

1. Hotel Management System

a. SRS Document:

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	<p><u>LAB-1</u></p> <p>Q. Software Requirements Specification (SRS) for Hotel Management System</p> <p>1. Introduction</p> <p>1.1 Purpose of this Document</p> <p>This SRS defines the functional and non-functional requirements. It provides necessary details, step-wise working and important information needed to create an efficient and robust system.</p> <p>1.2 Scope of this Document</p> <p>System will must be able to perform operations :-</p> <ul style="list-style-type: none">→ Online Bookings and Reservations→ Early Check-in Option and lost→ Billing and Payment System→ Restaurant Order Management→ Identity Proof Validation <p>Estimated cost of development = 9600 \$ and 800 hours are required.</p> <p>1.3 Overview</p> <p>The hotel management system will be a web-based application to enable users to use services provided by the hotel.</p> <p>2. General Description</p> <p>User must be able to register himself / herself with the application. These details can be verified during login and user input - location, date, checkout-date, Number of person's is entered. Based on data the matches with highest commonalities are displayed.</p>	

User can also refer to reviews and read others experiences to know more about the hotel if confirmed the user can book the hotel by paying entire amount/charges through any payment gateway.

3. Functional Requirements

Reservation Management

Allows user to reserve or cancel reservation confirmation email and payment receipt.
Avoid multiple bookings for same room
Provide for upgrades if rooms are vacant.

Room Management

Display all Do's and Don'ts before booking
Assign room to guest on arrival and update status.

Staff Management

Record check-in and check-out times
Weekly check of all staff by supervisor,
feedback must be entered.

4. Interface Requirements

Regional language option must be available.
VR representation of each room
Error handling must be considered.
Centralized system so that data consistency can be maintained.

5. Performance Requirements

The response for any query must be less than 1 second and should run on minimum

hotel.

8GB RAM system to ensure smooth functioning.
Error rate shouldn't exceed 10%.

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6. Design Constraints

The algorithm must run in $O(n \log n)$ time complexity. UI must be interactive and user-friendly to increase engagement and user retention. Application cannot run on LINUX operating system.

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7. Non-Functional Requirements:-

System must use RSA-2048 hashing for data security and must not be dependent on one architecture.

System must be able to process and handle 10,000 users simultaneously and if needed must be able to handle more.

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8. Preliminary Schedule and Budget

The project must be completed within 6 months and budget allocated is 9600\$. If any changes are made then reserve budget can be used.

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23/9/2024

b. Advanced Class Diagram:

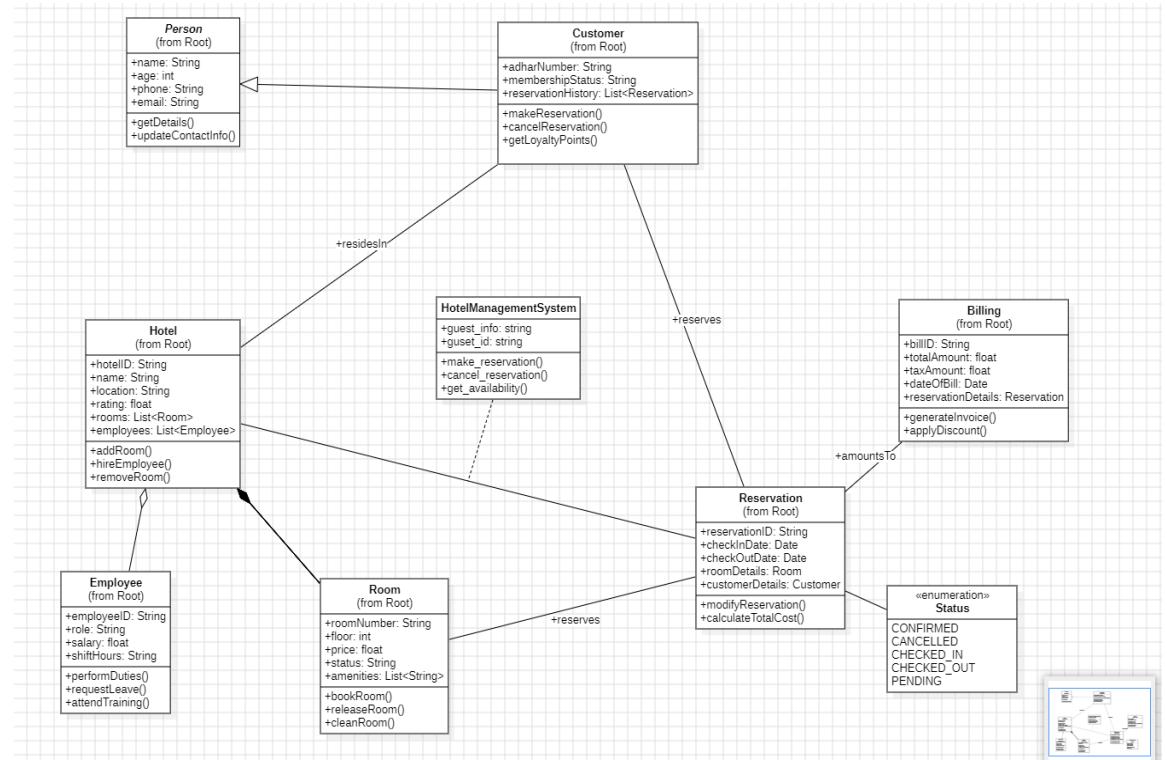
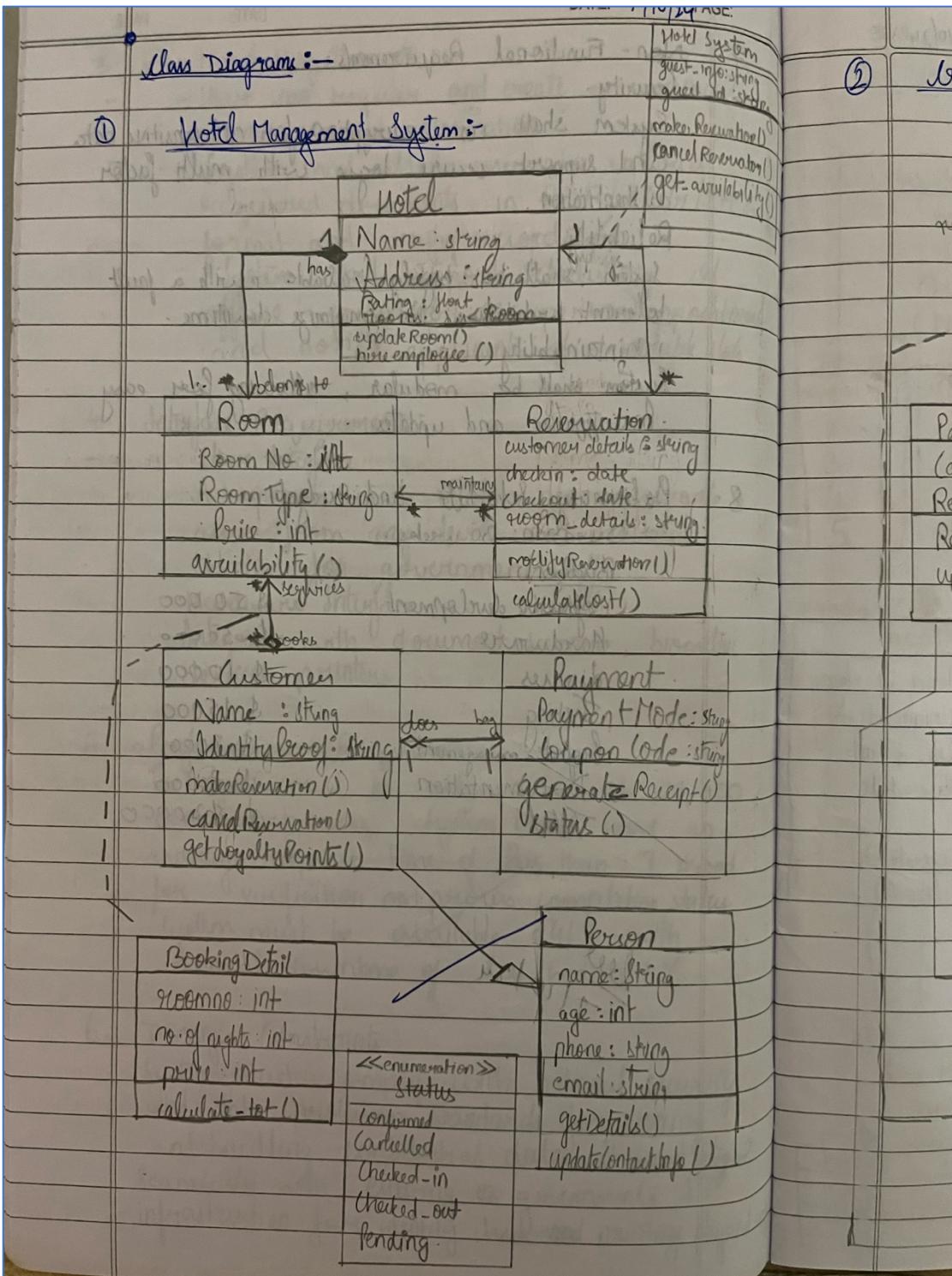


Fig 1.2 : Advanced Class Diagram for hotel management system

- **Person and Customer:** The Person class serves as a base for Customer, which includes details like membership and reservation history. Customers can make and cancel reservations.
- **Hotel:** The central entity managing Rooms and Employees. It includes methods to add or remove rooms and hire staff.
- **Room:** Represents individual rooms in the hotel, with details like room number, price, status, and amenities. Rooms can be booked, released, or cleaned.
- **Employee:** Represents hotel staff, with details like role, salary, and methods to perform duties or request leave.
- **Reservation and Billing:** The Reservation class handles booking details like check-in/check-out dates, room, and customer information. The Billing class generates invoices and applies discounts for reservations.
- **Hotel Management System:** Manages reservations, cancellations, and room availability, acting as the core system.



c. Advanced State Diagram:

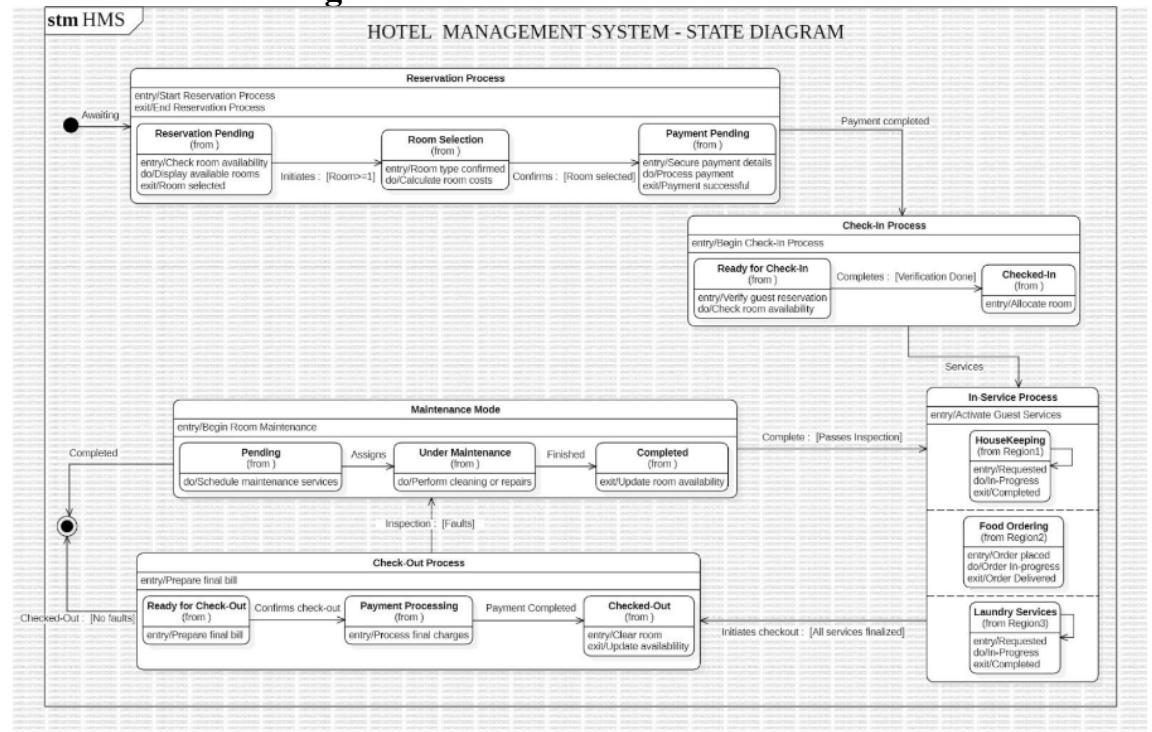
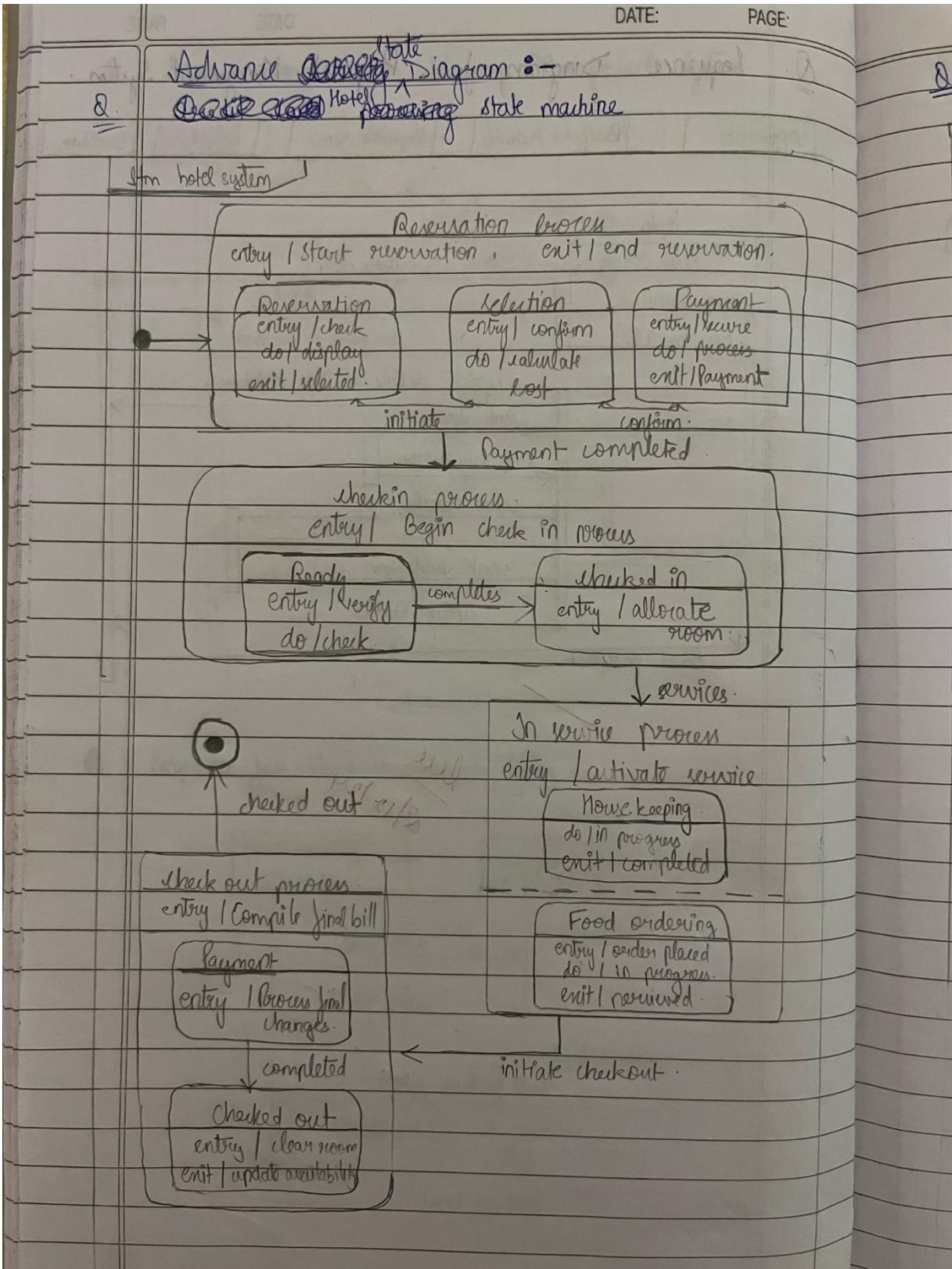


Fig 1.3



d. Use Case Diagram:

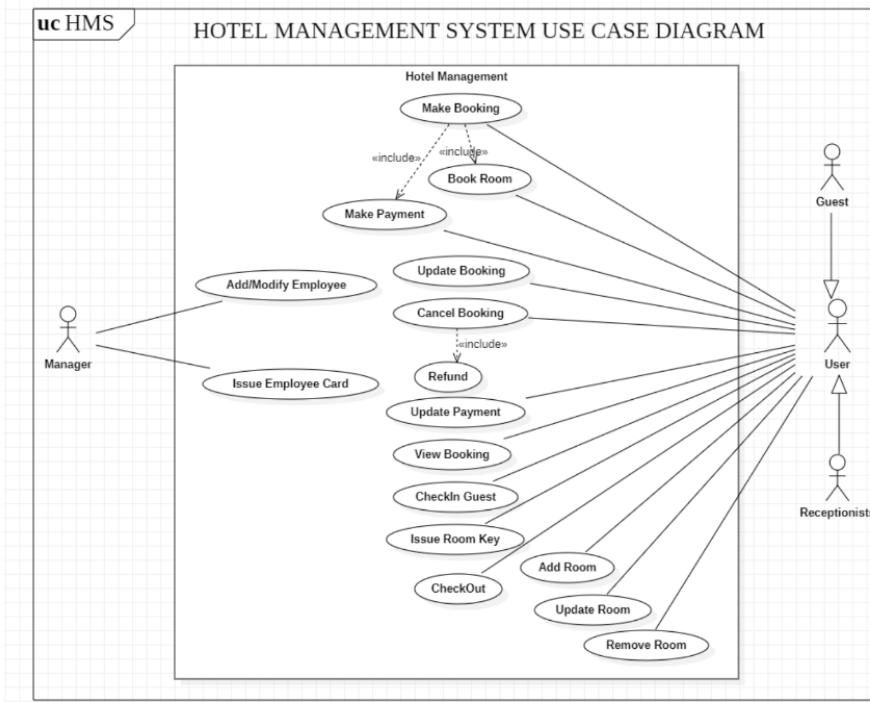
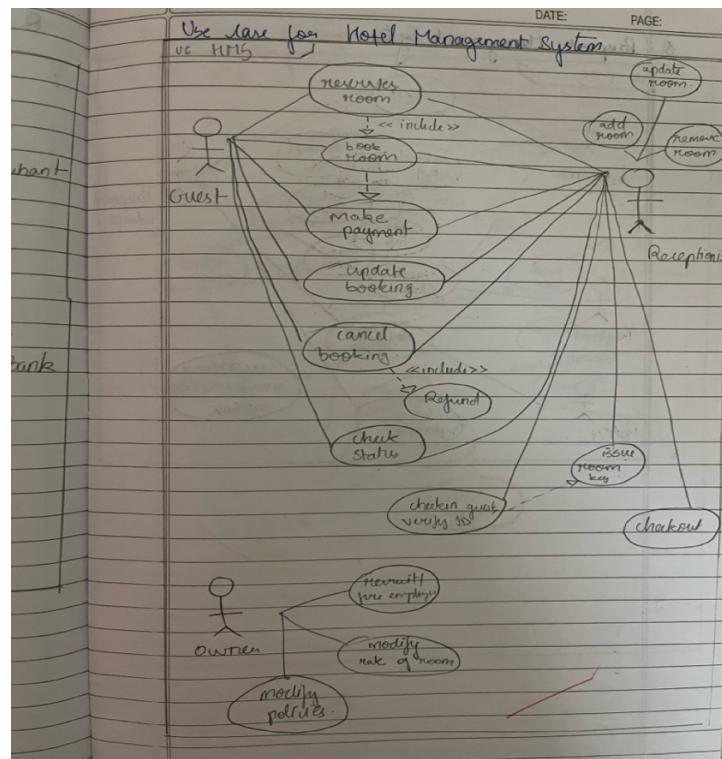


Fig 1.4



e. Sequence Diagram

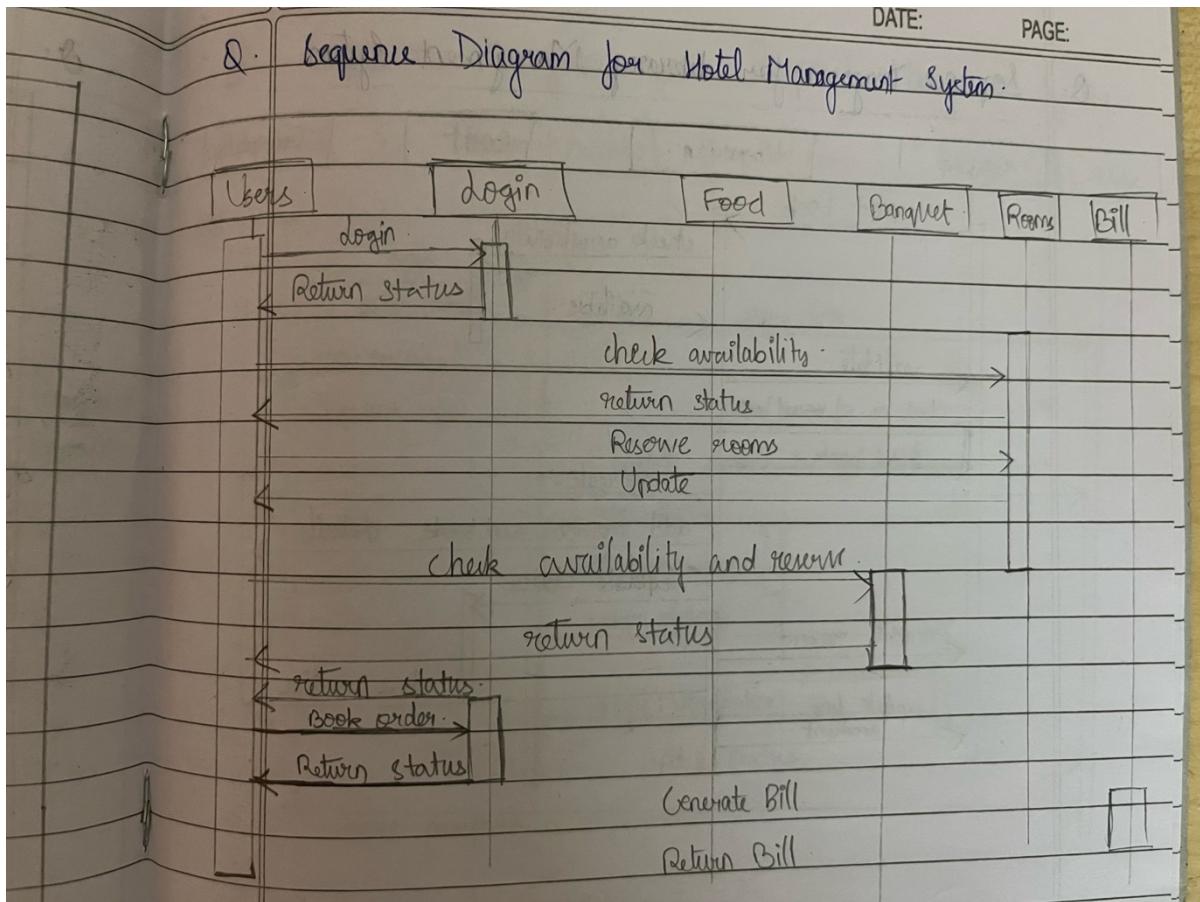
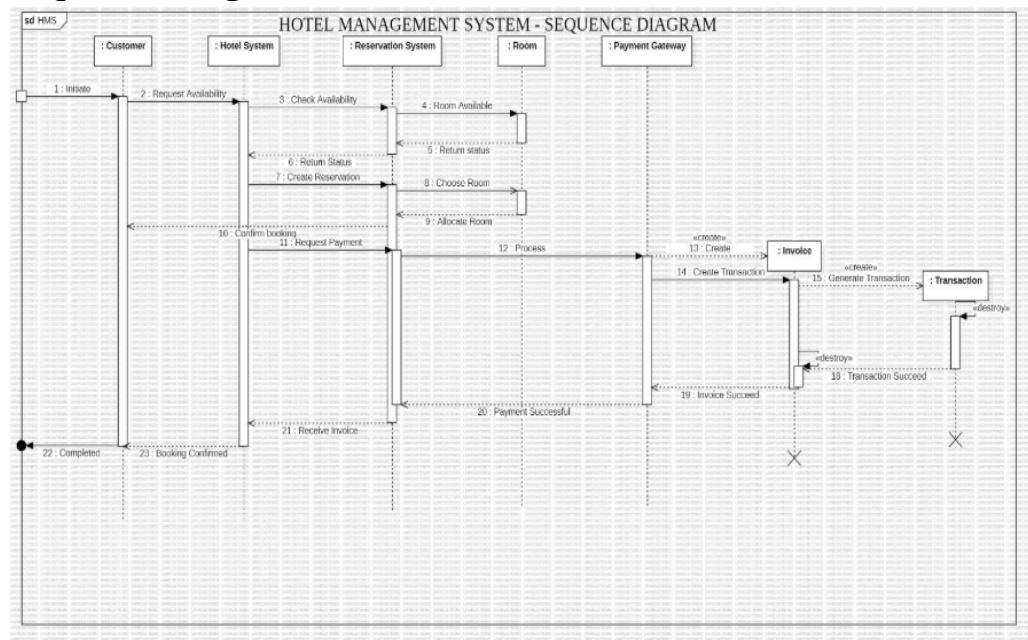


Fig 1.5

f. Activity Diagram:

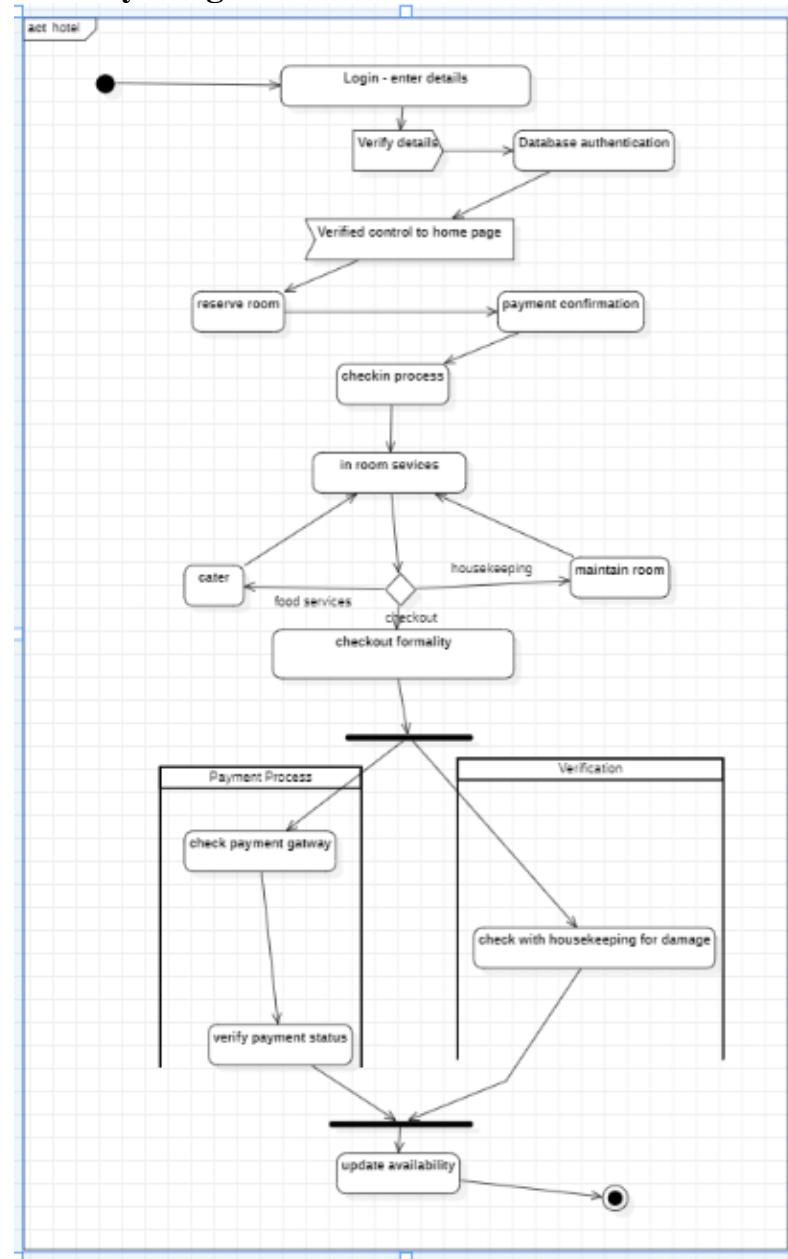


Fig 1.6

