Design Document

For

Guest House Booking in NITC

Version 1.0

Prepared by Team **13**:
(Based on SRS Version 1.0)

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Course: CS3004D Software Engineering

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Glossary

Admin	One who have all access to the application. He will be able to see database of application and other features.
Client	One who request for the application to be made. This case it is NITC guest house management staff.
User	One who interact with the application.
SQL	Structured Query language used for managing database

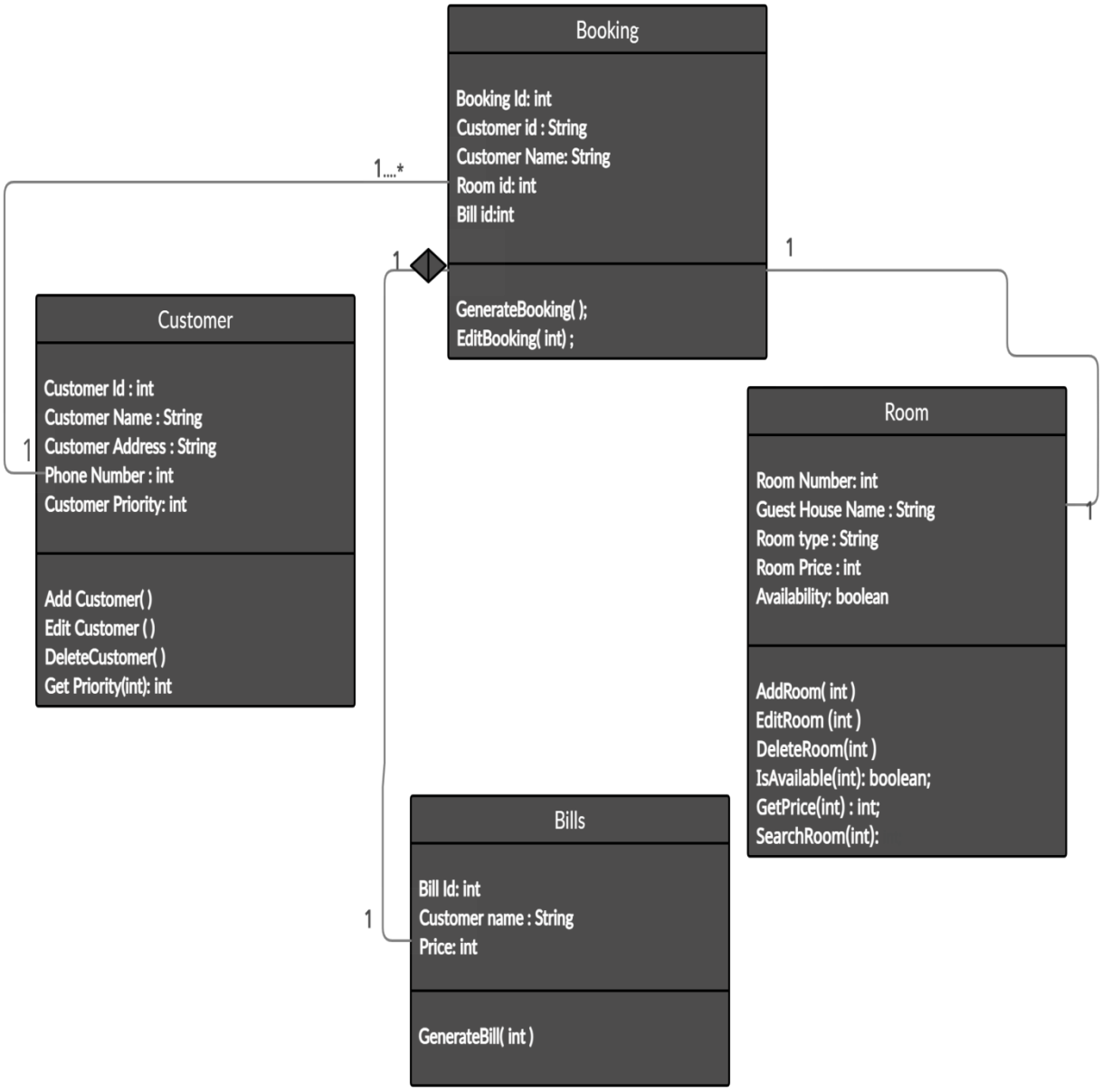
Table of contents

1. Detailed Design through UML diagrams

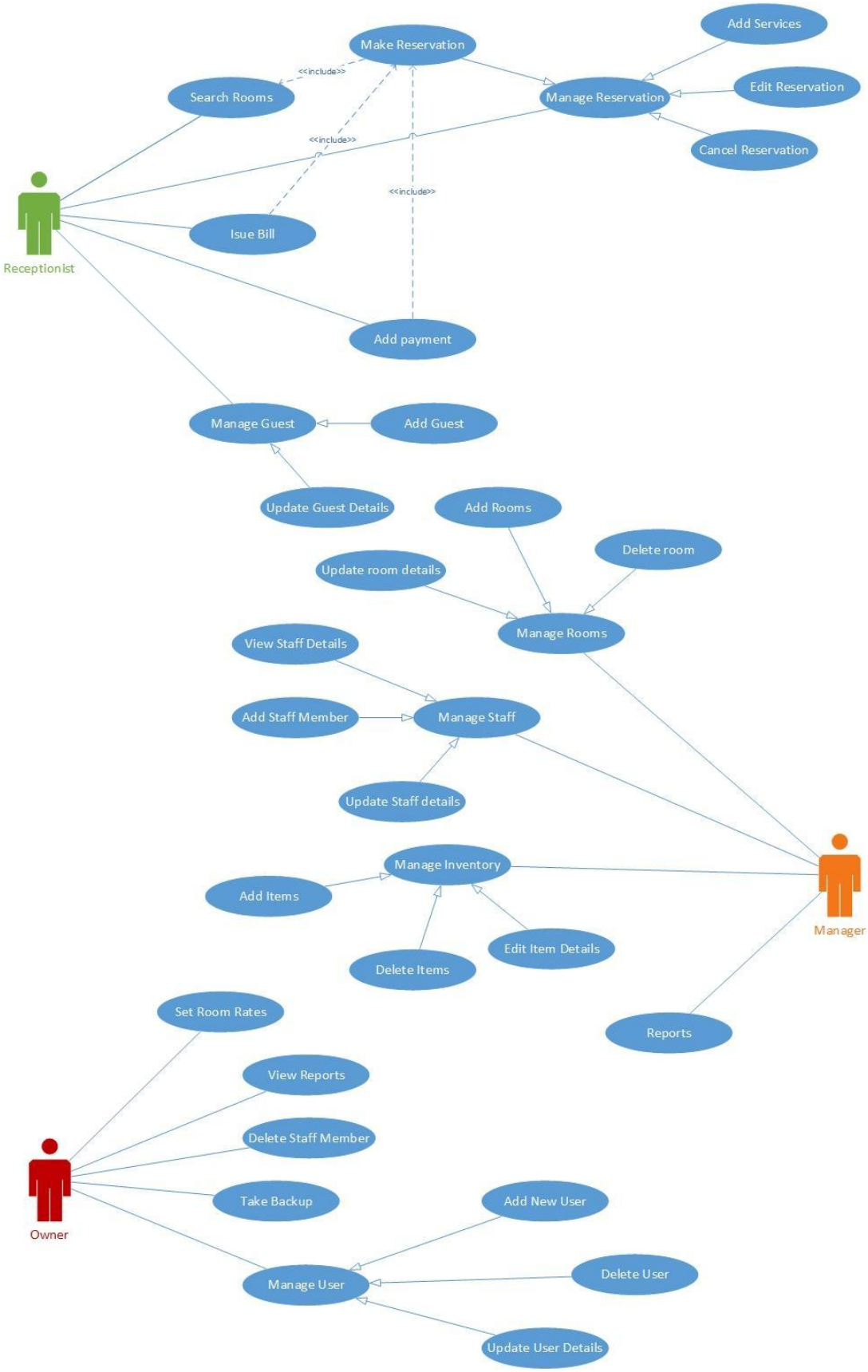
1.1 System model using Class Diagram

This Class Diagram will give us the basic structure of how many classes are made for the given system and how they will interact each other to make our application run properly.

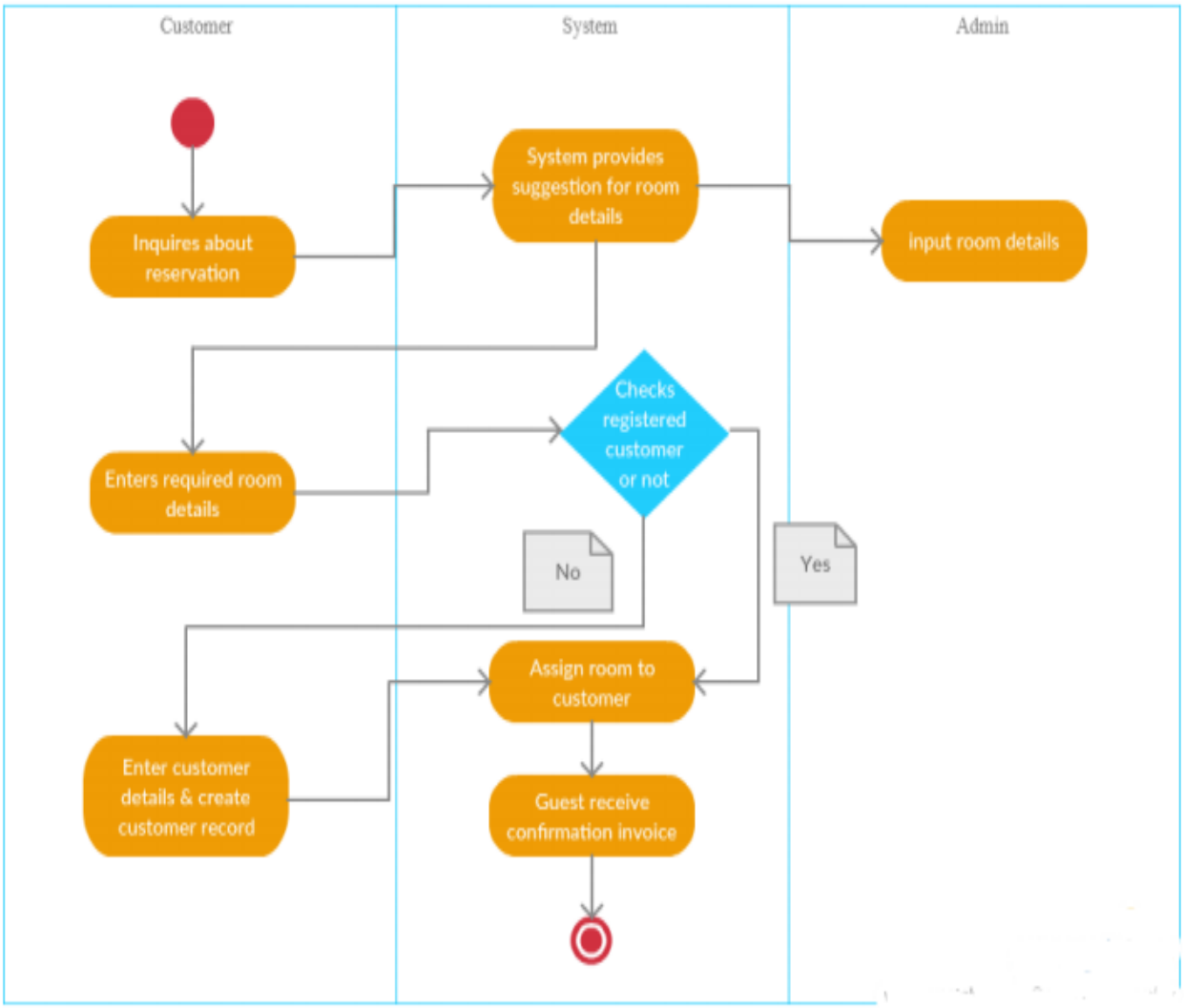
1.1.1 Class Diagram



1.2 Responsibilities – Use Case Diagram



1.3 Static snapshot of the system - Object Diagram

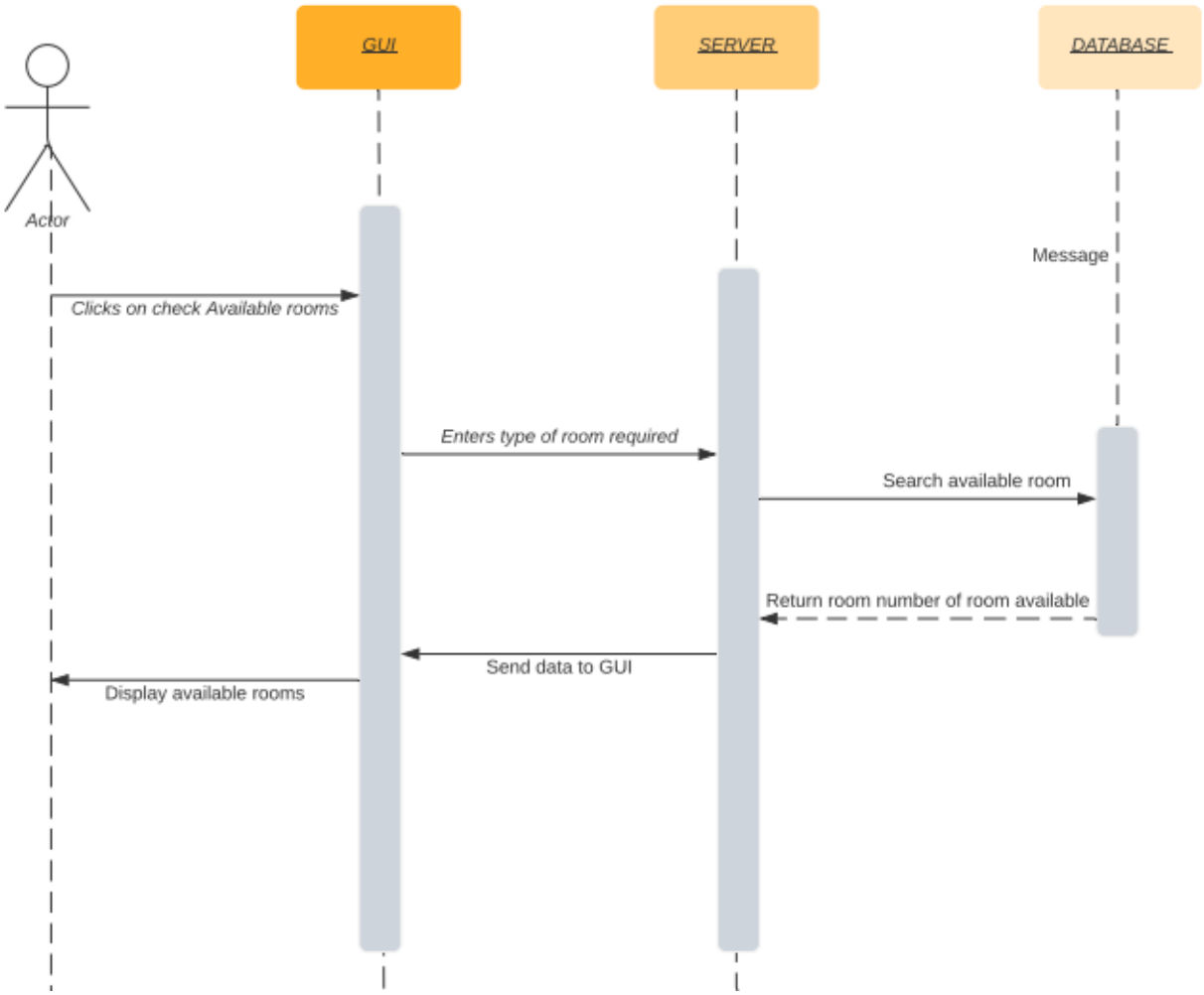


1.4 System Interactions through Sequence Diagrams

This section includes some of the sequence diagram which depicts some interactions in our application. A sequence diagram shows, as parallel vertical lines (lifeline), different processes or objects that live simultaneously, and as horizontal arrows, the messages exchanged between them, in the order in which they occur.

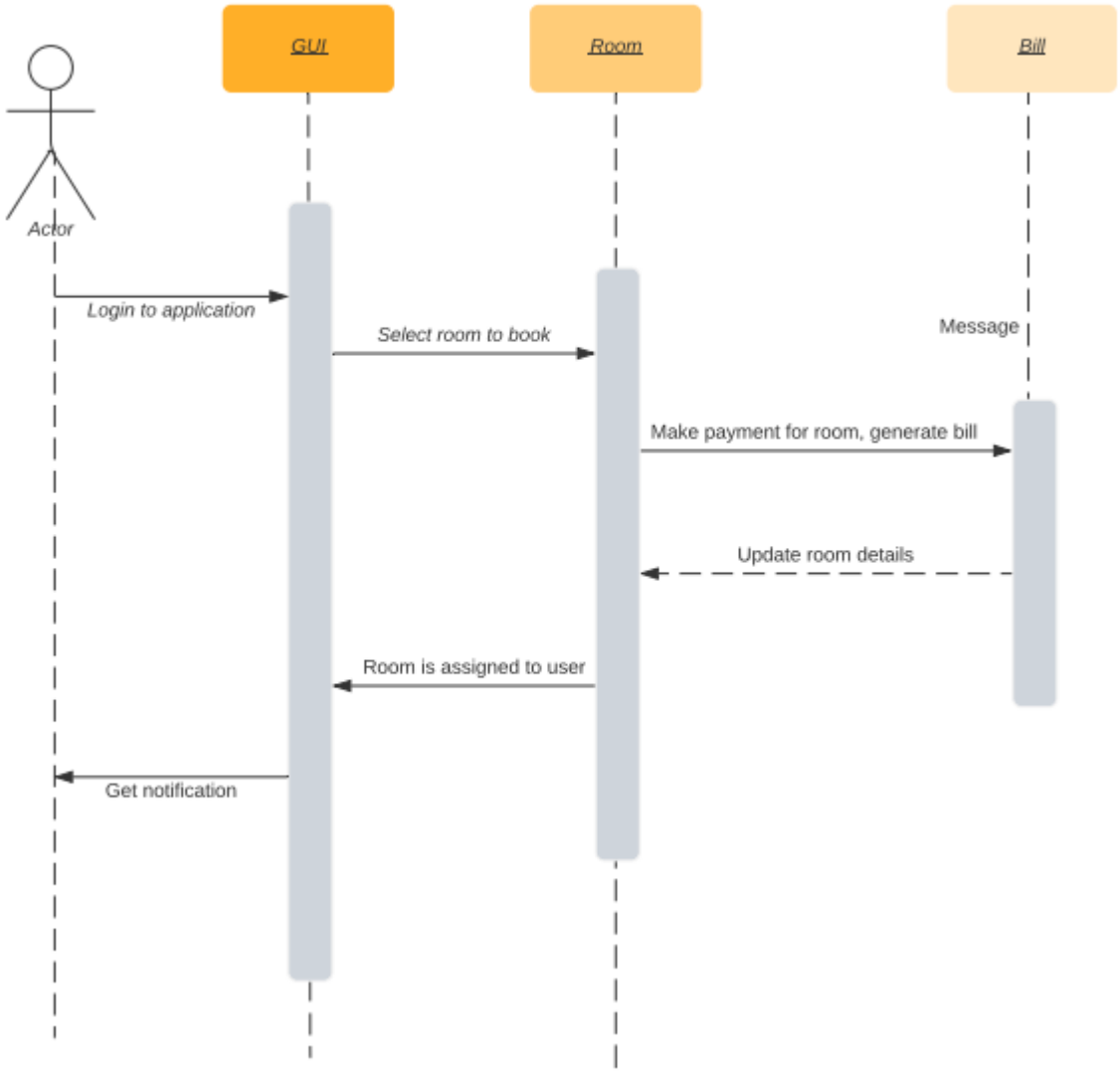
1.4.1 Check Availability – Atul Singh

Used for checking if a room is available or not. Details of available room is retrieved from the database and displayed to user.



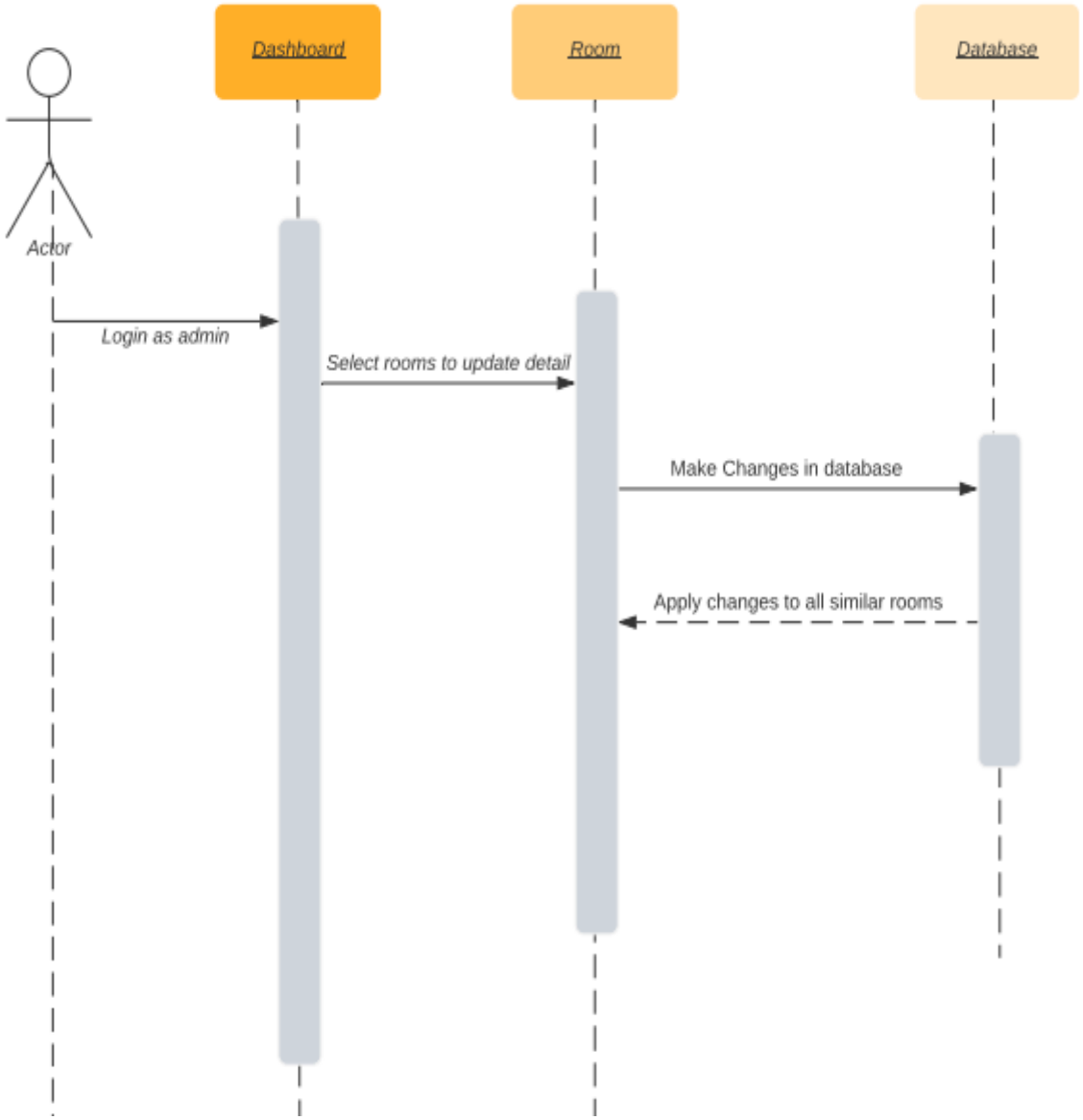
1.4.2 Make Reservation– Aditya Jha

Add new reservation. Hotel Guest Details updated to include current Guest. Also the room status will be changed to unavailable. On successful booking user receives notifications on registered phone number.



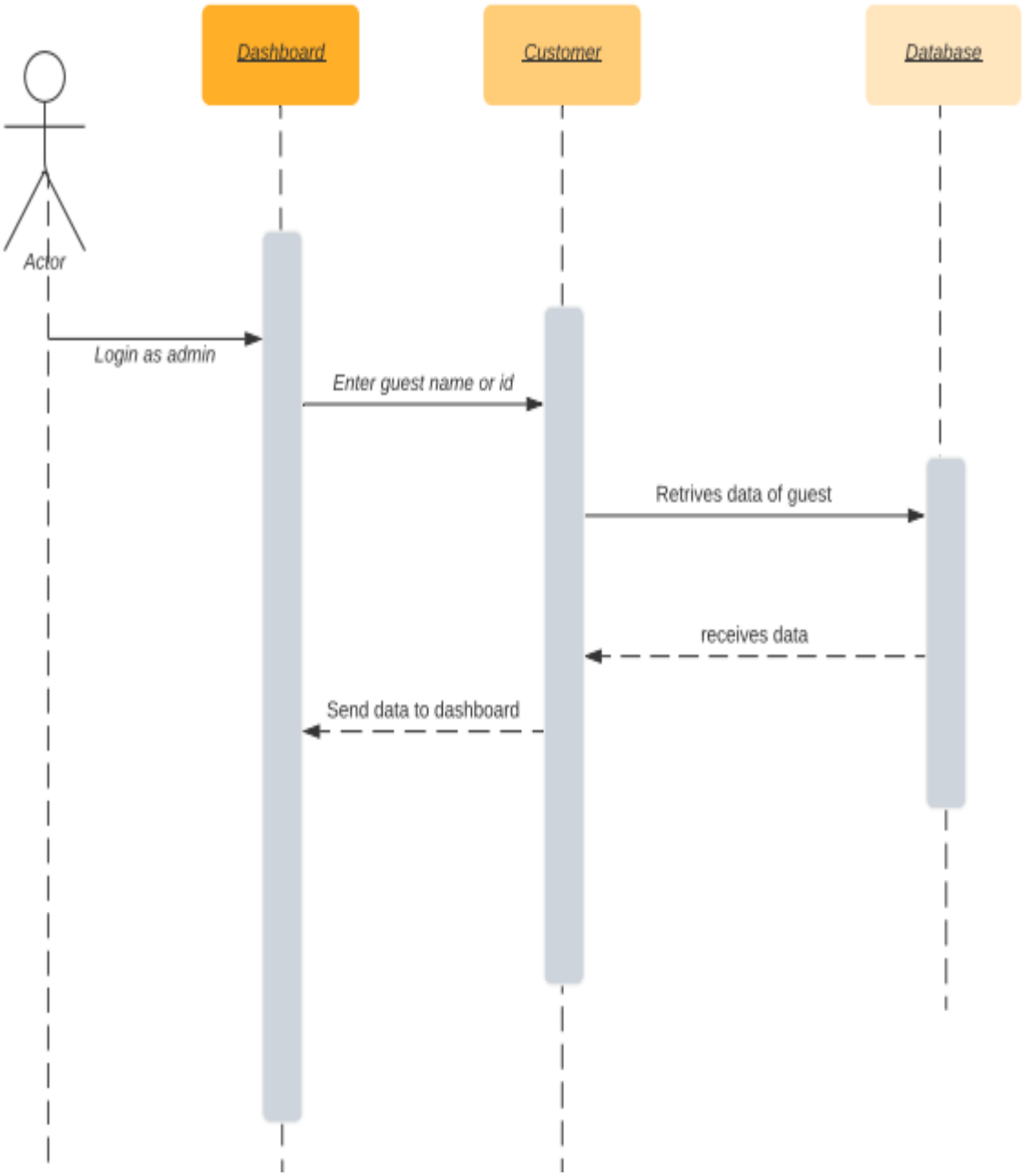
1.4.3 Set Room Rates– Ritik Gautam

Set rates to different types of room available in guest house. Set prices according to age of guest also if required. User who has admin credentials only can perform this task. Also changes made in rates should be applied to all rooms and displayed in the application as fast as possible.



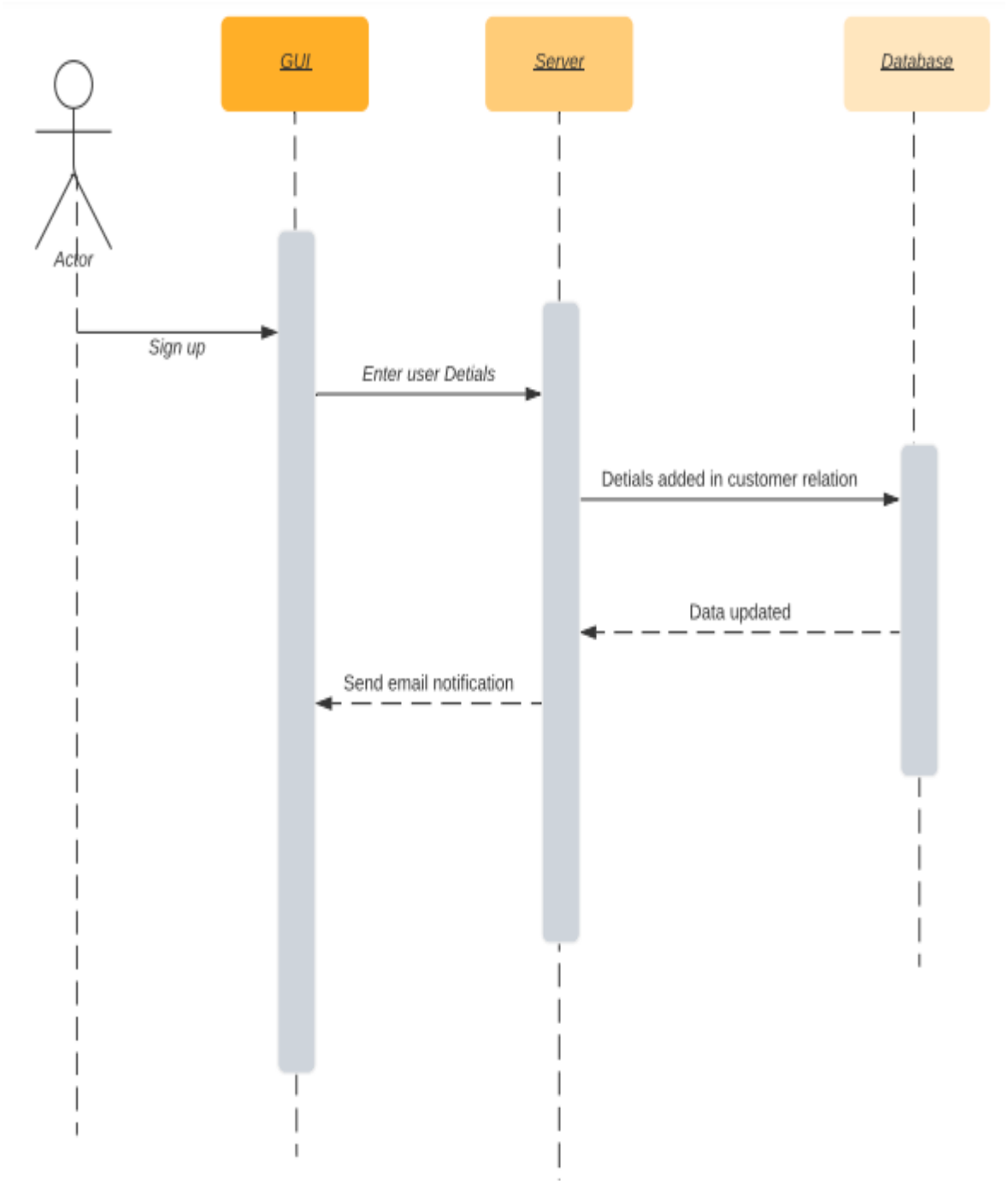
1.4.4 Guest Search –Amit Kumar Panja

This task can only be performed by admin. Admin enters guest name or Id and gets his details. If required he can update or delete his details from database.



1.4.5 Add Guest – Palash Bajpai

The new guest is added to database in customer class. This task can be performed by the receptionist if guest books room at office or user can directly use app and signup there to use the application. Users details should not be already present in the database.

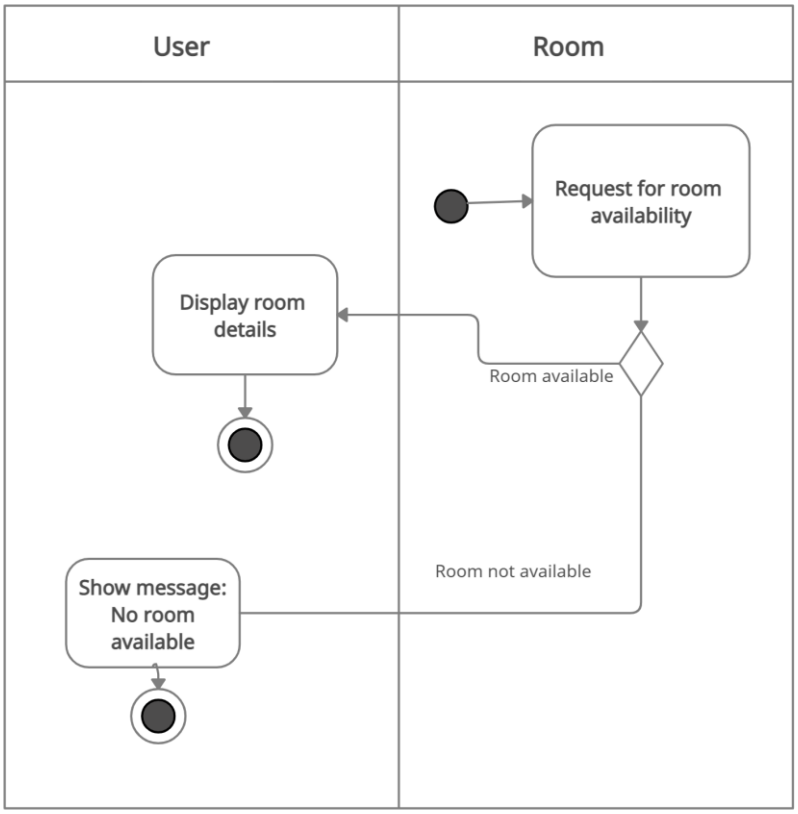


1.5 Control and Data Flows through Activity Diagrams

Activity Diagrams describe how activities are coordinated to provide a service which can be at different levels of abstraction. Typically, an event needs to be achieved by some operations, particularly where the operation is intended to achieve a number of different things that require coordination, or how the events in a single use case relate to one another, in particular, use cases where activities may overlap and require coordination. It is also suitable for modeling how a collection of use cases coordinate to represent business workflows.

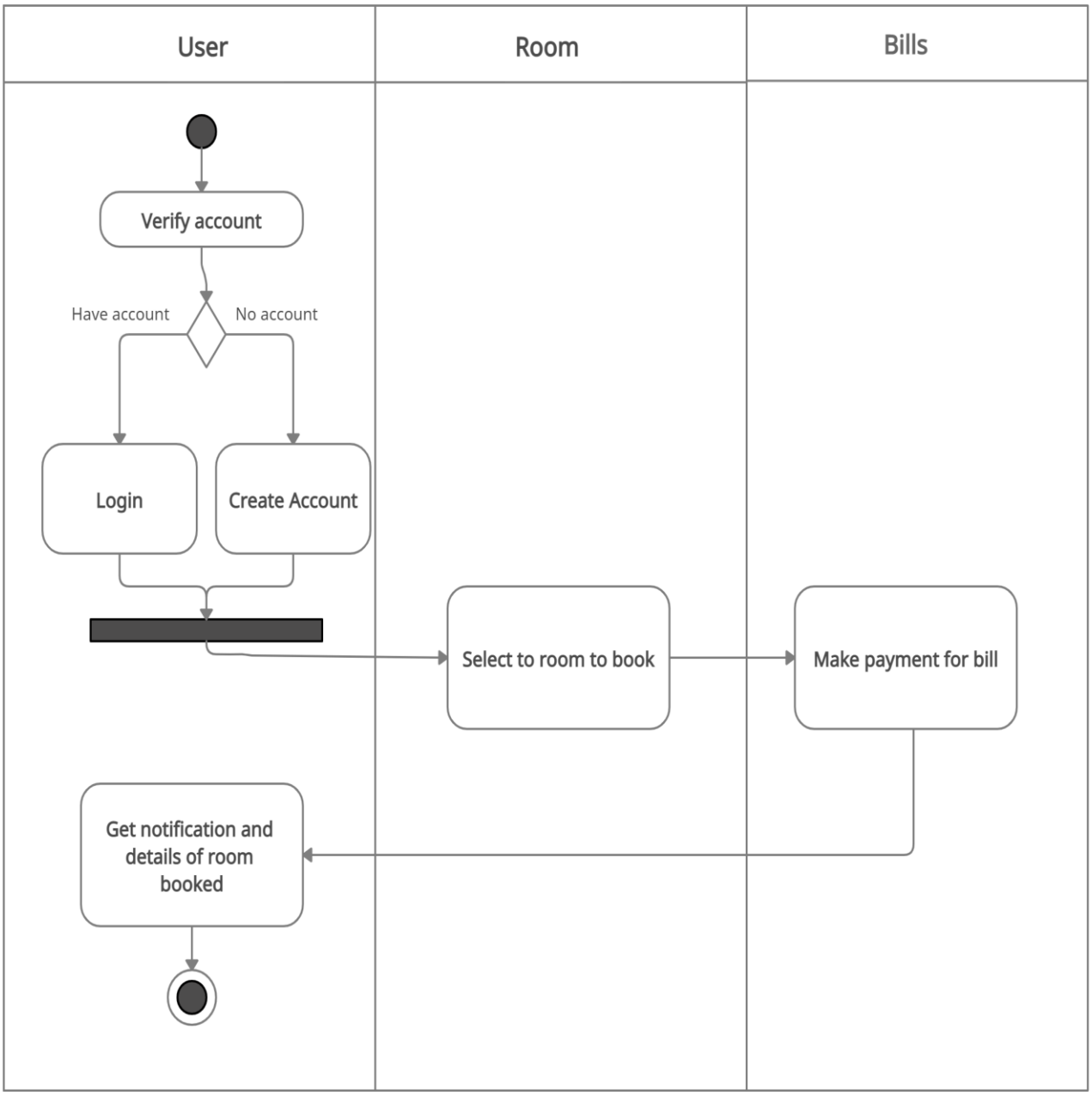
1.5.1 Check Availability – Atul Singh

To check room availability.



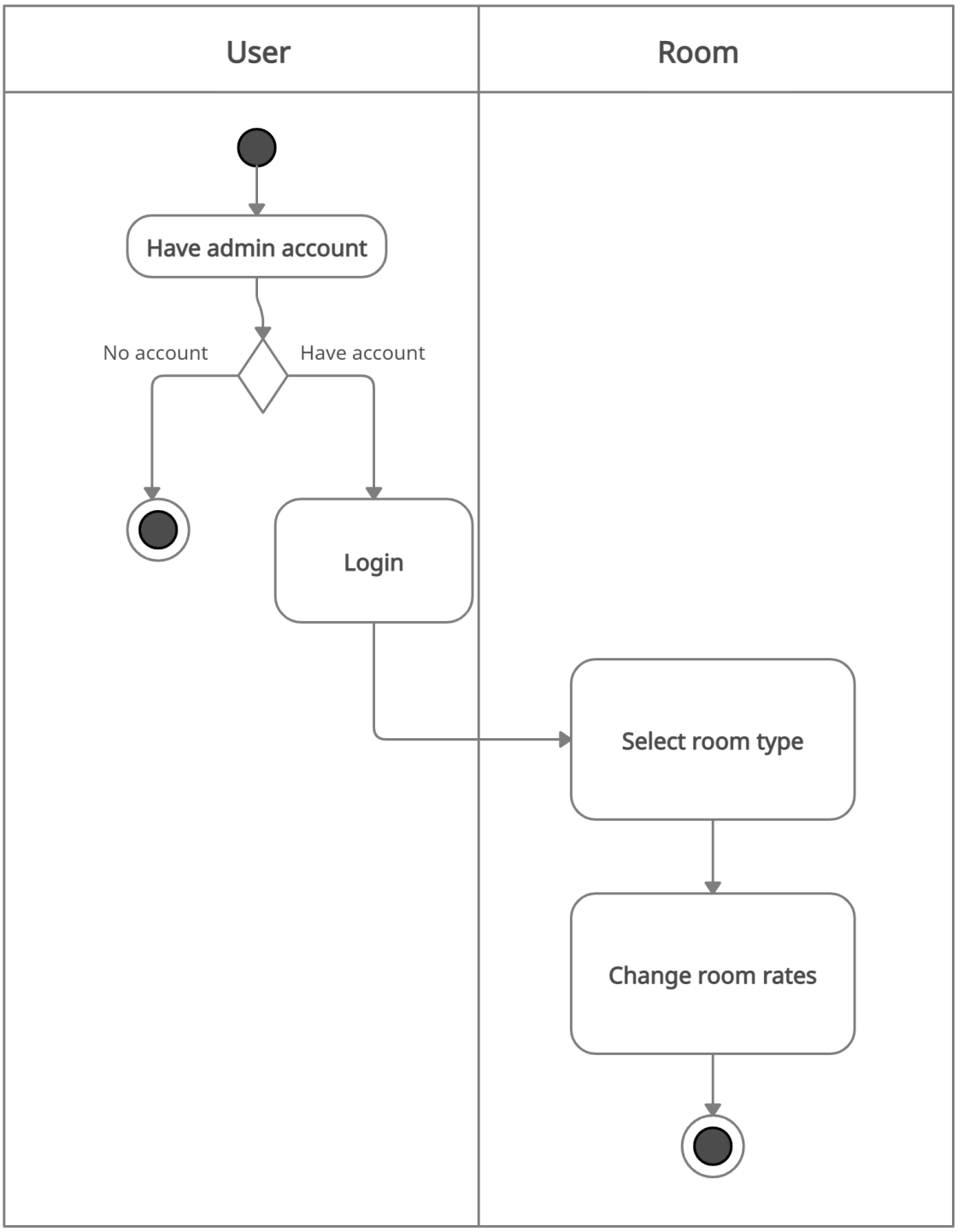
1.5.2 Make reservation – Aditya Jha

Used for reserving a room. User should be login if he wants to book a room in guest house. User may select room according to his needs. After selecting a room he should do payment to book it.



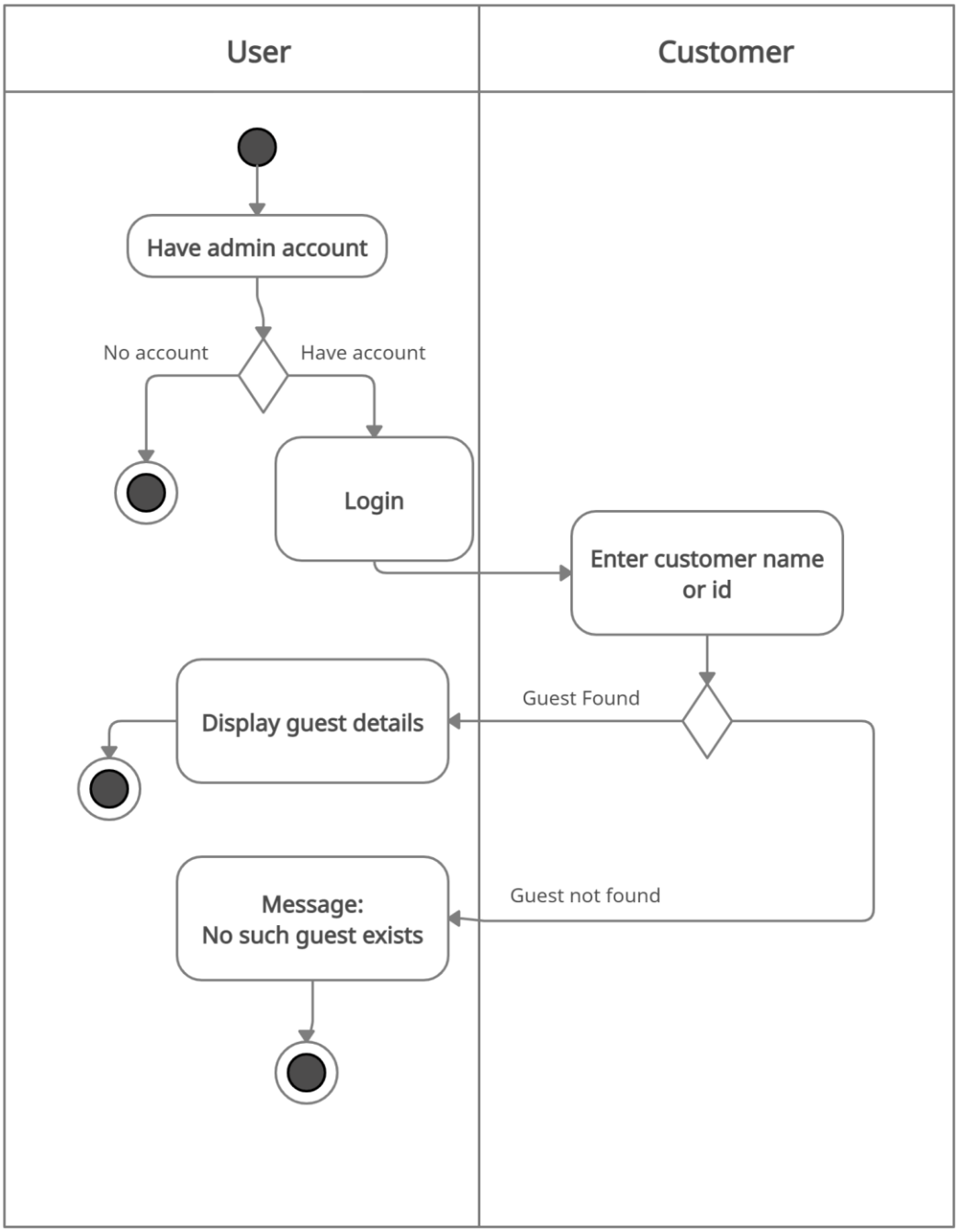
1.5.3 Set Room Rates – Ritik Gautam

Changes made in rates should be applied to all rooms and displayed in the application as fast as possible. This task can only be performed by the admin. For our system admin is hostel management committee since they handle guest house of NITC.



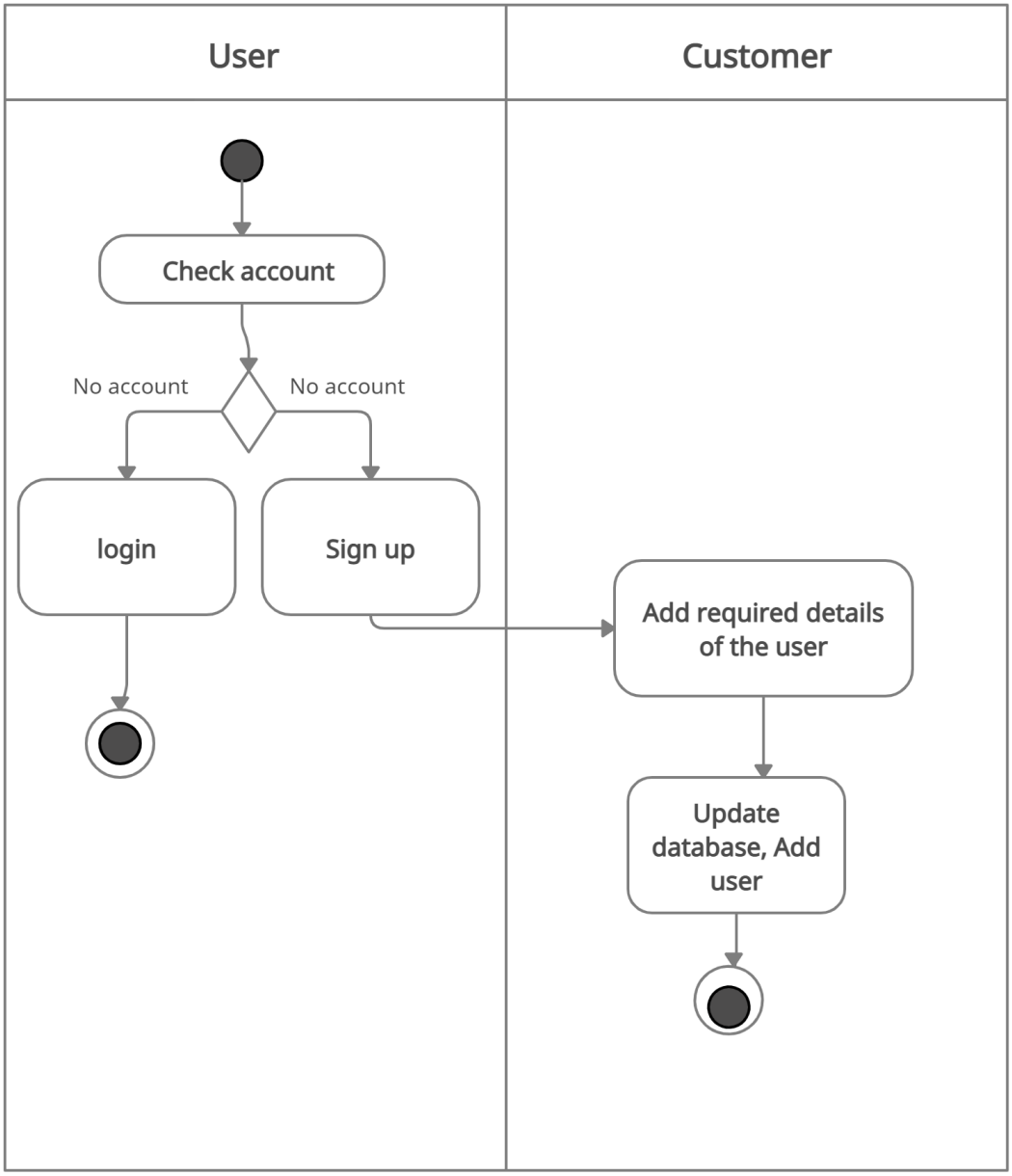
1.5.4 Guest Search- Amit kumar Panja

This task can only be performed by the admin and receptionist. Search a guest by name or id .If guest is available display his/her details else show an error message.



1.5.5 Add Guest – Palash Bajpai

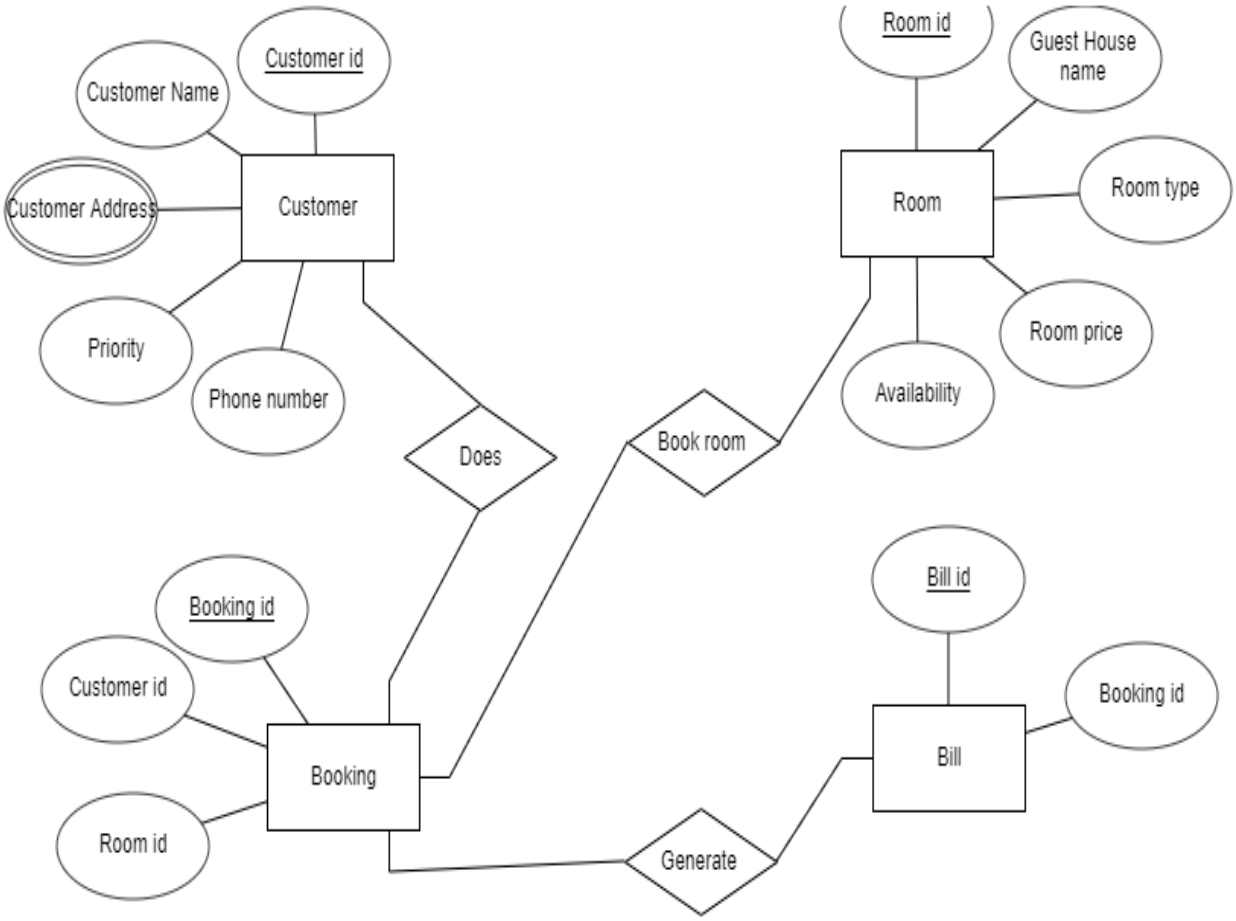
This task can be performed by the receptionist if guest books room at office or user can directly use app and signup there to use the application. Has high priority since guest from our database are only allowed to make reservation. Adding new guest updates the database.



2. Database Design

2.1 ER Diagram

An ER diagram shows the relationship among entity sets. In terms of DBMS, an entity is a table or attribute of a table in database, so by showing relationship among tables and their attributes, ER diagram shows the complete logical structure of a database.



3. Implementation Plans

3.1 Technology Stack

Front End :- Html, Css, Javascript
Back End :- PHP
Database :- SQL

3.2 Work Estimates

Description	**Time Estimate (Hours)**
Basic Designing and Usecase and Object Model	2 hrs
Sequence and Activity Diagram	3 hrs
ER diagram and other finishing task	2hrs

References

1. https://www.quickfms.com/guest-house-management-software - To see what features to add in application
2. "IEEE Recommended Practice for Software Design Descriptions," in IEEE Std 1016-1987 , vol., no., pp.1-16, 13 July 1987, doi: 10.1109/IEEESTD.1987.122643.

Appendix A - Activity Log

Meeting details

1. 2 April 2021:- from 2PM to 4PM
2. 3 April 2021:- from 5PM to 8PM
3. 6 April 2021:- from 3PM to 5PM

Individual contributions

1. Palash Bajpai :- Group lead, decided features to be added in the application and made ER diagram for the application to be designed. Designed a sequence and activity diagram .
2. Amit Kumar Panja :- Designed class diagram for the application. Also designed a sequence and activity diagram.
3. Atul Singh :- Made use case model for the application by using use cases used in SRS made earlier. Made a sequence and activity diagram.
4. Aditya Jha :- Made object diagram for the application. Also made a sequence and activity diagram.
5. Ritik Gautam :- Updated use cases to be used in all diagrams to be made. Helped in deciding features to be added in the design. Designed a sequence and activity diagram.