

Online Reservation Salon System

CCSW-223: Principles to Software Engineering

Section: C3W

Team Members:

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Lab 1

Project Definition

It is an application through which the appointments of salons located in your area are taken by specifying the area and the appropriate salon for its customers with all its available services.

Lab 2

Problem Description

There are numerous issues with the current reservation salon system including:

- ✓ It is challenging and not as flexible for beauty centers to communicate with their clients and vice versa.
- ✓ Even though they made the appointment via calls, customers are more likely to have their appointments delayed.
- ✓ It is difficult to postpone or change the appointment.
- ✓ There is no reimbursement for subpar services or inadequate handling of the misunderstanding, or even missed appointments.
- ✓ Since no system that compiles most of the city's beauty centers, their services, and evaluations exists, are aiming to develop a system that will solve such problems. It will help users by facilitating the process of displaying and choosing between salons and saving overall time in booking appointments.

Customer Interviews



1. What problems do you face when scheduling an appointment in the salon?

Failure to enter the customer on time for the appointment and setting the wrong date.

2. What recommendations or features do you want the application to provide?

Refund the amount if paid online in the event of cancellation of the appointment, a department to respond to complaints and inquiries.

3. Do you prefer to pay for reservations online? Why?

Yes, because this makes it easier and faster to enter the appointment.

4. Do you favor an Employees' Evaluation Service in the application?

Yes.

5. Do you prefer the feature to comment and rate the salon via application?

It may be useful to some, but I don't like it.

6. Do you like the idea of the app?

Yes.

7. Do you think that the idea of developing an application that incorporates the city's beauty centers is a great idea?

Yes, and I think it will help the women visiting the city and the city's residents as well.

8. Is the customer delivery service to the salon good?

Yes.

9. What is the most useful service idea of this application?

There are varied salon options at different prices.

Employee Interview

Name: Sara Yaser

Age: 35

E-Mail: SaraYas232@gmail.com

Job: Hair Stylist

1. In your opinion, what are the requirements that the customer needs in the application?

Availability to book a home service from the application.

2. What are the causes of overcrowding and lack of punctuality?

There are customers who come without prior appointment.

3. Do you think the feature of showing the services available in the beauty center, without prior reservation, is useful to the business and the customer?

Yes, because it will help reduce crowding and encourage punctuality— thus creating an organized business environment.

4. Do you think that having a field for employment through the application is useful to your business?

Yes.

5. What, in your opinion, is the benefit of this application for the salon?

It will benefit us because through it we will know the opinions of customers, improve mistakes, and increase the fame of the salon.

6. Is it helpful for the business to have customers evaluate the salon?

Yes.

7. Do you like the idea of the app?

Yes.

Programmer Interview

Name: Noor Bamaoudah

Age: 21

E-Mail: nournbamaoudah123@yahoo.com

Job: Cyber Security student

1. What is the most important step in the software development?

Precise requirement gathering to develop a software that is easy to use by all types of users.

2. What functional/nonfunctional features do you recommend the application's programmers to provide?

Functional: the system must allow the user to use the application 24/7 (availability).

Nonfunctional: application operates in GUI.

3. What advice can you offer to improve our application?

It should be user-friendly; provide a convenient environment for the software.

4. How can we improve the quality of the user experience?

- By allowing users to write their feedback about the application to improve it if necessary.
- Reference similar application to obtain inspiration of an overall concept of the design.

5. How long do you think will the potential duration of gathering information, documentation, and implementation take?

Approximately 6 months.

Analyst comments

- ✓ The findings of the in-person interviews demonstrate that the inconvenience of booking appointments at the beauty center and overcrowding are the primary issues, which our application aims to rectify. Findings also suggest that it is favorable for customers to book appointments, display various beauty centers, their services and employees, and pay prior to the appointment date. Loyal customers tend to want the same employee serving them, hence our application will provide the function of selecting services and employees beforehand. As well as allowing them to request an 'At Home Service' or a 'Refund' in the event of cancellation or a thirty minutes-delay.
- ✓ The application benefits beauty parlors, as it reduces crowding, encourages punctuality-- for both customers and employees--, commercializes their business, and overall improves the quality of service. The 'Service Evaluation' function provides beauty centers with constructive feedback that will guide them to enhance their business.

Lab 3

Purpose of Project:

Content:

Women need a system that includes most beauty centers in the city. And due to the many problems with beauty centers systems, it may be difficult for users to schedule an appointment or know the services and evaluations of the salon. Therefore, our project will facilitate the process of choosing between salons, save time for the user and reduce previous problems.

Motivation:

The prime motivation for designing this system is due to the difficulties most women face when booking appointments at beauty centers. We have observed that booking an appointment with a specific employee is not always possible due to overlapping reservations. Thus, we aim to resolve these technical issues in our application.

Consideration:

As some may not view these obstacles as serious, we believe that solving them will substantially enhance the satisfaction of its users. Some issues clients face are delayed appointments, being unsatisfied with employees available, and overlapping appointment schedules. In addition, parlor employees find the insufficient organization of reservations

and overcrowding to be critical problems. We will consider these issues and incorporate solutions that shall be satisfactory to its users.

Goal of project:

- ✓ Gathering city salons in one system to make it easier for women to know the best salons.
- ✓ Facilitate the process of booking an appointment or postponing it.
- ✓ Facilitate the communication of beauty centers with customers and vice versa.

Preliminary Report

Problem:

Lack of flexibility in scheduling appointments for beauty salons leads to a number of problems , such as late entry of customers, a lack of employee evaluations, and the requirement for stringent processes in the event of client displeasing or misunderstanding. These problems are having a negative impact on the beauty salons clients.

Finding:

Regularly calling or visiting beauty salons to make reservations results in several issues, including:

- 1- Difficulty in choosing the right employee to meet her needs without evaluating the staff.
- 2- Making Reservations by phone leads to wasting the customer's time while waiting for the phone to be answered.
- 3- Ineffectiveness and inconsistency between what staff offered and what customers required.

Recommend:

The app we are building aims to make picking a salon, making a reservation, and visiting considerably simpler. To save the consumer and the salon a ton of time and effort, we are creating an app that will allow the user to browse all the salons in his area, choose what he wants, and book the service he wants at the optimal time for him, that makes our app usable, effective, and advantageous to both parties.

Cost and Schedule Estimates

phases	description	time (week/hour)	cost
specification	-the client identifies his problem -Knows the client requirements	1-week 32 hour	2500SR
designing the system	define the components of the system windows	3weeks	8000SR
implement the programming	start writing and execute the code	4months	30,000SR
validation	checking the the program meets the requirements of clients	5 days 14 hour	3000SR
installing	-installing the program -link it to the client platform	3 days 12hours	2000SR
maintenance and modifying	-fixing bugs -modify the program and update the changes according to the requirements of clients	when there is a bugs or need to be modify	relying on the need for fixing or modifying

Lab 4

The Feasibility Study

The concept of the project is to create an application that provides its users with surrounding salons; hence customers specify the desired salon for them while being able to display all the services available, working hours, and offers. The system simply exhibits salons in the vicinity and facilitates communication between the establishments and their clients. It improves the overall quality of work and delivers a cost-effective solution.

The approximate cost of operating and implementing this system is 320,000 Riyals. This also includes all the steps of designing, executing, maintaining, and modifying the system.

We chose this project system to improve the current reservation system used in beauty salons and to navigate an easier, error-reduced application-based interaction between beauty businesses and customers.

Problem Definition

Over-the-phone prior bookings at beauty parlours are hinder-some and result in systematic and satisfactory problems for the business and its clients. The current reservations system includes common problems such as miscommunication, misinterpretations, non-responsiveness, or payment drawbacks.

Scope Objectives of New System

To create a tool (application) that will substitute reservations via phone, facilitate the process of salon selection, and identify offers, services, and employees available. Therefore, saves time and effort done by employees, managers, and clients.

Alternative Solution

Automated Answer Call System: an AI-powered answering system that automatically picks up calls, provides the caller with all available services and records booked appointments.

Detailed Cost Table

phases	description	time (week/hour)	cost
Specification	-The client identifies his problem -Understand and gather client requirements	1-week 32 hour	2500SR
Designing the System	Define the components of the system windows	3weeks	8000SR
Implement the Program	Start writing then executing the program	4months	30,000SR
Validation	Checking that the program meets the requirements of clients	5 days 14 hour	3000SR
Installation and integration of application	-Installing the program -link it to the client platform	3 days 12hours	2000SR
Maintenance	-Fixing bugs -Modify the program and update the changes according to the requirements of clients	When there are bugs, or software evolution/update required	Relying on the need for fixing or modifying

Software Impacts

- ✓ Making applications available in several languages.
- ✓ Enabling application use in all areas (cities) of Saudi Arabia.
- ✓ Including various salon establishments as possible.
- ✓ Improve the overall usability of the application to employees and customers.

Potential Changes in the Organization

Improving business-to-customer communication will help salons gain popularity in the marketplace and become more efficient and successful. It will optimize management and employee production while simultaneously delivering a cost-effective and orderly system. The application will potentially motivate customers to check out neighboring salons and will prove them with the freedom and accessibility to book and choose services.

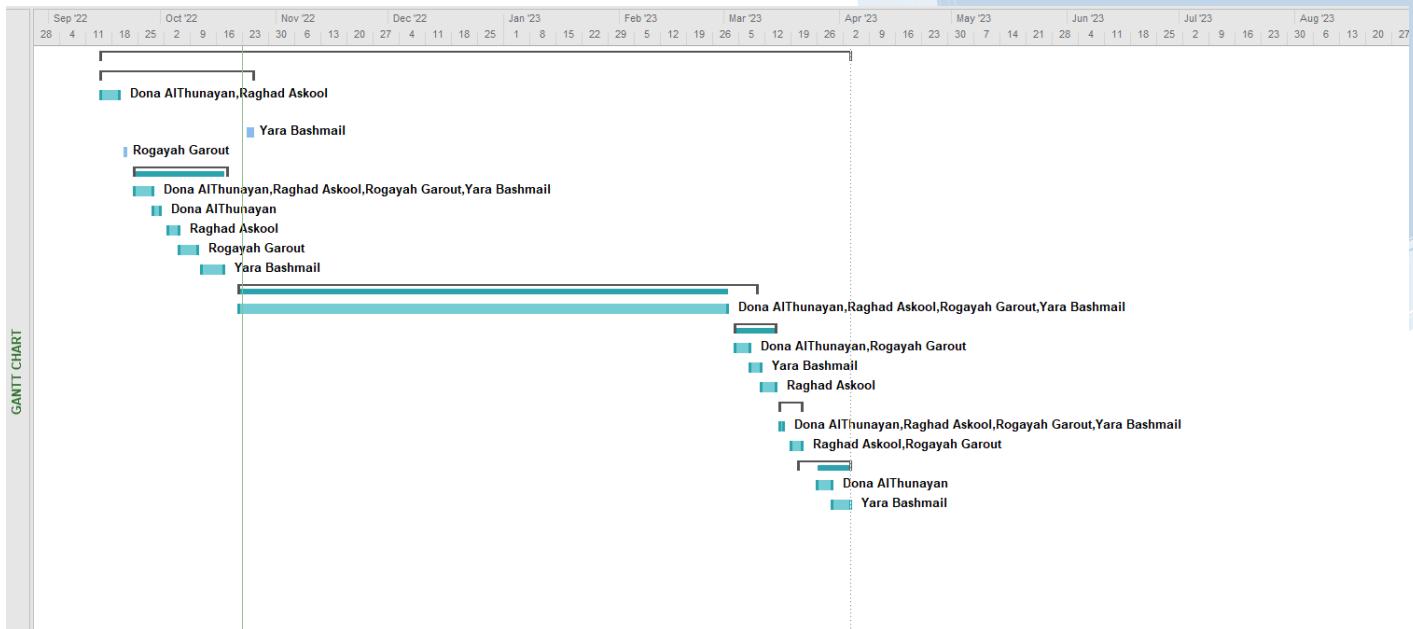
Recommended Alternative of the Course of Action

We found that the best solution is to create a program that lets customers manually and independently book their appointments, choose their services, and pay however they like. In addition to allowing them to choose the employee of choice for their overall satisfaction.

Project Plan

	Task Mode ▾	Task Name ▾	Duration ▾	Start ▾	Finish ▾	Predecessors ▾	Resource Names ▾
	➡	▫ Project	144 days?	Thu 9/15/22	Mon 4/3/23		
	➡	▫ Project Planning	29 days?	Thu 9/15/22	Tue 10/25/22		
	➤	Requirement Specification	3 days	Thu 9/15/22	Mon 9/19/22		Dona AlThunayan, Raghad Askool
	➡	Feasability Study	2 days	Mon 10/24/22	Tue 10/25/22		Yara Bashmail
📅	➡	Analyzation	1 day?	Wed 9/21/22	Wed 9/21/22		Rogayah Garout
	➤	▫ Design Phase	18 days	Sat 9/24/22	Tue 10/18/22		
	➤	Graphic Diagrams	4 days	Sat 9/24/22	Wed 9/28/22		Dona AlThunayan,F
	➤	Class Diagram	2 days	Thu 9/29/22	Fri 9/30/22		Dona AlThunayan
	➤	Database Schema	3 days	Mon 10/3/22	Wed 10/5/22		Raghad Askool
	➤	Manager Interface	3 days	Thu 10/6/22	Mon 10/10/22		Rogayah Garout
	➤	User Interface	4 days	Wed 10/12/22	Mon 10/17/22		Yara Bashmail
	➤	▫ Development	5.05 mons	Sat 10/22/22	Thu 3/9/23		
	➤	Coding	4.7 mons	Sat 10/22/22	Wed 3/1/23		Dona AlThunayan,F
	➤	▫ Validation	8 days	Sat 3/4/23	Tue 3/14/23		
	➤	Requirement Check	3 days	Sat 3/4/23	Tue 3/7/23		Dona AlThunayan,F
	➤	First Test	3 days	Wed 3/8/23	Fri 3/10/23		Yara Bashmail
	➤	Second Test	3 days	Sat 3/11/23	Tue 3/14/23		Raghad Askool
	➡	▫ Installation	4 days	Thu 3/16/23	Tue 3/21/23		
	➤	Presenting Project	1 day	Thu 3/16/23	Thu 3/16/23		Dona AlThunayan,F
	➤	Installing the Progra	3 days	Sun 3/19/23	Tue 3/21/23		Raghad Askool,Rog
	➤	▫ Evolution	10 days	Tue 3/21/23	Mon 4/3/23		
	➤	Modifying	4 days	Sun 3/26/23	Wed 3/29/23		Dona AlThunayan
	➤	Debugging	3 days	Thu 3/30/23	Mon 4/3/23		Yara Bashmail

Gantt Chart



Lab 5

The client:

Beauty salons.

The customer:

Beauty salons customer.

Other stakeholders:

Salon's managers.

The system will be useful for customers to make appointments and for the salon to better handle appointment conflicts if it is authorized and used by numerous salon managers.

Scope of the Situation

Content

- ✓ Without staff evaluation, it is challenging to select the appropriate person to satisfy her demands.
- ✓ The customer's time is wasted while waiting for the phone to be answered when making reservations over the phone.
- ✓ Due to improper appointment management organization, the consumer wastes time as she waits to enter the appointment.

Motivation

The main reason for developing this system was the challenges that most women have while making appointments at beauty salons. Due to overlapping appointments, we have noticed that it is not always possible to schedule an appointment with a certain staff. We therefore seek to fix these technical problems in our application.

Scope of Work

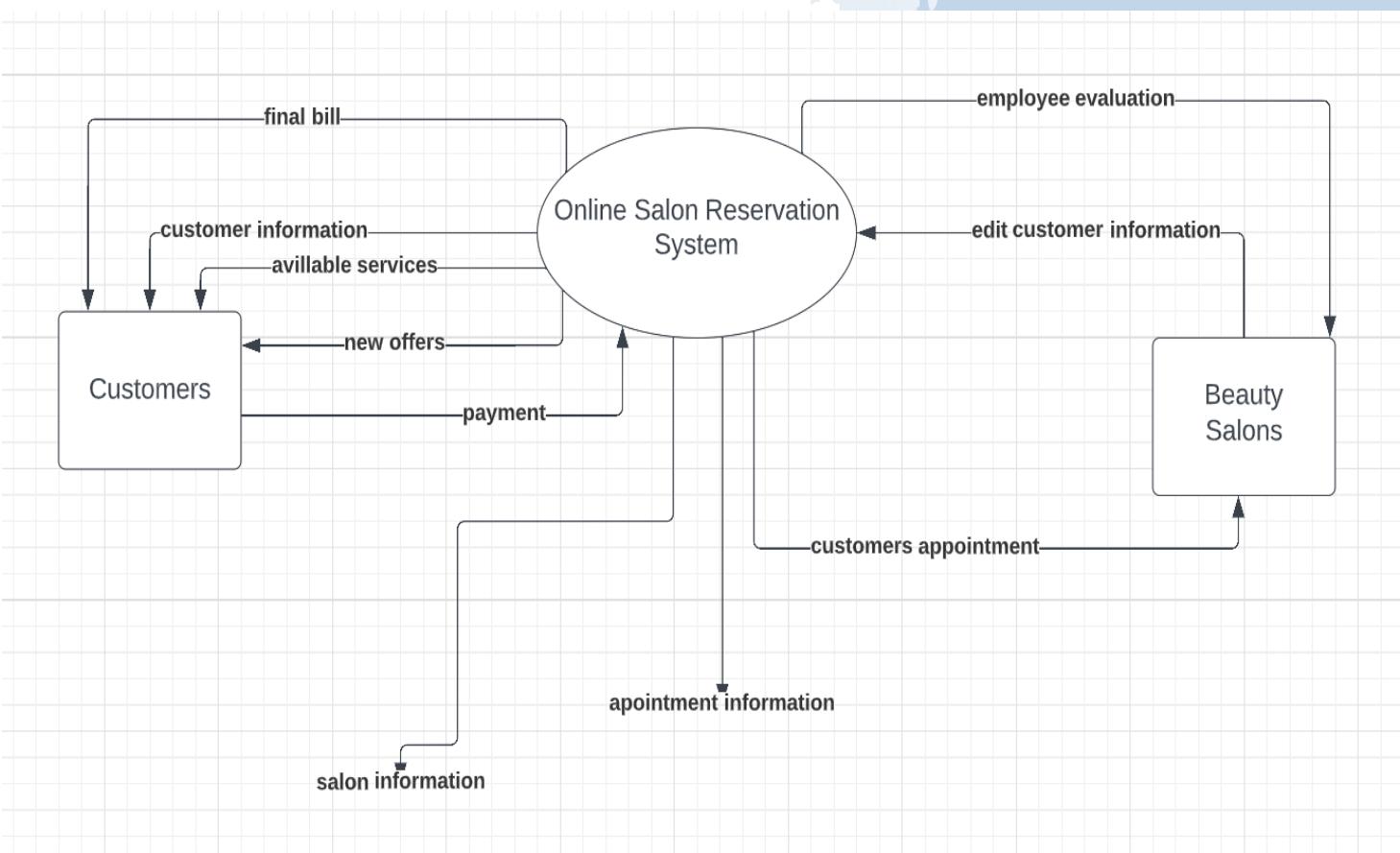
Content

By utilizing our system, beauty salons and clients will both benefit. On the one hand, it will make it simpler for the salons to view employee evaluations and enable them to be more adaptable when handling client issues. On the other hand, it will enable clients to book an appointment via the app without having to call or visit the salon.

Motivation

Our program is new and simplified to make work easier and faster. As the application schedules appointments, and views the evaluations of the employees efficiently, the beauty salons become more efficient.

Context Diagram



Work Partitioning

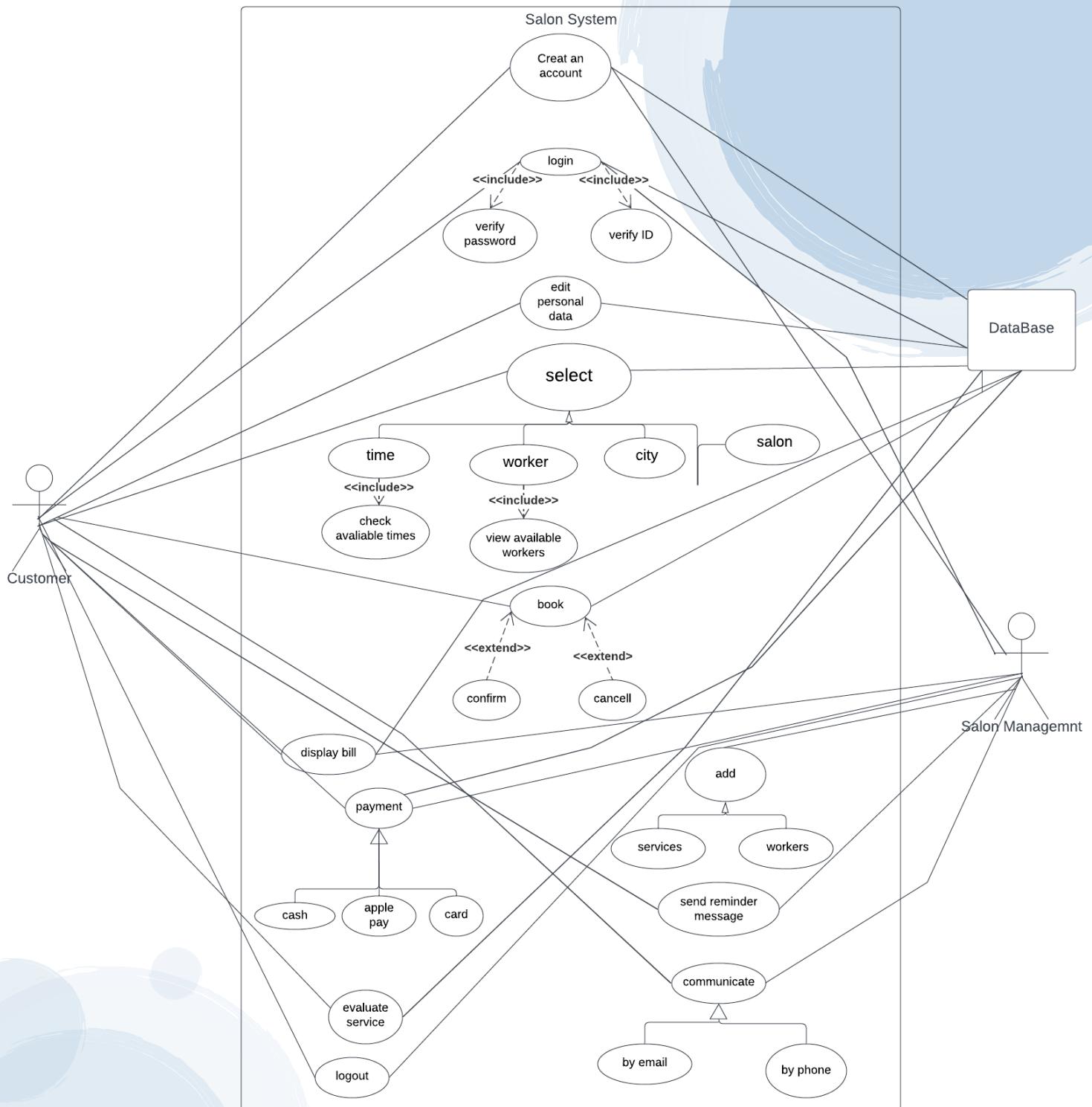
Event Name	Input and Output	Summary
Final bill	(output)	The customer received the final bill from the salon
Customer information	(output)(input)	Obtaining customer information and sending it to the salon
New offers	(output)	Alert customers about the offers available to the salon
Available services	(output)	Show the services available to the customer
Payment	(input)	Pay after booking the appointment through the system
Employee evaluation	(output)	Show previous customers evaluation of employees
Customer appointment	(output)	Show complete booking information to the customer
Edit customer information	(input)	The customer update his data

Motivation

The major goal for us in creating this system is customers and salons. We will provide the inputs and outputs that make it easier for them to book appointments. The diagram shows the main functions of the system. Show all available salons, services available to them, offers, book appointments in the salon, and choose the payment method to facilitate the process for the customers.

Lab 6

Use Case Model



Functional Requirements

ID	Requirement Definition
FR1	Create an account
FR1.1	The system shall enable the user to create an account.
FR2	send acceptance message
FR2.1	the system shall display a text message confirming the customer's registration
FR3	login
FR3.1	the system allows all the customers to enter the system with their supposed username and password
FR4	select the city
FR4.1	The system shall view the available cities to the customer to allow him to choose one of the available cities.
FR5	select salon
FR5.1	the system shall display the available salons at the selected city.
FR6	view available workers
FR6.1	the system shall view the available workers to the customer to select one.
FR7	insert services

FR7.1	the system shall enable the salon management to insert services.
FR8	show services
FR8.1	the system shall view the available services to the customer.
FR9	booking
FR.91	the system shall enable the customer to book an appointment.
FR10	issued bill
FR10.1	The system shall allow the salon management to issues a bill.
FR11	payment
FR11.1	The system shall allow the customer to pay in multiple ways.
FR12	Evaluate
FR12.1	The system shall enable the customer to write evaluation about his appointment.

Usability Requirement:

- ✓ The customer interface displays the services with worker, day, and the time available to book and shows the previous reservations.
- ✓ The salon management interface displays the field for inserting new services, workers and showing the customer appointment.

Business requirements:

- ✓ The customer must log into the account before his information appears on the screen.
- ✓ Clicking on the book button to move the booking to the salon management to assign reservation or clicking on the evaluate button to write an evaluation.

Regulatory /Compliance Requirements:

- ✓ Only the salon management and their workers will be able to reach the system.
- ✓ The database of the customers and their appointment information a functional audit trial.

Security Requirements:

- ✓ The program must provide integrity and saves the customers information.
- ✓ Program data must be protected from unauthorized.

Non-Functional Requirement

User Interface:

- ✓ The program must provide two interfaces one for the entities and other for the customers.
- ✓ The program must provide an easy and simple interface that is useable to use for all customers.
- ✓ The program provides a GUI (graphical user interface) that suit both salon management and customers.

Hardware Interface:

- ✓ The hardware interface must be available on the entity's computers for the developer and on any customers devices.

Software interface:

- ✓ The program must communicate with the database to extract needed information like the username and password and the other information of the customers.

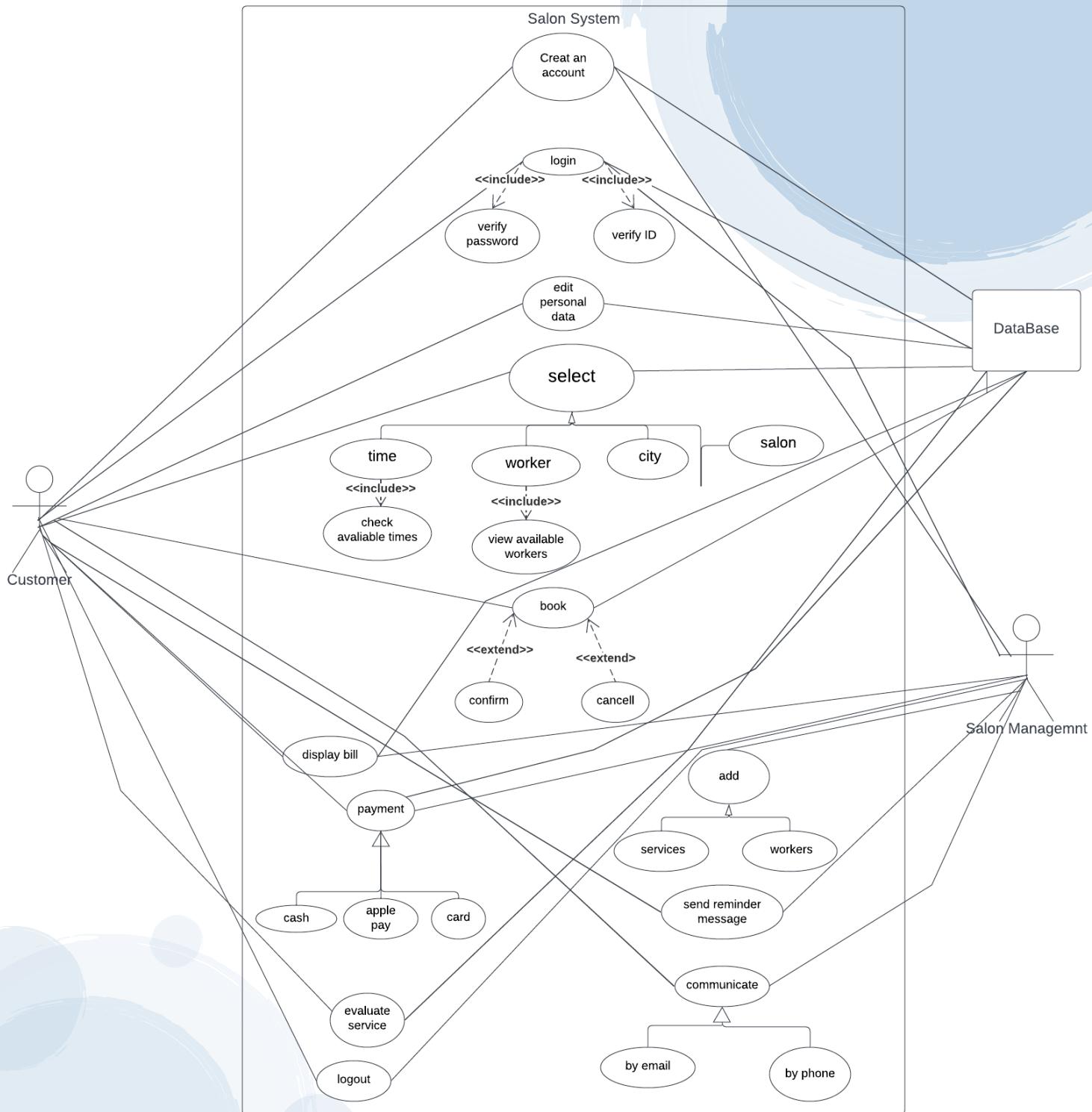
Security requirements:

- ✓ The system must provide login page, as for the customers they need to log in each time they open the program and get a varication code sent to their phone numbers.
- ✓ The program must allow only authorized users to improve the system.

- ✓ The system shall allow the customers to access only the services which they are authorize to parties.

Lab 7

Use Case Model



Use Case Description

UC1: Create Account

Scope: Customers and salon management

Level: primitive

Primary actor: Customers

Precondition: the period of the system is available to create an account

Stakeholders and Interests: Customers and salon management

Scenario of UC1: Actors will create an account in the system

UC2: Login

Scope: Customers and salon management

Level: primitive

Primary actor: Customers

Precondition: having an account

Stakeholders and Interests: Customers and salon management

Scenario of UC2: after actors have an account, they can login system

UC3: Edit Personal Data

Scope: Customers

Level: primitive

Primary actor: customers

Precondition: create an account and log in

Stakeholders and Interests: customers

Scenario of UC3: edit personal information after logging in

UC4: Select

Scope: customers

Level: primitive

Primary actor: customers

Precondition: create an account and log in

Stakeholders and Interests: customers

Scenario of UC4: Choose booking details after logging in

UC5: Book

Scope: customers

Level: primitive

Primary actor: customers

Precondition: create an account and log in

Stakeholders and Interests: customers and salon management

Scenario of UC5: Reserve after logging in

UC6: Display Bill

Scope: customers and salon management

Level: display the bill

Primary actor: customers

Precondition: After booking

Stakeholders and Interests: customers

Scenario of UC6: After booking, the invoice will be displayed

UC7: Payment

Scope: customers and salon management

Level: payment the bill

Primary actor: customers

Precondition: After display the bill

Stakeholders and Interests: customers and salon management

Scenario of UC7: Pay after viewing the bill

UC8: Evaluate Services

Scope: customers and salon management

Level: evaluate services

Primary actor: customers

Precondition: After visiting the salon and trying the services

Stakeholders and Interests: customers and salon management

Scenario of UC8: evaluate services after visiting the salon and trying the services

UC9: Add

Scope: salon management

Level: add services in the application

Primary actor: salon management

Precondition: create an account and log in

Stakeholders and Interests: salon management

Scenario of UC9: Add features and services available in the salon

UC10: Send reminder message

Scope: customer and salon management

Level: Send an appointment reminder

Primary actor: salon management

Precondition: book an appointment at the salon

Stakeholders and Interests: customers and salon management

Scenario of UC10: sending an appointment reminder to the customer

UC11: Communicate

Scope: customer and salon management

Level: communication between customers and salon

Primary actor: customer

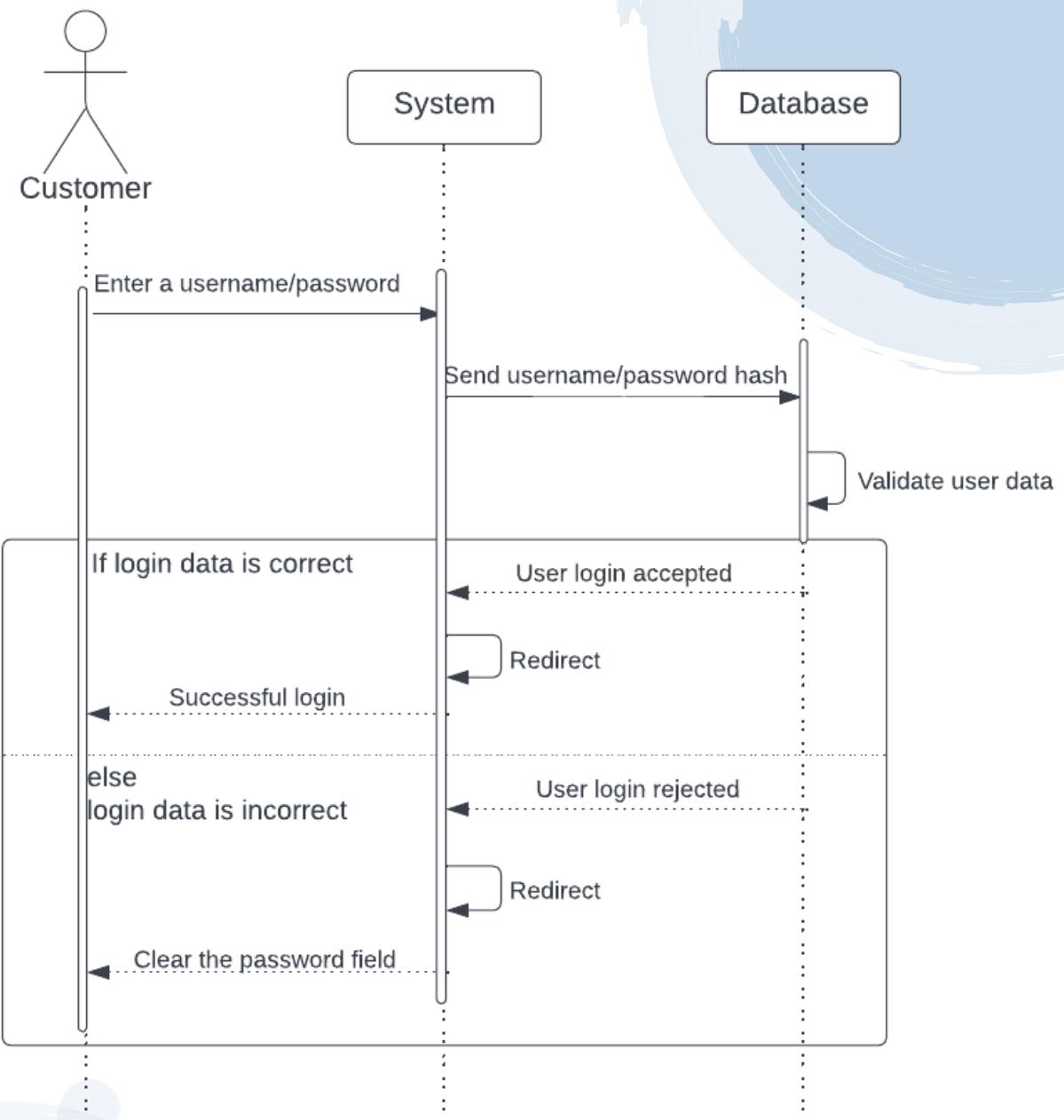
Precondition: create an account and log in

Stakeholders and Interests: customers and salon management

Scenario of UC11: communication between customers and salon

Lab 8

SD.1: Login



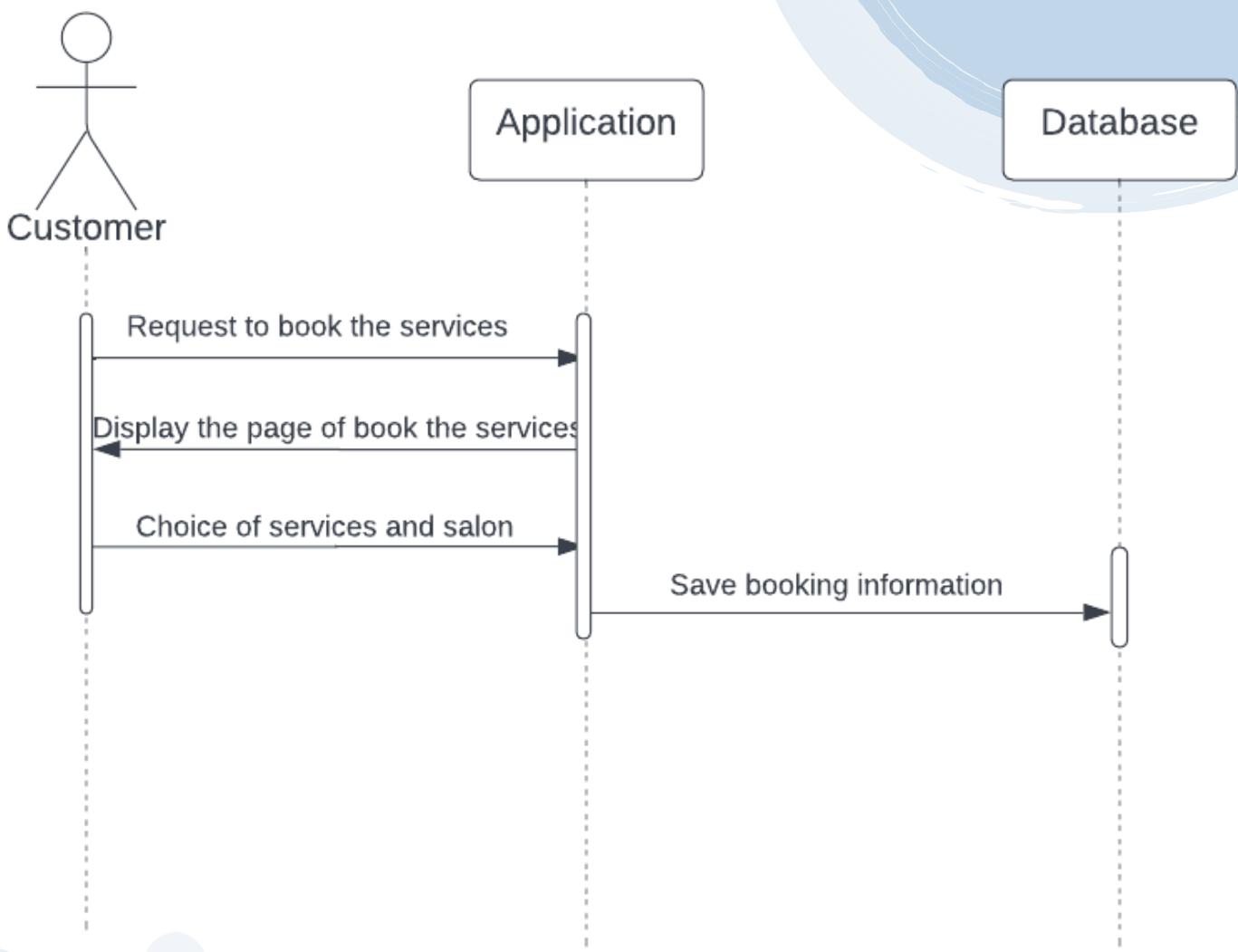
Login Analysis

Identified Main Flow

1. The customer logs into the system
2. The system verifies the information entered to log in
3. If the customer entered the information correctly, they will have access to log in
4. If the customer entered the information incorrect, will ask for it again

Customer	Application	Database
Enter a username/password	Send username/password	
		Validate user data
	Log in	

SD2: Booking



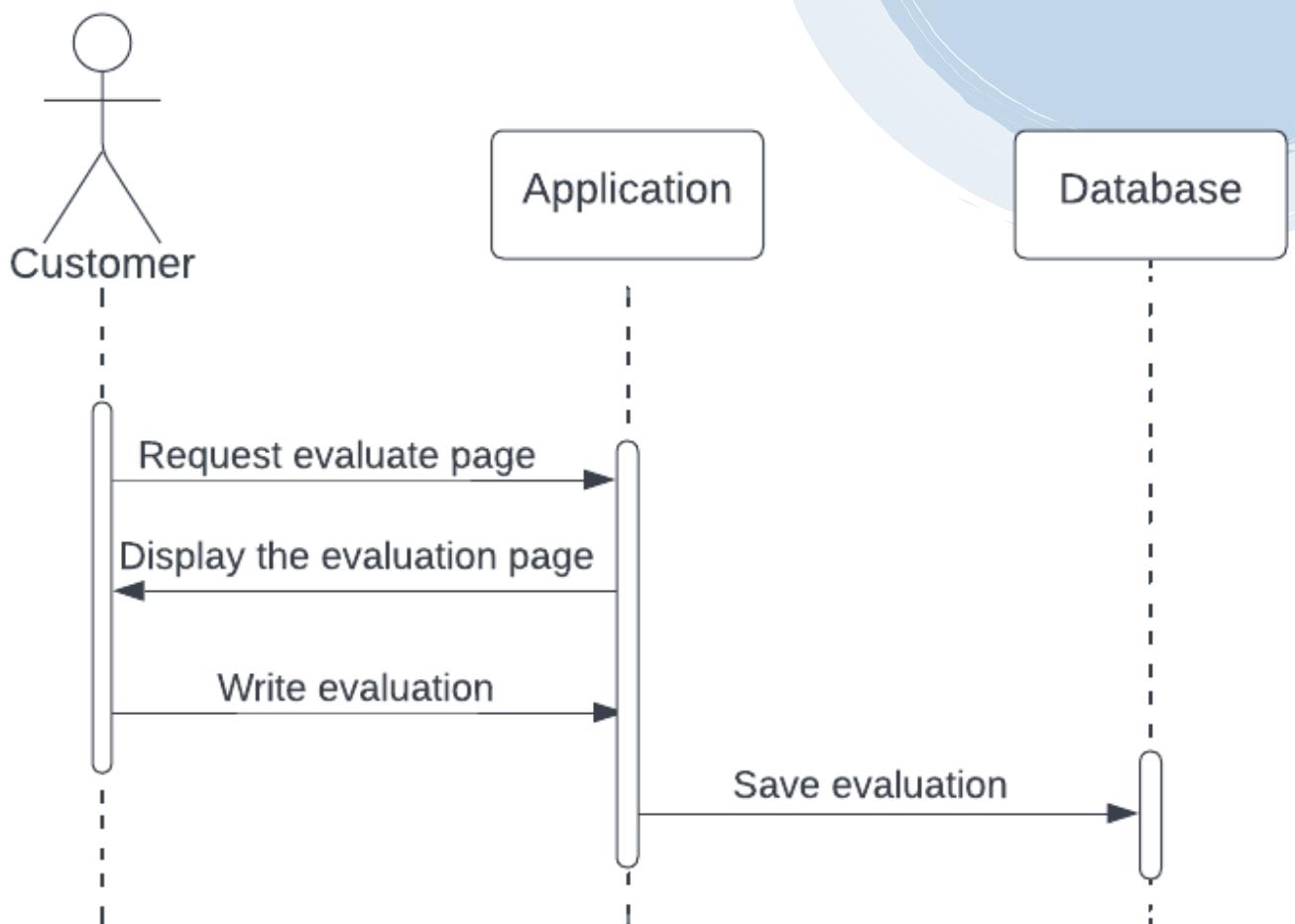
Booking Analysis

Identified Main Flow

1. The customer searches for the services
2. Services will be displayed in the application
3. The customer will choose the services and salon
4. The database will display the final reservation

Customer	Application	Database
Request to book the services	Display the page of book the services	
Choice of services and salon		Save booking information

SD3: Evaluation



Evaluation Analysis

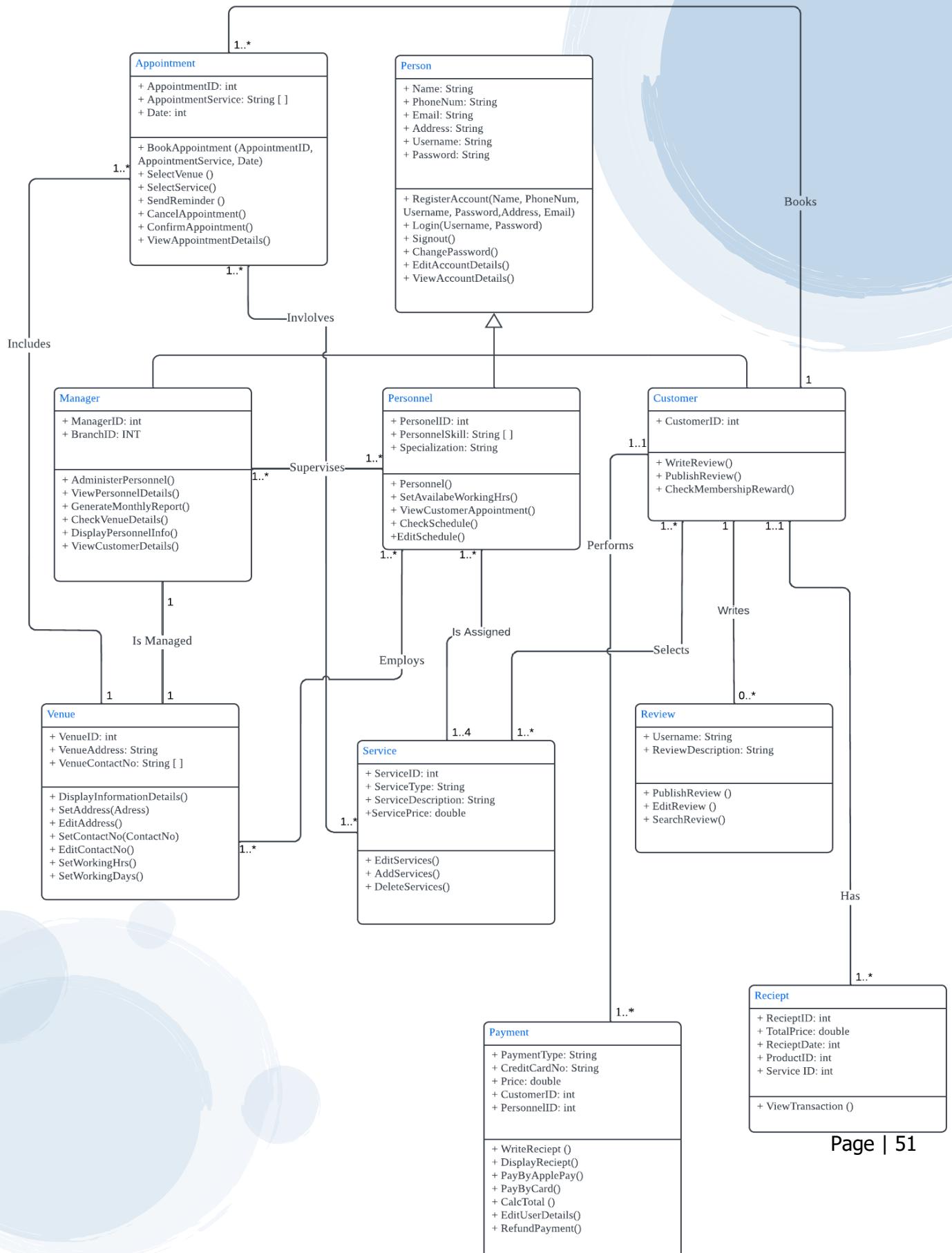
Identified Main Flow

- 1- The customer request evaluate page
- 2- The application displays an evaluation page
- 3- The customer writes evaluation
- 4- The database save evaluation

Customer	Application	Database
Request evaluate page		
	Display the evaluation page	
Write evaluation		
		Save evaluation

Lab 9

Class Diagram



Class Diagram Description

Class	Definition
<i>Person</i>	Managers, personnel, and customers can register, log in, and view and change account details
<i>Manager</i>	Managers can oversee personnel and customer information and the venue's information. They can also generate monthly reports.
<i>Personnel</i>	Personnel can manually modify details about working hours, view, and modify schedules.
<i>Customer</i>	Customers can view available booking dates, services, and staff and write service evaluations.
<i>Appointment</i>	Appointment class contains information about booked reservations, can send reminders to customers of upcoming appointment(s), confirm, and cancel reservations.
<i>Payment</i>	This class contains information about the payment type, price, and customer involved. It also calculates the total, generates and displays receipts, and enables refund.
<i>Receipt</i>	This class displays all the information about transactions.
<i>Service</i>	Service class contains information about available services.
<i>Review</i>	This class displays evaluations published by customers and related customer usernames.
<i>Venue</i>	Contains information about each venue in the application, their address, and their contact no.