- Simple health services such as daily activity and locations of nearest health clinics.
- Linking the app to the applications of government services in KSA to facilitate the visit.
- Contact numbers needed in emergency situations such as police, ambulance and others.
- A map that includes facilities such as stadiums, tourist places, malls, restaurants, and others.

4- Cost & schedule estimates:

Phase	Description	Cost	Time
Specification	Define the main functionalities of the software and the constraints around them	8000 SR	1 month
Development	The software is to be designed and programmed	50000 SR	4 months
Validation	The software must conform to its specification and meet the customer's needs	10000 SR	1 month
Evolution	The software is being modified to meet customer and market requirements changes	9000 SR	1 month
Total	-	77000 SR	7 months

LAB 4 PLANNING PHASE TWO

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1- Problem Definition:

The problem is the difficulty of coordinating the travel of fans to the Kingdom of Saudi Arabia to attend the World Cup, and the solution to the problem is this application who will provide all the necessary procedures and reservations before the fan comes to the Kingdom of Saudi Arabia or to the matches. And They faced a problem in the lack of a list of events venues and some in the delay in issuing an entry permit.

2- Scope Objectives of “new system”:

Converting manual transactions and reservations into electronic ones through the application.

3- Alternative Solutions:

If we can't make it an app, we'll turn it into a mobile website.

4- Cost and benefits of Alternatives:

A mobile website is a customized version of a regular website that is used specifically for mobile. It has a responsive design and works for different screen sizes, and it has the advantages of being accessible across platforms, sharing easily, and potentially being more cost-effective.

Phase	Description	Cost	Time
Specification	Define the main functionalities of the software and the constraints around them	8000 SR	1 month
Development	The software is to be designed and programmed	50000 SR	4 months
Validation	The software must conform to its specification and meet the customer's needs	10000 SR	1 month
Evolution	The software is being modified to meet customer and market requirements changes	9000 SR	1 month
Total	-	77000 SR	7 months

5- Software impacts:

There are many benefits that will accrue to the company responsible and operating the World Cup 2030 in the Kingdom of Saudi Arabia for using our application, because it will facilitate for fans and visitors the process of booking tickets, housing, transportation, knowledge of all events and activities held on the map, and follow-up on the health status of fans.

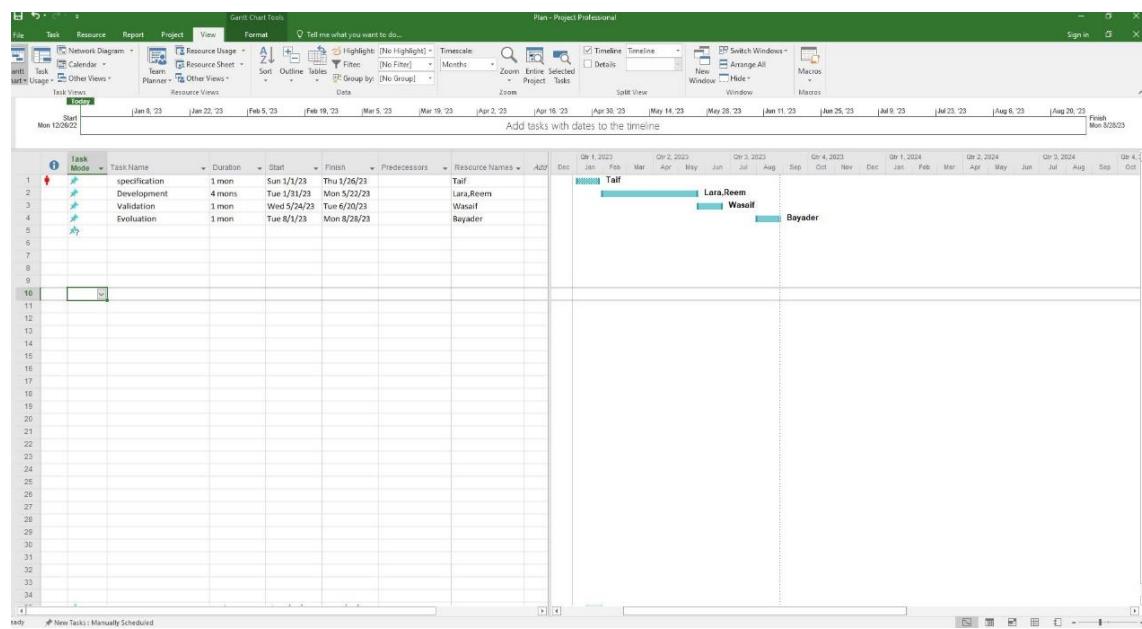
6- Potential Changes in the Organization:

Our application has facilitated the process of hosting fans and visitors and won their admiration because it includes all the services they need during their stay in the Kingdom of Saudi Arabia.

7- Recommended Alternative of the course of Action:

- If we can't make it an app, we'll turn it into a web.
- We will place an announcement on social media with this news so that all fans can reach the web link.

Project Plan:



LAB 5 Analysis Phase 1

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1. Context Diagram

Stockholder definition

a. The Client

- Ministry of sport and FIFA.

b. The Customer

- Fans and visitors to the World Cup in Saudi Arabia.

c. Other Stakeholder

- Event organization and employees, Stadium and Hotel Management, the Ministry of Health, the Ministry of interior and the statistic authority.

The scope of the work

a. The Current Situation

Content

- Currently, fans go to the match ticket office to buy tickets manually or by phone, and also to buy airline or bus tickets, which is a very primitive method.

Motivation

- In order to facilitate and save time, effort, and money, we are creating a system that works on booking tickets and transportation as well as housing using an application.

b. The Context of the Work

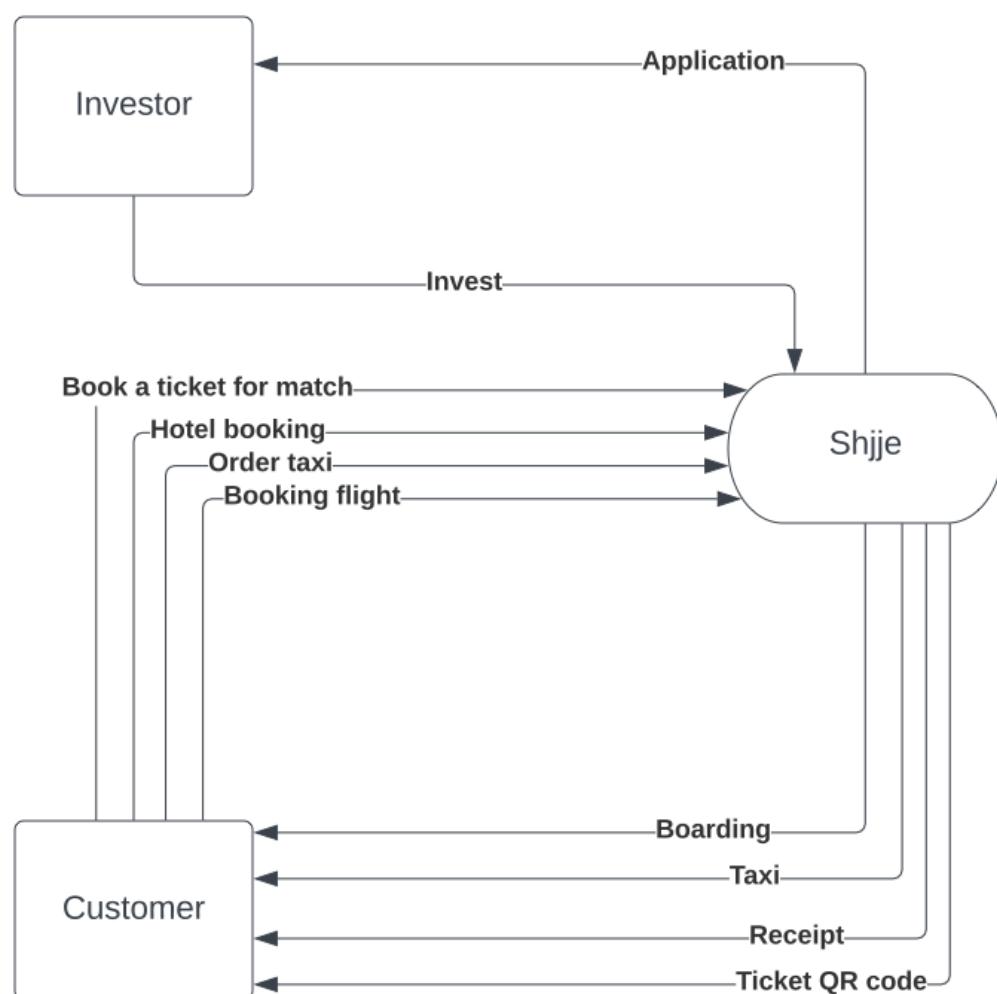
Content

- The system's implementation has assisted the application in achieving its objective of facilitating reservations for tickets, accommodation, and transportation.

Motivation

- After the system was established, we want to develop it due to the target group facing the problem of extracting mobile and Internet SIM cards. We seek to develop the application and add it as a service to facilitate the purchase process.

Diagram



Business Event List:

Event Name	Input/Output	Summary
Book a ticket for the match	Input	The customer book a ticket for the match from shjje
Hotel Booking	Input	The customer book a room in a hotel from shjje
Order taxi	Input	The customer order a taxi from shjje
Booking flight	Input	The customer book a flight from shjje
Boarding	Output	The customer receive a flight ticket from shjje

Taxi	Output	The customer receives a taxi car from shjje
Receipt	Output	The customer receives the receipt from shjje
Ticket QR code	Output	The customer receives the ticket QR code from shjje
Invest	Input	The investor invests shjje
Application	Output	The investor receives an application

LAB 6 PLANNING PHASE TO Shjje Application Principle of Software Engineering

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Functional requirement:

ID	Requirement Definition
FR1	Create an account
FR1.1	The system should enable the user to create an account
FR2	Login
FR2.1	The system allowed all users, such as the owners of the idea, as well as investors, to gain the user username and password for the system.
FR3	Book Flight
FR3.1	The system should display the available flight and seat for the user to book a flight
FR4	Book Hotel
FR4.1	The system should display the available hotels and rooms for the user to book a hotel room
FR5	Book Ticket
FR5.1	The system should enable the user to book a ticket for a match include choosing a seat
FR6	Policy and Security
FR6.1	The system allows users to read all policies and the way the application protects ideas and user information
FR7	Payment
FR7.1	The system allow the investor to choose their Preferred payment method
FR8	Emergency Call
FR8.1	The system should enable the user communicate with the emergency either by phone call or via chat
FR9	Transportation
FR9.1	The system should display the available taxi cars in the area for the user to order a taxi for transportation
FR10	Show Health Status
FR10.1	The system should view the user's health status

Non-Functional requirement:

ID	User Interface
UI1	The system should authorize the users to login and validate the users with their password
UI2	The system Should provide a user interface.

ID	Hardware Interface
HI1	The application is supported by Android and Apple iOS operating systems.

ID	Software Interface
SI1	The system will communicate with the database of ABSHER system to extract the needed information including ID number and password to validate the user access

ID	Security Requirements
SE1	The system must have a log-in page.
SE2	The system provide one-time password to log-in.
SE3	Only authorized users shall be able to create, edit, and delete in the system.

LAB 7 PLANNING PHASE TO Shjje Application Principle of Software Engineering (CCCW-223)-(10765)-(YBL)

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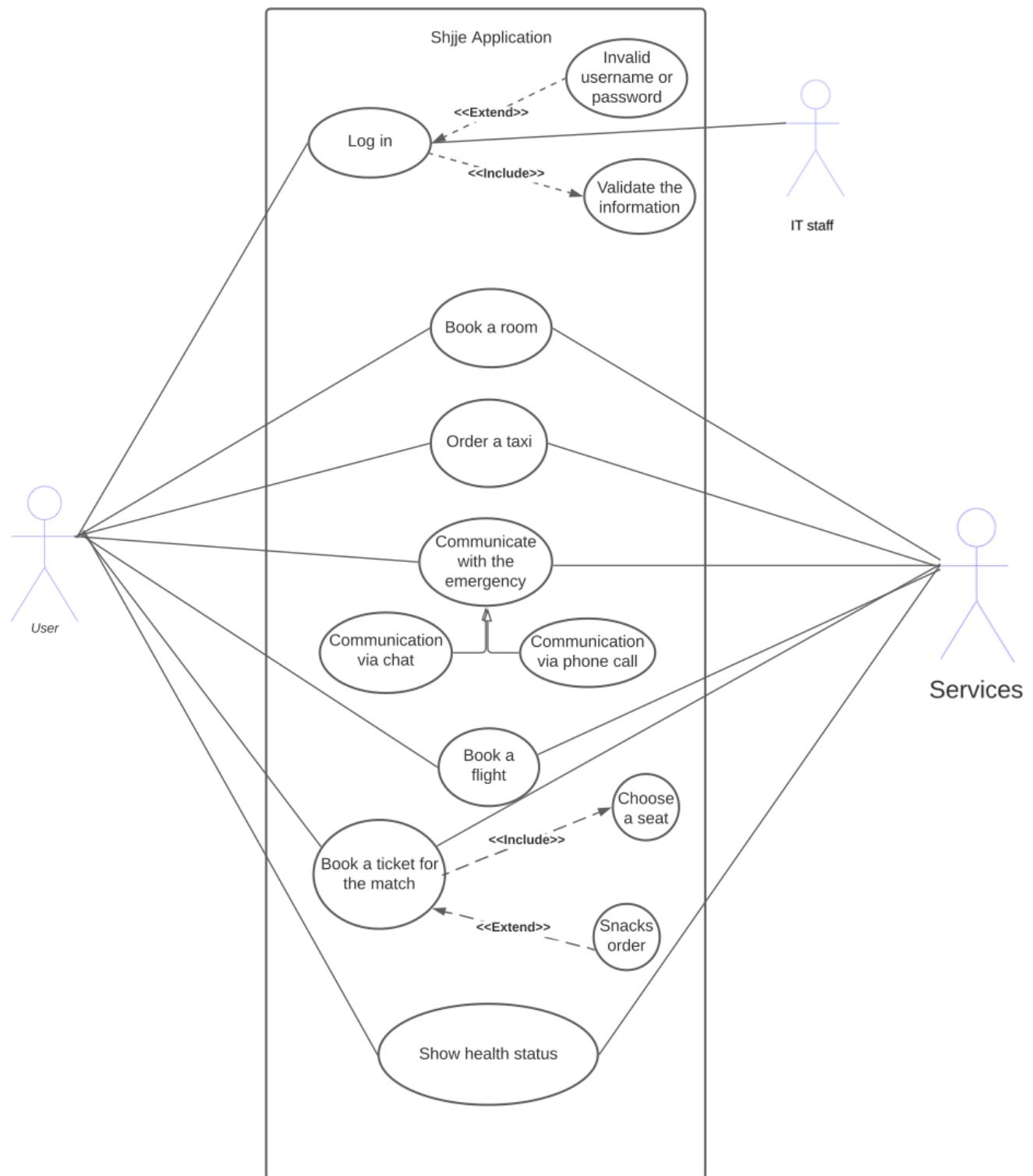
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1. Give the use cases diagram of your project.

2. Complete the needs analysis of your project by describing the scenarios of use cases diagram.

UC1: Log in.

Scope: The application's system.

Level: primitive.

Primary Actor: User and IT staff.

Precondition: Verify the information.

Stakeholders and Interests:

IT staff

Scenario of UC1:

- 1- The actor should log in with true information.
- 2- The system will validate the information.
- 3- They have ability to gain the application.

UC2: Book room.

Scope: User of the system and hotel staff.

Level: Book hotel rooms.

Primary Actor: User and hotel.

Precondition: After show the available hotels and rooms.

Stakeholders and Interests:

User

Hotel

Scenario of UC2:

- 1- The system will display the available hotels and rooms.
- 2- The user will book a hotel room.
- 3- The hotel staff will approve.
- 4- The system will display the reservation information.

UC3: Order Taxi.

Scope: User of the system and taxi company.

Level: Order taxi

Primary Actor: User and taxi company.

Precondition: After show the available taxi cars in the area.

Stakeholders and Interests:

User

Taxi company

Scenario of UC3:

- 1- The system will display the available taxi cars in the area.
- 2- The user should determine the meeting point and destination.
- 3- The taxi staff will display the fare.

UC4: Communication with the emergency.

Scope: User of the system and emergency team.

Level: Communication with the emergency via chat or phone call.

Primary Actor: User and emergency.

Precondition: After choosing the desire communication way.

Stakeholders and Interests:

User

emergency team.

Scenario of UC4:

- 1- The system will enable the user to choose the method of communication.
- 2- The user will choose the method of communication.
- 3- The emergency team will communicate with the user.
- 4- In the event of an emergency that involves taking the user from his place, the system will send the emergency team the user's place.

UC5: Book flight.

Scope: User of the system and Airline company.

Level: Book flight.

Primary Actor: User and airline.

Precondition: After show the available flight and seat.

Stakeholders and Interests:

User

Airline

Scenario of UC5:

- 1- The system will display the available flight and seat.
- 2- The user will book a flight.
- 3- The airline staff will approve.
- 4- The system will display the reservation information.

UC6: Book ticket for a match.

Scope: Ministry of Sports.

Level: Book ticket for a match.

Primary Actor: User and Ministry of Sports.

Precondition: After show the available matches, seat, and snacks list.

Stakeholders and Interests:

User

Ministry of Sports

Scenario of UC6:

- 1- The system will display the available matches, seat, and snacks list.
- 2- The user will book a ticket and order snacks.
- 3- The system will display the ticket information.

UC7: Show health status.

Scope: Ministry of health and user of the system.

Level: Show the user health status.

Primary Actor: User and Ministry of health databases staff.

Precondition: After conducting the specified examinations from the Ministry of Health.

Stakeholders and Interests:

User

Ministry of health.

Scenario of UC7:

- 1- The system will show the user health status.

LAB 8 Analysis Phase 2

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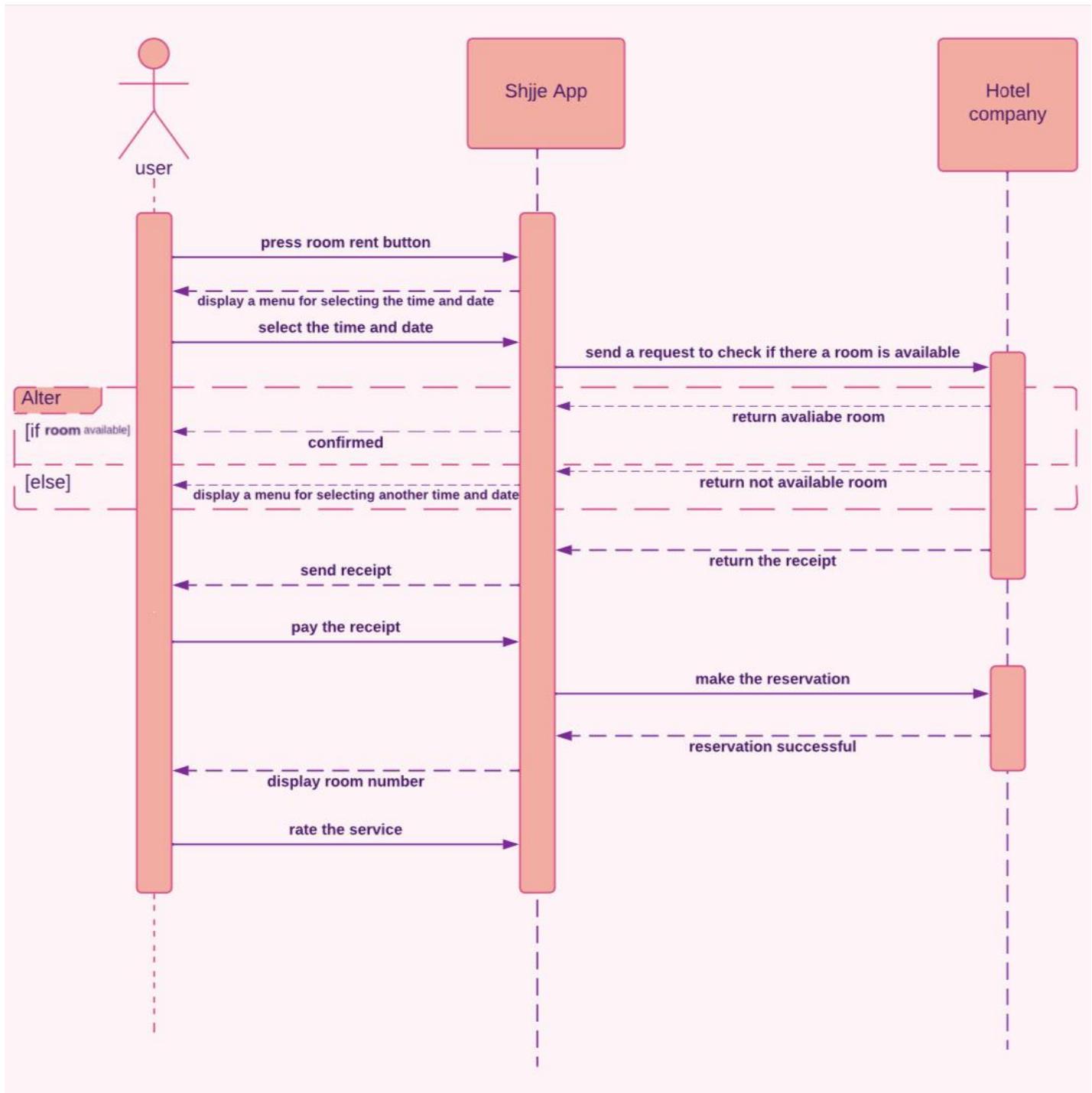
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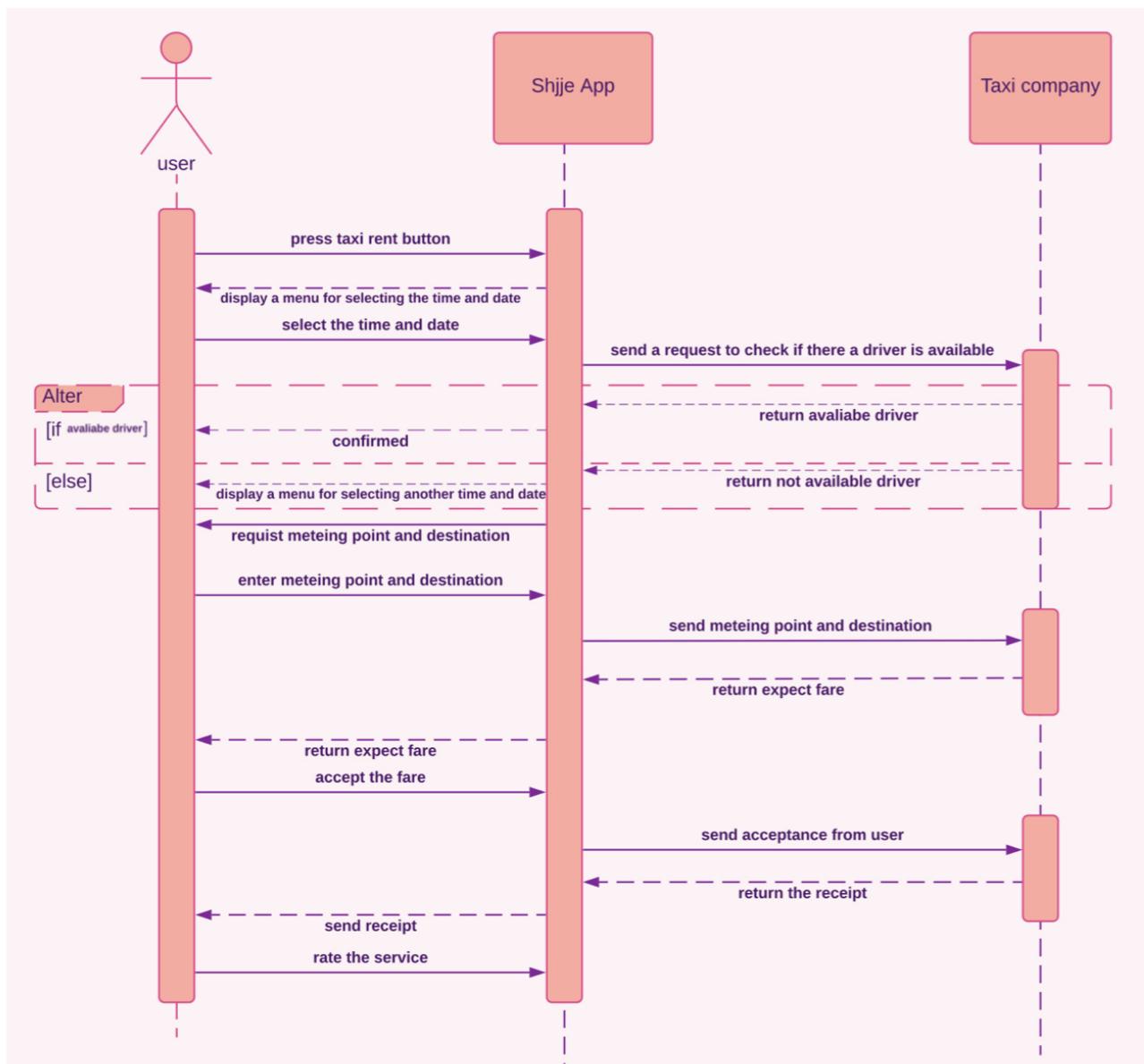
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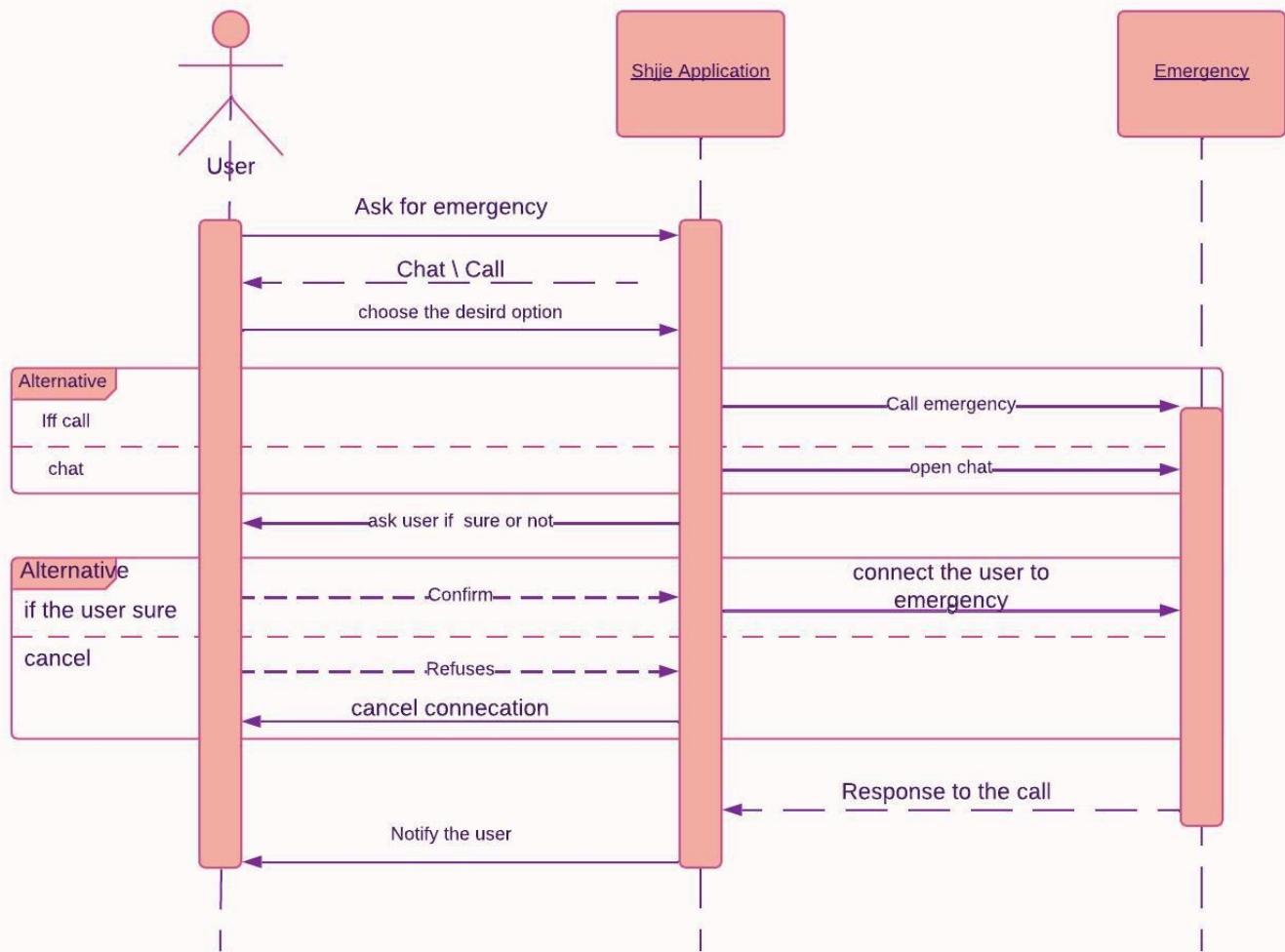
Book Hotel Room Diagram



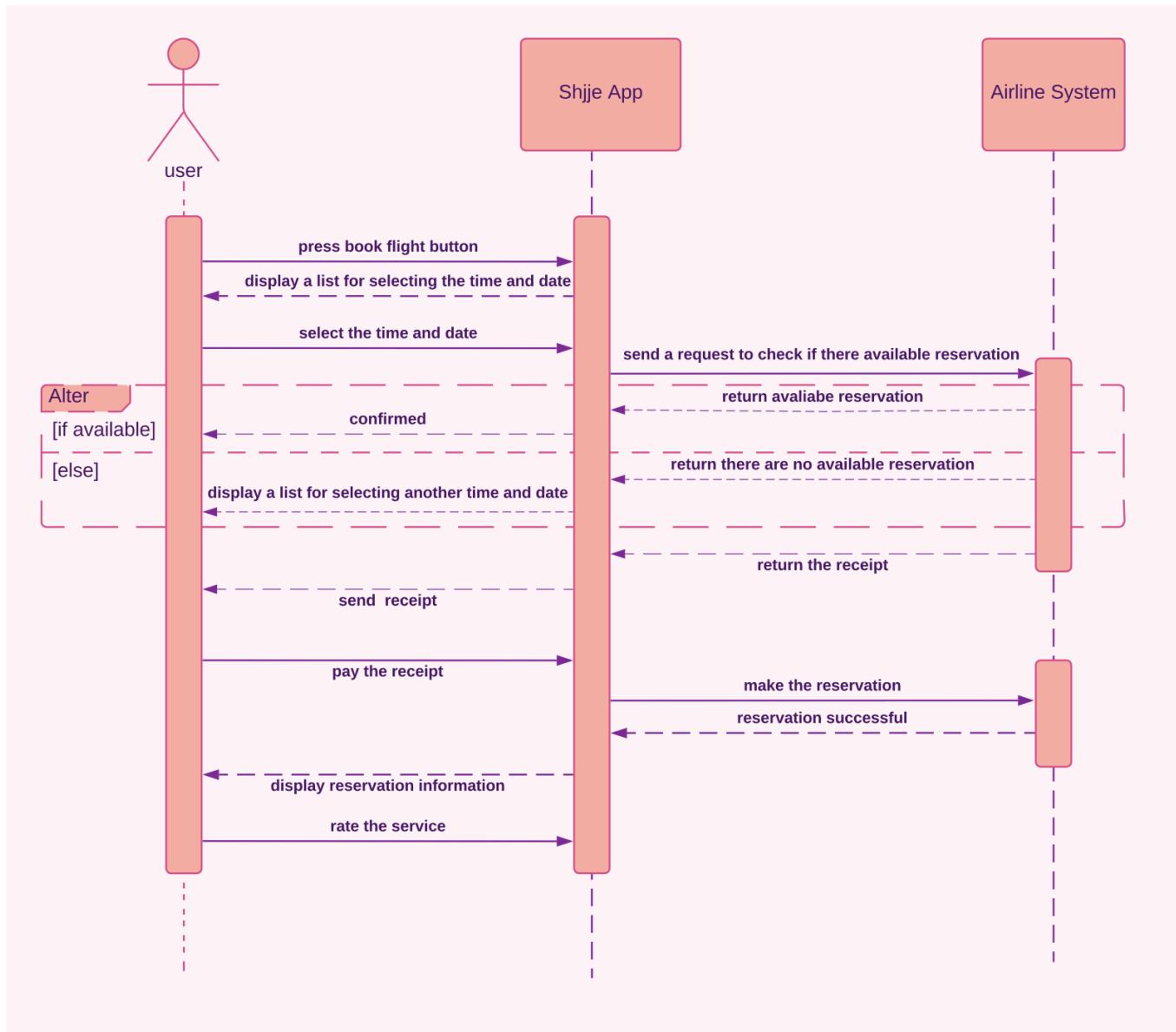
Taxi Rent Diagram



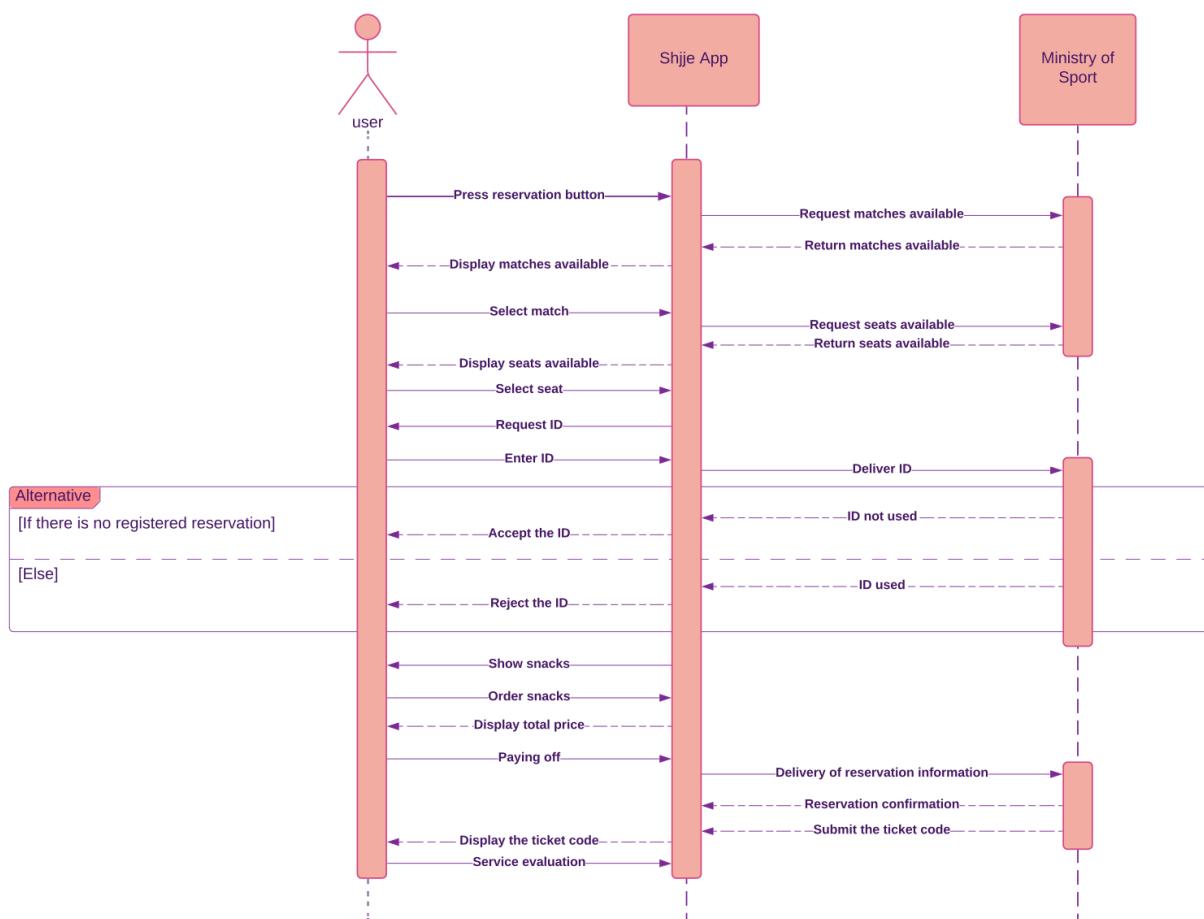
Communication with Emergency



Book Flight Diagram



Book Ticket Match Diagram



LAB 9 Modeling Phase

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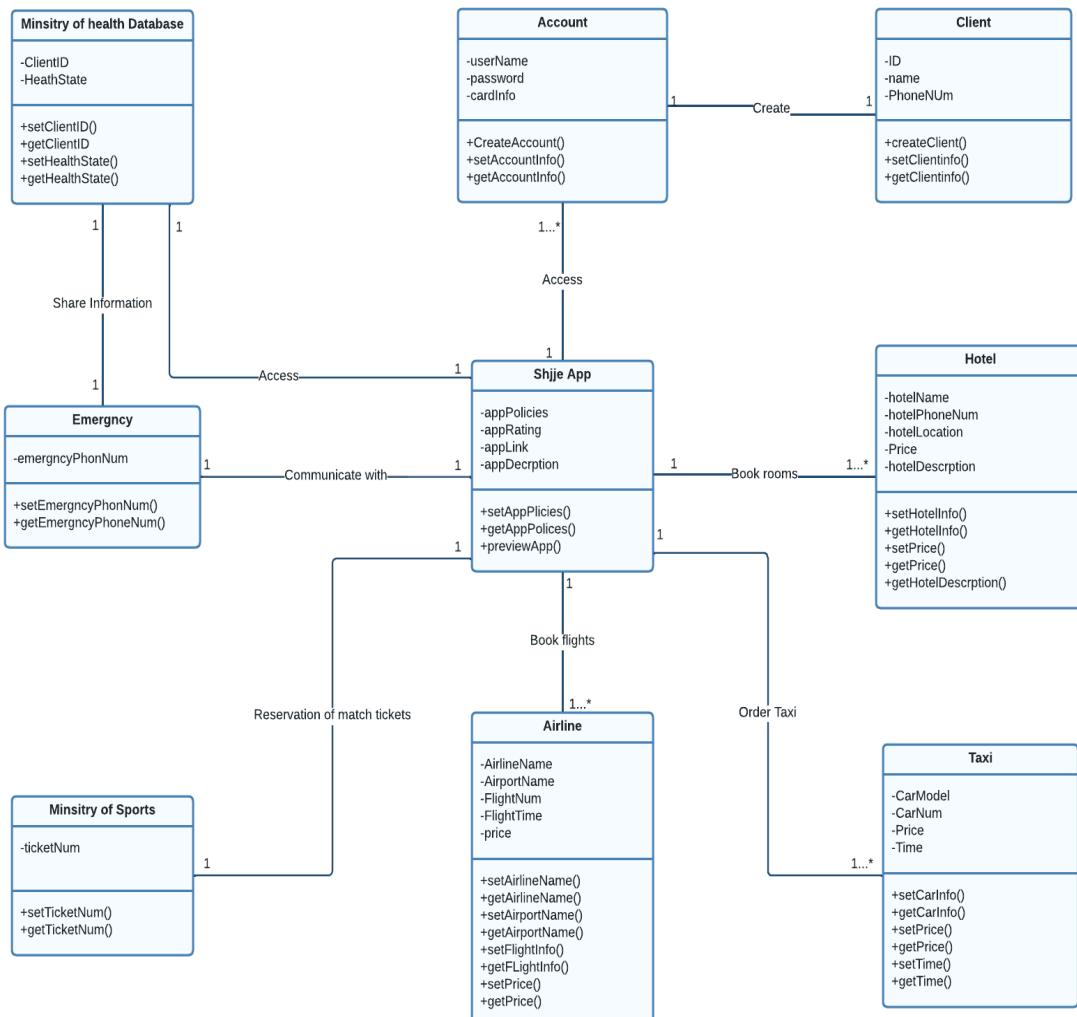
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Class Diagram:



Class Name	Description
Shjje App Class	It is the main Class for the app, and it will link the other classes together.
Client Class	It takes the client's name, id, and phone number which means it will create a client, client can have only one account .
Account Class	it requires a username, password, and card information, it will create an account for the client, and the account can access Shjje app.
Airline Class	It requires airline information. The client can book one or more flights by shjje app.
Taxi Class	It requires the car number, car model, time, and price. The client can set one or more orders for a taxi by shjje app.
Ministry of sports Class	It requires the number of the ticket. The client can reserve a match ticket by shjje app .
Hotel Class	It requires hotel information. The client can book one or more hotel rooms by shjje app.
Ministry of Health database Class	It takes the client ID from the account and will display the health state in the app.
Emergency Class	It requires an emergency phone number. It takes the health state from the Ministry of Health database. Communication with shjje app.

CONCLUSION AND SUGGESTIONS

In conclusion, we hope to get a chance to be a part of developing our country's vision by hosting the 2030 football World Cup to help our country to reach its goals and demonstrate that Saudi Arabia can host a remarkably successful tournament. We look forward to any opportunity to develop and implement this app with better features using java language programming to improve the application we could add other services in the future including the FIFA store, and review of passport details. We believe that it will align with Saudi Arabia's 2030 vision.

Tasks Allocation Table

Student Name	Work
Taif Alqarni	Lab2 (interview) – Lab 3 (preliminary report) - Lab5(report) Lab6(non-functional requirement) Lab8(sequence diagram)
Wasaif Althyabe	Lab2 (interview) -Lab3(cost schedule estimate) – Lab6 (functional requirement) Lab8(sequence diagram) Final report
Lara Alofi	Lab2(interview) -Lab3(purpose of the project)- Lab 4(Project plan)- Lab5(context diagram) Lab8(sequence diagram)
Bayader Alluhaybi	Lab2(interview)-Lab4(report)- Lab5(business event list) Lab8(sequence diagram)-Lab9(class diagram)
Reem Alharbi	Lab2(interview) -Lab3(purpose of the project)- Lab4(report) – Lab7(use case diagram) Lab8(sequence diagram)