American International University-Bangladesh (AIUB)

Department of Computer Science

Faculty of Science &Technology (FST)

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CSC 2210 Object Oriented Analysis and Design (OOAD)

Section: F

Group No: 04

Hotel Booking Management System

An Object-Oriented Analysis and Design (OOAD) project submitted
By

1	SAIYDUR RAHMAN	19-39890-1	25%
2	JIHAD SHAHARIAR JOY	19-40068-1	18.75%
3	ASHFAT AL RASHID	19-40195-1	18.75%
4	MD. MAHINUR RAHMAN	19-40226-1	18.75%
5	MD. RAZIB MOLLAH	20-42153-1	18.75%

CHAPTER 1: PROBLEM DOMAIN

1.1 Project Background Analysis

- Write the background description that helps putting the project into the right context of a problem domain and gives everyone involved a common view of the project

  We all know that there are lots of hotel in this world and many people (customer) come here for stay and spend quality time with their family. Also some people come to visit interesting places and they need room or house to stay. It is too difficult to manage all the customers. From this project we can reduce the difficulties of managing there room, billing system, giving facilities etc.
- What is the root cause of this problem? Why this problem is so important to consider?

  Managing customer in hotel is quietly difficult because when they come into a hotel they want to see room then need to check is this room is available or not then check in then check out(How many days want to stay in this hotel room), food facilities, environment, etc. Which is so difficult for a manager, but if they implement a new management system which will be generated automatically. It will reduce the difficulty and customer will get hassle free room booking and spent time easily.

1.2 Project Solution and Feasibility Analysis

- What are the solutions you are going to propose to deal with the problem? Why this solution is particularly appropriate to solve the problem? Is the solution feasible to the meet the business objective

  The one and only solution for this particular problem is implement an online Hotel Management System. There are two primary user 1.Customer 2.Manager. Customers can see room and check in with that room and Manager will give them other facilities which will be discussed below the sections. Yes this solution is feasible to meet the business objective because of

  1. **Less Stuff:** Normally, they need extra stuff for dealing with customers. But through the online booking system, there is no need for extra stuff because we already said that it generates automatically by the system.

  2. **Open booking facilities for 24/7:** Through the online booking system, user can book rooms at any time. So, business will be more profitable.
- Provide a short description of the software being specified and its purpose, including relevant benefits, objectives, and goals

  Here is the short description of this software:

  For users:

  1. **Numerous room options:** Pictures of every room will be available along with all facilities in this app. So, users will be able to explore pictures of the rooms, washrooms and other facilities and book the suitable one for them.

2. Affordability: This app displays the total cost description along with the pictures. So, users can choose the best price for them.

3. Changes and cancellation: Users can make any changes or cancel their booking. Users will not have to call the customer service representative to assist users with the process.

4. Details about hotel location: This app not only provides details concerning the hotel but also a summary of the information about the region.

5. Discounts deals: By paying bills through bKash, users can get some discount also.

6. Convenience: From this app, users can book hotels anytime of the day or night from anywhere.

7. Save time: This app offers a fast booking process. For repeat customers, they don't need to register again. Thus, the booking process will be faster. Users will not have to get in contact with the manager or spend a long time waiting for feedback. Most importantly, they will not have to go to a hotel and wait for a booking.

8. **Availability:** This app will give a scenario of availability of room. So, the user will be able to choose which room he/she can book. Through this, users can avoid double booking also.

- Existing studies presented in the problem area. What are the existing software solutions are available to solve the aforementioned problem?

From our research we see many type of software are implemented for Hotel Management but most of the software is difficult to use which is bad for user. They use billing system for hotel customer most of the time which is good but it is not in online user must be in hotel and check in after checking out they will generate customize bill.

- What makes this project new, innovative, interesting, or otherwise distinct from other similar projects? Does the project duplicate functionality already available in the market?

Our project is totally different from other software and there are no duplicate functions which is already available in the market but you will find similar functions. Our project is interesting because we giving some special features for customers and managers

1. Login System: We provide a login system for both customer and manager where they need to create an account then they have to login for using those features.

For Customer:

1. Room: They can see rooms interior and room facilities
2. Check In: If that room which customer like if is it available they can check in or reserve that room by check in option after that the time will start and count automatically.
3. Check Out: When they will go out from that room they can use check out option and the time will stop and give them a bill receipt which is need to pay.
4. Payment Option: They can pay their dues from another place by this payment options.

For Hotel Manager:

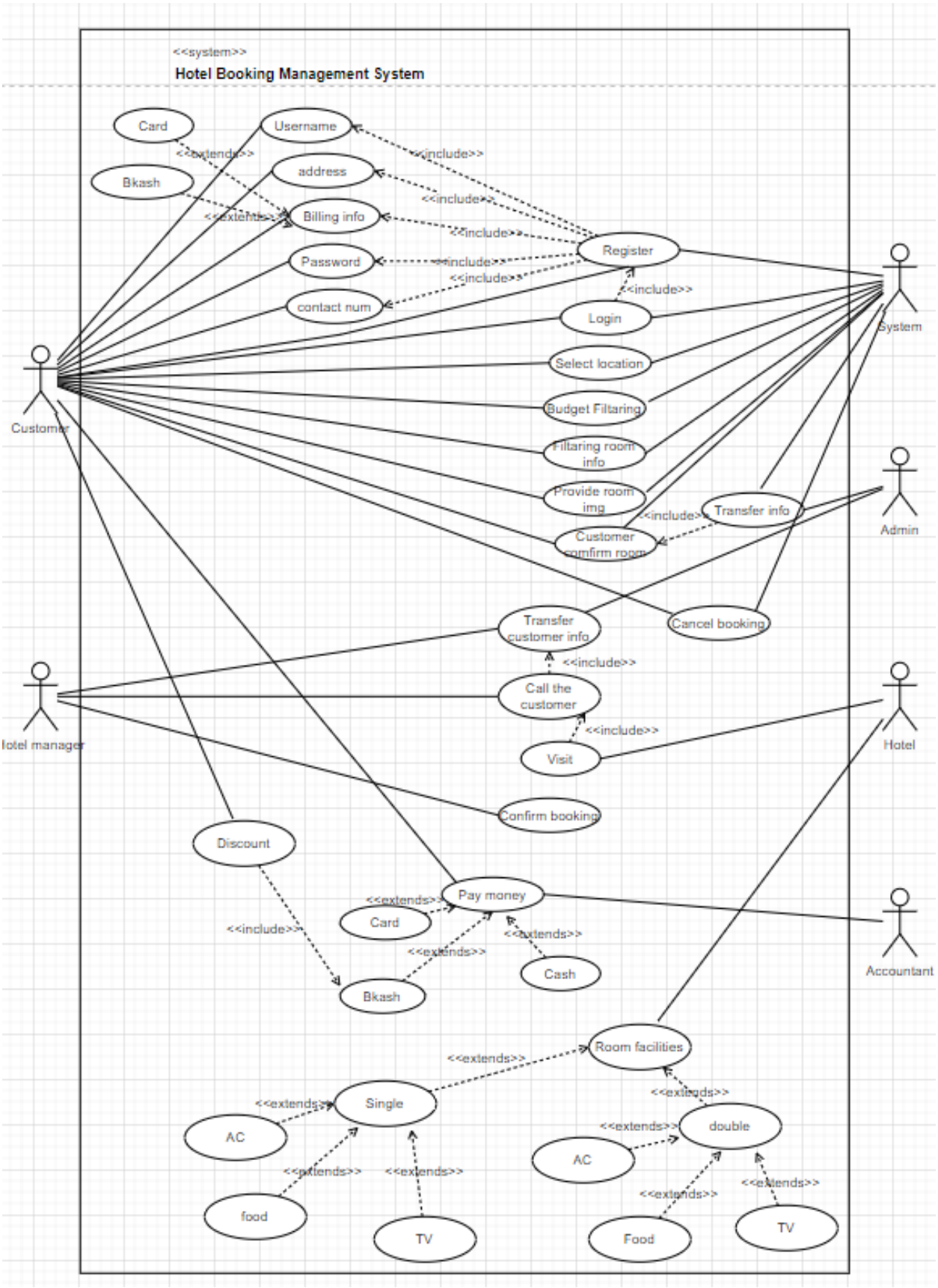
1. Customer Information: They can get customer information from that room and can pass it to the system for other work.
2. Call Customer: If they want to talk with customer they can call customer from this software.
3. Receive booking: If any customer book any room manager will get a notification that this customer need this room then manager can check that room is available or not, if the room available manager also can book that room for customer.

CHAPTER 2: UML DIAGRAM

2.1 Use Case Diagram

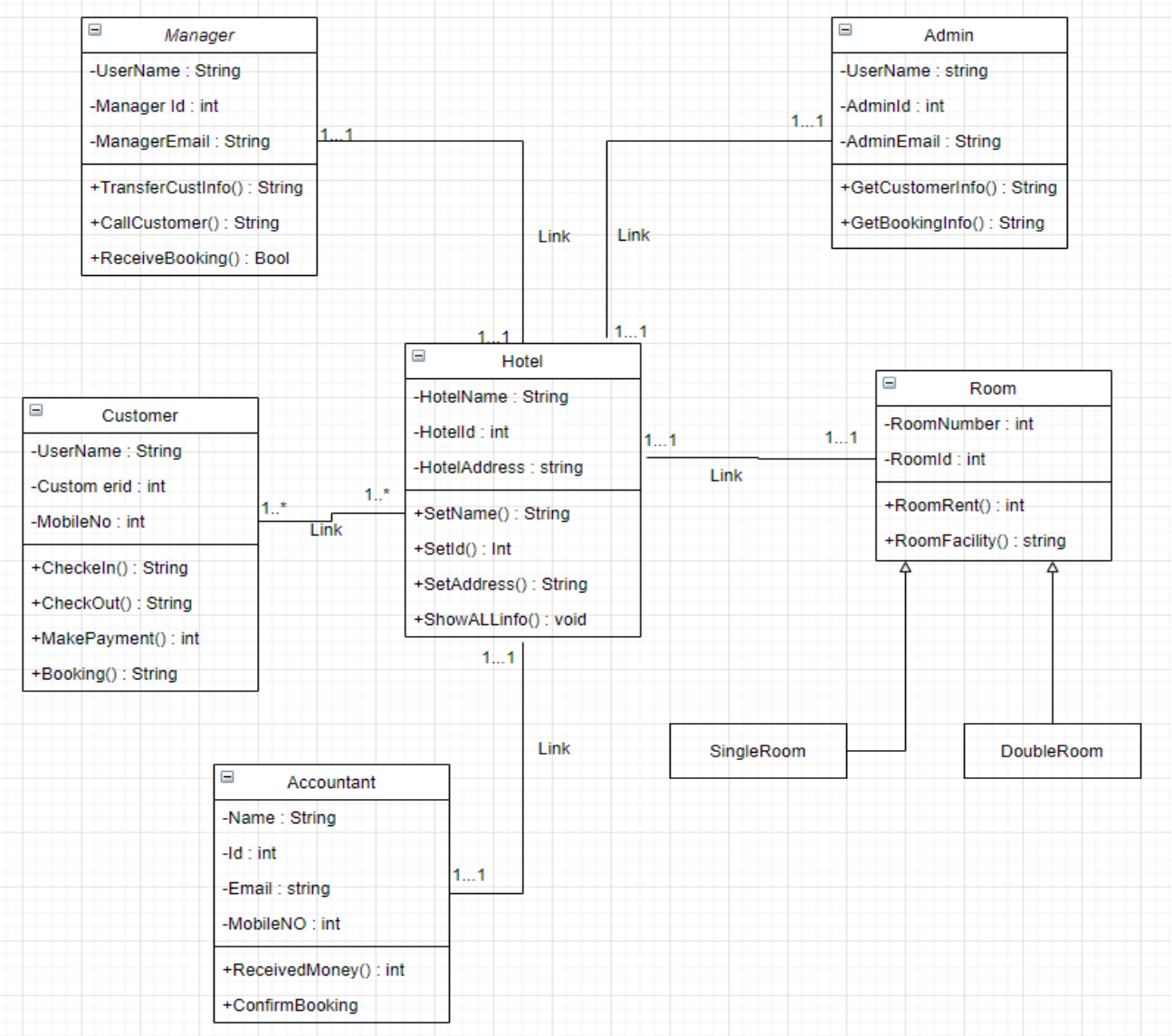
- Does the use case narrative represent the Scenario of the use case diagram?
  Yes, the following use case diagram showing all the scenarios.
- Does the Use Case diagram include the major use cases, actors who perform the use cases and the relationships among the use cases needed to deliver by the system?
  Yes, the Use Case diagram include the major use cases, actors who perform the use cases and the relationships among the use cases needed to deliver by the system.

Case Study: As well already we give a short description of our hotel booking management system there are two primary user which is customer and hotel manager and the secondary user are Accountant and Admin. Customer and Hotel Manager will use there features and all features are approved by the Admin and Account. Login System will generate by the system and billing system generate from the accountant. When a customer wants to pay, accountant will give them a receipt to pay and also ask to if they are paying the bill in card or cash or bkash.


<<system>>
Hotel Booking Management System
Card
Username
Bkash
address
Billing info
Password
contact num
Register
Login
Select location
Budget Filtaring
Filtaring room info
Provide room img
Customer comfirm room
Transfer info
Cancel booking
Transfer customer info
Call the customer
Visit
Confirm booking
Discount
Pay money
Card
Bkash
Cash
Room facilities
Single
AC
food
TV
double
AC
Food
TV
<<include>>
<<extends>>
Customer
System
Admin
Hotel manager
Hotel
Accountant

2.2 Class Diagram

- Does the class narrative represent the Scenario of the class diagram?
  Yes, the class narrative represents the Scenario of the class diagram.
- Does the Class diagram include the major classes (attributes, operations) and the relationship among the classes needed to deliver by the system?
  Yes, the class diagram includes four major classes and the relationship among the classes needed to deliver by the system.
  Case Study: Each customer has unique id as well as name and a mobile number and his/her account is linked to the hotel which denotes to the management system. Customer can check in or out and book room also make payment through the system. Admin can control also change the hotel system who is linked with hotel and has unique id, name and email address.
  Manager has also unique id and email address who receives customer information from admin through the system, receives booking from customer and confirms the booking by calling them. Every room has its own number and id which refers to two types of rooms: 1.single and 2.double which has two types of rent and facilities.
  Hotel has its own unique id, name and address and it utilizes the management system which is linked with all the other users of the whole process.
  Accountant receives the payment from the customer after the customer checks out through the system. Accountant also need to save the data of payment by using his/her unique information saved in the system.



2.3 Sequence Diagram

- Does the sequence narrative represent the Scenario of the sequence diagram?

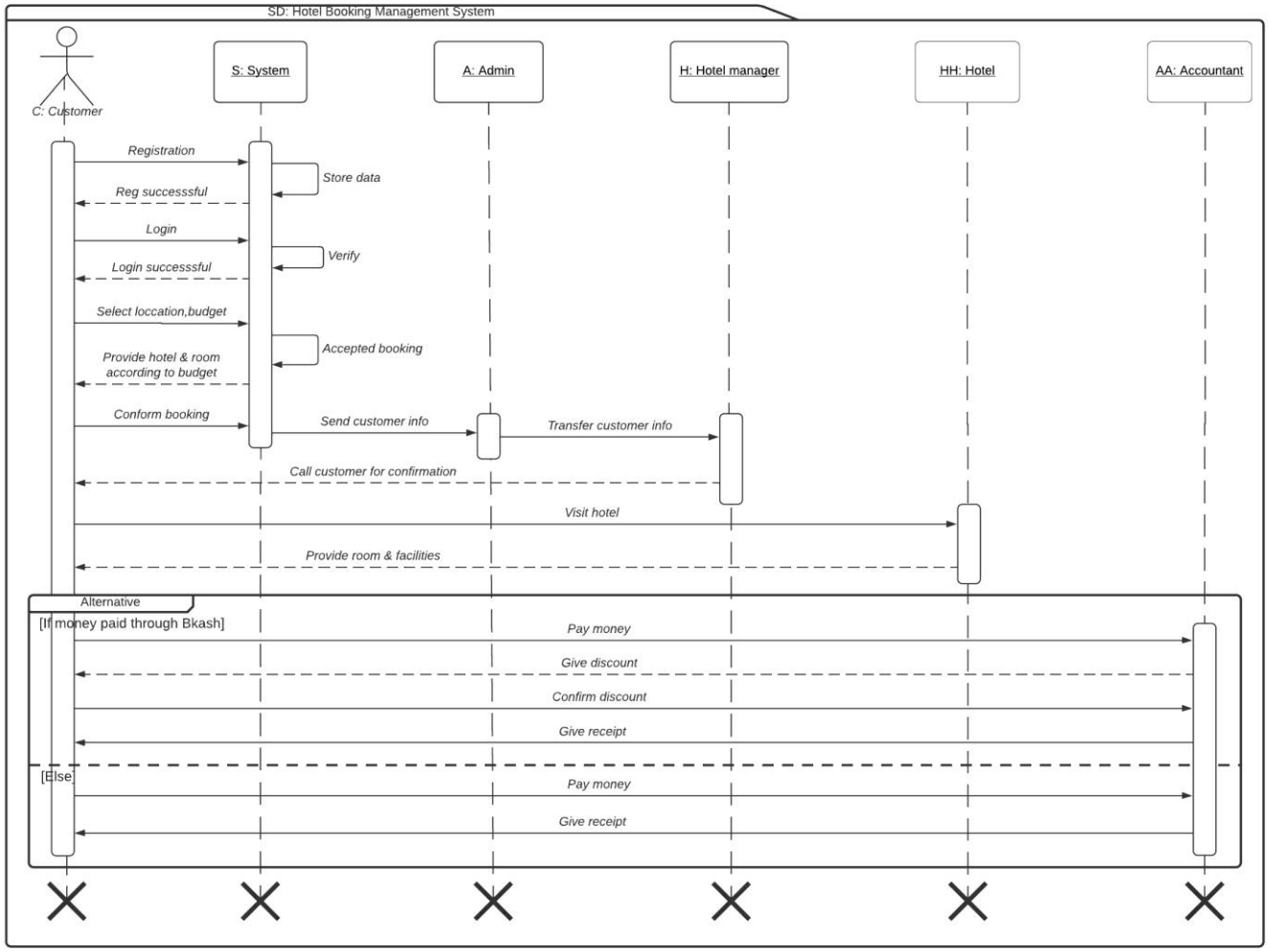
  Yes, the sequence narrative represents the Scenario of the sequence diagram.

- Does the Sequence diagram include the sequence of the major activities needed to deliver by the system?

  Yes, the sequence diagram includes the sequence of the major activities needed to deliver by the system.

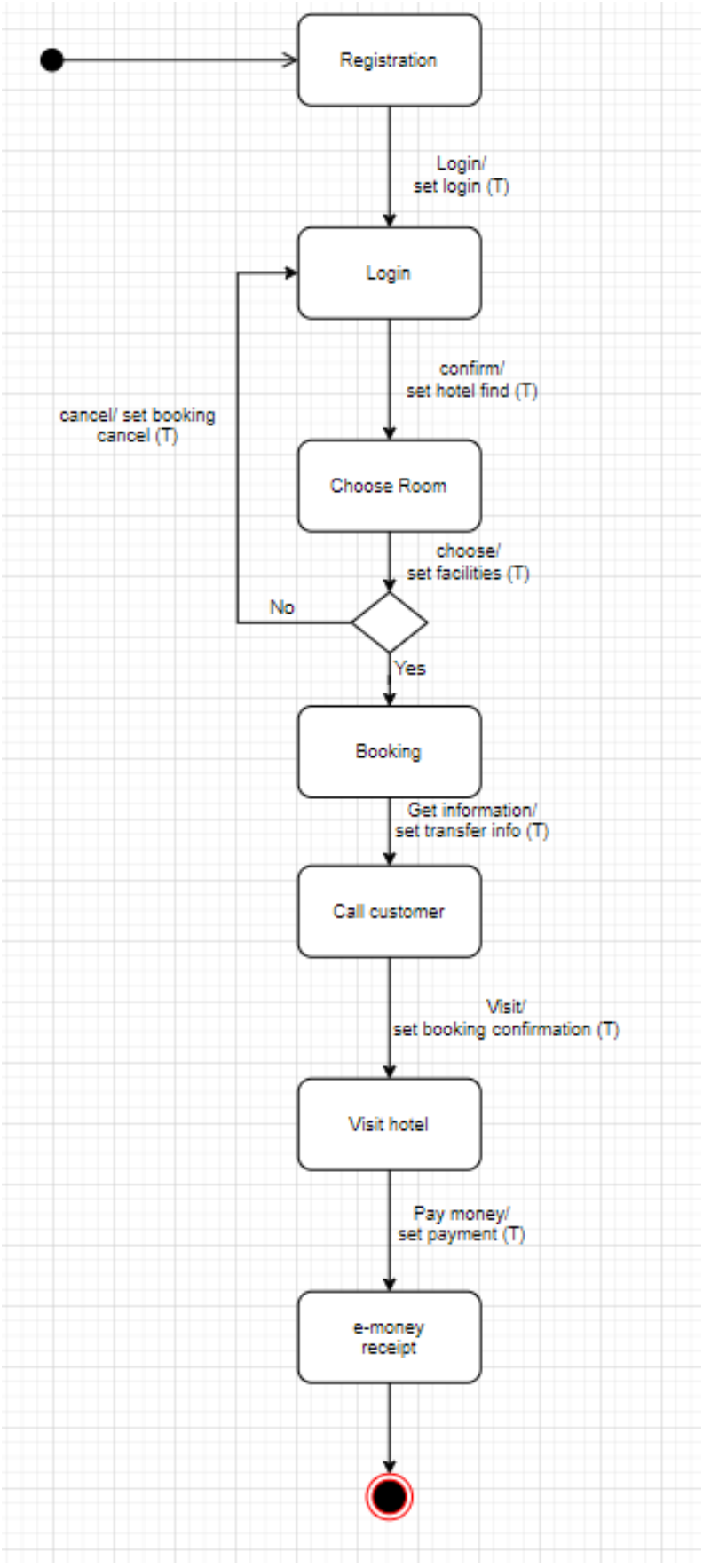
  Case Study: A customer have to register to the system in order to have the authority to book a room of the hotel. The system stores the data of the customer and a registration successful message is sent to the customer. After being registered, the customer must

login to the system and the system will verify and notify the customer. Location and budget will be selected by the customer and the system will provide hotel/rooms according to the budget. Customer has to confirm booking to get a room that suits their affordability. The system accepts the booking and sends the customer information to Admin. Admin transfers the customer information to the hotel manager and the hotel manager calls the customer to confirm the booking. Customer visits the hotel according to their booked time and the hotel provides them their chosen room and facilities. The accountant receives the money paid by the customer and if the customer pay their money through bKash, they get a discount that they must confirm. When the customer pay their money through card or cash they do not get any discounts. The accountant gives the customer a receipt of their bill.



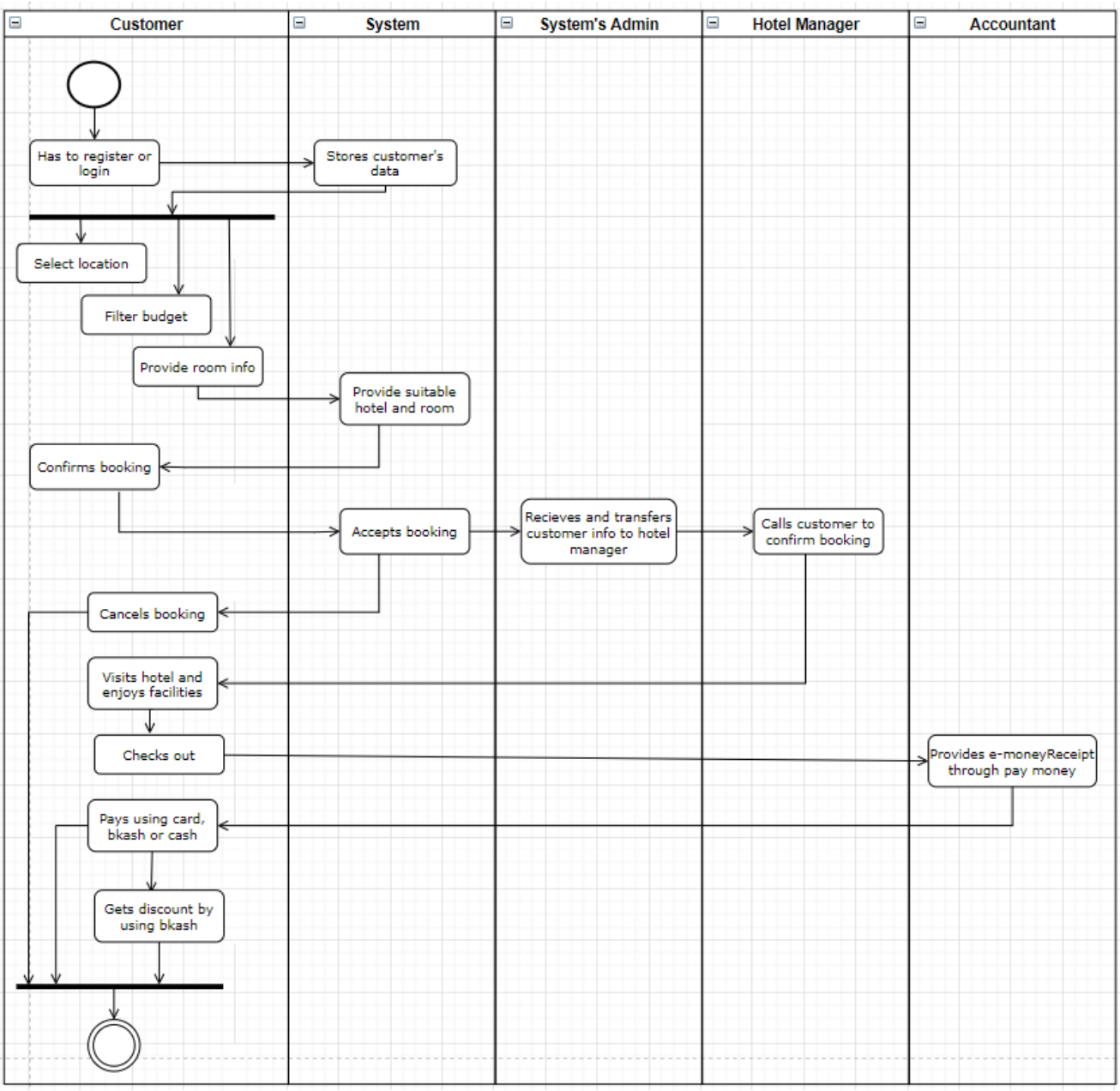
2.4 State chart Diagram

- Does the State chart narrative represent the Scenario of the state chart diagram?
  Yes, the State chart narrative represents the scenario of the state chart diagram
- Does the State chart diagram include the major states needed to deliver by the system?
  Yes, the State chart diagram includes the major states needed to deliver by the system.
  Case Study: At initial state, registration must be done. Customer must be logged in to the system after registration to book any room. Room and facilities must be chosen by the customer. If the customer is not satisfied with the room, facilities and budget etc. the booking can be cancelled. Otherwise if affordable, the customer must confirm the booking. The customer will be telephone called by the hotel manager in order to confirm the booking. The hotel will be visited by the customer according to their booked date and time. Finally, payment will be confirmed by the accountant.


Registration
Login/
set login (T)
Login
confirm/
set hotel find (T)
cancel/ set booking
cancel (T)
Choose Room
choose/
set facilities (T)
No
Yes
Booking
Get information/
set transfer info (T)
Call customer
Visit/
set booking confirmation (T)
Visit hotel
Pay money/
set payment (T)
e-money
receipt

2.5 Activity Diagram

- Does the activity narrative represent the Scenario of the activity diagram?
  Yes, the activity narrative represents the scenario of the activity diagram
- Does the Activity diagram include the major activities needed to deliver by the system?
  Yes, The Activity diagram includes the major activities needed to deliver by the system.
  Case Study: The customer has to log in or register and the hotel management system will store the data. The system will select location, filter budget and provide room info according to customer's desire. The system will provide a suitable hotel and room for the following customer. Then the system will ask to confirm booking. If the customer does not accept booking, the booking will be cancelled and operation will end. If the customer accepts booking then the system admin receives and transfer customer information to hotel manager. The Hotel Manager calls customer to confirm booking. After confirmation, the customer visit the hotel and enjoy facilities. When the customer checks out, the accountant provides e-money receipt through pay money. The customer may pay through card or cash or bKash and will get a discount if payment is made through bKash.


Customer
System
System's Admin
Hotel Manager
Accountant
Has to register or login
Stores customer's data
Select location
Filter budget
Provide room info
Provide suitable hotel and room
Confirms booking
Accepts booking
Recieves and transfers customer info to hotel manager
Calls customer to confirm booking
Cancels booking
Visits hotel and enjoys facilities
Checks out
Provides e-moneyReceipt through pay money
Pays using card, bkash or cash
Gets discount by using bkash