King Saud University
College of Computer and Information Sciences
Computer Science Department

King Saud University
College of Computer & Information Sciences
Computer Science Department

Hotel System
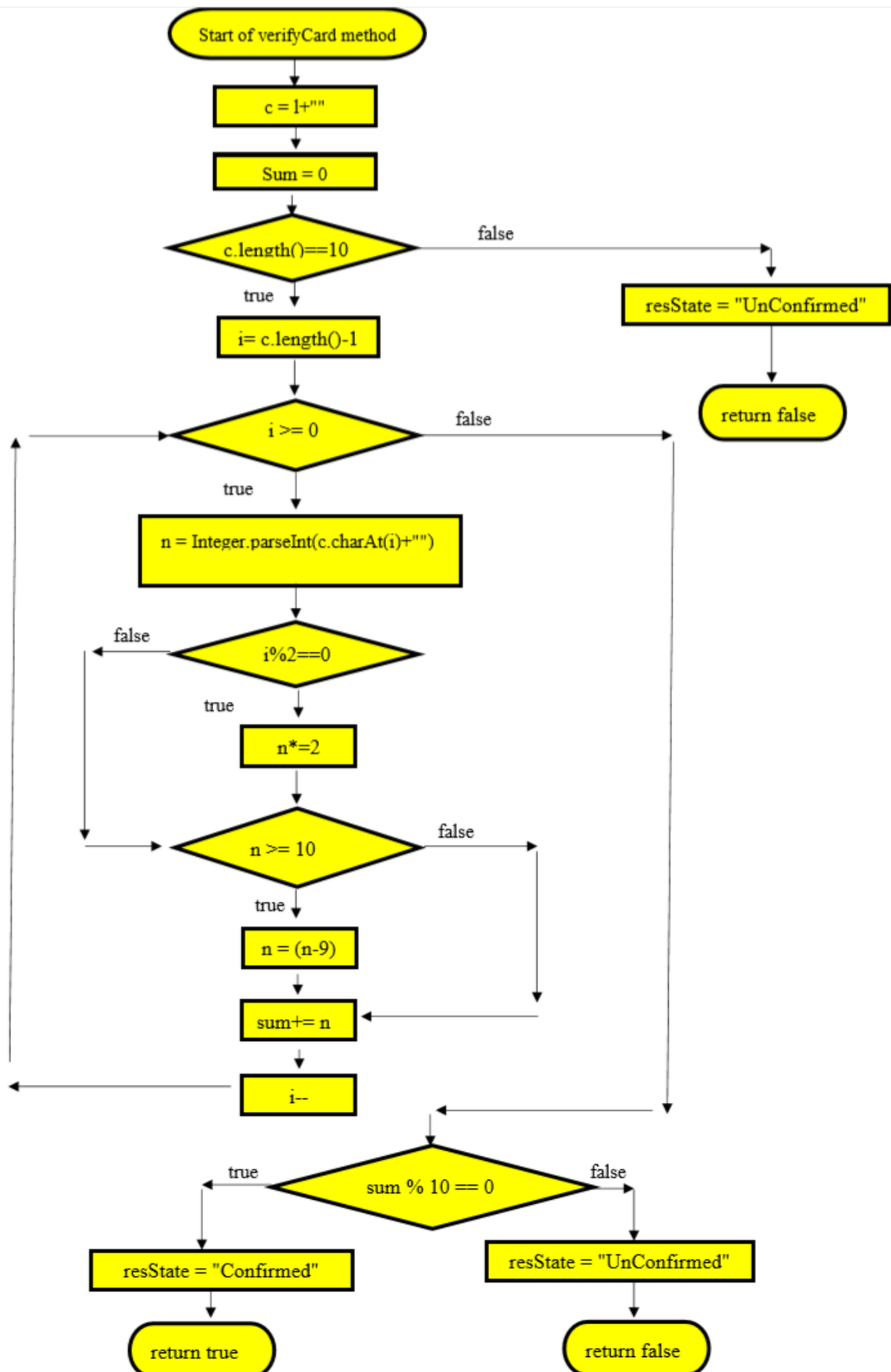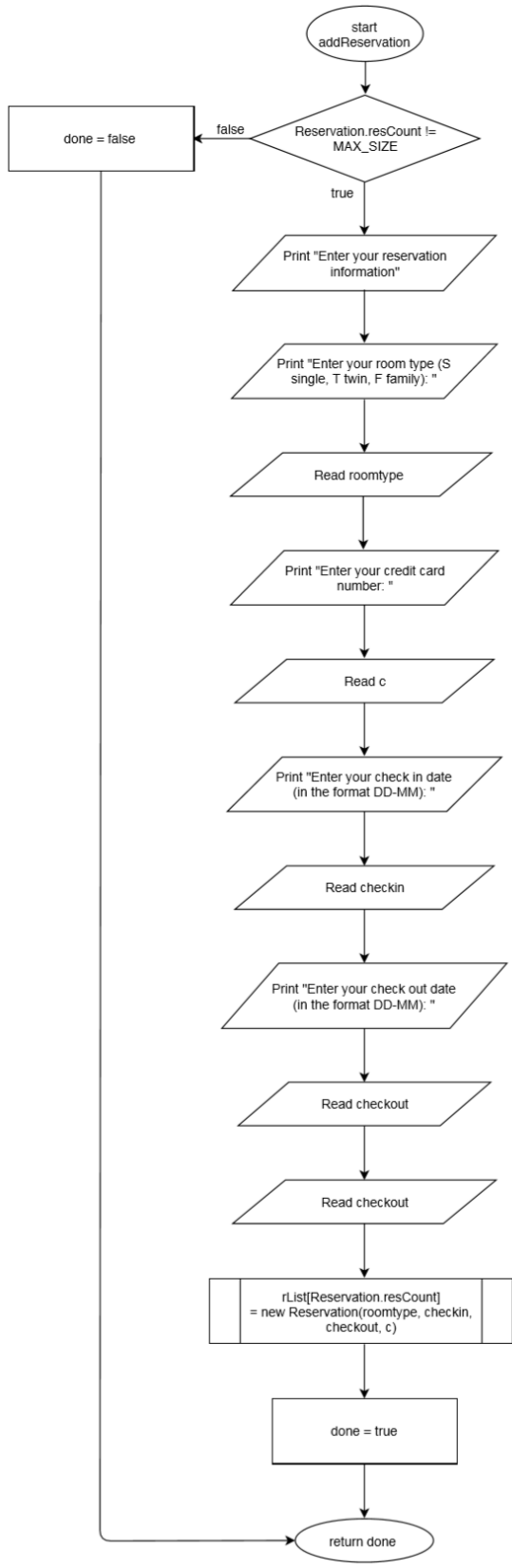
First semester 1441 - 1442

Group members

Introduction:

We have implemented a program consisting of two classes, Hotel and Reservation. The class Reservation is a template with attributes and methods for each object of type Reservation. The main operations it does is initializing the attributes using the constructor, verifying if the user's credit card number is valid or not, calculating the price based on the duration and the room type, also it displays each reservation information. The class Hotel is the implementation of the class Reservation, it has an array of type Reservation. And it allows for the interaction based on the user's username. It allows for adding, canceling and modifying reservations. It also finds the location of the reservation in the array of Reservations. It displays and counts the reservations according to their status.

Methods flowchart :

1- **verfyCard**
2- **AddReservation()**

Start of verifyCard method

c = 1+""

Sum = 0

c.length()==10 — false → resState = "UnConfirmed" → return false

true

i= c.length()-1

i >= 0 — false →

true

n = Integer.parseInt(c.charAt(i)+"")

i%2==0 — false →

true

n*=2

n >= 10 — false →

true

n = (n-9)

sum+= n

i--

sum % 10 == 0 — true → resState = "Confirmed" → return true

false → resState = "UnConfirmed" → return false

```
                          start
                       addReservation

                                |
                                v
  +----------------+      /  Reservation.resCount != \
  |  done = false  | <--- <        MAX_SIZE           >
  +----------------+ false \                          /
          |                      |
          |                     true
          |                      |
          |                      v
          |            /  Print "Enter your reservation  /
          |           /        information"             /
          |                      |
          |                      v
          |            /  Print "Enter your room type (S  /
          |           /   single, T twin, F family): "   /
          |                      |
          |                      v
          |            /  Read roomtype  /
          |                      |
          |                      v
          |            /  Print "Enter your credit card  /
          |           /        number: "               /
          |                      |
          |                      v
          |            /  Read c  /
          |                      |
          |                      v
          |            /  Print "Enter your check in date  /
          |           /   (in the format DD-MM): "        /
          |                      |
          |                      v
          |            /  Read checkin  /
          |                      |
          |                      v
          |            /  Print "Enter your check out date  /
          |           /   (in the format DD-MM): "         /
          |                      |
          |                      v
          |            /  Read checkout  /
          |                      |
          |                      v
          |            /  Read checkout  /
          |                      |
          |                      v
          |      +--+-------------------------------+--+
          |      |  |  rList[Reservation.resCount]   |  |
          |      |  | = new Reservation(roomtype,    |  |
          |      |  |    checkin, checkout, c)       |  |
          |      +--+-------------------------------+--+
          |                      |
          |                      v
          |            +------------------+
          |            |   done = true    |
          |            +------------------+
          |                      |
          |                      v
          +----------------> (  return done  )
```

Screenshot:

- Guest's menu:

```
Welcome to Hotel system, please select your option (guest or clerk) or END to end the program
guest
Guest Menu
You have the following options
Add Reservation
Enter your reservation information
Enter your room type (S single, T twin, F family):
S
Enter your credit card number:
5866321747
Enter your check in date (in the format DD-MM):
12-12
Enter your check out date (in the format DD-MM):
15-12
Reservation added succefully.. you can perform the following opertaions on your reservation
1-Cancel Reservation
2-Display Reservation
3-Exit
Enter your option.
2
Display Reservation
Reservation Number: 0e08G        Reservation Status: Confirmed
Room Type: Single                Check In Date: 12-12
Price: 450.00
1-Cancel Reservation
2-Display Reservation
3-Exit
Enter your option.
1
Cancel Reservation
1-Cancel Reservation
2-Display Reservation
3-Exit
Enter your option.
2
Display Reservation
Reservation Number: 0e08G        Reservation Status: Canceled
Room Type: Single                Check In Date: 12-12
Price: 450.00
1-Cancel Reservation
2-Display Reservation
3-Exit
Enter your option.
3
Exit
```

- Clerk's menu: with 3 reservations added by guests

```
Welcome to Hotel system, please select your option (guest or clerk) or END to end the program
clerk
Clerk Menu
You have the following options
1- Find reservation
2- Display all Confirmed reservations
3- Modify reservation
4- Cancel reservation
5- Count the number of reservations
6- Display all due reservations
7- Exit
Enter your option
1
Find reservation
Enter reservation number
1v07F
Index of reservation is 1
Clerk Menu
You have the following options
1- Find reservation
2- Display all Confirmed reservations
3- Modify reservation
4- Cancel reservation
5- Count the number of reservations
6- Display all due reservations
7- Exit
Enter your option
2
Display all Confirmed reservations
Reservation Number: 0y30J        Reservation Status: Confirmed
Room Type: Single                Check In Date: 11-12
Price: 300.00
Reservation Number: 1v07F        Reservation Status: Confirmed
Room Type: Twin                  Check In Date: 22-12
Price: 660.00
Clerk Menu
You have the following options
1- Find reservation
2- Display all Confirmed reservations
3- Modify reservation
4- Cancel reservation
5- Count the number of reservations
6- Display all due reservations
7- Exit
Enter your option
```

```
Enter your option
3
Modify reservation
Enter reservation number
0y30J
Enter room type:
F
reservation is found and updated
Clerk Menu
You have the following options
1- Find reservation
2- Display all Confirmed reservations
3- Modify reservation
4- Cancel reservation
5- Count the number of reservations
6- Display all due reservations
7- Exit
Enter your option
2
Display all Confirmed reservations
Reservation Number: 0y30J        Reservation Status: Confirmed
Room Type: Family                Check In Date: 11-12
Price: 800.00
Reservation Number: 1v07F        Reservation Status: Confirmed
Room Type: Twin                  Check In Date: 22-12
Price: 660.00
Clerk Menu
You have the following options
1- Find reservation
2- Display all Confirmed reservations
3- Modify reservation
4- Cancel reservation
5- Count the number of reservations
6- Display all due reservations
7- Exit
Enter your option
5
Count the number of reservations
Select a reservation status
confirmed
total number of the selected reservation status is 2
Clerk Menu
You have the following options
1- Find reservation
2- Display all Confirmed reservations
```

```
2- Display all Confirmed reservations
3- Modify reservation
4- Cancel reservation
5- Count the number of reservations
6- Display all due reservations
7- Exit
Enter your option
4
Cancel reservation
Enter reservation number
1v07F
reservation is found and updated
Clerk Menu
You have the following options
1- Find reservation
2- Display all Confirmed reservations
3- Modify reservation
4- Cancel reservation
5- Count the number of reservations
6- Display all due reservations
7- Exit
Enter your option
5
Count the number of reservations
Select a reservation status
canceled
total number of the selected reservation status is 1
Clerk Menu
You have the following options
1- Find reservation
2- Display all Confirmed reservations
3- Modify reservation
4- Cancel reservation
5- Count the number of reservations
6- Display all due reservations
7- Exit
Enter your option
6
Display all due reservations
Reservation Number: 0y30J          Reservation Status: Confirmed
Room Type: Family                  Check In Date: 11-12
Price: 800.00
Exit
Clerk Menu
You have the following options

1- Find reservation
2- Display all Confirmed reservations
3- Modify reservation
4- Cancel reservation
5- Count the number of reservations
6- Display all due reservations
7- Exit
Enter your option
7
Exit
Welcome to Hotel system, please select your option (guest or clerk) or END to end the program
⌊
```