

**Final project**  
**Best choice application**

**CCSW223 – PRINCIPLES OF SOFTWARE ENGINEERING**

Dr.Omniya mohammad wajih

:Students Names

Layan Alamri 2112099

Nouf Alsahafi 2111270

Deema Abdullah 2110766

Ameera Alreheli 2110295

Ebhar Aljubayri 2110441

# CONTENTS

	PAGE
<b>Introduction</b> .....	3
<b>Iab 2</b> .....	4
<b>Iab 3</b> .....	8
<b>Iab 4</b> .....	11
<b>Iab 5</b> .....	14
<b>Iab 6</b> .....	17
<b>Iab 7</b> .....	19
<b>Iab 8</b> .....	25
<b>Iab 9</b> .....	29
<b>Conclusions and Recommendations</b> .....	30
<b>Task table</b> .....	31

## **Introduction**

The idea of the project is to make an application that help people so all their needs are in one application, and they will not have to order or book or even search from two different applications. It also It helps business owners, restaurants, and hotels to expand, manage their reservations, communicate with customers, and answer their inquiries.

we will implement our purpose by build an application that contains several services and facilities in the city such as (Hospitals, Gyms, Schools, Malls, Restaurants, and coffee Shops). It is divided into categories so it can be easier to search and see other user's reviews so the user can choose the best option and also show the costs of every single service.

**Lab 2**  
**Information gathering**  
**Interview description**

**First interview:**

**a. Evaluation of a User Request**

Date: 2022/12/28

This interview was conducted with Afnan Alshafie , she is a student and she loves to .explore and visit the new cafes , restaurants and places

Phone number: +966 542065636

**b. Description of the problem**

**-Through your experience of going to new places, did you encounter difficulties to - .know these places? If yes , mention it**

Yes, it is very difficult for me to find good new places near to me

**-Have you ever book in any restaurant, cafe, or other place, and encountered problems with this booking?**

Yes, a lot. often when i need to communicate, confirm a booking , and know the available times. they takes a long time to respond

**-If you want to know an overview of the place, people's opinions and a price list, is that easy?**

Not always, many times it is difficult for me to have a single source that provides all the information I want to know

**-If you have an application that helps you discover these places, what needs do you want it to provide for you?**

Providing an easy way to search for any place with the online booking service, this will be a time saver

And to add the accounts of the restaurant or café on social media, the location of the place, and people's opinions about the place.

**-Have you ever encountered difficulty communicating with places such as (restaurants - cafes - entertainment resorts - etc.)?**

Yes, it is often difficult to communicate with them

Such as not finding the number, or the number being wrong

This problem caused me a lot of difficulties when I wanted to go to a place and I could not book an appointment

### **c. Analyst comments**

From this interview, I found that the general public may face difficulty when searching for any services, and problems in communicating with them or booking an appointment, and that they need an application that facilitates the process of communication and booking for any service

## **Second interview**

### **a. Evaluation of a User Request**

I did this interview with Atheer Al-Reheli on Saturday, December 21, 2022 and she is a student in interior design major

Her email: [atheeralreheli-18@hotmail.com](mailto:atheeralreheli-18@hotmail.com)

### **b. Description of the problem**

**-When you travel, do you have to use more than one application, Mention some of the applications?**

Yes, I have to use more than one applications like booking, SIXT, Airbnb, And restaurants websites to book a table

**-In your sense, if we add all your travel needs, such as booking hotels, restaurants, museums, and cars and so on, in one application, it will become a useful application and you will use it?**

Yes, of course, I will use it because it will make it easier for all reservations to be in one place, reduce time and possibly reduce costs

**-Do you think existing applications are improving themselves and adding better features, or is there stability at the same level?**

I think yes, they add features in applications and develop their applications

### **c. Analyst comments**

Through my interview with her, I believe that society needs an application that combines all needs in travel and entertainment in an application to facilitate all needs for more fun and luxury, and when all your needs are in one application, it will reduce the cost of reservations because there will be offers when booking, and it reduces fraud If traveling in a country for the first time, you go to it, so that you do not need to communicate by phone for example

## **Third interview**

### **a. Evaluation of a User Request**

This interview was done by Ali Al-Shamrani on Wednesday, December 21, 2022  
He works as the Director of the Public Relations Department at SABIC  
He loves to travel and move around and also part of his job is to travel around the world  
His email: [ali.mu.Alshamrani@gmail.com](mailto:ali.mu.Alshamrani@gmail.com)

### **b. Description of the problem**

**-did you use some applications when you travel? If yes, mention them**

Yes, of course, it seems impossible without those applications such as Booking , google map

**-Is using these applications a necessity or do you have other options?**

Actually, it is not possible to travel without them, especially in a new city, without using any apps will make it more difficult and require more time  
I can say that I have no other choice

**-When you visit a place for the first time, what are the top 3 problems you face ?**

Difficulty searching for high-quality hotels -1

Difficulty finding tourist places -2

Difficulty in accessing shopping centers-3

**-Do you think that the existing applications are sufficient, or is there a need for other applications?**

In my opinion, the more applications in this field the better  
There are many services that can still be added and developed  
So I think we still need more applications

### **c. Analyst comments**

I noticed that the existence of such programs is absolutely necessary. I also noticed from the interview that going to a country for the first time and not having a common language between you is difficult and tiring

On the other hand, it provides a lot of entertainment, as you do not need someone to guide you to the distinctive and beautiful place

Where the presence of one program summarizes the world for you in your hands is a shortcut to a lot of effort

## **Fourth interview**

### **a. Evaluation of a User Request**

This interview was done with Buthaina Alsahafi on 26 Dec 2022. She is master student in .new south wales university who just move to Sydney, Australia

Buthaina Alsahafi = +966502394530

### **b. Description of the problem**

**-In your opinion, what is the best way to know City places ( restaurants, coffee shops, hospitals, etc.)?**

Search about it in social media platforms

**-Did you face any problems with accessing services when you came to the city?**

Yes, I had some troubles at the beginning

**-Mention one of the problems you have faced and tell me your opinion about the best solution to this problem.**

.Using public transportation

One strategy to alleviate this problem could be handing a guide booklet to new arrivals .in the airport

**-If there was an application that covers all of the city services and facilities how much do you think it will help newcomers to the town?**

.I believe it would be very helpful and time saving

### **c. Analyst comments**

From this interview, we can see that newcomers to the city face problems at the beginning. And our application will be very helpful and time saving for them

## **Fifth interview**

### **a. Evaluation of a User Request**

This interview was done by Raghad Mohammed on Tuesday, December 27, 2022

She is a student

She loves to visit new places

Her number: [0560541340](tel:0560541340)

### **b. Description of the problem**

**- Give me an example of problems you have faced while traveling that interrupt your plan?**

Sometimes I cannot book restaurants or tourist places through one application, but I need to use more than one application for reservations, inquiries, and knowing the location of the place, and all information may not be available correctly or may be outdated, so we have to book in the same place, which causes a lot of time

**-Have you ever encountered a problem when you wanted to order from a place (such as: a restaurant, pharmacy or supermarket)?**

Yes, sometimes I want to buy a specific product, but it may not be available, so it would be better if there was an application that would tell me where it is available and the branches where this product is available

**- How do you think that the idea of our application would solve this problems ?**

The application will help solve many problems, especially during travel, such as booking hotels, restaurants, and tourist places, and this will save a lot of time and effort for users

**- Do you think people would use our application ?**

Certainly, because the idea of the application will help a lot, especially since there will be no need to use more than one application to reserve different places, and it will make it easier for customers to book with ease

### **c. Analyst comments**

Raghad answered that the biggest problem she faces is the lack of an application that allows reservations and purchases from different places, and that sometimes the information about places is wrong or outdated, and that requires time and effort, so there must be a comprehensive application for all these things, and that's the idea of our application that will enable many people to book easily



## **Lab 3**

### **Planning Phase 1**

#### **1.The purpose of the project**

The purpose of the project that we decided to make this application to help people so that all their needs are in one place, and they will not have to order or book from two different applications

##### **a. The User Business or Background of the Project Effort**

###### **Content**

An application that contains several services and facilities in the city such as (Hospitals, Gyms, Schools, Malls, Restaurants and coffee Shops). It is divided into categories so it can be .easier to search with other users reviews so the user can choose the best option

###### **Motivation**

.Help users to choose the best facility

###### **Considerations**

the biggest problem is when we want to order or book two different services, we have to order or book from two different applications, for example if we want book hotel and at the same .time book a restaurant

##### **b. Goals of the Project**

Our application supports and helps users of all categories, by providing and displaying all services in all categories, with evaluation, prices and opinions of users, and the thing that distinguishes our application is that it provides the feature of booking service and communication via the phone number or the application.

#### **2.Preliminary report**

###### **The problem**

There is no single source or application to display all services with their information and details, and the possibility of booking easily

### **Findings**

The biggest problem that customers face, is their inability to reserve all they want from one application, and they are forced to use more than one application to reserve different places, .or there is no enough information or pictures about the place, which will take a long time

### **Recommendation or proposed solution**

Our application will collect all places and it will be more comprehensive, allowing customers to book any place they want easily and from one application. Also, all information about the place will be available and correct, such as mobile number, communication methods, prices, .and menu, which will provide a satisfactory experience for customers

### **Cost & schedule estimates**

<b>Phase</b>	<b>Description</b>	<b>Cost</b>	<b>Time</b>
<b>Specification</b>	defining what the system should do	4500\$	weeks 2
<b>Development (design &amp; implementation)</b>	defining the organisation of the system and implementing the system	30,000\$	months 6
<b>Validation</b>	checking that it does what the customer wants	7500\$	month 1
<b>Evaluation</b>	changing the system in response to changing customer needs	10,000\$	weeks 2
<b>Total</b>		52,000\$	months 8

## Lab 4

### Planning Phase 2

#### 1.Report

##### 1-Problem Definition:

The problem is when we want to reserve different services we use more than one application because there is no single source or application to display all services with their information and details, and the ability to booking.

##### 2- Scope Objectives of “new system”:

Collect all services in one application.

##### 3- Alternative Solutions:

- Developing existing applications and adding new features and new ideas to them
- Making an application in which some of the features that we have developed, but not all of them

##### 4- Cost and benefits of Alternatives:

When we develop an already existing application, we will save approximately 50% of each phase.

And when we reduce the features of the application to a smaller number, approximately 35% of the budget will be saved.

Phase	Description	Cost	Time
<b>Specification</b>	defining what the system should do	4500\$	weeks 2
<b>Development (design &amp; implementation)</b>	defining the organisation of the system and implementing the system	30,000\$	months 6
<b>Validation</b>	checking that it does what the customer wants	7500\$	month 1
<b>Evaluation</b>	changing the system in response	1000\$	weeks 2

	to changing customer needs		
<b>Total</b>		44,000\$	months 8

## 5- Software impacts:

It will have a strong impact on where all the person's reservations will be in one place and the customer's information in one place, as all your requirements are in one place, making it easier for the customer and the company.

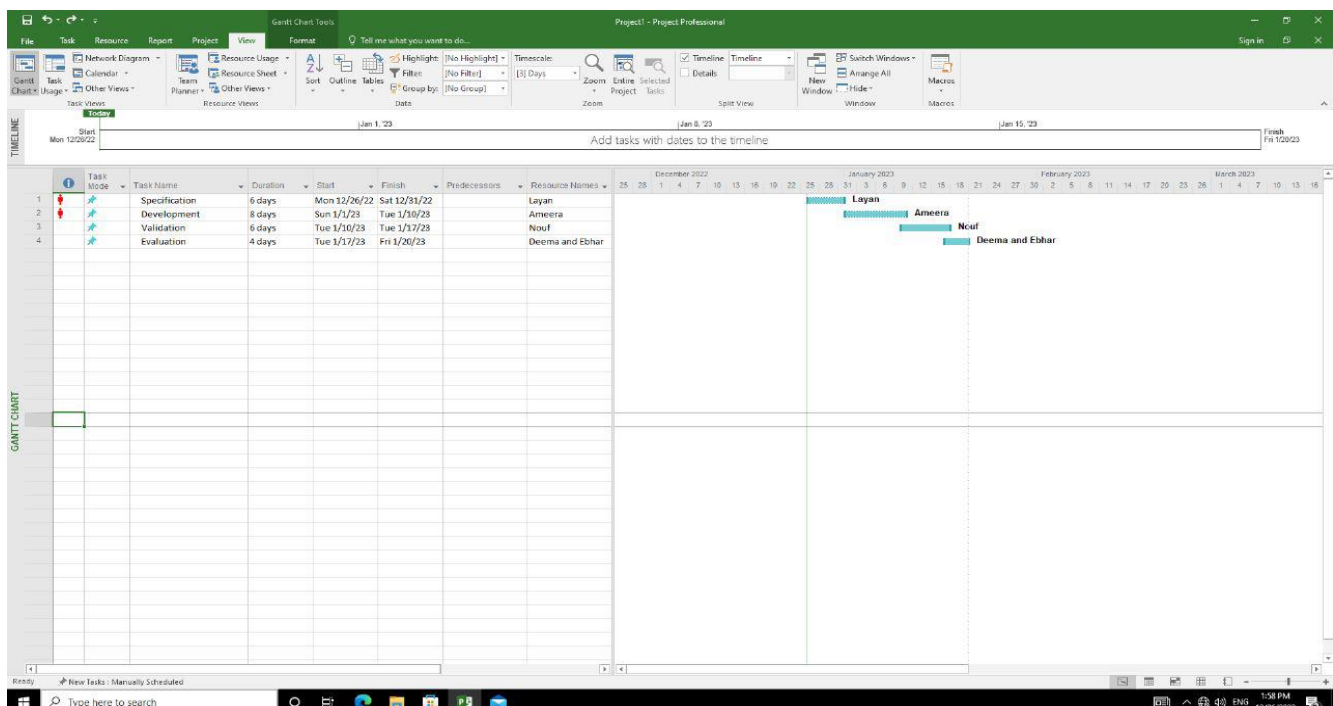
## 6- Potential Changes in the Organization:

When the application is done, it will help our targeted groups to book or buy easily from anywhere and at any time they want without the need to use different applications, thus a lot of time and effort will be saved. In addition to the ease of using the application and the availability of sufficient information about whatever they want.

## 7- Recommended Alternative of the course of Action:

- Developing existing applications and adding new features and new ideas to them
- Making an application in which some of the features that we have developed, but not all of them

## 2. Project plan





## Lab 5

### Analysis Phase 1

#### Project Activistes :

##### 1. List the stakeholders of the project.

- a. The Client  
✓ There are no client, the developers wanted to develop this software
- b. The Customer  
✓ Backpackers, travelers, scholarship students, anyone looking for a specific place with specific desires.
- c. Other Stakeholder  
✓ Entertainment authority, owners of restaurants and cafes, owners of entertainment projects, owners of shops and projects in general, people who have shops in unpopular places.

##### 2. Identify the scope of the work.

###### a) The current situation

###### -Content

When searching for any place, a person must search in several sources, and despite that, he will not find sufficient information, and when he wants to book for any service, this is by phone call, and a reservation service may not be available, or there is a malfunction in the phone number

###### -Motivation

If our application is used, this will facilitate the issue of booking and communication with the required party through our application, and it will be easy to search for information anywhere, people will only have to download our application and they will find everything they need in it.

## b) The context of the work

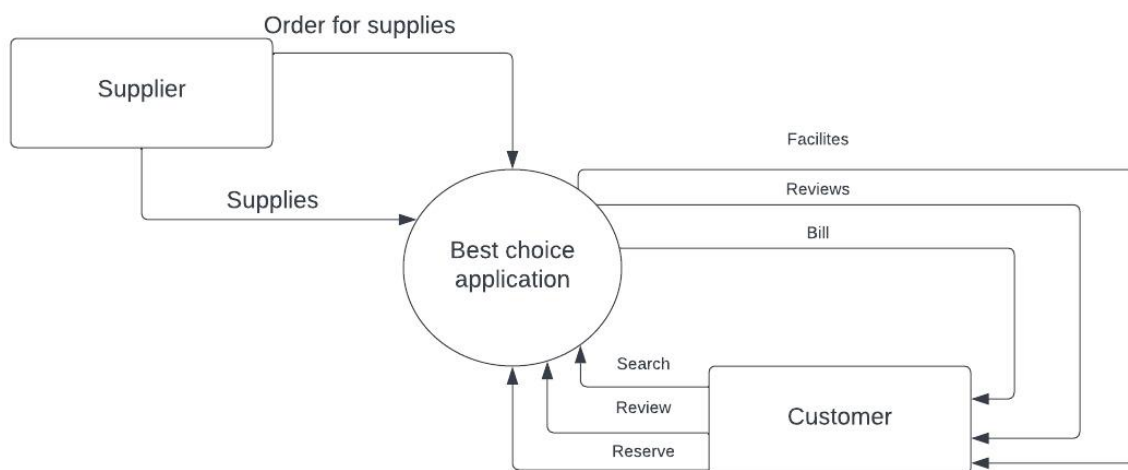
### - Content

With our application, the customer and owners will benefit greatly. The application will be able to save the data and information that entered by the users. Users will also be able to book through the application, and there will be messages to confirm the reservation or purchase.

### - Motivation

The idea of our application is required because there are many difficulties when users want to make reservations from different places. Our application is designed to simplify the process by entering the application and writing the place where you want to book, for example, and entering the date, time and other information so that you can book and purchase faster without the need to make effort and waste time.

## 3. Draw context diagram of your project.



## 4. Conduct an event table for your project.

Event Name	Input and Output	Summary
1. Supplies	Supplies (in)	Receive from the supplier information and features of the place
2. Order for a supplier	order for a supplier (out)	Order the information and features of the place from the suppliers

3. Search	Search (in)	The customer is looking for something he needs to book
4. Review	Review (in)	The customer reviews the facilities of the application
5. Facilities	Facilities (out)	The application show Facilities it can provide.
6. Bill	Bill (Out)	The customer received the final bill from the application.
7. Reviews	Reviews(out)	The application gives the customer reviews of old customer.
8. Reserve	Reserve(in)	The customer make reservation from the application.



## Lab6

### Lab Manual

#### Functional requirement:

Requirement Definition	ID
<b>Create an account</b>	<b>FR1</b>
The system shall enable a user to create an account	FR1.1
<b>Select the services to reservation</b>	<b>FR2</b>
The system shall identify the possible services restaurant or flight etc... So the customer can choose one of the available services.	FR2.1
<b>View an invoice for the reservation</b>	<b>FR3</b>
The system shall allow the customer to see the invoice of reservation	FR3.1
<b>View reservation status</b>	<b>FR4</b>
The system shall allow user to show his reservation status.	FR4.1
<b>Login</b>	<b>FR5</b>
The system shall allow to the all actors to gain the system throw supposed user name and password.	FR5.1
<b>Storing customer data</b>	<b>FR6</b>
The system shall store the customer all information	FR6.1
<b>Show Services</b>	<b>FR7</b>
The system shall allow the companies to show their services	FR7.1

#### Non-Functional requirement:

- **User Interface**

**UI1:** The system interface shall Provide user needs.

**UI2:** The User Interface should be usability interface and easy to use.

**UI2:** The user interface shall be simple.

- **Hardware Interface**

**HI1:** The system hardware fashion should commensurate with a difference hardware interfaces.

- **Performance**

**P1:** A user who already knows what he want should be able to locate and view that page in 8 seconds.

**P2:** The mean time to view a web page over a 56Kbps modem connection shall not exceed 5 seconds.

**P3:** The landing page supporting 3,000 users per hour must provide 5 second or less response time in a Chrome desktop browser.

- **Software Interface**

**SI1:** The Investment management system shall communicate with another data base that created for the system to extract the needed information including user name and password to validate the user access.

- **Security Requirements**

**SE1:** The system shall provide log in page and check the user identity.

**SE2:** The system shall give the user permission to access only the services which he/she authorize to access to make and edit, delete.

**SE3:** The system log shall provide automatically produced file that contains a record of all the events associated with the system.

**SE4:** The system shall provide password protected access to web pages that are to be viewed only by employees.

**SE5:** Transaction data must be transmitted in encrypted form to prevent security problems.

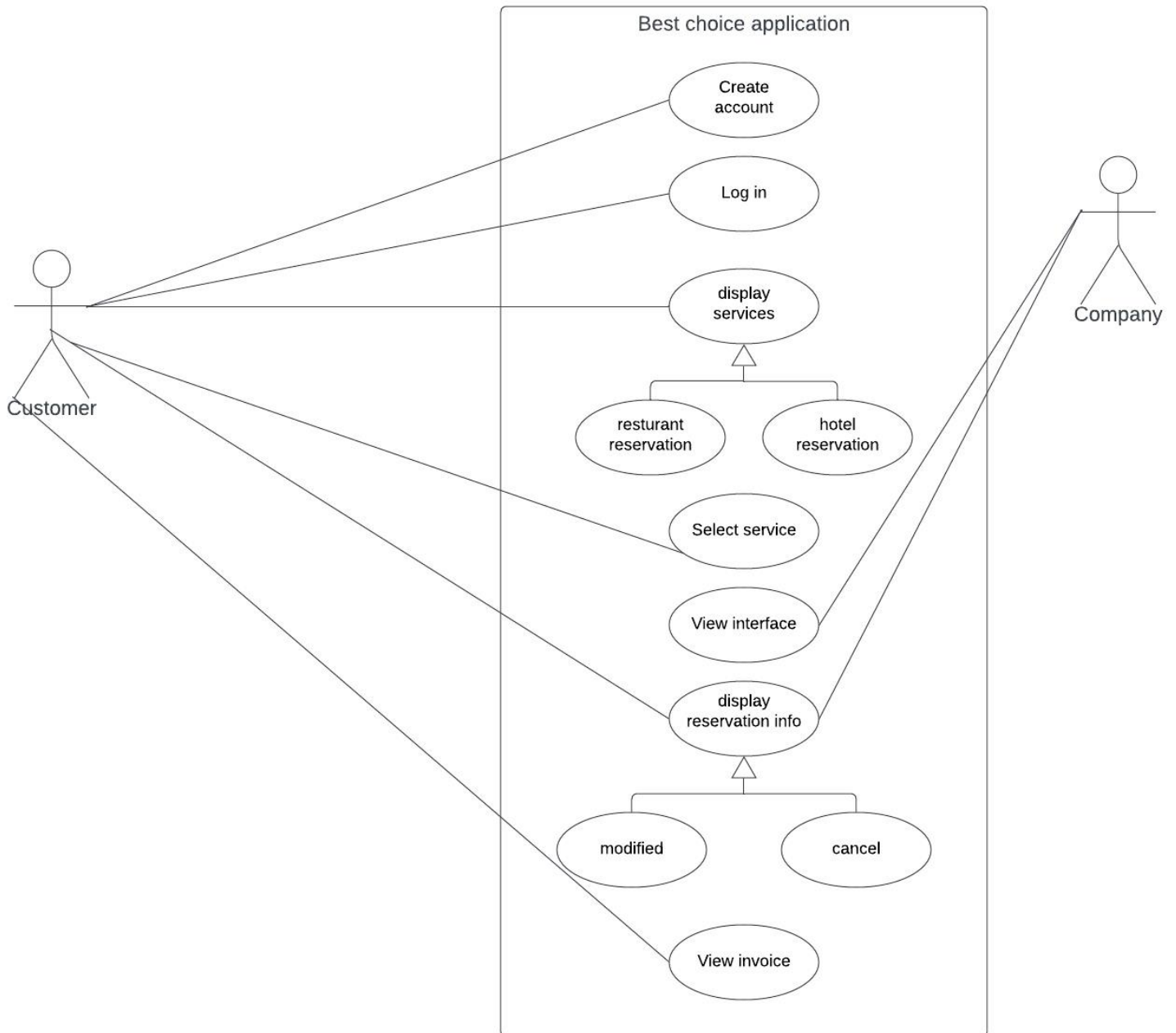
- **System Reliability**

**SF1:** The system must perform without failure in 95 percent of use cases during a month.

**SF2:** The system must ensure consistency in the freshness and correctness of the data between the application and user.

**Lab 7**  
**Analysis Phase 2**

**1. Use Case Diagram:**



## 2. Use Case Description:

### UC1: Create an account

**Scope:** Customers and Companies .

**Level:** Information authentication .

**Primary Actor:** System.

**Precondition:** sign up user information.

**Stakeholders and Interests:**

Customers

Companies

### Scenario of UC1:

1-The customer have ability to creat account.

2-The system authentication the customer after a login

3-The customer can access the services

### UC2: select the services reservation.

**Scope:** company .

**Level:** Obtaining approval from the concerned

**Primary Actor:** customer.

**Precondition:** sttaf if company.

**Stakeholders and Interests:**

Staff of restaurant.

**Scope:** user and company system.

**Level:** Conclusion of verify

**Primary Actor:** user.

**Precondition:** after the user place reservation request.

**Stakeholders and Interests:**

users.

company system.

#### **Scenario of UC2:**

**Scope:** users and company staff.

**Level:** Conclusion of verify

**Primary Actor:** company system.

**Precondition:** After the user completes the reservation and request.

**Stakeholders and Interests:**

users.

company system

#### **UC3: view an invoice for the reservation.**

##### **Scenario of UC3:**

**1-After the user place request in the company system.**

**2-The customer must be able to see the invoice of reservation.**

#### **UC4: review reservation status.**

**Scope:** user and company system.

**Level:** Conclusion of verify

**Primary Actor:** user.

**Precondition:** after the user place reservation request.

**Stakeholders and Interests:**

users.

company system.

#### **Scenario of UC4:**

**1-After the user place request to reservation service in the company system**

**2-The users check the status of their orders.**

#### **UC4.1: review reservation status.**

**Scope:** users and company system.

**Level:** primitive.

**Primary Actor:** users.

**Precondition:** after show the empty places.

**Stakeholders and Interests:**

users.

Company system.

#### **Scenario of UC4.1:**

**1-After the users show the empty reservation.**

**2- They can create an account to reserve a service inside company system.**

## UC5:login

**Scope:** Customers , companies .

**Level:** primitive.

**Primary Actor:** System .

**Precondition:** after have an account.

**Stakeholders and Interests:**

Customers

Companies

## Scenario of UC5:

1- After the actors have an account.

2- They have ability to gain the website.

## UC6: storing customer data.

**Scope:** system.

**Level:** store and secure data.

**Primary Actor:**system.

**Precondition:** customer put his information.

**Stakeholders and Interests:**

Restaurant, flight staff.

Security staff.

**Scenario of UC6:**

**1-After customer fill the information form.**

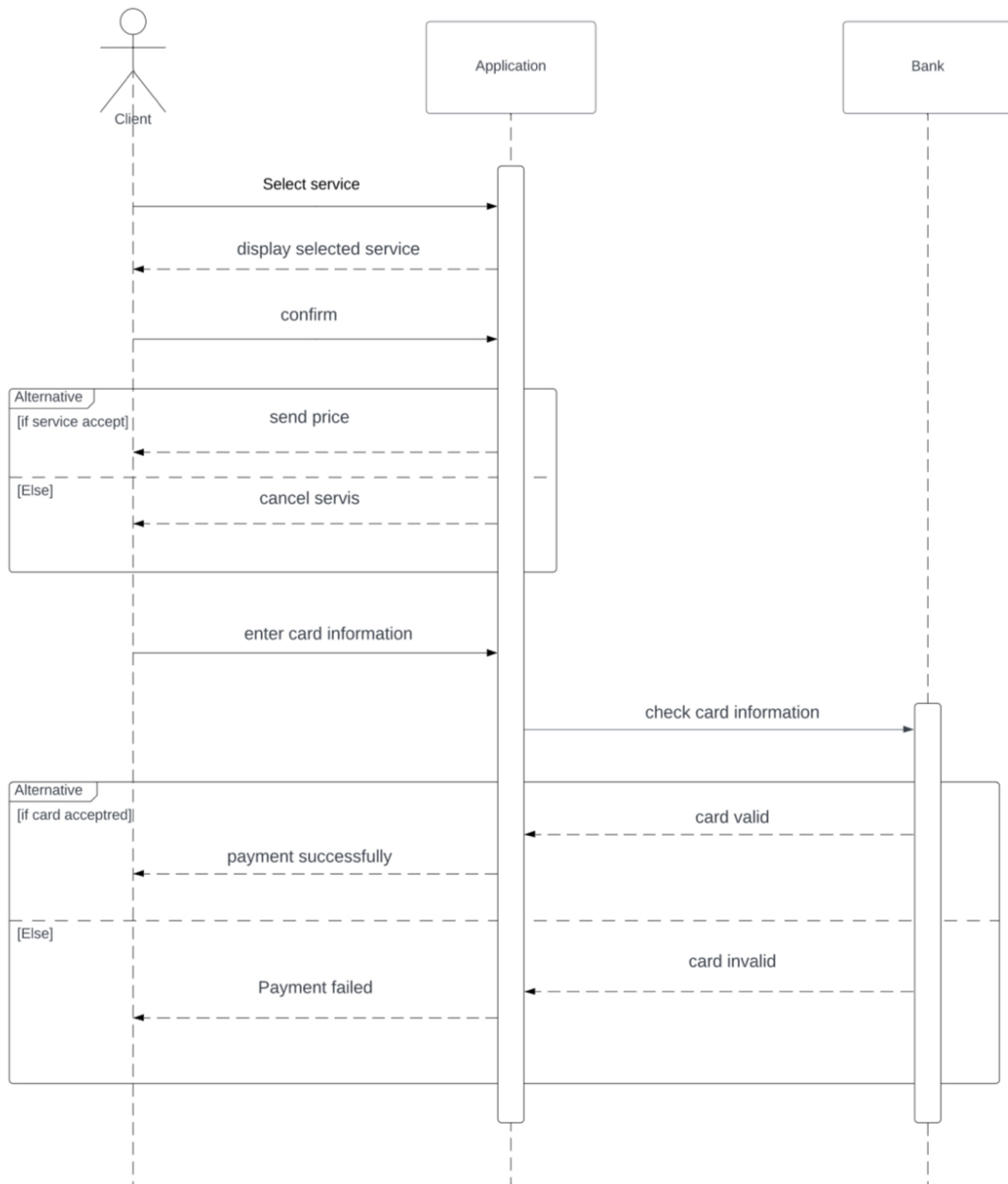
**2-The security staff can secure the customer data.**



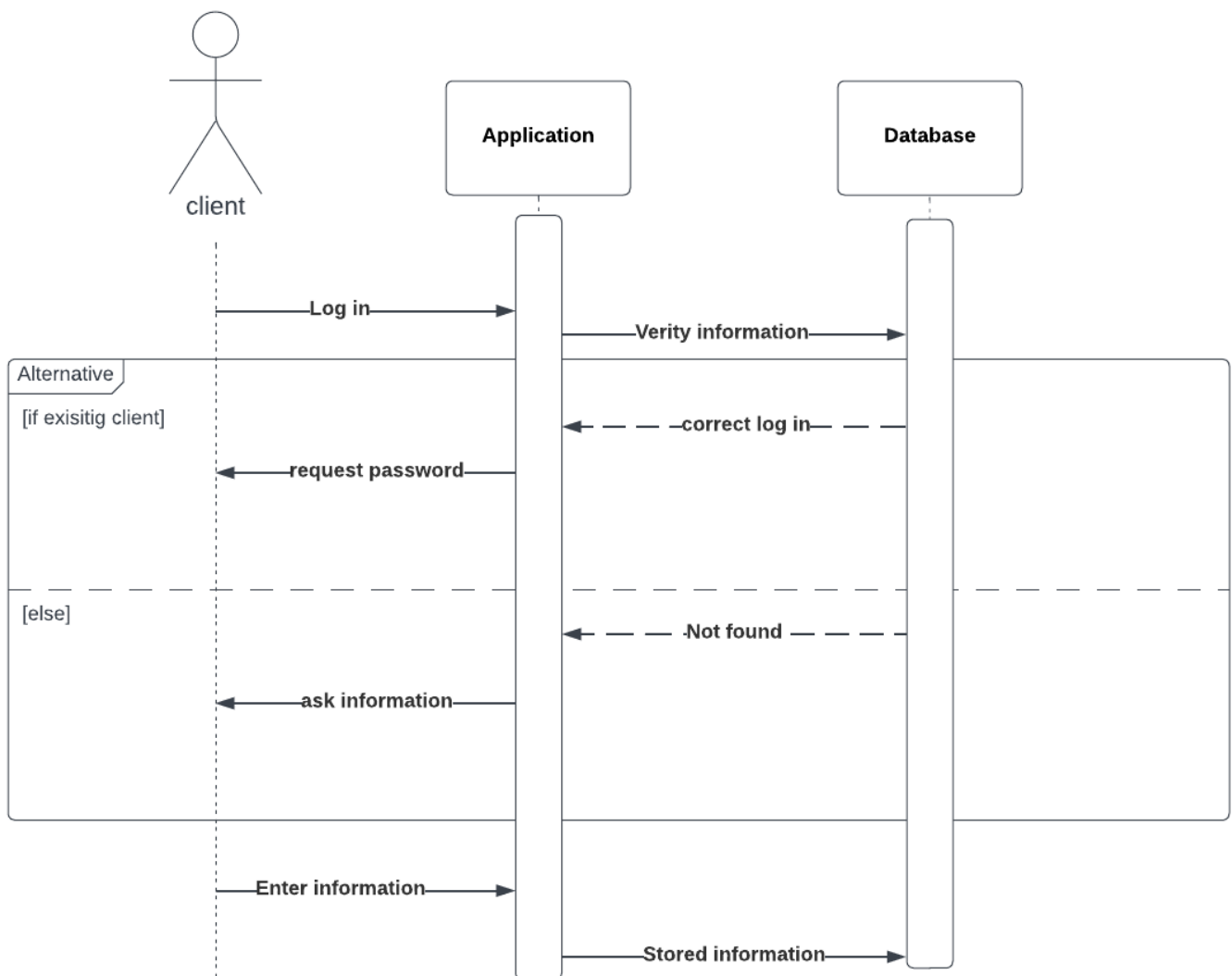
## Lab 8

### UML Sequence Diagram

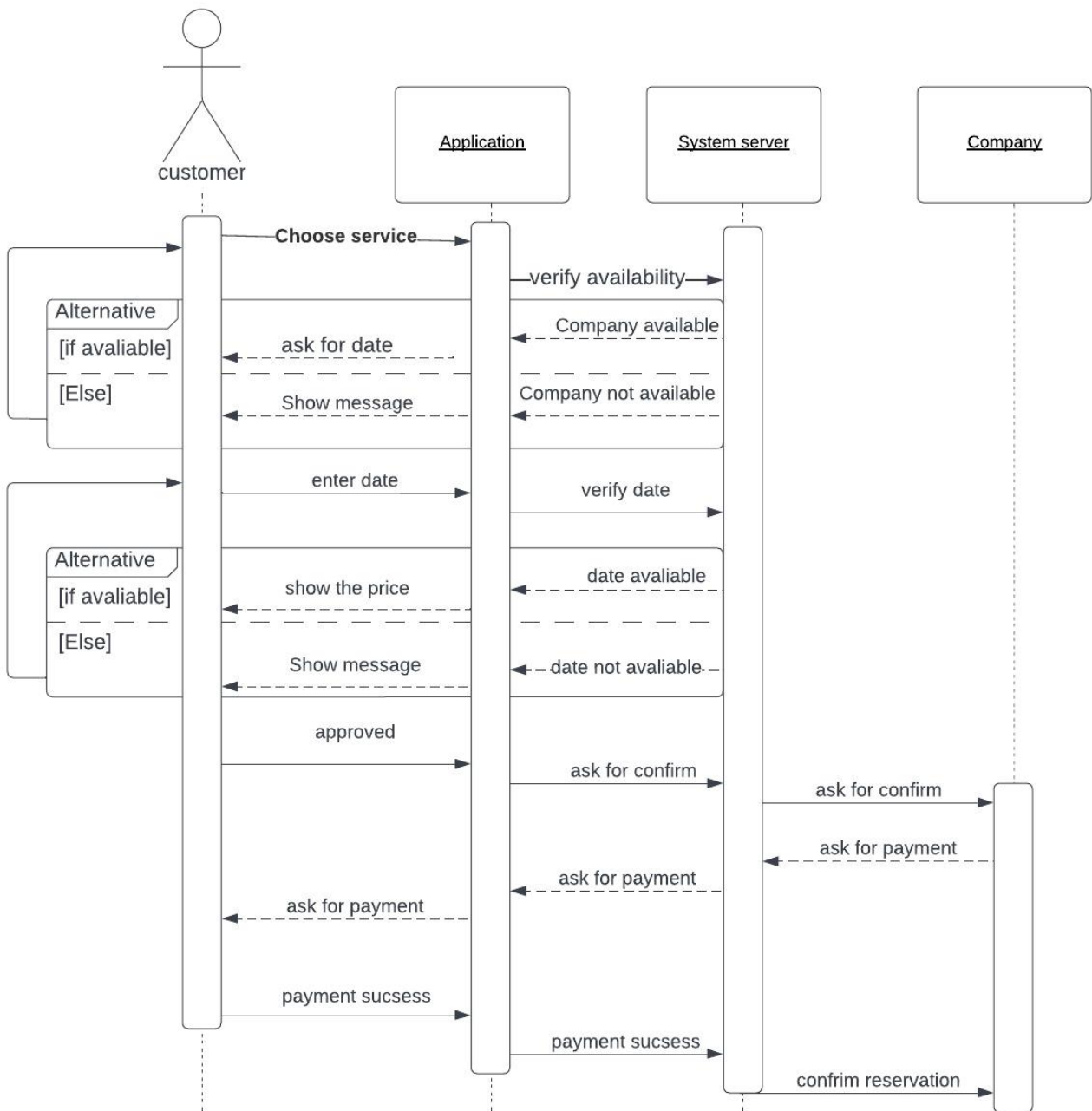
**View an invoice for the reservation**



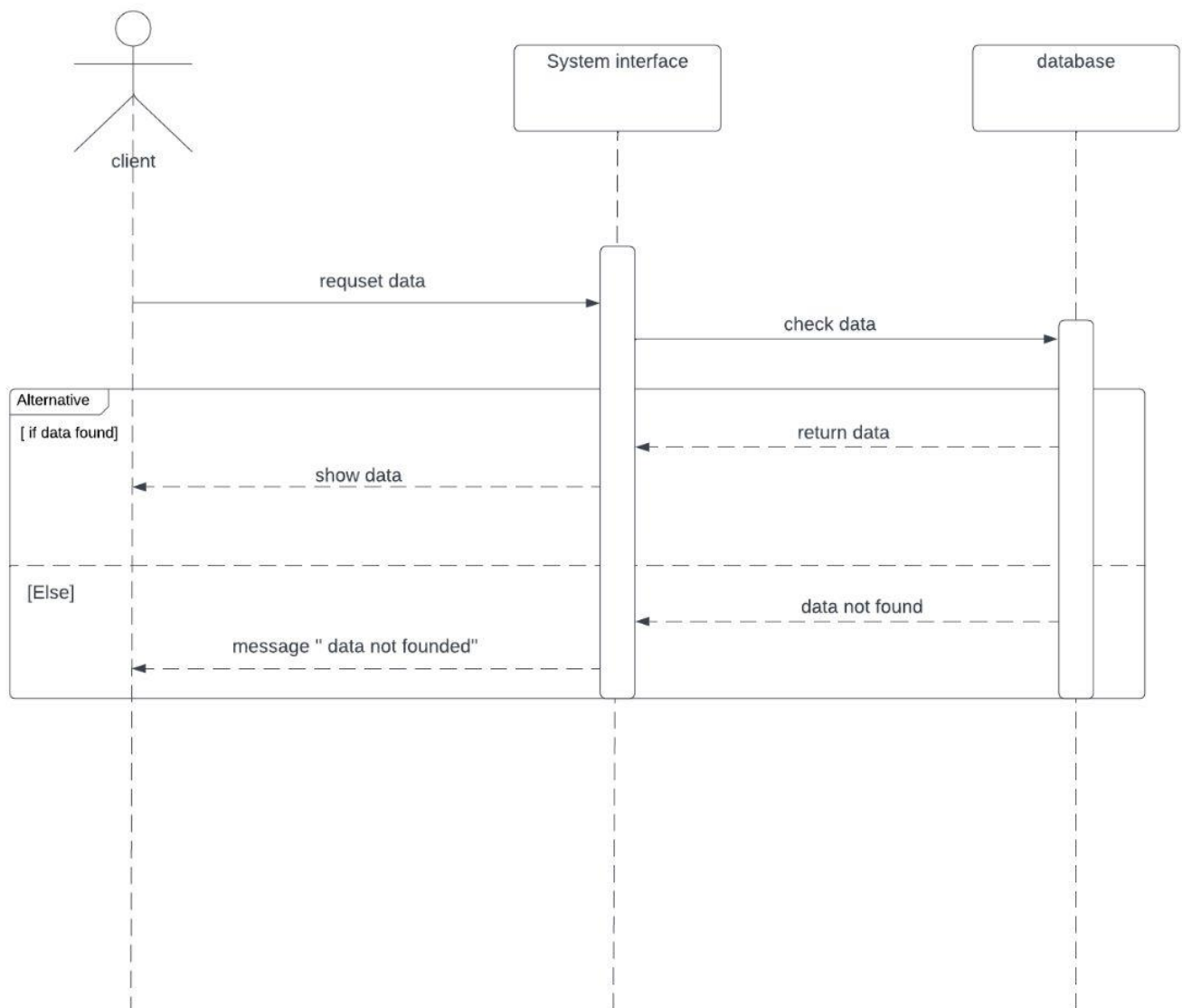
## Create Account



## Select service for reservation

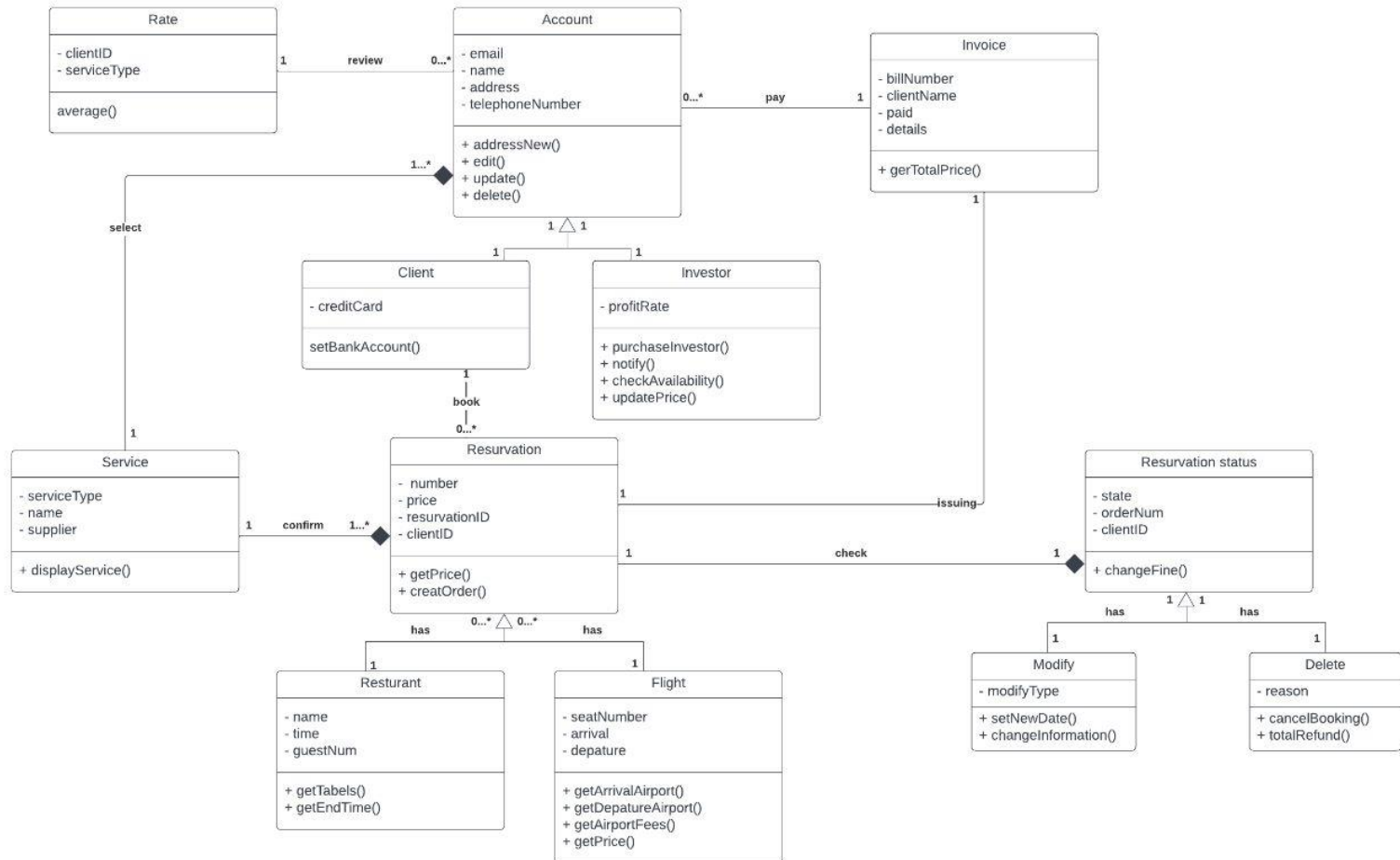


## Display services



## Lab 9

### Class Diagram



### Description

Each user must have an account contains information ( email - name - address - telephone number ) , can be a client or an investor. client can reserve a service ( restaurant - flight ). Client also can rate the service and review the rate of the other client's. Client can modify or delete his reservation. Each service must have a supplier. When the client reserves a service the application issue an invoice contain certain information about the service ( bill number - client name - price - etc..)

## **Conclusions and Recommendations**

After the implementation of this project, the application will provide many services and benefits to both the client and the other party (Clinics, Gyms, Schools, Malls, Restaurants, and coffee Shops). On the client side, it will provide many services, including:

- Abbreviation several applications in one application.
- Offer prices and benefits for various services with less effort and time.

In addition to the financial benefits offered by the application to business owners and institutions and the ease of communication with clients.

In the future, we aspire to expand the application to cover all cities around the world, and of course, with this expansion services will increase.

## Task Table

Name/lab	2	3	4	5	6	7	8	9
layan	Interview 1	The problem	Problem definition	Scope (a)	Non-fn	description	invoice	drawing
deema	Interview 3	table	Cost table	stockholder	Non-fn	description	Create Account	drawing
ameera	Interview 2	Consideration+ purpose	Solutions+ Recommended+ impact	table	fn	description	Display services	drawing
nouf	Interview 4	Content + motivation	scope	drawing	fn	drawing	Select service	description
ebhar	Interview 5	Finding + solutions	changes	Scope (b)	noting	noting	noting	noting