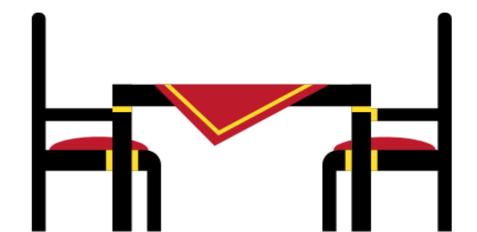




# Jahezli Application

## **CPIT-251 | GROUP 4**

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## **Abstract**

In our daily lives dealing in various fields have become easy. So, on many occasions, we need applications and sites that make it easier for us to search and reserve tables at restaurants that we need. Because of this, the idea of our system came, which is that customers can search and choose what they want through the app, and the table will be equipped with various payment methods to avoid losing time.

The system we have chosen is the Jahezli Application, which offers many options of restaurant tables and a variety of table types for various occasions if the person wants a casual dinner or has an important meeting

The report discusses the solution to some problems we noticed. We identified the problem statement the people face while identifying the best solutions. Also, we have outlined the methodology that we will follow which is the Waterfall methodology. Lastly, we set the requirements that must be present in this system

In the end, we achieved our goal by planning, analysing, implementing ,designing, and testing our system well and deeply by completing all the required tasks. The main points in our report for each phase will be discussed in detail.

## Introduction

The application is for table reservations. This app aims to help customers reserve a suitable table before arriving at the restaurant. The application provides a variety of services. In addition to that, the customer can then pay for the service/s in different ways.

## **Problem statement**

Nowadays, restaurants and cafes are experiencing overcrowding issues, causing customers to wait for a long time for a table, wasting the customer's time upon arrival.

## **Solution**

Our solution is to create an application that allows customers to reserve a table before arriving. To avoid congestion and long waits as well as processing the order in advance, which helps customers not to waste their time such as important meetings held in the place. So, they can reserve and pick the tables and the orders as they want.

## **Approach**

Waterfall methodology This method was chosen because of several reasons one of them is the application is not complicated. Also, this method focuses on determining the requirements which clarify them. Lastly, the model develops systematically from one phase to another in downward motion without going backward.

## Requirements

#### Functional requirements:

- Search for table
- Reserve table
- Modify the reservation
- Display the reservation
- Review and feedback

#### Non-functional requirements:

- Availability.
- Security.
- Reability.

# Schedule for the activities of the project

	0	Task Mode	Task Name	Duration	Start	Finish	Predecess
1		3	□ analysis	4 days	Mon 04/04/22	Thu 07/04/22	
2	3	3	interview	2 days	Mon 04/04/22	Tue 05/04/22	
3		3	collection requirment	2 days	Wed 06/04/22	Thu 07/04/22	۲
4		3	requirement documentation	0 days	Thu 07/04/22	Thu 07/04/22	٣
5		3	□ design	12 days	Fri 08/04/22	Mon 25/04/22	£
6		3	use case	2 days	Fri 08/04/22	Mon 11/04/22	
7		3	sequnce digram	3 days	Tue 12/04/22	Thu 14/04/22	٦
8		3	activety digram	3 days	Fri 15/04/22	Tue 19/04/22	٧
9		3	class digram	4 days	Wed 20/04/22	Mon 25/04/22	٨
10		3	check digram	0 days	Mon 25/04/22	Mon 25/04/22	٩
11		3	implemntetion	8 days	Tue 26/04/22	Thu 05/05/22	٩
12		3	coding	4 days	Tue 26/04/22	Fri 29/04/22	
13		3	debug	4 days	Mon 02/05/22	Thu 05/05/22	17
14		3	code documentation	0 days	Thu 05/05/22	Thu 05/05/22	١٣
15	6	3	□ test	7 days	Fri 06/05/22	Mon 16/05/22	15
16	6	3	test the code	4 days	Fri 06/05/22	Wed 11/05/22	
17		3	user feedback	3 days	Thu 12/05/22	Mon 16/05/22	17
18		3	check the code	0 days	Mon 16/05/22	Mon 16/05/22	14:19
19		A.	■ maintenance	0 days	Sun 03/04/22	Sun 03/04/22	
20		3	new releases	0 days	Sun 03/04/22	Sun 03/04/22	

Figure 1 MS project schedule (1)

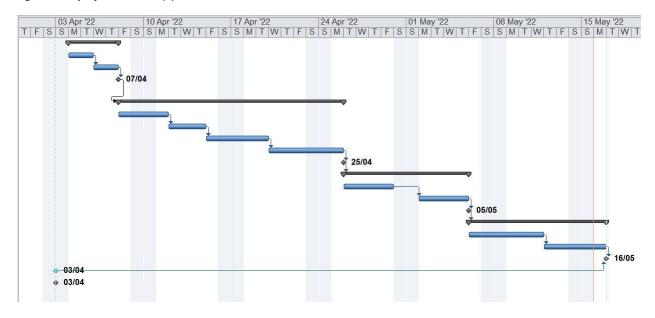


Figure 2 MS project schedule (2)

## **Use Case diagram**

A use case diagram is a graphical depiction of a user's possible interactions with a system.

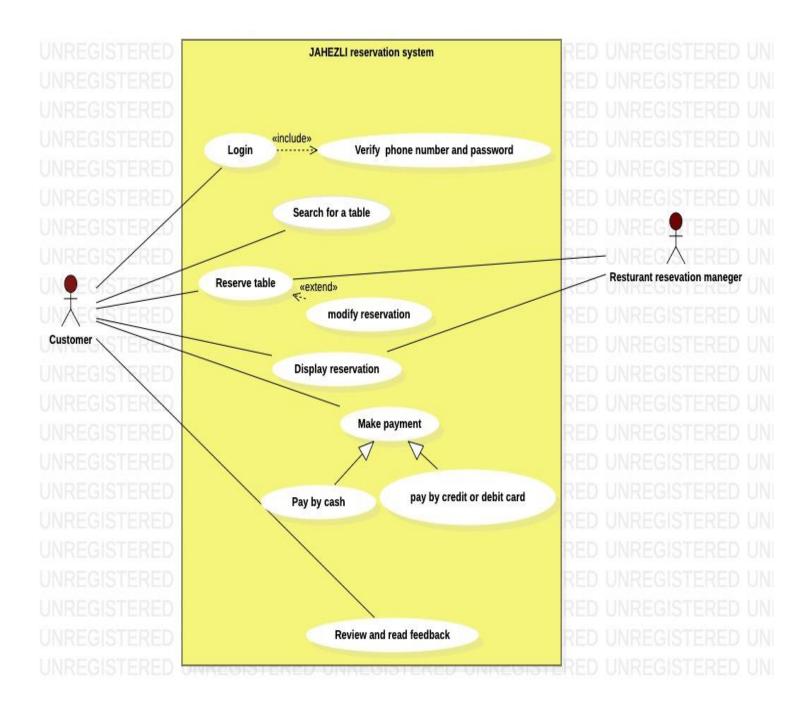


Figure 3 use case diagram

## **Use cases descriptions**

#### **Table1** Shows login use case in detail.

#### Table 1 Login use case description

Use case title: Login
Primary actor: Customer
Level: Kite (Summary).
Stakeholders: Customer.

**Precondition:** The system must connect to the internet.

Minimal Guarantee: Rollback to any uncompleted

Success Guarantee: Access to home page.

**Trigger:** User requests to login.

#### Main Success Scenario:

- 1. Customers must sign up for the first time.
- The customer sets a username, phone number, e-mail, and password.
- 2. The customer must login if it is not the first time.
- The system validates the username and password.
- 3. The customer successfully accesses the home page.

- 1a. Invalid username or password(or both).
  - 1a1. The system shows an error message containing "Please try again ".
    - 1a2. Either customer tries again or guits the application.
- 2a. Invalid password for three times.
  - 2a1. System notifies the user by sending a message to the E-mail.
- 3a. Customer forgets the password.
  - 3a1. Click on forget password button.
  - 3a2. Reset a new password.
- 4.a. Customer does not fill in the required information.
  - 4a1. System shows an error message.

#### **Table 2** Shows Search for table use case in detail.

#### Table 2 Search for table use case

#### Use case title: Search for table

Primary actor: Customer Level: Kite (Summary).

Stakeholders: Customer, manager.

Precondition: customer must select the place, time, date, and number of people

Minimal Guarantee: Show Places Menu.

Success Guarantee: available tables displayed to customer and the customer choose

table.

**Trigger:** choose a place and table.

#### Main Success Scenario:

- 1. Customer login to the account.
- 2. The customer opens the menu & chooses a place.
- 3. Customer set date, time, and the number of people.
- 4. The customer chooses a table after the available tables are displayed.

- 1a. Unable to access the account.
  - 1a1. The system shows an error message containing "Please try again ".
  - 1a2. Either customer tries again or quits the application.
  - 1a3. Customer reset account password, username.
- 2a. No places shown on the menu.
- 2a1. The system shows an error message, Customer refresh the page.
- 2a2. The customer quit the app.
- 3a. Unable to set a date, time, and the number of people.
  - 3a1. The system shows an error message, Customer refresh the page.
- 4a. There are no tables displayed to the customer.
- 4a1. The system Shows the reason for no available tables.
- 4a2. The system shows the message "Please try another date and time".
- 4a3. Customer selects another date and time, if available they will reserve.
- 4a4. If the customer selects another date and time and no available tables shown; they will quit the application.

#### **Table 3** Shows reserve table use case in detail.

#### Table 3 reserve table use case

Use case title: Reserve table

Primary actor: Customer Level: Kite (Summary).

Stakeholders: Customer, Manager

**Precondition:** Select the table, place, date and time, number of people

Minimal Guarantee: Show the available tables.

Success Guarantee: Inform the customer that the table is available, and the reservation

has been confirmed.

**Trigger:** The customer found the available table suitable for their reservation details.

#### **Main Success Scenario:**

- 1. Customer login to the account
- 2. The customer opens the menu & chooses a place.
- 3. Customer set date, time, and the number of people.
- 4. Customer search for a table
- 5. The customer chooses a table after the available tables are displayed.
- 6. New reservation created.
- 7. The customer confirms the reservation with a guarantee that the reservation details are appropriate.
- 8. The manager checks the reservation by ensuring that no one has previously booked the same table.
- 9. The manager confirms the reservation.
- 10. The system sends a confirmation and detailed information about their reservation.

- 1a. Unable to access the account.
  - 1a1. The system shows an error message containing "Please try again ".
  - 1a2. Either customer tries again or quits the application.
  - 1a3. Customer reset account password, username.
- 2a. Couldn't find a table
  - 2a1. The system Shows the reason for no available tables
  - 2a2. The system shows the message "Please try another date and time "
  - 2a3. Customer selects another date and time, if available they will reserve.
- 2a4. If the customer selects another date and time and no available tables are shown; they will quit the application.
- 3a. No reservation created.
- 3a1. The system shows an error message.
- 3a2. The customer makes a new reservation.
- 4a. Manager cancel reservation.
- 4a1. The system shows a message containing the reason for canceling the reservation; the customer makes a new reservation.
- 5a. No confirmation was displayed for the customer.
  - 5a1. The system shows an error message, Customer refresh page.
  - 5a2. The customer re-checks the history of reservations in the account.

#### **Table 4** Shows display reservation use case in detail.

#### Table 4 display reservation use case

Use case title: Display reservation

Primary actor: customer. Level: Kite (Summary). Stakeholders: Customer.

Precondition: customer should login.

Minimal Guarantee: display the reservation page.

Success Guarantee: inform the customer that the modification has been successful.

**Trigger:** customer want to modify the reservation.

#### **Main Success Scenario:**

- 1. Customer login to the account
- 2. Customer open menu.
- 3. The customer makes modifications delete or adds.
- 4. Display the table reservation information to the customer.
- 5. The customer confirms the reservation.

- 1a. Unable to access the account.
  - 1a1. The system shows an error message containing "Please try again ".
  - 1a2. Either customer tries again or quits the application.
  - 1a3. Customer reset account password, username.
- 2a. Couldn't open the reservation page.
- 2a1. Customer re-fresh the page.
- 3a. Customers do confirm the reservation after the modification.
  - 3a1. The system shows a message that the customer must confirm.
- 4a. Require information is not correct.
  - 4a1. The system shows an error message and re-enters.

#### **Table 5** Shows Make payment use case in detail.

#### Table 5 Make payment use case

#### Use case title: Make payment

Primary actor: Customer. Level: Kite (Summary). Stakeholders: Customer.

**Precondition:** Customer must select the payment method.

Minimal Guarantee: Rollback to any uncompleted payment details.

Success Guarantee: Inform the customer that the payment has been successful,

confirm the reservation and send invoice.

**Trigger:** Customer want to confirm reservation.

#### **Main Success Scenario:**

- 1. Customer login to the account
- 2. The customer opens the menu & chooses a place.
- 3. Customer set date, time, and the number of people.
- 4. Customer search for a table
- 5. The customer chooses a table after the available tables are displayed.
- 6. New reservation created.
- 7. The customer confirms the reservation with a guarantee that the reservation details are appropriate.
- 8. The customer selects the payment method.
- 9. The customer fills in all required information.
- 10. Show the "payment has been successful" message to the customer.
- 11. The manager checks the reservation by ensuring that no one has previously booked the same table.
- 12. The manager confirms the reservation.
- 13. The system sends a confirmation and detailed information about their reservation.

#### **Extensions:**

- 1a. Unable to access the account.
  - 1a1. The system shows an error message containing "Please try again ".
  - 1a2. Either customer tries again or quits the application.
  - 1a3. Customer reset account password, username.

#### 2a.there is no table selected.

- 2a1. The system shows an error message.
- 2a2. The customer must select something.
- 3a. No method of payment is selected.
  - 3.a1. The system shows an error message.
  - 3a2. The customer must select a method.
- 4a. Require information is not correct.
  - 4a1. The system shows an error message and re-enters.

#### **Table 6** Shows review and read feedback use case in detail.

#### Table 6 review and read feedback use case

Use case title: Review and feedback.

Primary actor: Customer Level: Kite (Summary). Stakeholders: Customer.

**Precondition:** Reservation via the application and visit the restaurant.

Minimal Guarantee: Display the review page.

Success Guarantee: Write the review on the review page.

Trigger: The customer wants to read the reviews or write their feedback.

#### Main Success Scenario:

- 1. Customer login to the account
- 2. The customer opens the menu & chooses a place.
- 3. The customer can read the reviews.
- 4. After the system sends a confirmation and detailed information about the reservation the customer writes opinion and experience.

- 1a. Unable to access the account.
  - 1a1. The system shows an error message containing "Please try again ".
  - 1a2. Either customer tries again or quits the application.
  - 1a3. Customer reset account password, username.
- 2a. The review page does not appear to the customer.
  - 2a1. The customer must select a place.
- 3a. The feedback page does not appear to the customer.
  - 3a1. The customer must confirm the reservation.

## Class diagram:

Use to represent classes, attributes, methods, and relationship between classes.

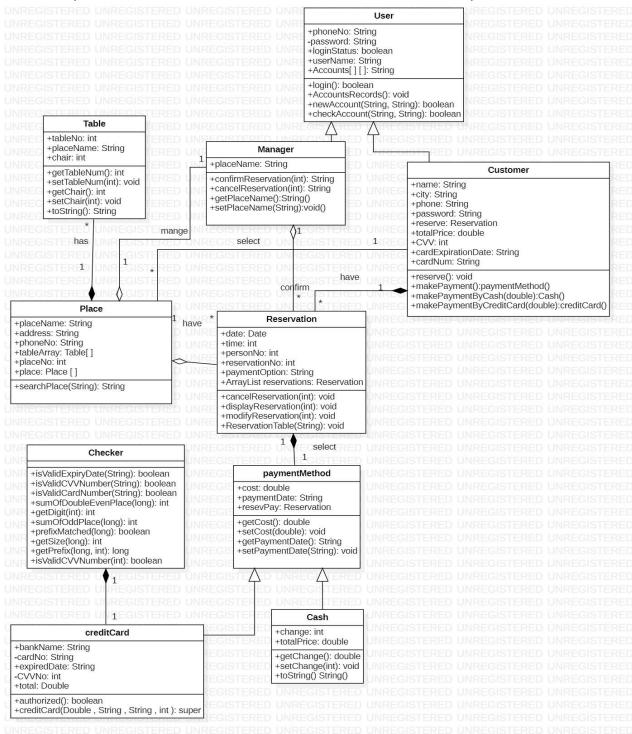


Figure 4 Class Diagram

## Sequence diagram:

Sequence diagram used to depict the interaction among objects during a period of time.

#### I. Search for a table sequence diagram

This diagram shows the order of operation when customer search a table to reserve.

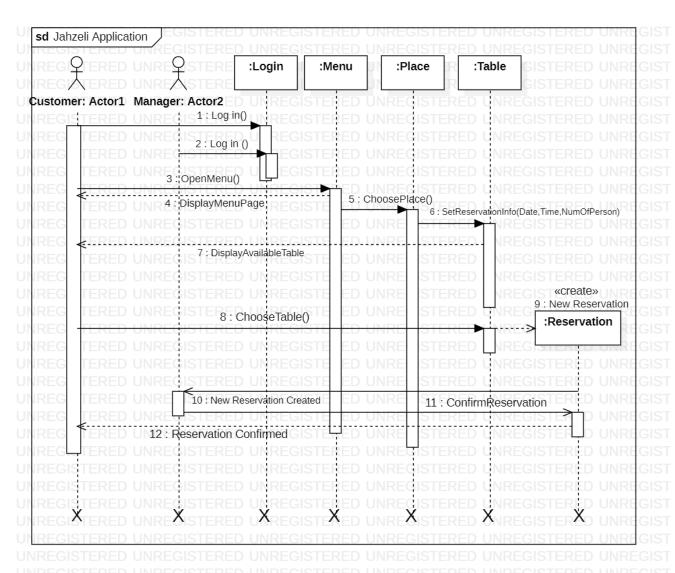


Figure 5 Search for a table sequence diagram

### II. Reserve table sequence diagram

This diagram shows the operations when a customer reserve table.

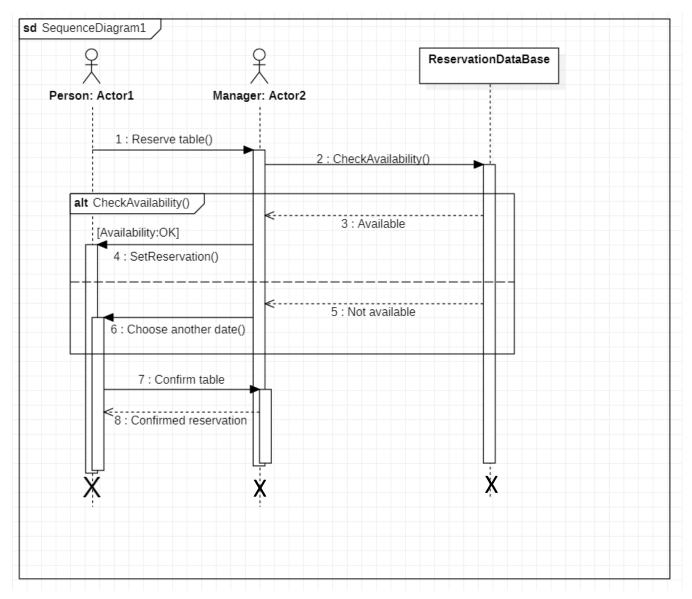


Figure 6 Reserve table sequence diagram

# **III.** Display reservation sequence diagram This diagram shows the order of the operations when a customer display reservation for a table

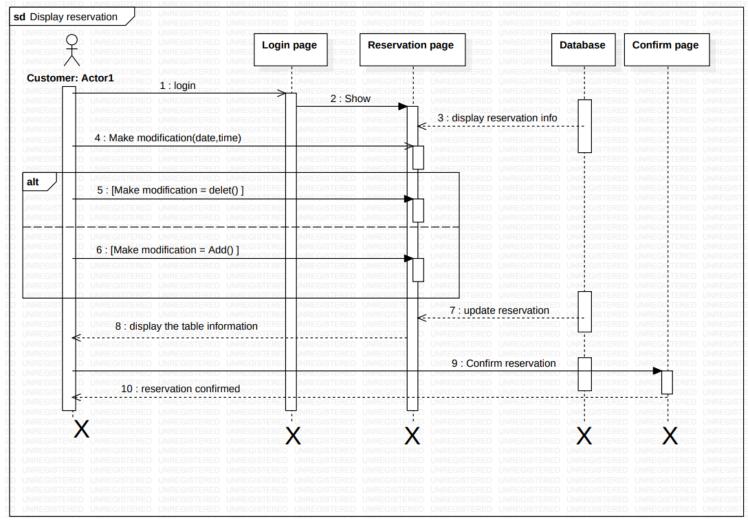


Figure 7 Display reservation sequence diagram

#### IV. Make payment sequence diagram

This diagram shows the order of the operations when a customer pay for reserved a table.

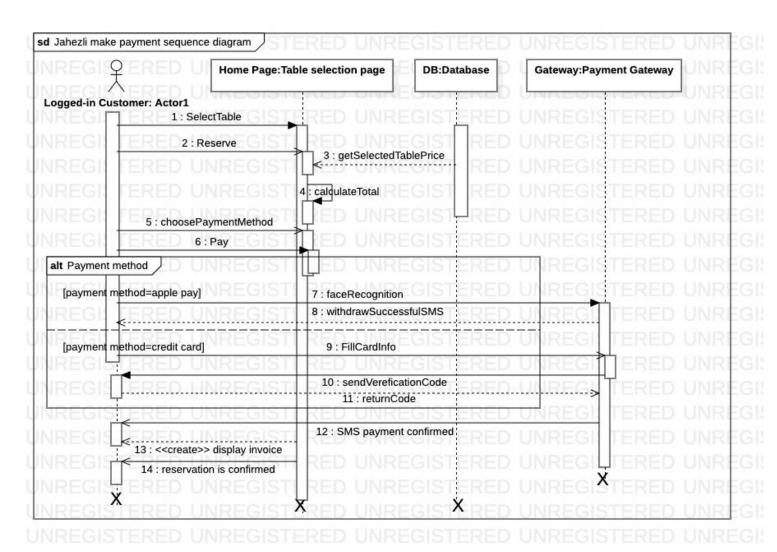


Figure 8 Make payment sequence diagram

**V.** Review and read feedback sequence diagram
This diagram shows the order of the operations when a customer displays and writes
Reviews and feedback.

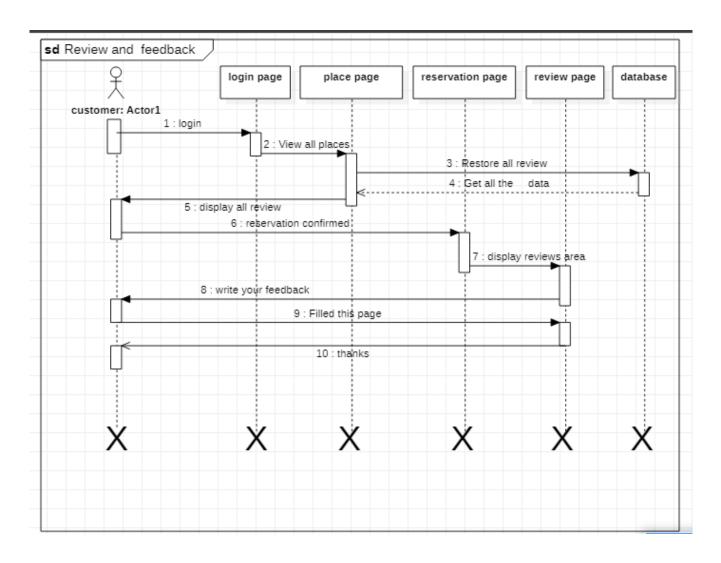
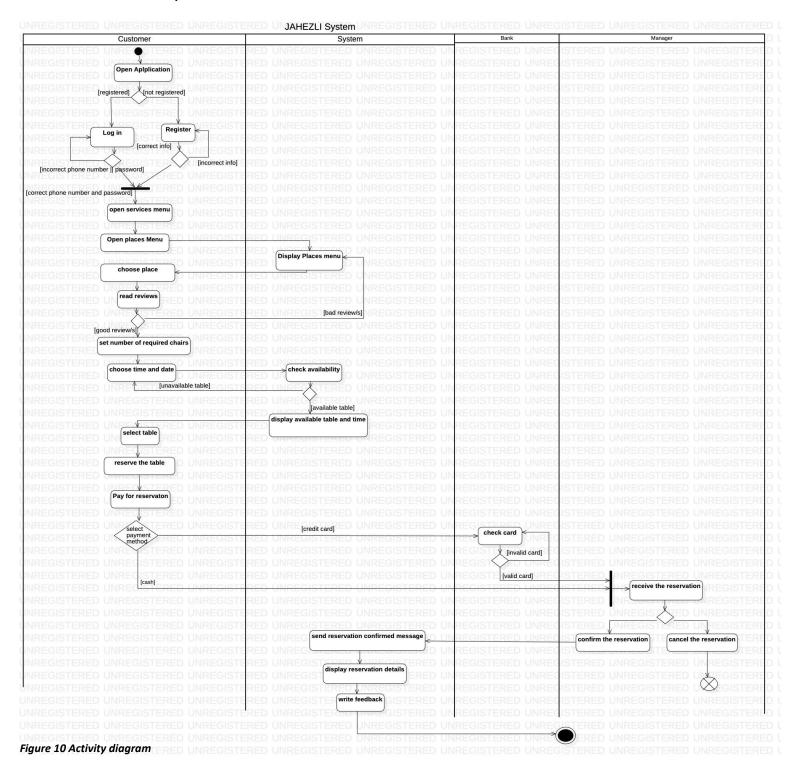


Figure 9 Review and read feedback sequence diagram

## **Activity diagram**

Activity diagram used to display graphical representations of workflows of stepwise activities and actions with support for choice, iteration, and concurrency.



## **Implementation**

#### Login:

```
// this method takes login info
public static boolean login(Scanner input) throws FileNotFoundException {
    User user = new User();
    // log in ## not completed
    System.out.print("Enter your user name: ");
    String userName = input.next();
    System.out.print("Enter your password: ");
    String Password = input.next();
    boolean login_statue = user.login(userName, Password);
    if (login_statue = true) {
        System.out.println("WELCOME TO JahezliApp! ");
        customersatute = true;
    } else {
        System.out.println("incorrect password or username");
    }
    return login_statue;
}
```

Figure 11 Login source code

#### **Registration:**

```
public static void RegisterAccount (Scanner input) throws FileNotFoundException {
   String phone;
   String city;
   String password;
   // registration
   System. out.println("-----");
                          Registration Page
   System.out.println("
   System.out.println("----");
   String name;
   System.out.println("Enter your full name :");
   name = input.next();
   // Phone Number
   while (true) {
      // take phone and check if it correct
      System.out.println("Enter Phone Number Starting with 05:");
      phone = input.next();
      if (phone.length() == 10 && phone.startsWith("05")) {
          System.out.println("Phone number is correct ");
          break;
      }
   // password i didn't put any conditions on the password
   System.out.println("Enter password:");
   password = input.next();
```

Figure 12 Registration source code (1)

```
System.out.println("Enter password:");
password = input.next();
// CITY
//this is a menu so user select city
System.out.println("-----
                       Select your City:
System.out.println("
                                                             ");
System.out.println("----");
System.out.println("Jeddah Enter 1");
System.out.println("Mecca Enter 2");
System.out.println("Riyadh Enter 3");
System.out.println("Dammam Enter 4");
city = input.next();
//check if it right
while (true) {
   if (city.equals("1") || city.equals("2") || city.equals("3") || city.equals("4")) {
      break;
   } else {
      System.out.println("-----
                             Select your City:
                                                                  ");
      System.out.println("
      System.out.println("-----
                                                              ----");
      System.out.println("Jeddah Enter 1");
      System.out.println("Mecca Enter 2");
      System.out.println("Riyadh Enter 3");
      System.out.println("Dammam Enter 4");
      city = input.next();
```

Figure 13 Registration source code (2)

```
// accroding to selection add the name of the city
    switch (city) {
       case "1":
           city = "Jeddah";
           break:
        case "2":
           city = "Mecca";
           break;
        case "3":
           city = "Riyadh";
           break;
        case "4":
           city = "Dammam";
           break:
    }
/// insert the custmer method not completed
// here i create an object of customer
//String phone, String city, String password
Customer customer = new Customer(name, phone, city, password);
arrayOfCustomers.add(customer);
System.out.println("thank you!" + customer.getName());
System.out.println("Account Created Successfully!");
```

Figure 14 Registration source code (3)

#### Reserve table:

Figure 15 Reserve table source code

#### **Modify reservation:**

```
public void modifyReservation(int reservationNo) throws ParseException {
    Scanner input = new Scanner(System.in);
    String date = input.nextLine();
    Date date1 = new SimpleDateFormat("dd/mm/yyyy").parse(date);
    Place placeName = null;
    String placeName1 = input.nextLine();
    paymentMethod total = null;

    System.out.println("Your reservation number is: " + getReservationNo());
    System.out.println("Your reservation date is: ");
    setDate(date1);
    System.out.println("Place name is: ");
    placeName.setPlaceName(placeName1);
    System.out.println(" Your reservation has been modified successfully ");
    System.out.println();
}
```

Figure 16 modify reservation

#### **Cancel reservation:**

```
//check parameter and return values
public String cancelReservation(int reservationNo) {
    for (int i = 0; i < reservations.size(); i++) {
        Reservation Temp = reservations.get(i);
        if (Temp.getReservationNo() == reservationNo) {
            reservations.remove(i);
            return Temp.getReservationNo() + " Your reservation has been cancelled successfully";
        }
    }
    return "This reservation is not Assigned to you";
}</pre>
```

Figure 17 cancel reservation

#### Display reservation:

```
public void displayReservation(int reservationNo) {
    Place placeName = null;
    paymentMethod total = null;

    System.out.println("Welcome");
    System.out.println("Your reservation number is: " + getReservationNo());
    System.out.println("Your reservation date is: " + getDate());
    System.out.println("Place name is: " + placeName.getPlaceName());
    System.out.println("Total amount is: " + total.getCost());
    System.out.println(" Enjoy. ");
    System.out.println();
}
```

Figure 18 Display reservation source code

#### **Make Payment:**

```
package jahezli.app;
 7
 8
   9
10
       * @author mac
11
0
      public class paymentMethod {
          double cost;
13
          String paymentDate;//date or String
14
15
          public paymentMethod(){
16
17
18
      }
19
          public double getCost() {
20 🗆
21
              return cost;
22
23
24 📮
          public void setCost(double cost) {
25
              this.cost = cost;
26
27
28 📮
          public String getPaymentDate() {
              return paymentDate;
29
30
31
          public void setPaymentDate(String paymentDate) {
32 🖃
33
              this.paymentDate = paymentDate;
34
35
```

Figure 19 make payment source code

#### Pay by credit card:

```
package jahezli.app;
10
       * @author mac
12
      public class creditCard extends paymentMethod {
          String bankName;
          private String cardNo;
15
          String expiredDate;
          private int CVVNo;
17
18
19
          public creditCard() {
20
              super();
21
22
          public String getBankName() {
24
26
27
          public void setBankName(String bankName) {
28
              this.bankName = bankName;
29
30
          public String getCardNo() {
33
34
          public void setCardNo(String cardNo) {
36
              this.cardNo = cardNo;
37
38
39
          public String getExpiredDate() {
40
42
43
          public void setExpiredDate(String expiredDate) {
              this.expiredDate = expiredDate;
45
46
          public int getCVVNo() {
48
49
50
```

```
27
           public void setBankName(String bankName) {
28
29
30
31
           public String getCardNo() {
32
33
35
           public void setCardNo(String cardNo) {
37
38
39
40
           public String getExpiredDate() {
41
42
43
           public void setExpiredDate(String expiredDate) {
44
                this.expiredDate = expiredDate:
45
46
           public int getCVVNo() {
48
49
50
           public void setCVVNo(int CVVNo) {
52
53
54
55
           public boolean authorized() {
56
57
                boolean authorizedcheck;
               if ((cardNo == null) || (cardNo.length() < 13) || (cardNo.length() > 19)) {
   System.out.println("failed length check");
   authorizedcheck = false;
58
59
%
61
                    return authorized();
62
                } else {
63
                     System.out.println("valid");
64
                    authorizedcheck = true;
65
66
                return authorizedcheck;
67
68
69
70
```

Figure 21 pay by credit card source code part1

Figure 20 pay by credit card source code part2

#### Pay by cash:

```
package jahezli.app;
7
8
9
10
       * @author mac
11
12
      public class Cash extends paymentMethod{
          int change;
13
14
15
          public Cash(){
16
          super();
17
      }
18
19
          public int getChange() {
20
               return change;
21
22
23
           public void setChange(int change) {
24
               this.change = change;
25
26
27
28
29
```

Figure 22 pay by cash source code

#### Review:

```
public static void getReviews(String placeName) throws FileNotFoundException {
   File inputFile = new File("C:\\Users\\اسامه بابونس\\Desktop\\Reviews.txt");
   if (!inputFile.exists()) {
       System.out.println("Input files does not exist !!");
       System.exit(0);
   Scanner input = new Scanner(inputFile);
   String currPlaceName = "";
   String review = "";
   String temp1 = "";
   String temp2 = "";
   boolean notFound = true;
   int placeCounter = 0;
   ArrayList<String> reviews = new ArrayList<>();
   while (input.hasNext()) {
       temp1 = input.next();
       if (!temp1.equals("Place Name:")) {
           continue;
       currPlaceName = input.nextLine().trim();
       if (currPlaceName.equals(placeName)) {
            temp2 = input.next();
           if (!temp2.equals("Review:")) {
               continue;
           review = input.nextLine().trim();
           reviews.add(review);
           notFound = false;
           placeCounter++;
```

Figure 23 Review source code (1)

```
System.out.println();
if (notFound) {
    System.out.println("Not found any place with the required name \"" + placeName + "\"\n");
} else {
    if (placeCounter == 1) {
        System.out.println("There is 1 review found for the place \"" + placeName + "\":\n");
} else {
        System.out.println("There are " + placeCounter + " reviews found for the place \"" + placeName + "\":\n");
}
for (int i = 0; i < placeCounter; i++) {
        System.out.println("Review " + (i + 1) + ": " + reviews.get(i));
}
System.out.println();
}
</pre>
System.out.println();
```

Figure 24 Review source code (2)

#### Feedback:

```
public static void printFeedback(String placeName) throws FileNotFoundException {
    Scanner in = new Scanner(System.in);
    File outputFile = new File("C:\\Users\\السامله بايونس\\Desktop\\Feedback.txt");
    PrintWriter output = new PrintWriter(outputFile);

    System.out.print("Enter your feedback about the place \"" + placeName + "\":");
    String feedback = in.nextLine();
    output.println(feedback);
    output.flush();
}
```

Figure 25 Feedback source code

#### **Test**

```
© Testing.java × 📾 Customer.java ×
Source History @ @ - ■ - 전 등 문 문 다 중 등 연 선 @ ■ @ ⊒
 2
     import jahezli.app.Cash;
 3
     import jahezli.app.Customer;
     import jahezli.app.User;
     import jahezli.app.Manager;
     import jahezli.app.Table;
 6
 Q
     import java.io.FileNotFoundException;
    import java.io.IOException;
 9
     //import org.junit.Test;
10
     //import static org.junit.Assert.*;
11
12
     public class Testing {
         Customer customer = new Customer();
14
         Table table = new Table (5, "Piatto", 3);
15
         Table table1 = new Table(6, "San Carlo",7);
16
          *
17
          */
18
          @Test
20 🗏
         public void testmakePayment() {
21
             customer.makePayment();
             Cash cashPaymentObject = customer.makePaymentByCash(customer.getTotalPrice());
22
             assertNotNull(cashPaymentObject);
24
25
26
```

Figure 26 Test

## **Challenges:**

It was hard for us to implement this project as a code, because this is the first project we implement from the first phase, which is planning to the last phase testing.

It was hard to deal with github because it is a new for us.

## **Future work:**

Our application covered certain cities Jeddah, Mecca, Riyadh, and Dammam, so we hope to make for all cities in Saudi Arabia. Also we used file as way to store our data, to improve the application we will use a database to store all data.

## **Conclusion**

In the end, the main idea of the project is to develop an application for the customer to choose and reserve a table in restaurants for the available classes without waiting a lot of time. Moreover, for managers, can check the availability and can respond to their customer. the customer has two way to pay which make it easier for them. The system also has a feature that allows the customer to modify a reservation or cancel it.