Lab 1

CCSW223

Faris Alghamdi – 2041424

Abdulrahman Alsomali – 2040214

Nasser Alshehri – 2040209

Restaurant System: Our project is a restaurant system which will help the customers book tables through an app or even book a table while at the restaurant itself. The staff will use the system in order to look at the customers' orders through a tablet presented to them at the table and prepare the food.

This project aims to help restaurant owners and personnel to make it easier to manage and operate.

Lab 2

Information gathering

Faris Alghamdi – 2041424

First interview: -

Name: Ahmed Saleh AL Qahtani.

Job title: Receptionist.

1st question: How many customers do you usually serve in your establishment?

Answer: on a normal day, we expect around forty to fifty people. But on busy days such as the weekend, we get no less than eighty customers.

2nd question: How do you view the current state of the booking service you provide?

Answer: The booking system is a bit impractical. You need to call us in advance to book a table or come to us and we will book one for you. Sometimes customers get upset when they enter the restaurant and there are no tables available.

Comment: The restaurant gets a lot of customers, and their booking system is flawed. The employees need a better way to book tables and alert customers if there are no tables left.

Second interview: -

Name: Amir AL Zahrani.

Job title: Cook.

1st question: What do you think of the ordering system of your restaurant?

Answer: I face issues with a lot of the orders, it's usually the waiter's fault. Sometimes the table number isn't written down, or they write the wrong order, and they miss one of the orders.

2nd question: How would you rate the hygiene standards in the kitchen?

Answer: It's alright. The cooks are the ones who clean the kitchen, but sometimes we get very busy or simply forget somethings and the kitchen becomes very messy.

Comment: A better order system would benefit the employees and the customers. Hiring Janitors and assigning them certain times to clean would improve the hygiene.

Abdulrahman Alsomali – 2040214

First interview: -

name: Mohammed Al-solami

Job title: Waiter

1st question: What is the problems that you have during taking orders from clients?

Answer: Some of them take too long and the others makes it hard to understand, sometimes there's too many orders that i forget.

2nd question: What is the preferred way to serve meals with ?

Answer : It is preferred to use the movable table to make sure nothing goes wrong and it is easier to hand out big numbers of plates .

3nd question: What are the most important features in this job?

- Flexibility
- Multi-Tasking
- Active listening

Comment: I think the waiter really works hard so I suggest that putting numbers on tables and signs on the movable table for serving or maybe make an app for clients to make orders from just to make it simple.

Second interview: -

Name: Ibrahim Al-Hazmi

Job title: Cashier

1nd question: What are the payment options?

Answer: The options are Cash and Credit card.

2nd question: What is the traits that you must have as a cashier?

Answer: Awareness, Alert, Friendliness ,Customer Focus, Honesty and trustworthy.

3nd question: What kind of troubles do you have during work?

Answer: Taking fake money without checking.

Run out of changes.

Comment: In my opinion the cashier should have more gadget to spot out the fake money or make it only credit card payments.

Nasser Alshehri – 2040209

First interview: -

Name : Ahmed Khaled

Job title :receptionist

1st question: How does your restaurant deal with crowding?

Answer: In fact, customers at peak times suffer from crowding, and the customer comes to the restaurant and reserves the table and must wait outside for an average of 15-30 minutes until another customer finishes

2nd question: What is the average time a customer uses at the table?

Answer: It varies according to the number of people, for example, from two to four people, and after we combined the cooking time with the customer's eating time, they need a maximum of 45 minutes, but five or more take a full hour

3nd question: Does the restaurant lose customers because of the long waiting time?

Answer: Unfortunately, yes, I see the anger on some customers when they know the waiting period and go, and some of them start screaming inside the restaurant while their order is being prepared; Because he waited so long before.

Comment: Overcrowding in restaurants causes customers to wait outside an average of 30 minutes, and because of this, the restaurant loses a lot of customers a booking system will provide good service to the customers

Second interview: -

Name: Abdulrahman Al Ahmad

Job title: restaurant manager

1st question: Do you think that the idea of our program will be an essential addition to restaurants, or is it just a secondary feature?

Answer: I think that it will be a basic and strong addition to large and crowded restaurants, but for small restaurants it will be a secondary advantage and may not be needed much

2nd question: Do you prefer to create a partnership between your restaurant and the program, and the program company is interested in organizing customers inside your restaurant, or do you buy the full ownership rights to the program?

Answer: It would be a good idea if I buy the idea of the program and my restaurant is distinguished by this addition, but I think it will cost a high budget, not the partnership alone will be enough

Comment: the need for a program is high. They are willing to hire workers to operate and maintain it. Other restaurants might have the ability to buy a program for themselves

Lab 3

Planning Phase 1

The Purpose of this project is to provide restaurant owners and workers with a system which will make serving customers much easier and ensures a smooth experience for the customer, where there is no room for error.

The motivation for this project is to aim for a comfortable experience for both the customer and the employees.

Goals: This system aims to help restaurants who have a lot of branches open and could use the organizing aspect it provides.

Preliminary report:-

The problems: In high end restaurants, the waiting time is long and sometimes the waiters bring the wrong food to the table, which results in more waiting. The booking system has it's flaws as well, such as the employees mixing up tables or outright forgetting your reservation.

Suggested solutions: Diverting from the traditional dining experience and upgrading to a new version of it.

Cost & Schedule: The cost is estimated to be 210,000 Riyals, while the time to conduct it is estimated to be 8 months.

LAB 4

Planning phase 2

The feasibility study: -

1. Description of product: Our product aims to organize the dining experience. It enables the customers to order remotely without the need of a waiter, send information throughout the restaurant with incredible speed, relay information on what orders were handed in first and when the waiters can send them to the tables.

2. Technology considerations: This product will utilize the use of multiple electronic devices, such as computers and tablets.

3. Product marketplace: high end restaurant owners should find this product very useful and beneficial for their business.

4. The team expertise: Our team consists of 5 experienced programmers (3 Software Engineers, 1 Database Science and 1 Cyber security).

5. The language that will be used: we will be using C++ for its fast properties.

6. Estimated cost: This product will cost 150,000 Riyals.

7. Benefits: The benefits from the product are estimated to be around 30,000 Riyals.

The Report Writing: -

1- Problem Definition: Nowadays, restaurants print lots of receipts for customer which cost them money, they also have so a lot of employees due to the abundance of customers.

2- Scope Objectives of "new systems": We are aiming to make orders, booking and paying much easier and more efficient for both the customers and the restaurant.

3- Alternative Solutions: As of today, there aren't that many Alternate solutions. The only ones that come to mind is hiring robot waiters as they don't require pay.

4- Cost and benefits of Alternatives: The traditional way costs a lot of money. Buying paper for receipts, custom made menus and paying wages to waiters who sometimes make costly mistakes.

This is an estimated cost from a high-end restaurant which houses 50 customers (the restaurant is open for 12 hours and offers service all week) in the weekend, because they're mostly full at the weekend.

In this schedule we have accounted for the cost of paper and replacing menus, as well as giving them away to customers, as well as how much time was spent due to the waiters getting the wrong order or delivering to the wrong table.

Day of the weekend	Estimated Cost in SAR	Estimated Time
Thursday	50	3 hours
Friday	80	5 hours
Saturday	40	2 hours

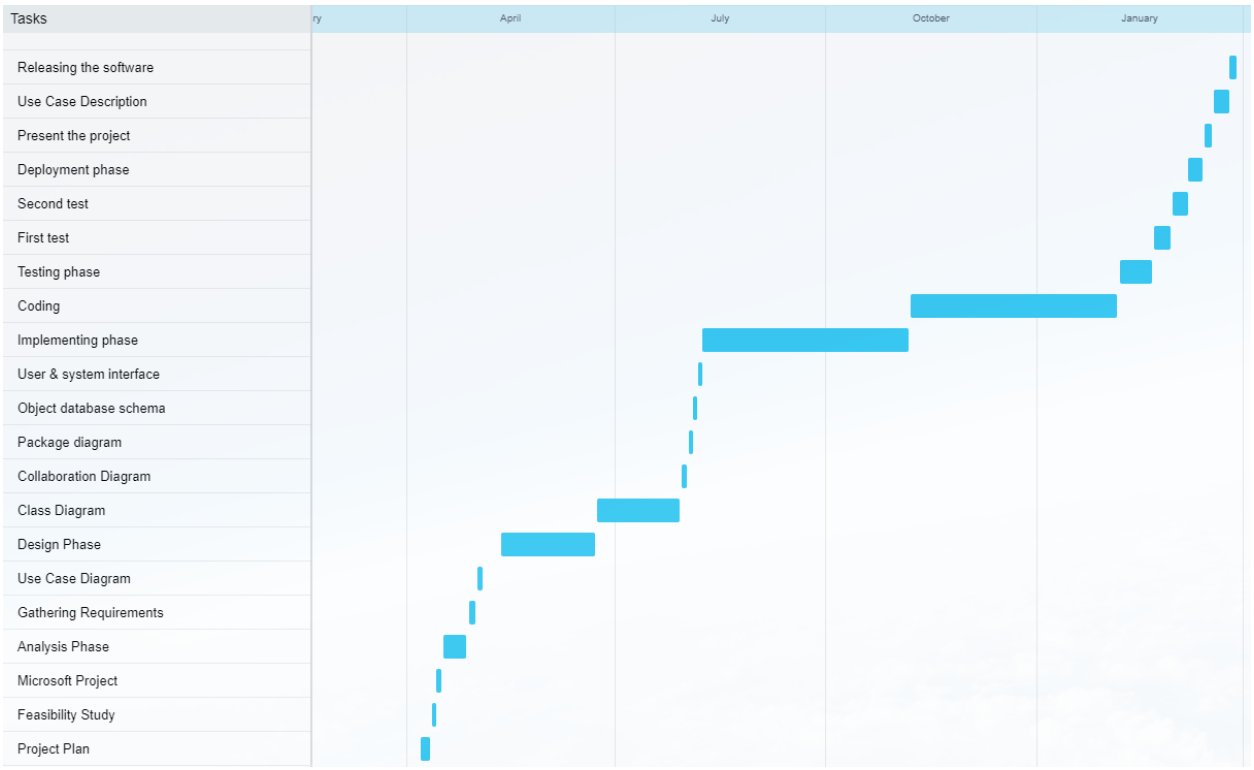
And here are the costs after the implementation of our product.

Day of the weekend	Estimated Cost in SAR	Estimated Time
Thursday	0	All the orders are correct
Friday	0	All the orders are correct
Saturday	0	All the orders are correct

5- Software impacts: Hire less worker which saves on money, and no more paper wasted in receipts and menus. It is simpler than the current system.

6- Potential Changes in the Organization: This new system will make the customers wait less, serve them faster, therefore making more money.

7- Recommended Alternative of the course of Action: Sadly, there is no other way than these two which are our system and the current one.



Task name	Duration	start	finish	Resource names
Project plan	5 days	22/5/4	22/10/4	
Feasibility study	3 days	22/11/4	22/13/4	
MS project	2 days	22/14/4	22/16/4	Faris Alghamdi
Analysis phase	13 days	22/17/4	22/27/4	
Gathering requirements	4 days	22/28/4	22/1/5	Nasser Alshehri
Use case diagram	3 days	22/2/5	22/4/5	Abdulrahman Alsomali
Use case discerption	6 days	22/5/5	22/11/5	Faris Alghamdi
Design phase	51 days	22/12/5	22/22/6	
Class diagram	36 days	22/23/6	22/29/7	Nasser Alshehri
Collaboration diagram	2 days	22/30/7	22/1/8	Abdulrahman Alsomali
Package diagram	1 day	22/2/8	22/3/8	Faris Alghamdi
Object database schema	1 day	22/4/8	22/5/8	Faris Alghamdi
User & system interface	1 day	22/6/8	22/7/8	Nasser Alshehri
Implementing phase	90 days	22/8/8	22/6/11	
Coding	90 days	22/7/11	23/5/2	All the team
Testing phase	14 days	23/6/2	23/20/2	
First test	7 days	23/21/2	23/28/2	All the team
Second test	7 days	23/1/3	23/8/3	All the team
Deployment phase	6 days	23/9/3	23/14/3	
Present the project	3 days	23/15/3	23/18/3	Nasser Alshehri & Abdulrahman Alsomali
Releasing the software	3 days	23/19/3	23/22/3	All the team

LAB 5

Analysis Phase 1

Stake holders: -

Client.

Customers.

Waiters.

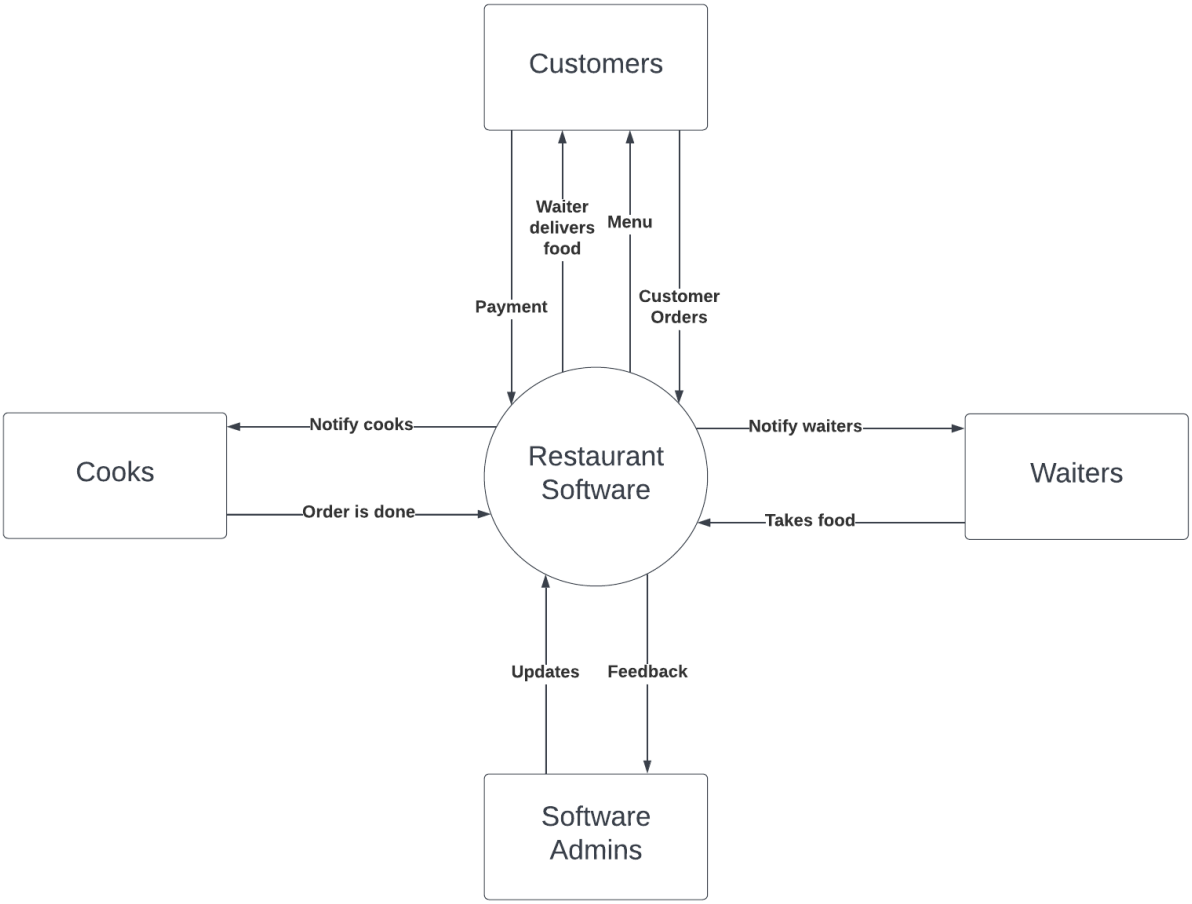
Chefs.

Managers.

Scope of work: -

The scope of work will be in a high-end restaurant, which will take care of management and provide a smart dining experience. In this project we will focus on perfecting the dining experience for customers using technology. It will take orders and process them to the cooks immediately and with precision, which will be delivered via the waiters to the customers' tables.

Context Diagram of our project: -



Event table for our project: -

Event Name	Input & Output	Summary
1. Receiving food	Receiving food (in)	Receiving food from the suppliers
2. Order for the suppliers	Order for the suppliers (out)	Order more food from the suppliers
3. Booking tables	Booking tables (in)	The customer books a table beforehand
4. Ordering food	Ordering food (in)	The customer orders food
5. Handing out receipt	Handing out receipt (out)	The staff hands out a receipt
6. Final bill	Final bill (out)	The customer receives the final bill from the staff
7. Serving the food	Serving the food (out)	The customer receives the food from the restaurant
8. Supplies report	Supplies report (out)	The system produces a supplies report to an admin
9. Sales report	Sales report (out)	The system produces a sales report to an admin

LAB 6

Requirements

Functional: -

1. The system shall allow the customer to submit an order, afterwards the system shall send an alert to the cooks detailing the customer's order in order to prepare it.
2. The system shall allow the manager to send requests to the respective companies in order to re-supply the restaurant.
3. The system shall allow the customer to send feedbacks and reports.
4. The system shall send alerts to the wait staff notifying them that the order is ready to be delivered.
5. The system shall allow the customers to reserve tables in advance.
6. The system shall allow the employees to register/log into the system.

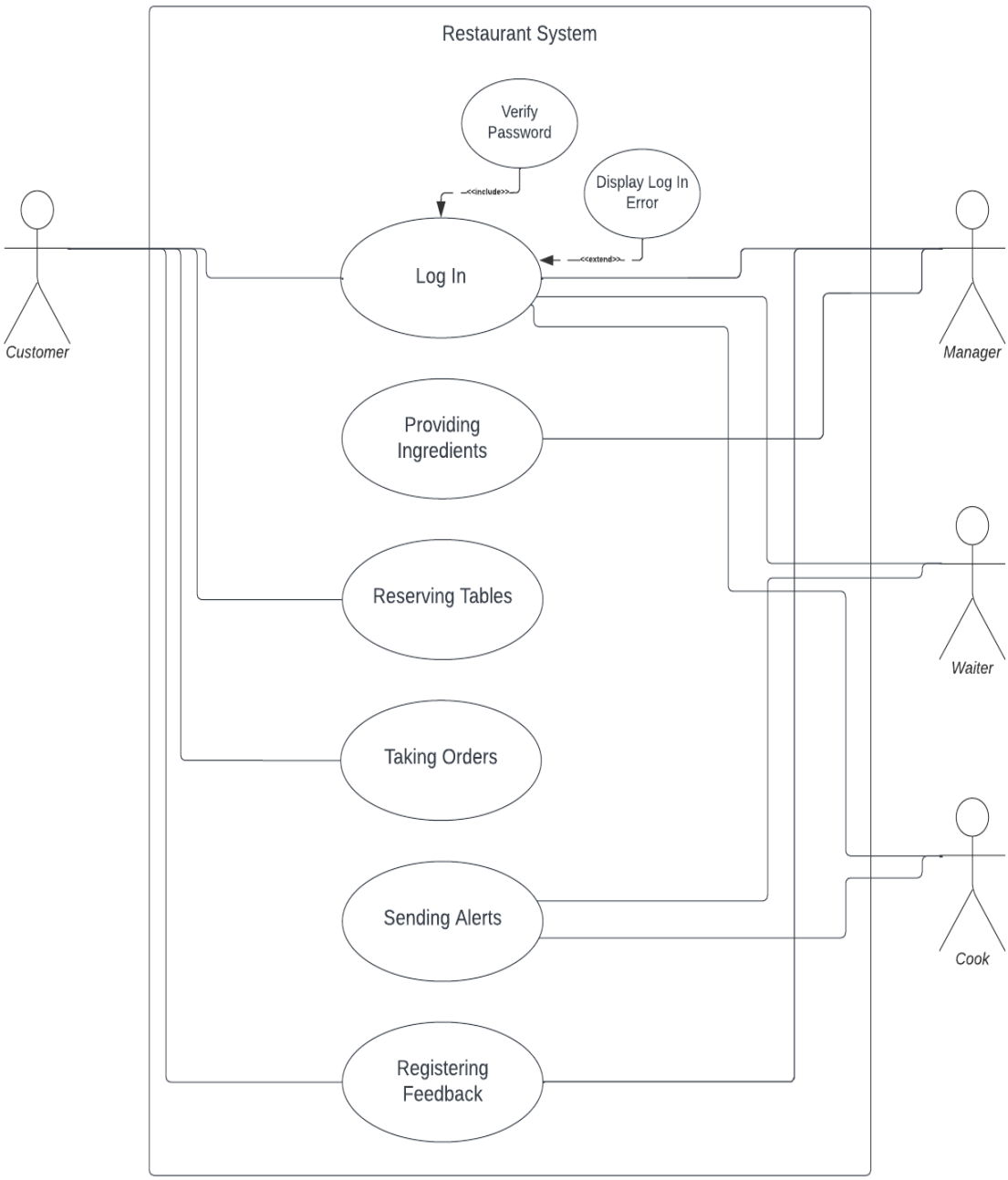
Non – Functional: -

1. The system shall verify the validity of the login data entered by the user.
2. The reservation mechanic shall be open all the time.
3. The system shall send alerts to the staff in approximately 5 seconds.
4. The system shall alert the customer of their reservation beforehand.

LAB 7

Analysis Phase 2

1) Used – Case Diagram:-



2) Describing the Scenarios: -

UC1: Logging in

Scope: Customer, Waiter, Cook, Manager.

Level: Logging into the system.

Primary Actor: Customer.

Precondition: After opening the website.

Stakeholders & Interests:

Customer.

Manager.

Waiter.

1- The manager logs in to check on the system and resupply the stock.

2- The Customer logs in to check the website and make reservations.

3- The restaurant staff log in to start or end their shift.

UC2: Providing Ingredients

Scope: Manager.

Level: Dealing with companies to supply the restaurant.

Primary Actor: Manager.

Precondition: Arriving at the restaurant before opening hours.

Stakeholders & Interests:

Manager.

Cook.

1- Every morning, the manager arrives and checks on the supplies of the restaurant.

2- The manager makes orders depending on what's missing or needed.

UC3: Reservation

Scope: Customer.

Level: The customer reserves a table for the present day or a specific date.

Primary Actor: Customer.

Precondition: Logging into the system.

Stakeholders & Interests:

Customer.

1- The customer logs into the website to check the availability of the tables.

2- When the customer finds a table, they can reserve it or book a table for a specified date.

UC4: Taking orders

Scope: Customer.

Level: Receive orders from customers.

Primary Actor: Customer.

Precondition: The customer arrives at the specified time of the reservation.

Stakeholders & Interests:

Customer.

.1- The customer arrives for this reservation.

2- The customer orders the dishes they desire.

3- The cooks receive the order and start making it right away.

UC5: Sending Alerts

Scope: Cook, Waiter.

Level: The cook sends and alert for the waiter.

Primary Actor: Cook.

Precondition: The food is ready.

Stakeholders & Interests:

Cook.

Waiter.

1- Once the cooks finish preparing the food, they send alerts to the waiters to pick up the dishes.

UC6: Feedback

Scope: Customer, Manager.

Level: The customer sends feedback of their experience.

Primary Actor: Customer.

Precondition: The customer leaves the restaurant.

Stakeholders & Interests:

Customer.

Manager.

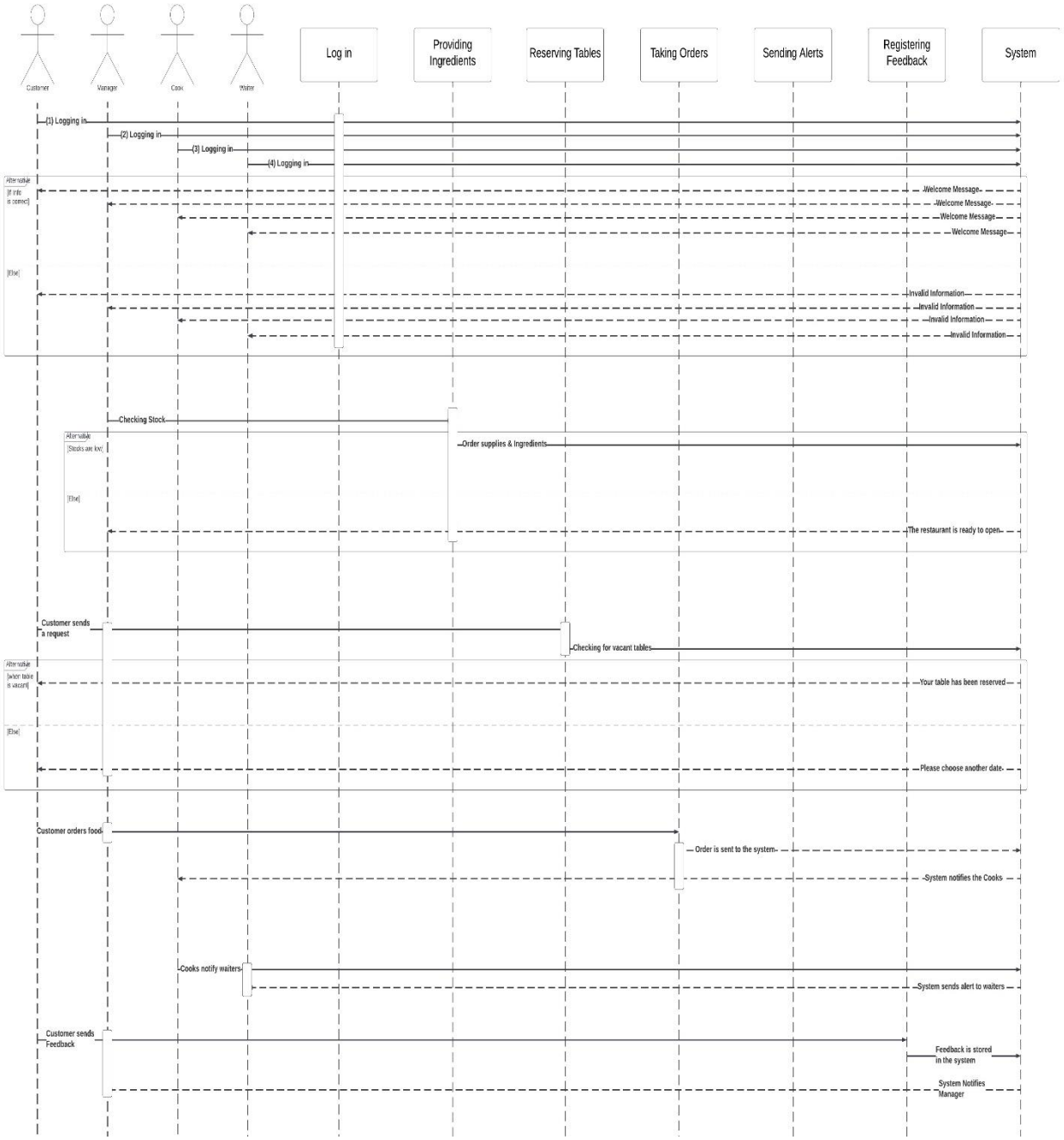
1- The customer finishes their food and leave the restaurant.

2- Next time they log in, they can rate their last experience.

LAB 8

Analysis Phase 3

Sequence Diagram:-



2) A brief description on the symbols used in the sequence diagram explaining the reason for the usage of that symbol:

1. Customer: a person who dines at the establishment.
2. Manager: a person who keeps the restaurant running.
3. Cook: a person who cooks the food for the customers.
4. Waiter: a person who delivers the food to the customers.

3) A brief description on the flow of each event in each sequence diagram:

In the beginning all actors log in to access the system. The manager checks the stock of the restaurant through the system. the system will show the manager if there are any missing supplies or ingredients for the manager to order.

The customer checks the system for any vacant tables in the restaurant to reserve. If there are no tables available, the system will send a message asking the customer to try a different date.

When the customer reserves a table and arrives at the restaurant, they can order food. The order will be sent to the system, and from there it will be sent to the cooks so they can prepare the meal.

When the food is ready, the cooks will send a message through the system to the waiters to pick up the dishes to the customer's table.

When the customer is finished, they can send feedback through the system. The system will store this feedback and alert the manager so they can check it.