



SAVITRIBAI PHULE PUNE UNIVERSITY

A PROJECT REPORT ON

“Online Hotel Booking Website”

SUBMITTED TOWARDS THE

FINAL FULLFILLMENT OF THE REQUIREMENTS OF

BACHELOR OF COMPUTER APPLICATION (SCIENCE)

SUBMITTED BY

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UNDER THE GUIDENCE OF

PROF: PRITI JADHAV



SWARAJ COLLEGE OF ARTS COMMERCE AND SCIENCE

PUNE - 411043

Academic Year 2025-2026

Certificate

DECLARATION

I hereby declare that the project titled "**ONLINE HOTEL BOOKING WEBSITE**"

submitted by me is a record of original work carried out by me under the guidance of my project guide. This project has not been submitted to any other university or institution for the award of any degree, diploma, or certificate.

I further declare that all the information and data included in this project are true and correct to the best of my knowledge.

Place: Pune

Date: _____

Student Name: DEEPALI SANDIP MANDHARE

Signature: _____

ACKNOWLEDGEMENT

Doing a project study involves a great deal of encouragement, innovative ideas and support from different people. After all success is the epitome of hard-work, perseverance, steadfast determination and most of all encouraging guidance. This project done for "Training & Development" was a knowledge gathering experience and opened a vast frontier of practical aspect of theoretical knowledge.

I take this opportunity to express my heartiest thanks to Dr. Bharat Jinturkar who is the Principal of college. I express and deepest gratitude to Prof. Priti Jadhav for providing unwavering support throughout my course.

I am extremely indebted for her consultations, despite her busy schedule. I express my sincere gratitude to all the staff of Swaraj College of Commerce and Computer Studies for providing me useful assistance in my way for the successful completion of this project.

I am very thankful to Prof. Priti Jadhav for giving me attention and time in guidance and kindly pointing out every required detail in project throughout the completion of my project.

DEEPALI S MANDHARE.

ABSTRACT

The Online Hotel Booking Website is a web-based application developed to provide an automated platform for hotel room reservations. The primary goal of this project is to simplify the booking journey by allowing users to check room availability and book stays online.

Developed with a focus on modern web standards, the project uses JavaScript and Bootstrap for a dynamic UI and MongoDB for storing persistent data. Key modules include user registration, a searchable room catalog, and a dedicated administrative panel.

The system provides a user-friendly interface. The final product demonstrates a secure, scalable solution that reduces manual paperwork, minimizes booking errors, and improves overall operational efficiency.

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1.INTRODUCTION

In today's digital world, customers prefer online services for convenience and time saving. This system helps a hotel manage its room bookings efficiently while providing customers with 24/7 access to reservation services.

An Online Hotel Booking Site is a web-based application designed to allow customers to easily view, check availability, and book rooms. It replaces traditional manual booking methods with a fast, secure, and user- friendly digital system. The system provides to managing the reservation process.

Using the site the user will also be able to track the rate of the rooms, to see the images of the rooms and hotels and will also be able to book the rooms by entering the proper details of the user. The system will able user to add, delete, edit and update reservation. These website simplify the booking process by providing detailed information about properties, including pricing, amenities, location, availability all in one place.

The main objective of this project is to design and develop a centralized, web-based platform that allows users to browse and book hotel rooms online, while providing administrators with a responsive dashboard to manage inventory and reservations efficiently.

2. NEED OF COMPUTERIZATION

In the modern world, computerization plays a vital role in improving the efficiency, accuracy, and speed of various processes in different fields, including hotel. Traditional methods of managing and analyzing customers data are manual, time-consuming, and prone to human errors. With the increasing number of customer and data, it becomes difficult for hotel to handle and interpret information effectively without the use of computerized systems.

Dynamic billing and financial accuracy manual billing is slow and prone to calculation errors, especially when adding taxes, extra services, or sessional discounts. a digital system ensures accurate, transparent billing and generates instant financial reports, which are vital for auditing and long -term business analysis

Comprehensive guest profiling digital data management allows the hotel to store guest preferences (e.g; room type, dietary needs, or past stay history) securely. This enables personalized hospitality, where staff can anticipate guest needs before they arrive, fostering loyalty and improving the overall guest relationship.

Computerization also ensures better data management, easy storage, quick retrieval, and enhanced security of information. It reduces paperwork, saves time, and minimizes human errors. Additionally, the system provides a user-friendly interface that allows users to interact with the system easily without requiring deep technical knowledge.

3. FACT FINDING TECHNIQUES

Fact-finding is an essential part of system analysis. It involves gathering accurate and complete information about the current booking processes, customer expectations, and the challenges faced by administrators. The main objective is to understand the requirements and constraints of the hotel industry so that a more efficient and user-friendly proposed system can be developed.

In the Online Hotel Booking System, the following fact-finding techniques were used:

- **Observation:**

The manual or semi-automated process of handling room bookings, guest check-ins, and check-outs was observed. This helped in understanding how staff manage room availability, track seasonal pricing, and handle guest details, as well as identifying the challenges of overbooking or paperwork delays.

- **Document-Study:**

Existing physical registers, guest invoice copies, and room catalogs were analyzed to understand the type of data maintained. This helped in identifying necessary parameters for the database.

- **Research:**

Research on existing industry leaders like Booking.com, Airbnb, and various boutique hotel websites was carried out. This was done to understand modern user interface standards, effective booking flows, secure payment integration practices, and features like real-time availability and admin dashboards.

By using these fact-finding techniques, comprehensive information was collected that served as the foundation for designing and developing the Online Hotel Booking System. These techniques ensured that the proposed system would meet the actual requirements of both the guests and the hotel administrators while solving the inefficiencies of manual booking.

4. STUDY OF EXISTING SYSTEM

A. EXISTING SYSTEM:

The existing system for evaluating hotel booking is primarily manual and relies on traditional record-keeping methods. The existing system is manual system. This system requires more time for the getting customers. In the existing system all the tracking of booking is done manually.

Key Characteristics of the Existing System:

- **Manual Data Handling:**

Many existing systems rely on physical ledgers , registers, and diaries to record guest check-in, check-out, and room assignments, are recorded manually.

- **Delayed Confirmation:**

There is no “instant confirmation”. The customer must wait for a staff member to confirm the room status before the booking is finalized.

- **Limited Operating Hours:**

Booking are often restricted to the hotel’s business hours. If a customer wants to book a room at midnight and no one is at the desk, the sale is lost.

- **Limited Data Analysis:**

There is no automated method to predict future performance based on historical data.

- **Time-Consuming:**

Collating and analyzing records for multiple customers requires significant effort and is prone to errors.

B. DRAWBACKS OF EXISTING SYSTEM:

The existing manual or semi-automated system for managing hotel reservations has several limitations that reduce operational efficiency and customer satisfaction. Some of the main drawbacks are:

- **Time Consuming Processes:**

Manual verification of room availability and recording guest details via phone calls or walk-ins takes a significant amount of time, leading to delays for both staff and customers.

- **Prone to Errors (Double Booking):**

Without a real-time synchronized database, human errors in manual logging often lead to “Double Booking”, where the same room is accidentally assigned to multiple guests, damaging the hotel’s reputation.

- **Lack of Real-time Accessibility:**

The existing system typically operates only during business hours. Potential guests cannot check availability or make reservations instantly at their own convenience, resulting in lost revenue opportunities.

- **Inefficient Data Management:**

Storing guest records, billing information, and room history in physical registers or isolated spreadsheets is cumbersome. Retrieving specific past data for reporting or loyalty programs is slow and inefficient.

- **Security and Data Integrity Risks:**

Physical files are vulnerable to damage (fire, water) or unauthorized access. There is no automated backup mechanism or data encryption to protect sensitive guest information.

- **No Automated Reporting and Analytics:**

There is no built-in mechanism for generating instant financial reports, occupancy charts, or booking insights. This increases the workload on administrators and makes strategic decision-making difficult.

These drawbacks highlight the need for a computerized Online Hotel Booking System that can automate the data reservation process, provide real-time updates through a responsive dashboard, and offer secure data store.

C.FEATURES OF EXISTING SYSTEM:

The existing manual system for managing room reservations and guest records relies on human intervention and physical documentation. While functional for small-scale operations, it lacks the integration of a digital platform. These features include:

- **Manual Reservation Entry:**

Booking requests are received via telephone or walk-ins and recorded by hand in a physical reservation diary or a standalone spreadsheet.

- **Physical Room Inventory Management:**

Room availability is tracked using a “status board” or paper log.

- **Paper Based Guest Documentation:**

Guest details, identification copies, and check-in forms are stored in physical folders or filing cabinets, making historical data retrieval time-consuming.

- **Manual Billing and Invoicing:**

Calculations for room stays, taxes, and additional services (like laundry or meals) are performed manually, increasing the risk of mathematical errors.

- **Fragmented Communication:**

Information sharing between the front desk, housekeeping, and management happens through verbal cues or written notes, often leading to delays in room readiness.

- **Static Pricing Structure:**

Room rates are generally fixed or updated seasonally in a printed rate card, lacking the ability to adjust prices dynamically based on real-time demand.

- **Limited Data Security:**

Sensitive guest information and financial records are kept in unlocked files or password-unprotected spreadsheets, posing a high.

Although the system provides an online presence, it suffers from high latency in confirmation, heavy reliance on manual labor, and potential for overbooking due to the lack of real-time automation.

5. STUDY OF PROPOSED SYSTEM

A. NEED FOR PROPOSED SYSTEM:

The existing manual or semi-automated system for managing hotel reservations has several limitations, such as being labor intensive, prone to double booking, and lacking a centralized data view. To address these issues, the **Online Hotel Booking System** is proposed.

The need for this proposed system arises due to the following reasons:

- **Real-Time Availability Tracking:**

The system provides an instant view of which rooms are booked and which are vacant. This prevents the human error of overbooking the same room for the same dates.

- **Enhanced Admin Control:**

The responsive admin dashboard allows staff to update room prices, add new room types, and manage guest check-ins/ check-outs efficiently from any device.

- **Improved User Experience:**

Prospective guests can browse high-quality images and room amenities at their own convenience without needing to call the hotel for basic information.

- **Streamlined Record Search:**

Unlike searching through physical files, the proposed system allows administrators to search for guest records or booking history instantly using names.

- **Efficient Resource Allocation:**

With a clear digital overview of upcoming bookings, management can better prepare housekeeping and staff schedules in advance.

In short, the proposed system is needed to enhance the operational efficiency, data integrity, and professional image of the hotel, providing a reliable digital platform to manage hospitality services effectively.

B. FEASIBILITY STUDY:

Before developing the Online Hotel Booking System, a feasibility study was conducted to evaluate whether the proposed system could be successfully implemented. This study helps in determining the practicality, cost-effectiveness, and operational benefits of the system.

It includes the following aspects:

- **Technical Feasibility:**

The system utilizes HTML, CSS, JavaScript, and Bootstrap for a responsive frontend design, ensuring the website works on both desktops and mobile devices. MongoDB is used as the NoSQL database for flexible data storage of room details and bookings. These technologies are modern, widely documented, and highly compatible, making the project technically viable.

- **Economic Feasibility**

The development cost is extremely low as it relies on open-source technologies and free database tiers (like MongoDB Atlas). The system reduces the need for physical stationery and manual labor, leading to long-term savings for hotel management. Maintenance costs are minimal since the stack is lightweight.

- **Operational Feasibility:**

The system is designed with a user-friendly admin dashboard, requiring very little technical training for hotel staff. It streamlines the workflow by digitizing room status tracking and guest records, which significantly improves day-to-day operational efficiency compared to manual ledgers.

- **Schedule Feasibility:**

The system can be developed within a reasonable time frame (2–3 months) considering project scope, complexity, and resources available.

The feasibility study shows that the proposed Online Hotel Booking System is technically, economically, operationally, and schedule-wise feasible, making it a practical and efficient solution for modernizing hotel management.

C. DRAWBACKS OF PROPOSED SYSTEM:

Although the proposed Online Hotel Booking System offers significant advantages over the existing manual method, it also has certain limitations and drawbacks, which are important to consider:

- **Dependence on Internet Connectivity:**

The system is web-based, meaning both the hotel administrator and the potential guests require a stable internet connection to access the booking features. In areas with poor connectivity, the system may become inaccessible.

- **Manual Payment Processing:**

As the current version does not implement an online payment gateway, guests still need to handle financial transactions offline (at the hotel). This prevents the system from being a "one-stop" fully automated booking solution

- **Lack of Automated Notification:**

Since automated email or SMS confirmation is not yet implemented, the staff must still manually monitor the database for new entries and contact guests to confirm their stay, which leaves room for slight delays.

- **Requirement for Technical Maintenance:**

Unlike a physical ledger, this system requires periodic software updates, database backups, and server maintenance to ensure it remains functional and bug-free.

- **System Integrity and Accuracy:**

The system relies entirely on the administrator to keep room statuses updated. If a staff member forgets to update a check-out in the admin dashboard, it could lead to inaccurate availability displayed on the frontend.

Despite these drawbacks, the system still provides a significant improvement over manual methods by centralizing data, providing a professional digital interface, and making room management much faster and more organized.

D. FEATURES OF PROPOSED SYSTEM:

The Online Hotel Booking System is a responsive web-based application designed to streamline room management and guest reservations. Its key features include:

- **Responsive User Interface:**

Built using Bootstrap, the interface ensures a seamless experience across all devices, allowing guests to view room galleries and details on desktops, tablets, and smartphones.

- **Real-Time Availability Tracking:**

The system automatically updates the status of rooms as "Available" or "Booked," ensuring that administrators always have an accurate view of current inventory.

- **Simplified Booking Inquiries:**

Includes a user-friendly booking form that captures guest details and stay dates, storing them directly in the database for admin review.

- **Centralized Guest Records:**

Maintains a digital history of all guest check-ins and bookings, making it easy for the hotel staff to search for and retrieve customer information without searching through physical files.

- **Secure Admin Authentication:**

Features a secure login system for hotel administrators, ensuring that only authorized personnel can access the dashboard and modify sensitive room or guest data

- **Automated Data Handling:**

Reduces the need for manual calculations of stay duration and basic reporting, allowing the hotel management to focus more on guest services and hospitality

E. OBJECTIVES OF PROPOSED SYSTEM:

The main objectives of the **Hotel Booking Site** are as follows:

- **Digitize Room Reservations:**

To transition from manual paper logs to a digital database, allowing for a more organized and modern approach to booking management.

- **Ensure Real-Time Data Accuracy**

To provide an up-to-date view of room availability, ensuring that administrators can instantly identify occupied, vacant, or reserved rooms to prevent double-booking

- **Centralize Guest Information:**

To store all guest details, stay history, and contact information in a secure MongoDB database for quick retrieval and better customer relationship management

- **Enhance Administrative Efficiency:**

To provide a responsive admin dashboard that allows staff to manage room listings, adjust pricing, and monitor bookings from any device with ease.

- **Provide a User-Friendly Experience:**

To offer prospective guests a professional web interface where they can view room galleries, check amenities, and submit booking inquiries at any time.

- **Streamline Record Management:**

To eliminate the need for physical storage by maintaining digital records, making the process of generating summaries or checking past stay details much faster.

F. SYSTEM SPECIFICATIONS

1. Hardware Specifications:

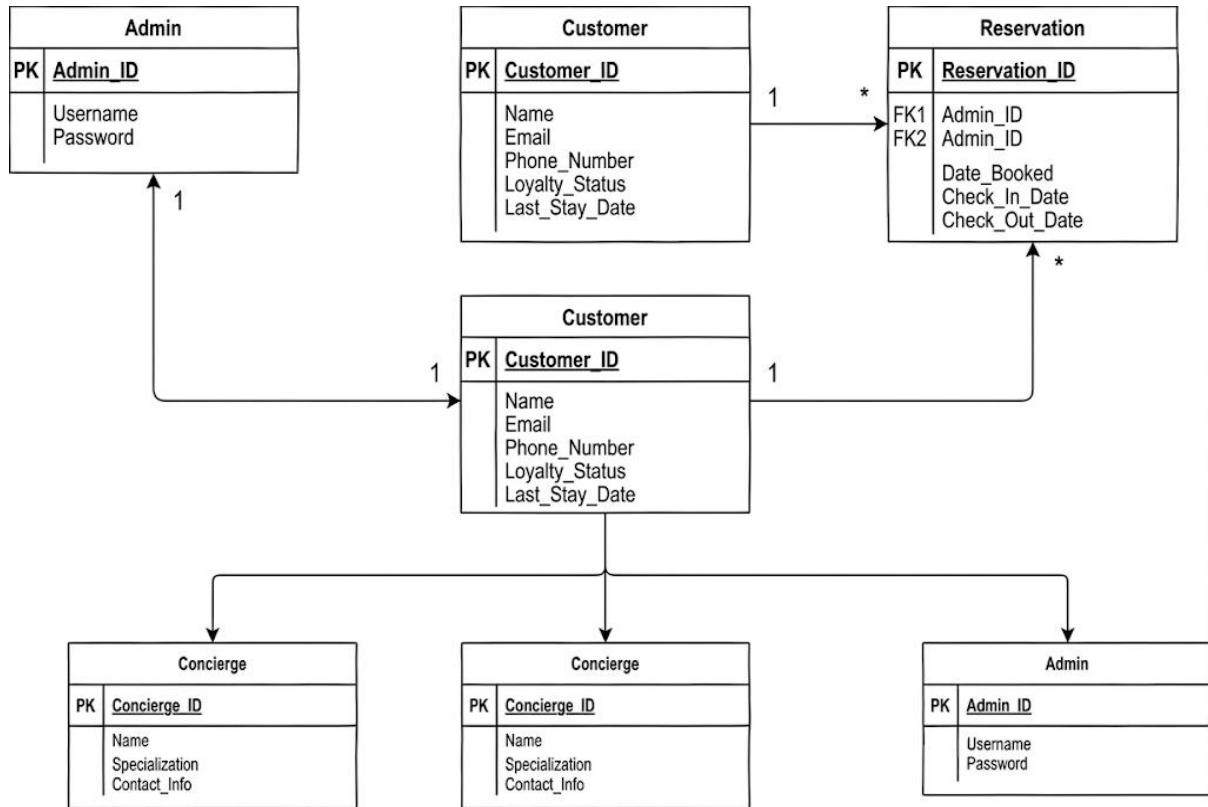
Component	Minimum Requirement
Processor	Intel Core i3 or higher
RAM	4 GB or higher
Storage	500 GB HDD or 128 GB SSD
Display	14-inch monitor with 1366x768 resolution
Input Devices	Keyboard and Mouse
Network	Internet connectivity for web application

2. Software Specifications:

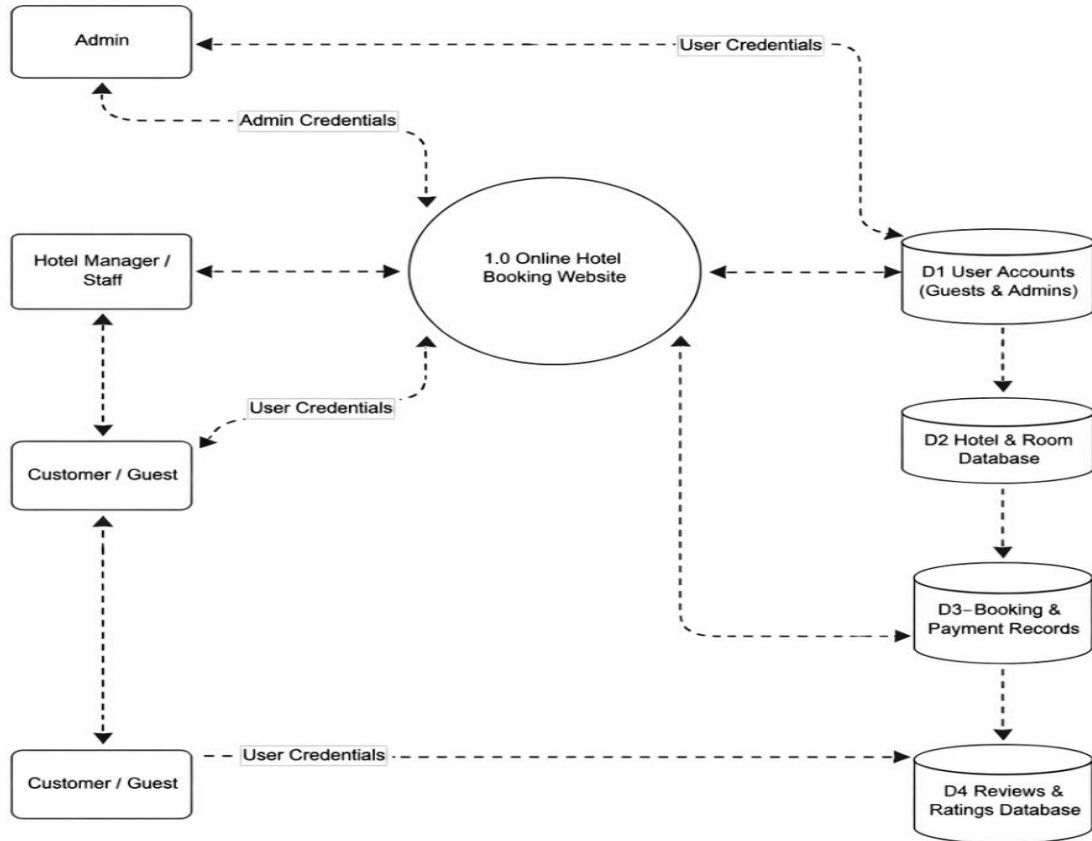
Component	Specification
Operating System	Windows 10 / 11
Programming Language	HTML, CSS, JavaScript
UI Framework	Bootstrap 5 (for responsive design)
Database	MongoDB (NoSQL)
Environment/Runtime	Node.js or Live Server for testing
IDE / Editor	VS Code (Visual Studio Code)
Browser	Chrome / Microsoft Edge (latest version)

6. SYSTEM DESIGN

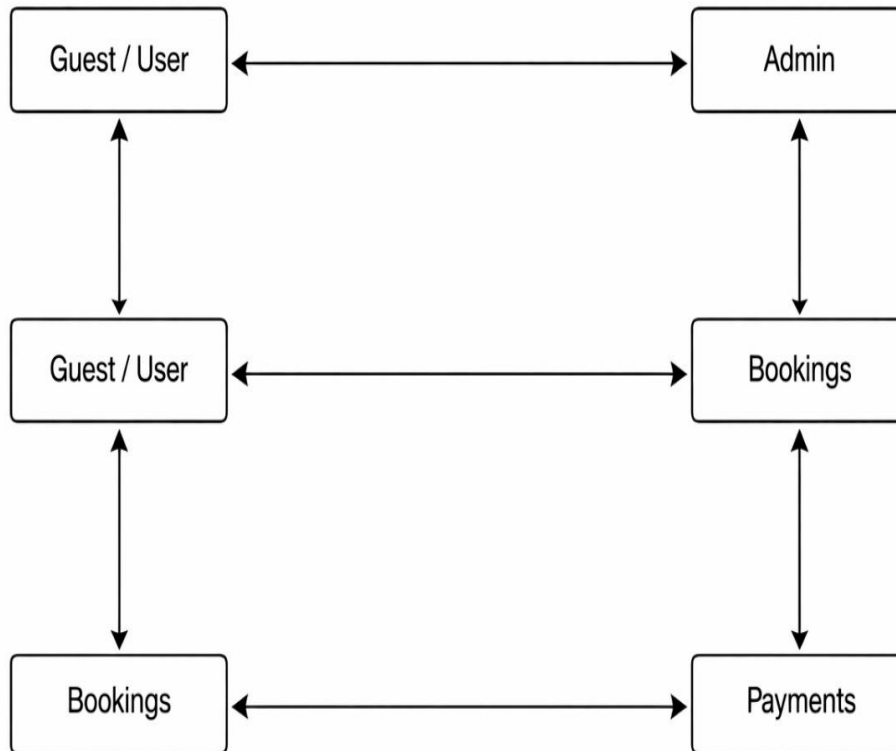
A. ENTITY RELATION DIAGRAM(ERD)



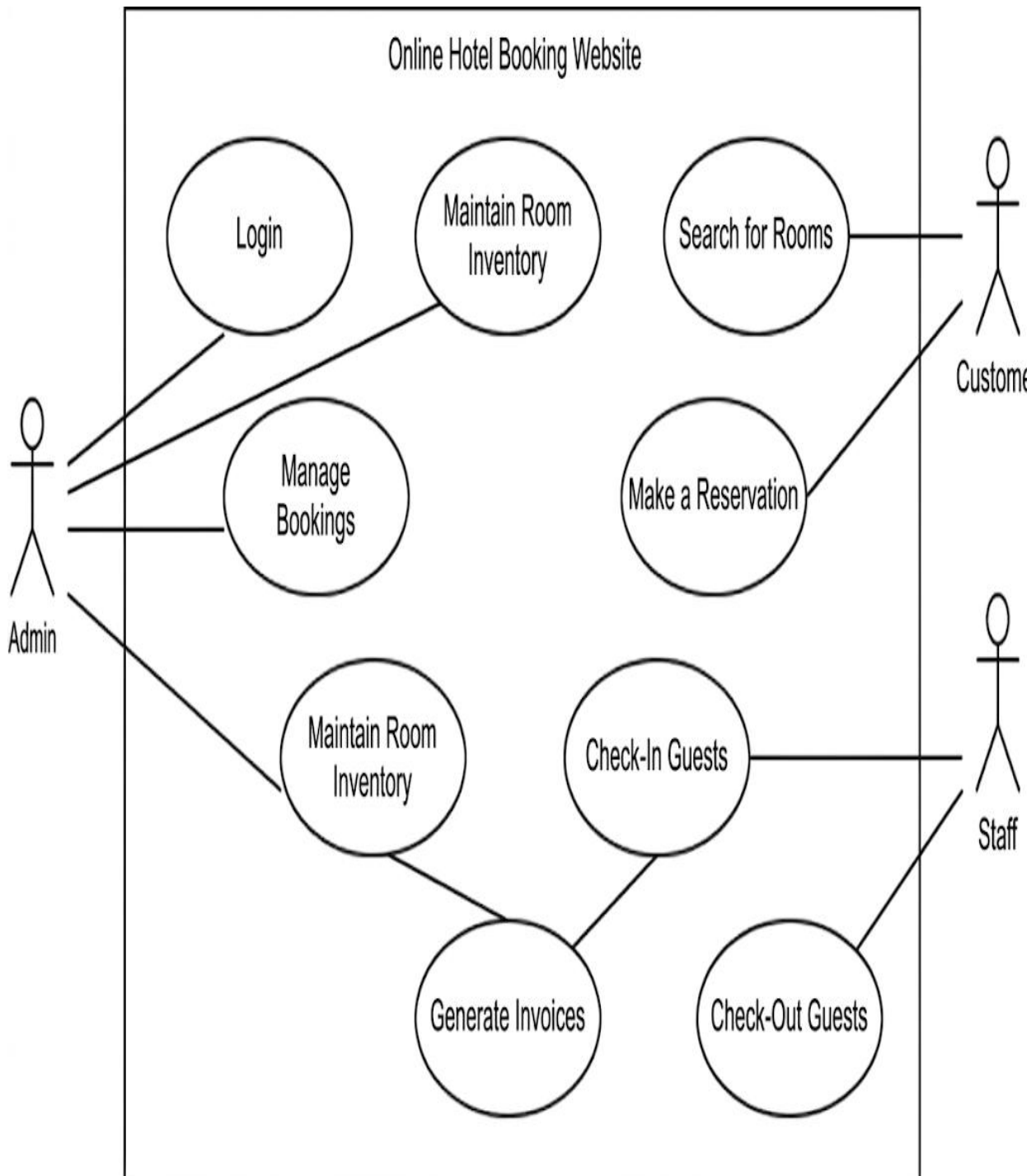
B.DATA FLOW DIAGRAM(DFD):



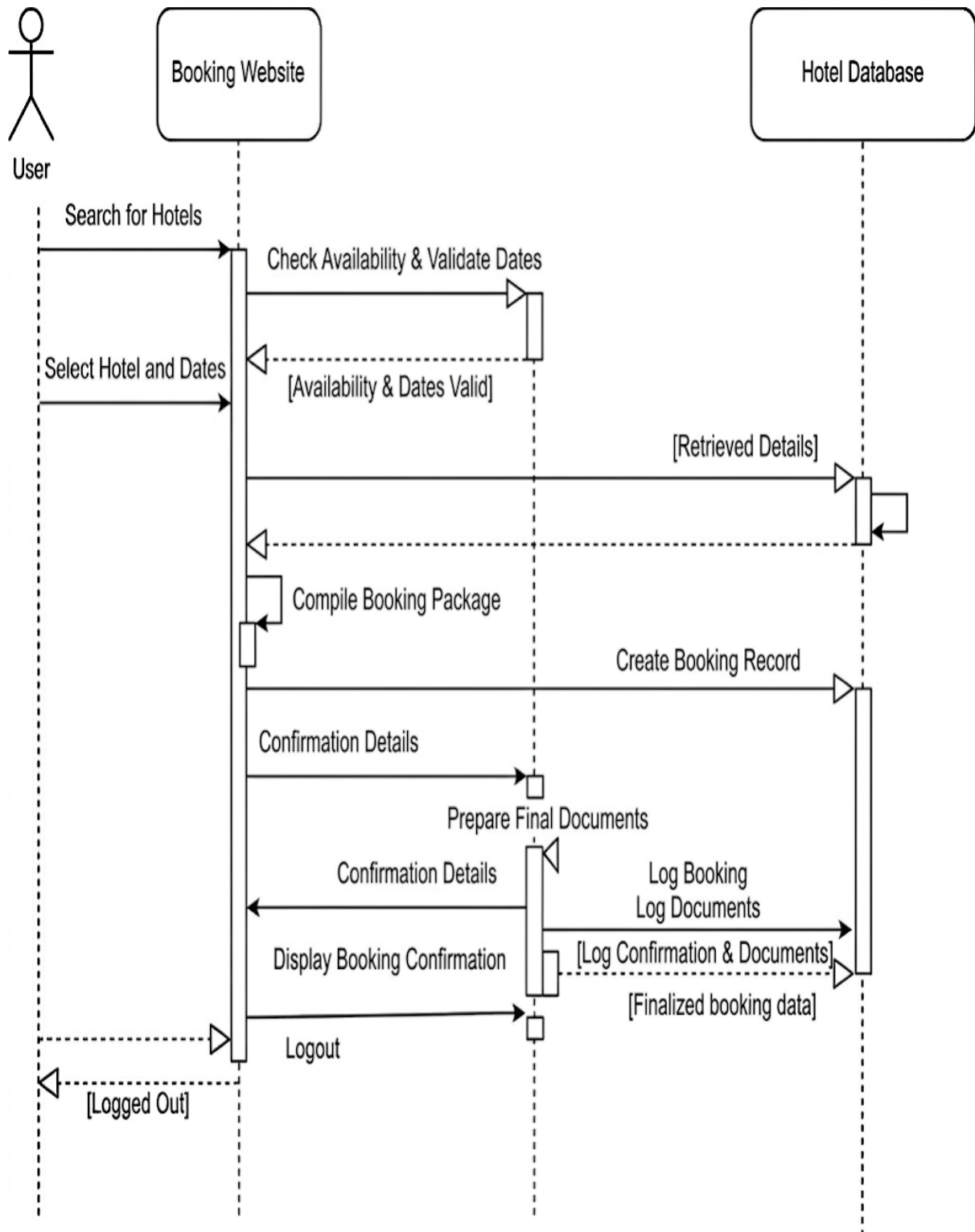
C. CLASS DIAGRAM:



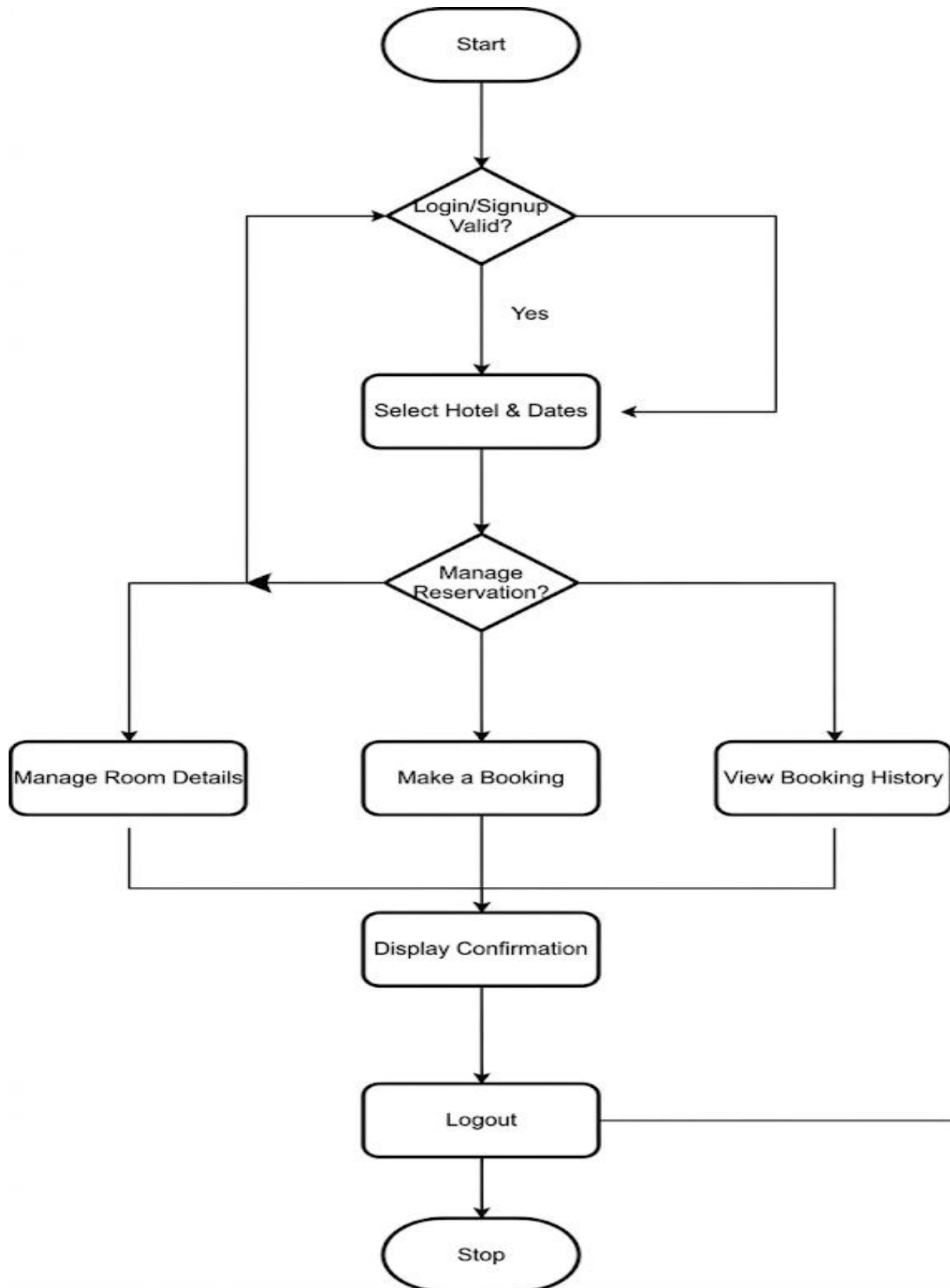
D. USE CASE DIAGRAM:



E. SEQUENCE DIAGRAM:



F. ACTIVITY DIAGRAM:



7. DATABASE DESIGN

Database Tables and Structure

1. Table: Admin

Field Name	Data Type	Size	Constraint
Admin_ID	INT	11	Primary Key
Name	VARCHAR	30	Not Null
Username	VARCHAR	30	Not Null
Password	VARCHAR	30	Not Null

2. Table: User

Field Name	Data Type	Size	Constraint
User_Id	Int (pk)	11	Primary Key
User_Name	Varchar	50	Not Null
Contact_No	Varchar	13	Not Null
Email Address	Varchar	20	Not Null
Password	Varchar	30	Not Null
Confirm Password	Varchar	30	Not Null

3. Table: Room

Field Name	Data Type	Size	Constraint
Room_Id	Int	15	Primary Key
Room_Type	Varchar	50	Not Null
Price	Float	15	Not Null
Photo	Varchar	100	Not Null
Photo_Path	Varchar	500	Not Null

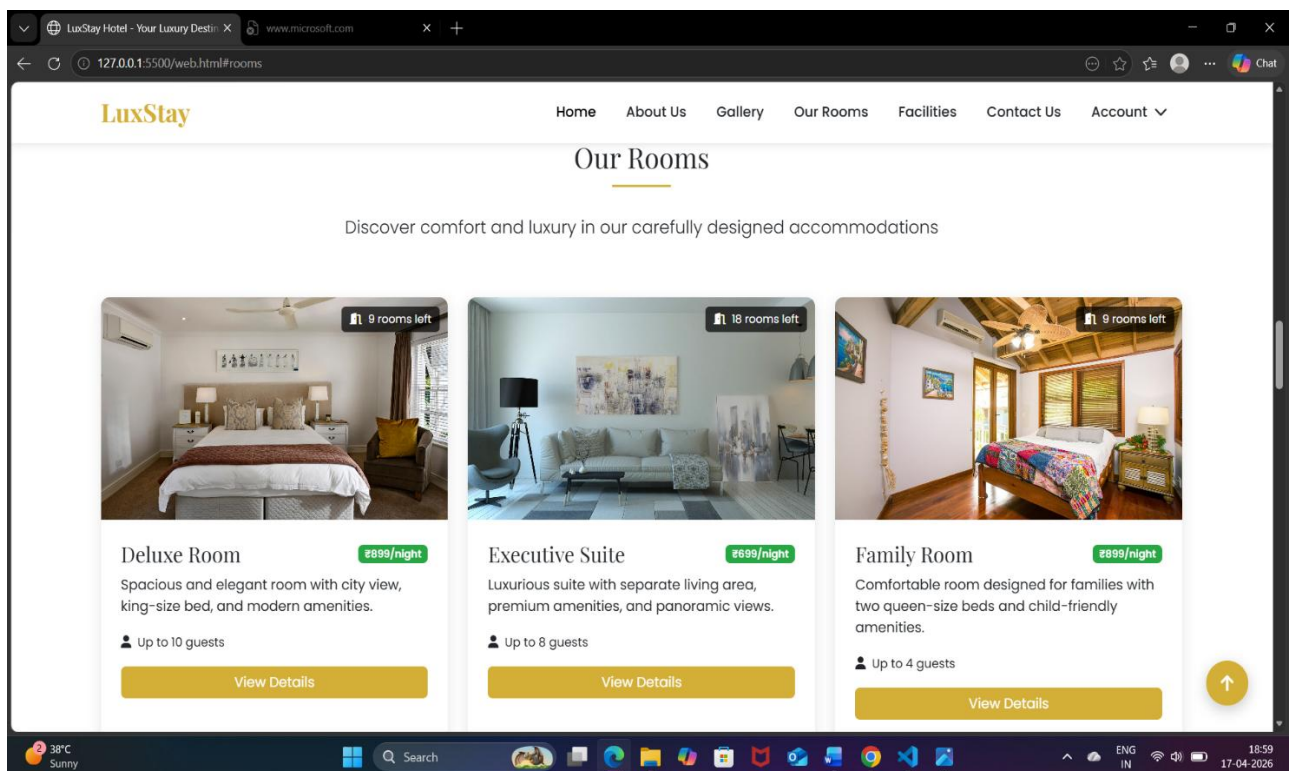
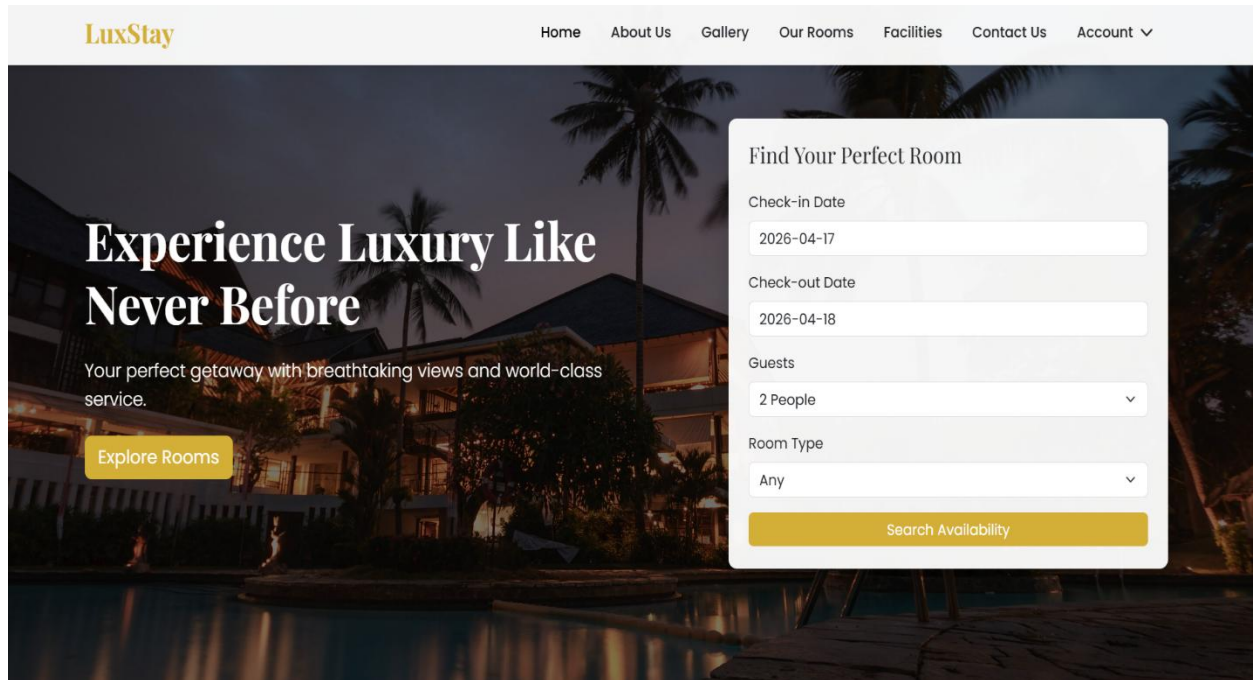
4. Table: Bookings

Field Name	Data Type	Size	Constraint
Booking_Id	Int	15	Primary Key
Check_In	Varchar	50	Not Null
Check_Out	Varchar	15	Not Null
Total Price	Varchar	100	Not Null
Status	Varchar	100	Not Null

8. TESTING

Test Case ID	Module	Test Description	Input	Expected Output	Actual Output	Result
TC01	Login	Validate login with correct admin credentials	Username: admin, Password: 1234	Login successful redirect to Dashboard	Login successful	Pass
TC02	Room Management	Add a new hotel room category	Room: Deluxe, Price: 800, Status: Available	Room added successfully to the database	Room added	Pass
TC03	Room Management	Update existing room details	Change price of Room 500 to 800	Database reflects updated price	Price updated	Pass
TC04	User Search	Search for available rooms by date	Check-in: 2026-05-06, check-out: 2026-05-07	List of available rooms for those dates displayed	List displayed	Pass
TC05	Booking	Perform a room booking	Room ID: 101, User: Divya Mane	Booking confirmation message and ID generated	Booking confirmed	Pass
TC06	Cancellation	Cancel an existing booking	Booking ID: LUXSTAY-ABJUGULW	Status updated to "Cancelled" in database	Status updated	Pass
TC07	Admin Panel	View all customer bookings	Click "Search Bookings" tab	Table showing all active and past bookings	All bookings shown	Pass
TC08	Validation	Check for empty booking fields	Email: [Empty], Password: [Empty]	Error message: "All fields are required"	Error message shown	Pass
TC09	Database	Verify room status update after booking	Book Room 101	Room 101 status changes from "Available" to "Booked"	Status changed	Pass
TC10	UI/UX	Check dashboard responsiveness	Change screen resolution to mobile	Sidebar collapses and UI remains functionals	UI adapted correctly	Pass

9.INPUT & OUTPUT SCREENS



LuxStay Hotel - Your Luxury Destination | www.microsoft.com

127.0.0.1:5500/web.html#rooms

Admin Dashboard

DEEPAI M. Administrator

- Dashboard
- Room Management
- Bookings
- Users
- Settings

Dashboard

Total Rooms

6

Total Bookings

15

Registered Users

200

Room Availability

Room Type	Available Rooms
Deluxe Room	8
Executive Suite	16
Family Room	8
Luxury Room	10
Standard Room	6
Air Room	4

Recent Bookings

Room	Guest	Date	Status
Deluxe Room	Divya M/td>	2026-01-15	Confirmed
Executive Suite	Priya S	2026-03-18	Confirmed
Family Room	pooja N	2026-02-20	Confirmed

38°C Mostly clear | 19:22 17-04-2026

LuxStay Hotel - Your Luxury Destination | www.microsoft.com

127.0.0.1:5500/web.html#rooms

Admin Dashboard

DEEPAI M. Administrator

- Dashboard
- Room Management
- Bookings
- Users
- Settings

Settings

General Settings

Hotel Name: LuxStay Hotel

Contact Email: info@luxstayhotel.com

Contact Phone: +91 (22) 1234-5678

Address: 123 Marine Drive, Mumbai, Maharashtra 400020

[Save Changes](#)

Booking Settings

Check-in Time: 14:00

Check-out Time: 12:00

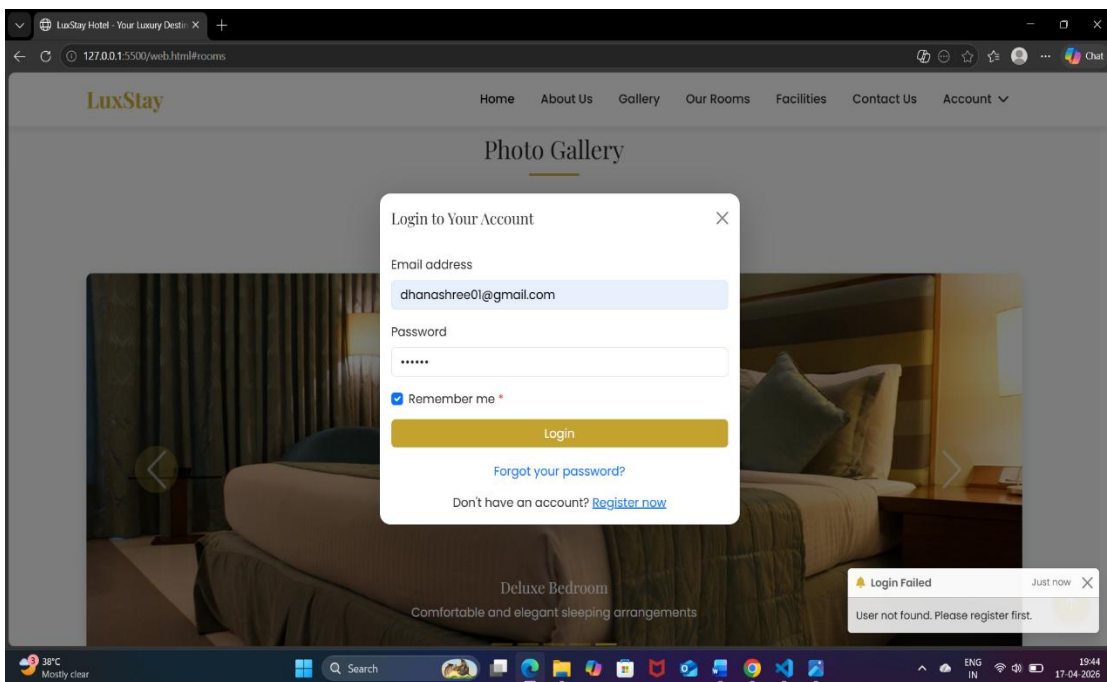
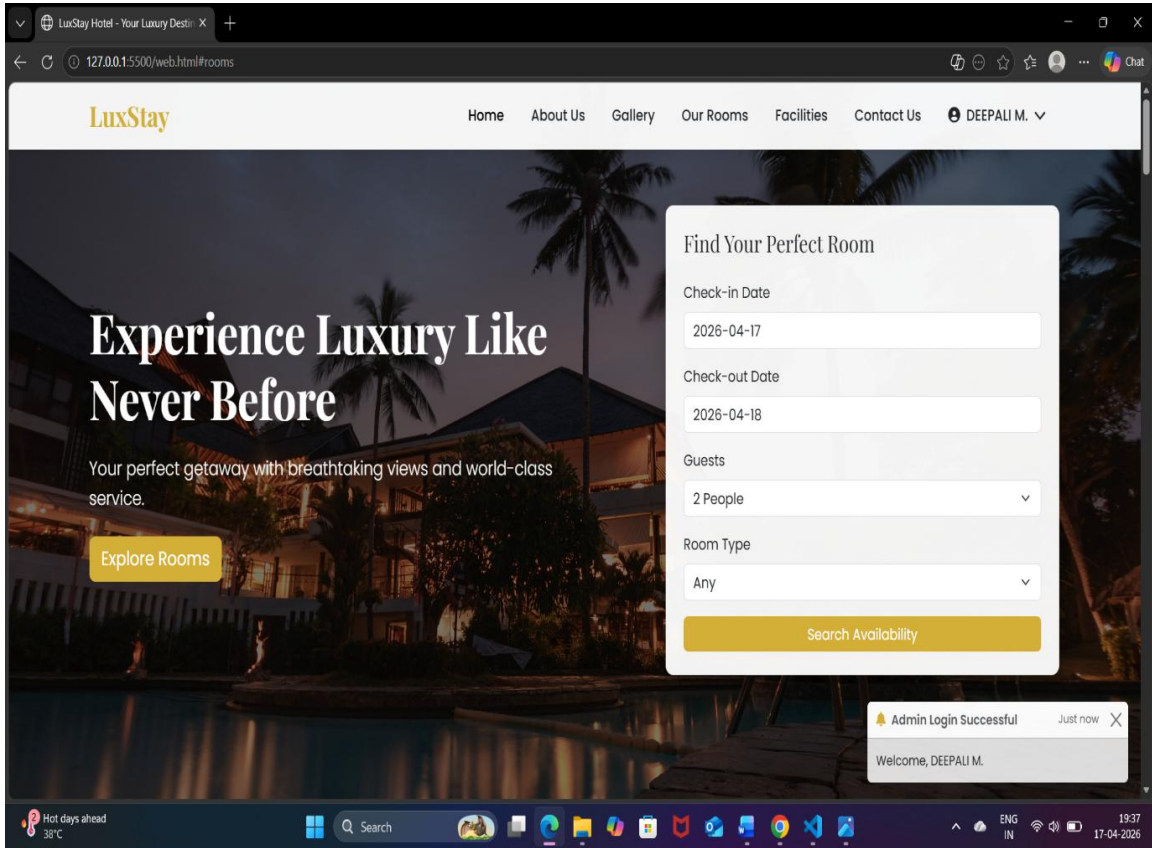
Maximum Booking Days: 30

Minimum Advance Booking (Days): 1

[Save Changes](#)

127.0.0.1:5500/web.html#settings

38°C Mostly clear | 19:34 17-04-2026



10. LIMITATIONS AND FUTURE MODIFICATIONS

❖ Limitations of the System:

- Dependence on Internet Connectivity:

The system is a web-based application, meaning it requires a stable internet connection to function. Users in remote areas or with poor network signals may experience difficulty in booking or viewing room availability.

- Limited Room Availability Sync:

Currently, the system depends on manual updates by the admin or a local database. If not integrated with a global system, there is a small risk of "double booking" if two users attempt to book the last room at the exact same millisecond.

- Verified User Reviews:

The system currently lacks a complex verification process for reviews. This means there is a possibility that some feedback or ratings could be biased or not based on an actual stay.

- Dependency on Reviews:

Negative reviews can disproportionately damage a hotel's reputation.

❖ **Future Modifications and Enhancements:**

○ **Integration of AI Chatbots:**

A future goal is to include an automated chatbot to assist users with common questions regarding hotel policies, cancellation rules, and booking status in real-time.

○ **Virtual Room Tours (360° View):**

To enhance user experience, the system can be updated to include 360-degree images or virtual reality tours, allowing guests to see the exact condition of the room before booking.

○ **Mobile Application:**

Develop a mobile app to make the system accessible on smartphones and tablets.

○ **Multi-Language and Multi-Currency Support:**

Future versions will aim to support multiple languages and automatic currency conversion to make the website accessible to international traveller.

○ **Automated SMS E-mail Notifications:**

Once the booking is confirmed, an email will be automatically sent to the customer:

○ **Comprehensive Travel Booking:**

Expanding systems to include car rentals, flight bookings, and activity packages alongside hotel rooms.

○ **Customer Reviews & Ratings:**

11. CONCLUSION

The Online Hotel Booking Site is a modern, digital solution designed to simplify the process of searching and reserving accommodations. Unlike traditional booking methods that involve phone calls or manual paperwork, this system automates room availability tracking, user information management, and booking confirmations, providing a seamless experience for both customers and hotel administrators.

Testing and evaluation have demonstrated that the system is highly responsive and meets all core functional requirements, including secure user authentication and CRUD (Create, Read, Update, Delete) operations for room management. While certain limitations exist, such as dependence on internet connectivity and manual room updates, these provide a clear roadmap for future enhancements like real-time API integration.

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(ii) <https://www.youtube.com>

(iii) <https://getbootstrap.com>

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