



**GUJARAT TECHNOLOGICAL UNIVERSITY**

Chandkheda,  
Ahmedabad Affiliated



**PRIME INSTITUTE OF ENGINEERING  
&  
TECHNOLOGY**

A  
Project  
Report On  
**Online Hotel Booking System**

Under subject  
of  
DESIGN ENGINEERING–IIB  
B.E - III, Semester –VI  
**Computer Engineering Department**

Submitted by:

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Academic year  
**(2023-2024)**



# *Prime Institute of Engineering & Technology*

*Gujarat Technological University, Ahmedabad*



**Computer Engineering Department**

**2023-24**

## *Certificate*

This is to certify that the Design Engineering Project–IIB, entitled “**Online Hotel Booking System**” which is being submitted by **CHAUDHARY SANJAY, PANDEY ADARSH, INDVE VICKY, PATEL PRIYANSHU, RANA VIRANK K.** for Design Engineering IIB (3160001) Semester VI in Bachelor of Computer Engineering to Gujarat Technological University, Ahmedabad is record of candidates own work, carried out by the under my guidance during academic year 2023-24.

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## **ABSTRACT**

*This project is designed to create a platform that allows both the user and administrator to keep track of transactions like room reservations, room booking, financial administration of the hotel, staff record keeping, online reservation and other day to day activities involved in the running and management of a hotel. Implementation of an electronic hotel management system is such that which provides proper management of data and transactions in a centralized and organized manner and also provides a user friendly interface with which the user can easily interact with just little knowledge of operating computers. This will not only keep record of various people but as well as it reduce extensive paper work in present system. It provides real-time information about room availability, rates, and amenities, enabling guests to make informed decisions and plan their stay accordingly. The system also resolves problems by facilitating secure online payment options, ensuring a smooth and hassle-free booking experience for guests.*

## LIST OF FIGURE

<b>Figure No</b>	<b>Figure Description</b>	<b>Page No.</b>
2.2.1	AEIOU Framework.....	5
2.2.2	Customer interact with receptionist about premium services.....	7
2.3.1	Mind Map.....	9
2.4.1	Empathy Canvas.....	10
3.1.1	Ideation Canvas.....	15
4.1.1	Product Development Canvas.....	19
5.1.1	LN matrix.....	23
5.3.1	Rough Prototype model.....	25
6.1.1	Sign up.....	26
6.1.2	Login(user) .....	26
6.1.3	Home.....	27
6.1.4	Rooms.....	28
6.1.5	Booking.....	28
6.1.6	About.....	29
6.1.7	Contact.....	30
6.1.8	Login(admin) .....	31
6.1.9	Home(dashboard) .....	31
6.1.10	Booked.....	31
6.1.11	Check-In.....	32
6.1.12	Check-Out.....	32
6.1.13	Room Categories.....	32
6.1.14	Users.....	33
6.1.15	Rooms List.....	33
6.1.16	Site setting.....	33

## LIST OF TABLE

Table No.	Table Description	Page No.
5.2.1	Hardware support and Estimation.....	24
5.2.2	Software Estimation.....	24
5.2.3	Communication Interface Requirement.....	24

# INDEX

	Content	Page No.
	<b>ACKNOWLEDGEMENT</b>	<b>i</b>
	<b>ABSTRACT</b>	<b>ii</b>
	<b>LIST OF FIGURE</b>	<b>iii</b>
	<b>LIST OF TABLE</b>	<b>iv</b>
<b>Chapter-I</b>	<b>INTRODUCTION TO CONCEPT/ AREA</b>	<b>1</b>
	1.1 Design Thinking.....	1
	1.2 Objective.....	2
	1.3 Purpose.....	2
<b>Chapter-II</b>	<b>PHASE 1: EMPATHIZATION PHASE</b>	<b>4</b>
	2.1 Introduction.....	4
	2.2 Observation Record sheets (AEIOU Framework) .....	5
	2.3 Mind Mapping.....	8
	2.4 Empathy Canvas.....	10
<b>Chapter-III</b>	<b>PHASE 2: IDEATION PHASE</b>	<b>15</b>
	3.1 Ideation Canvas.....	15
<b>Chapter-IV</b>	<b>PHASE 3: PRODUCT DEVELOPMENT CANVAS</b>	<b>19</b>
	4.1 PDC Canvas.....	19
<b>Chapter-V</b>	<b>PROOF OF CONCEPT</b>	<b>23</b>
	5.1 LNM.....	23
	5.3 Rough Prototype.....	25
<b>Chapter-VI</b>	<b>IMPLEMENTATION</b>	<b>26</b>
	6.1 Sample Screenshot.....	26
	6.2 Sample coding.....	34
<b>Chapter-VII</b>	<b>ADVANTAGES &amp; DISADVANTAGES</b>	<b>40</b>
	<b>CONCLUSION</b>	<b>43</b>
	<b>REFERENCES</b>	<b>44</b>

## CHAPTER 1: INTRODUCTION TO CONCEPT/ IDEA

### 1.1 Design Thinking

Once upon a time when we visited hotels and we observed so many problems in hotels. We saw many customers waiting for ordered food which was not given to them due to high number of customers had ordered food. Hotels used physical registers or logbooks to record guest reservations. Customers would call or visit the hotel to make bookings, and staff members would manually enter the details, including guest names, dates of stay, room preferences, and any special requests. Hotels maintained manual inventories for managing room availability, housekeeping status, and tracking amenities like towels, toiletries, and other supplies. This required regular manual checks and updates, which could be time-consuming and prone to errors.

Billing and accounting processes were typically paper-based. Invoices and bills were generated manually, and financial records were maintained in physical ledgers or through spreadsheet systems. Managing expenses, revenue, and financial analysis required significant manual effort.

Housekeeping staff relied on manual communication to coordinate room cleaning and maintenance tasks. They used printed schedules or verbal instructions to manage room turnovers, laundry services, and responding to guest requests for amenities or repairs.

Offline hotels struggled to provide real-time availability information to customers. Without an online system, guests had to contact the hotel directly to inquire about room availability, leading to delays and potential misunderstandings.

Offline hotels often accepted cash or limited types of payment methods, which could inconvenience guests who preferred alternative payment options such as credit cards or online payment gateways. This restriction could result in missed bookings or potential customer dissatisfaction.

The advent of online hotel management systems revolutionized these processes, offering centralized, automated platforms that streamline operations, enhance guest experiences, and improve efficiency. These systems typically include features such as online booking engines, integrated reservation management, automated check-in/check-out, real-time inventory updates, online payment processing, reporting analytics, and more.

Hotel Management System is a software system where the management of entire hotel is computerized. In this project the details are maintained like customer details, reservation details, booking details and billing details the reservation process of reserving rooms for the



customers, canceling the reserved rooms, booking the rooms vacating the rooms, the restaurant management, billing process, etc. all are computerized and the management is done without any difficulty. The reports can be viewed completely and the head of the management daily or weekly or monthly can review it. This Proposed System will be interactive, faster and user-friendly for the end users. Using the hotel management system, the following activities can be performed.

- Room Service
- Check In
- Check Out
- Staff Master
- Staff Attendance
- Login

### **1.2 Objective**

- To Reduced Incidence of Fraud.
- To Provide Data Security
- Effective Resource Management
- To increased Profit Line for The Organization.
- To Reduced Time Consumption.
- Improve revenue management
- Adequate Record Keeping (To eliminate manual record keeping and install an electronic record.)

### **1.3 Purpose**

- The purpose of a hotel management system is to automate various operations and processes involved in managing hotel business.
- The system enables guests to make online bookings and helps hotel staff manage reservations, room availability, and rates.
- The system generates accurate bills and invoices based on guest stays, additional services, and expenses incurred.
- The system facilitates check-in and check-out processes, guest registration, and room assignments. It stores guest information, and helps manage room status and housekeeping tasks.

- It generates reports and analytics on various aspects such as occupancy rates, revenue, guest feedback. This data helps in decision-making, identifying trends, and improving operations.

## **CHAPTER 2: PHASE 1: EMPATHIZATION PHASE**

### **2.1 Introduction**

Reverse Engineering, also called as Back Engineering, is the process of extracting knowledge or design information from any man-made thing and then re-producing it by following the Design Process. Thus, from a user's point-of-view, there may be a need to modify some feature or to add some features.

### **2.2 Observation Record sheets (AEIOU Framework)**

In the journey of gathering data for AEIOU framework for our project, we visited the hotel. In the hotel, we observed that different types of activities were done like customers check in for rooms, manager checking of CCTV footage for security purpose, receptionist working on the computer, customers were waiting in queue for their turn, person requesting for service and discounts and room availability etc.

We saw that the atmosphere of hotel was helpful and delightful as the hotel staff helping to the customer guiding them to their rooms and dining area. The environment was clean and peaceful as the staff and managers were doing their work properly. One customer was angry about the bad response of the staff member. Receptionist explaining the all included services and facility of booking in three-star and five-star rooms to the NRI customers. Some customers were using other hotel services like gym, swimming, eating etc.

The receptionist recording the data of hotel customer and also checking for past data present or not in hotel record book. Customer paying payment in cash or card. Customers have to depart from the hotel at a given time. We observed some customers had to face situations like when they arrived but did not get the availability to hotel rooms.

## 2.2.1 AEIOU Frameworks

AEIOU Summary:		Group ID: 529791	Date: 20/1/24	Version: 1.1
		Domain Name: HOTEL		
<b>Environment:</b> <ul style="list-style-type: none"> <li>• Quiet / Calm</li> <li>• Joyful</li> <li>• Foggy / Rainy / Sunny</li> <li>• Fancy</li> <li>• Noisy</li> </ul>	<b>Interactions:</b> <ul style="list-style-type: none"> <li>• Manager giving instructions to hotel staff</li> <li>• Guest asking for available rooms to receptionist</li> <li>• Management staff presenting annual reports to owner</li> <li>• Guest providing feedback to manager</li> <li>• A person asking for additional amenities from staff</li> <li>• Guest complaining about services to manager</li> <li>• A person asking to retrieve vehicle from parking attendant</li> <li>• Guest asking about available dates from event organizers</li> </ul>	<b>Objects:</b> <ul style="list-style-type: none"> <li>• Tables</li> <li>• Plates</li> <li>• Pen/Papers</li> <li>• Desks</li> <li>• Air Conditioners</li> <li>• Menucards</li> <li>• Computers</li> <li>• Telephones</li> <li>• Chandeliers</li> <li>• Crockeries</li> <li>• Sofas</li> <li>• Chairs</li> <li>• Key/Cards</li> </ul>		
<b>Activities:</b> <ul style="list-style-type: none"> <li>• Guest inquiring about available rooms</li> <li>• Check-in and check-out of guest from hotel</li> <li>• Guest ordering food to waiter</li> <li>• Payment done by guest for services</li> <li>• Staff managing room services and house-keeping services</li> <li>• Manager hiring hotel staff</li> <li>• Events being organized for guests</li> <li>• Manager checking stock of consumables</li> <li>• Manager paying salaries to hotel staff</li> </ul>		<b>Users:</b> <ul style="list-style-type: none"> <li>• Managers</li> <li>• Waiters</li> <li>• Parking attendants</li> <li>• Bartenders</li> <li>• Receptionists</li> <li>• Cleaning staff</li> <li>• Vendors</li> <li>• Housemaids</li> <li>• Guests</li> <li>• Event Managers</li> </ul>		

Figure 2.2.1: AEIOU Framework

### A-Activities:

#### General impressions/observations:

- Guest asking for available rooms
- Guest ordering food to waiter
- Guest reading menu card to order food
- Event being organized for guest
- Manager checking stocks of warehouse
- Manager paying salaries to hotel staff

#### Elements and special notes: Elements:

- Menu card
- Tables
- Pens
- Papers/files
- Cheque/cash

- Chairs
- Computers/laptop
- Telephones
- Printer

**Special notes:**

- On reaching hotel for staying, we saw many people inquiring on reception for available room because it was a chilling night of winters.

**E-Environment:****General impressions/observations:**

- Calm, Cool
- Fancy atmosphere
- Crowdy in weekend and festival seasons
- Customer is angry about bad response of the serving staff
- Manager watching CCTV footage for security purpose

**Elements, features and special notes:****Elements:**

- Air conditioner
- Computer
- Sofa
- Printer
- Spa
- Gym
- CCTV camera
- Chandelier (decorative hanging light)

**Special notes:**

- Environment was crowdy and noisy because of heavy crowd on New Year's Eve.

**I-Interactions:****General impressions/observations:**

- Guest asking for available rooms to receptionist
- Management staff presenting annual report
- Guest providing feedback to manager
- A person asking to retrieve vehicle from parking attendant
- Guest asking for additional amenities from staff

**Elements, features and special notes:****Elements:**

- Projector
- White board
- Telephones
- Sketches
- Chairs
- Tables
- Computer

**Special notes:**

- Some guest who was came to book venue for events had to return because all the venues were already reserved for a month.

**Scene of interaction:**

**Fig.2.2.2 Customer interact with receptionist about Premium services**

**Example:**

Miss. Pawar was a guest who visited to our hotel, to know about Premium services provided by our hotel. Mr. Shukla, who was the receptionist of hotel explaining her about the Premium services like - Adventurous activities, fitness rooms, premium amenities, personal concierge. (Person who help guests).

**O – Objects:****General impressions/Observations:**

- Guest reading menu card to order food
- Waiters using plates to serve ordered foods
- Guest using keys to unlock rooms
- Receptionist using computer to check guest detail
- Manager using pen and paper to check inventory

**Elements, features and special notes:****Elements:**

- Computer
- Plates
- Keys
- Menu card
- AC
- CCTV camera

**Special notes:**

- Receptionist informing guest on telephone that he is expecting someone on reception

**Inventory of key objects:**

- Computer
- Internet
- Adhaar card

**U –Users:****General impressions/Observations:**

- Receptionist checking about available rooms on computer
- Manager giving instructions to hotel staff
- Guards checking CCTV footage for security
- Event manager giving an information of available dates to guest
- Waiter serving ordered food to guest
- Parking attendant retrieving vehicles of guest

**Special notes:**

- Guest can't find rooms on an urgent basis when he/she need the room

**2.3 Mind Mapping**

A mind mapping canvas is a visual tool used to organize and explore ideas. Our systems mind mapping canvas allows hoteliers to visualize and organize key aspects of their operations. It helps map out functions like reservations, check-ins, room assignments, billing, and guest feedback. By connecting these elements visually, it enables efficient coordination, enhances productivity, and streamlines overall hotel management processes for better guest experiences.

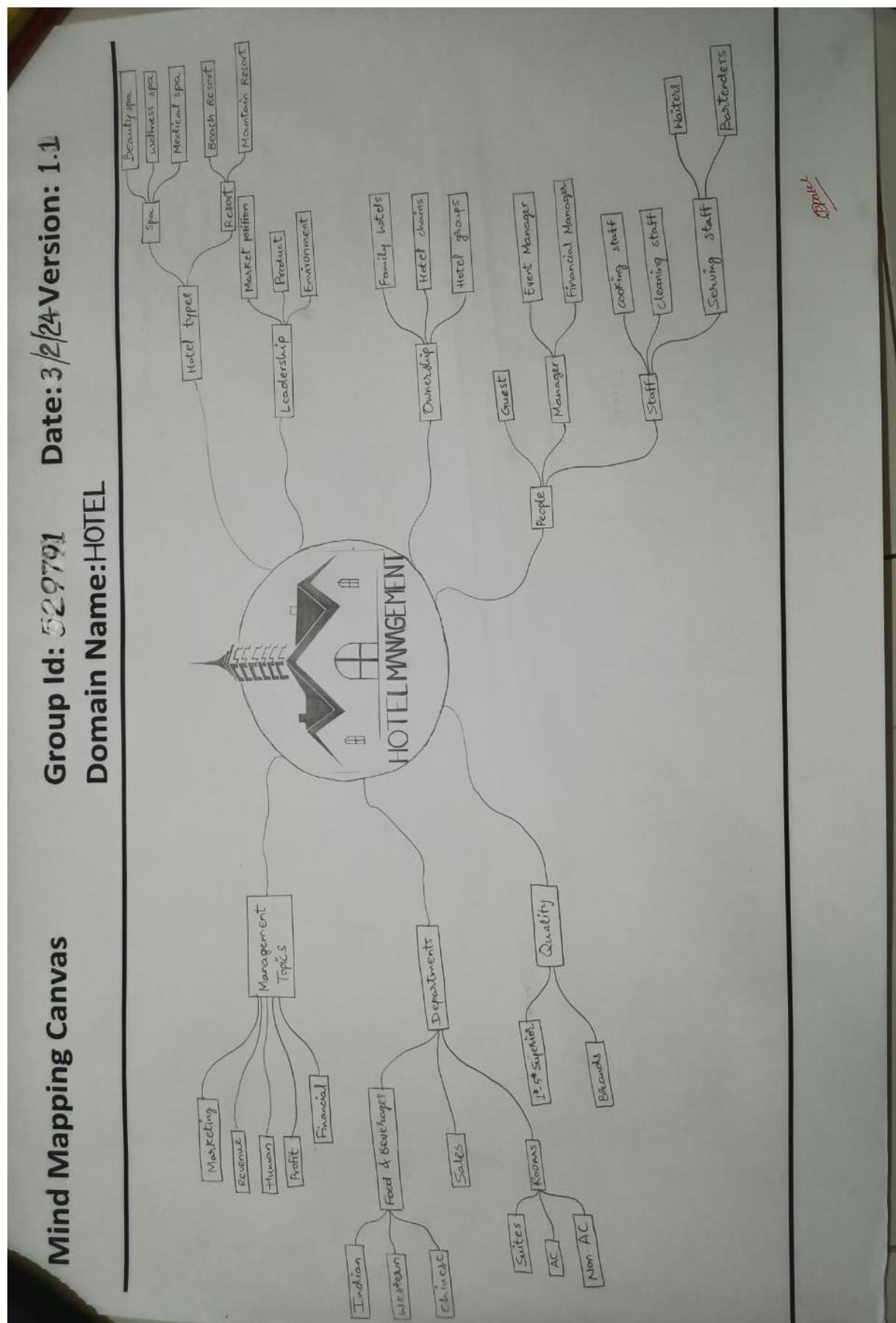


Fig: 2.3.1 Mind Map



## 2.4 Empathy Canvas

Design For Hotel

Date 17/02/24

Design By  
 RANA VIRANK  
 CHAUDHARY SANTAY  
 PANDEY ADARSH  
 JADVE VICKY  
 PATEL PRIYANSHU

Version 1.1

USER	STAKEHOLDERS
Manager	Waiters
Guest	Bartenders
Event manager	Parking attendants
	Vendors
	Gaurds
	cleaning staff

**ACTIVITIES**

Inquiry about Rooms

Paying Bills

Organizing Events

check-in & check-out

Managing Room Services

checking stocks of consumables

Ordering food

Paying Salaries

**STORY BOARDING**

**HAPPY** One of our friends came to India from abroad. so all our friends decided to organize a reunion party. As planned next weekend we all met and decided to go to the movies. After finishing the movie, we went to the beach where we enjoyed and played various games. At the end of the day we were all starving so we decided to go to the restaurant and enjoyed our food and reminisced our old memories and discussed our future plans/goals.

**HAPPY** There was my friends birthday on 29th sept 2021. So we decided to throw a surprise birthday party for her. As planned we arranged the party at a hotel she was surprised and puffed up with joy. After the cake-cutting ceremony everyone presented their gifts to her. She was flabbergasted and thanked everyone for making her day beautiful and memorable.

**SAD** In the season of winters. A group of tourists wandered from one state to another. from one country to another, came to visit the mountains of the North. The sun was already gone and the streetlights were shining in dark. They were looking for a place to rest and get warm as it was the chilling night of the month of christmas. They inquired several hotels and lounges, but due to winters all the rooms were already reserved. Due to unavailability of rooms they had to spend the chilling night in their cars.

**SAD** A businessman was travelling from one state to other for business conference. After reaching his destination he went to hotel for check-in and found some guest waiting there for checking-in. After couple of minutes waiting, he checked-in and headed straight to the conference as he was running out of time for conference. Next day he was saw a long line for check-out. Completing his check-out process he went to airport and found out that his flight departed several minutes ago and he had to spend next 6 hours for next flight.

B Patel

Figure 2.4.1: Empathy Canvas

## Users

Users are the people who belong to the domain that we have selected and they are the ones who face problems in that domain. The users that we have included are:

- **Event manager:**

Event managers may struggle to find available event spaces within the hotel through the online management system, especially during peak seasons or when multiple events are scheduled. Thus, providing him/her a real-time availability calendar that shows up-to-date information on event space availability. Allowing Event Managers to set up notifications or alerts for when a desired space becomes available.

- **Guest:**

Problem faced by many guests nowadays is slow response times through hotels. We have Optimized the system's performance to ensure fast loading times and quick response to guest requests

- **Managers:**

Managers may struggle with learning and fully utilizing the features and functionalities of the system. Thus, providing comprehensive training programs for managers, including user manuals, video tutorials, or workshops.

- **Receptionist:**

They handle sensitive guest information, including personal details and payment data. Any unauthorized access to the online system can have severe consequences. Thus, we Implement robust security measures to safeguard guest data. This includes using secure encryption protocols, regular data backups.

- **Stakeholders:**

Stakeholders are the people who are directly or indirectly affected by the domain, problem and the solution of the problem. They are the ones who get profit or loss from the domain.

- **Waiter:**

Waiters are facing Difficulty in taking Orders. To resolve this, Implement clear menu layouts order selection options. Also providing user-friendly interfaces for waiters to easily take order.

- **Bartender:**

Bartenders faces problem in Communication with Waitstaff and Kitchen for updated order. Integrate the bartender's device with the online system to facilitate communication

with waitstaff and the kitchen. Enabling real-time order updates and modifications to ensure efficient service.

- **Guards:**

Guards face challenges in Limited Access and Control items. Thus, we provide guards to view relevant information such as guest check-ins, CCTV footage, and security incidents.

- **Cleaning staff:**

Supervisors facing Difficulty in Tracking Room Status. Thus, we Implemented a room status tracking feature within the system that cleaning staff can easily update. Enable them to mark rooms as cleaned, in progress, or needing attention, ensuring clear visibility for supervisors and other staffs.

- **Investors:**

Investors face Lack of Financial Visibility. Implementing robust financial analytics capabilities within system. It Also Provide investors with access to performance indicators, and real-time financial data to gain a view of the hotel's financial health.

## **Activities**

Activities are the various tasks which are done by the users and stakeholders. These affect the domain.

- **Ordering foods:**

In Ordering food, customers order food. During festive Season, discount on various food items takes place.

- **Checking available stocks, dates for event etc.**

System will display information about current stocks levels, such as quantity on hand, units of measurements and other relevant details. All good and commodities i.e., cleaning supplies, food, linens and beverages which are not present, are filled up. In Planning dates, Event Manager provides the next available date for the event on which event can be organized.

- **Organizing events, business conferences etc.**

In Planning events, Event manager organizes, planned for variety of events that is being arranged in the hotel only. They check for the vacancy of events to organizes.

- **Paying bills:**

In paying bills, Guest pays the money in the exchange of food and beverages. During check-in time they were asked for payments in form of cash or online payment method according to their choices.

- **Inquiry about rooms**

Customers were inquiring about the available rooms and their facilities i.e. Wi-Fi, Fitness room, Swimming pool, etc.

## **Story Boarding**

- **Happy story-1**

one of our friends come to India from abroad. So, all our friends decided to organize a reunion party. As planned next weekend all met and decided to go the movies. After finishing the movie. we went to the beach where we enjoyed & played various games. At the end of the day, we were all starving so we went restaurant and enjoyed our food. Reminisced/remember our old memories and discussed our future plans/goals.

- **Happy story-2**

There was my friend's birthday on 29 September 2020. So, we decided to throw a surprise birthday party for her. As planned, we arranged the party at a hotel. She was surprised & puffed up with joy. After the Cake cutting ceremony, everyone presented their gifts to her. She was flabbergasted/surprised and thanked everyone for making her day beautiful and memorable.

- **Sad story-1**

In the season of winters. A group of tourists who were wandering from one State to another came to visits the mountains of the North. The Sun was already gone and the streetlights were shining in dark. They were looking for a place to rest and get warm as it was freezing outside. They inquired several hotels but due to winters all the rooms were already reserved. Due to unavailability of rooms they had to spent the night in their cars.

- **Sad story-2**

A businessman. was travelling from one state to another for business conference. After reaching his destination, he went to hotel for check-in and found some guest waiting there for checking-in. Completing the check-in process, he headed to the conference as he was already running out of time. After finishing his conference, he enjoyed the services of hotel. The next day he was worried as he spent lot of time during check-out process, as they were running all the processes manually. Reaching airport, he found that his flight departed 5 minutes ago. and he had to wait for 6 hours fox next flight.

**Conclusion:**

After visiting the hotel, we came to know about the users of online hotel booking and management. Here, we got the stakeholders regarding to Online hotel booking and management seeing the user performing their task we noted down all the activities done by them. From that we wrote two happy stories and two sad stories. We came to know about Online hotel management from the scratch which made our point of view clear in Empathy canvas.

## CHAPTER 3: PHASE 2: IDEATION PHASE

### 3.1 Ideation Canvas

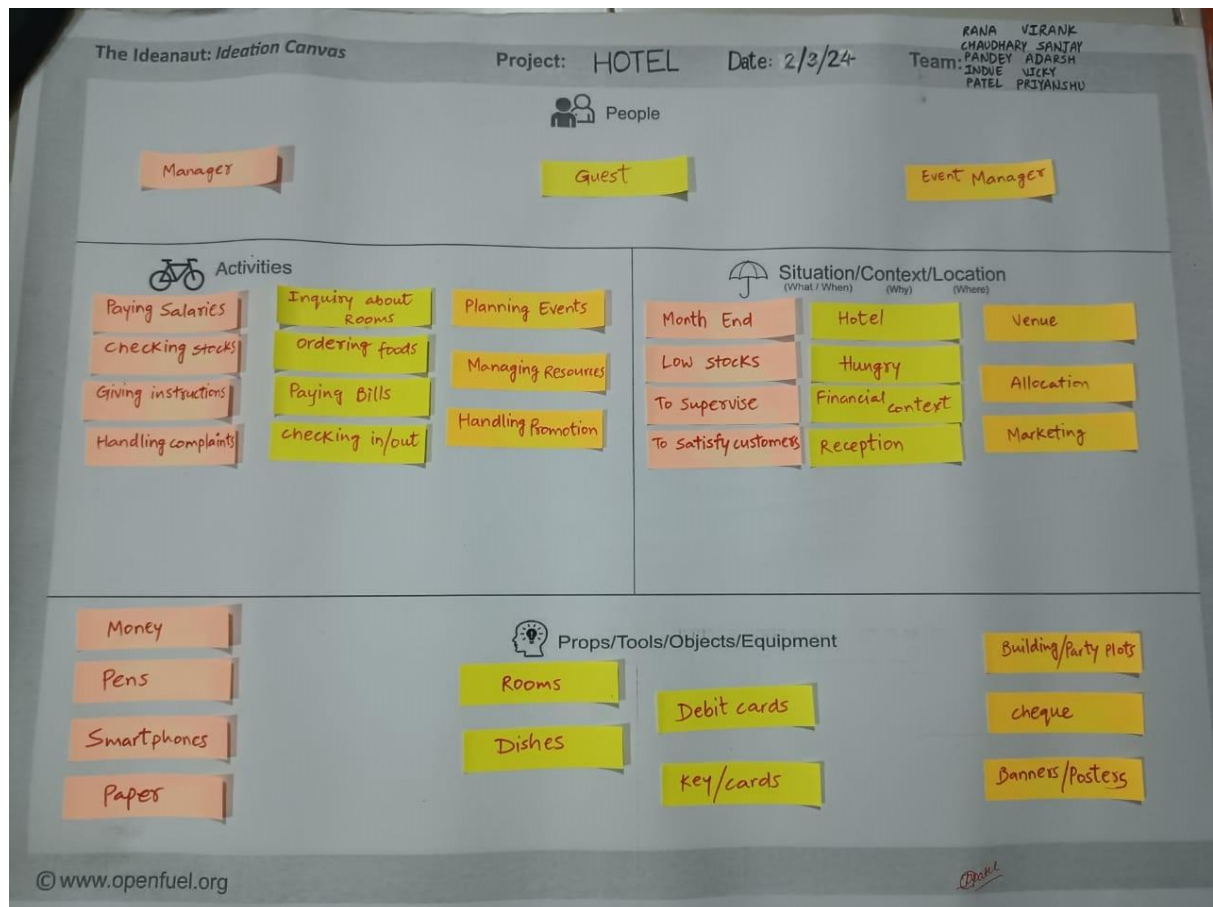


Figure 3.1.1: Ideation Canvas

#### People

- **Manager:**

Managers use business, management, and interpersonal skills to oversee the day-to-day operations of a hotel. The various hotel department heads report directly to them, and he/she must have knowledge of all areas of hotel management.

- **Guest:**

Staff members were helping the guest about how to use online booking.

- **Event manager:**

Event Manager were helping guest to show the availability of venue and dates for the events.

## Activities

- **Paying salary:**

Manager providing salaries to each of employees in the hotel through system. System will generate salary slips for each employee, detailing the breakdown of earnings, deductions, and net pay. After salary is being paid, system will update record accordingly.

- **Checking stocks:**

System will display information about current stocks levels, such as quantity on hand, units of measurements and other relevant details. All good and commodities i.e., cleaning supplies, food, linens and beverages which are not present, are filled up.

- **Inquiry about rooms:**

Customers were inquiring about the available rooms and their facilities i.e., Wi-Fi, Fitness room, Swimming pool, etc.

- **Bill payment/giving instruction:**

In giving instruction, Managers gives instruction the trainee, new staff to proper communicate with their guest.

- **Handling complaints:**

In this, Sources of conflict is being identified and all the complaints are handled carefully.

- **Ordering food**

In Ordering food, customers order food. During festive Season, discount on various food items takes place.

- **Paying bills**

In paying bills, Guest pays the money in the exchange of food and beverages. During check-in time they were asked for payments in form of cash or online payment method according to their choices.

- **Checking in/out**

In Checking in process, guest is welcomed-in for the enjoyment and calm their mind. In checking out, Guest moving back to their homes after amusement.

- **Planning events**

In Planning events, Event manager organizes, planned for variety of events that is being arranged in the hotel only. They check for the vacancy of events to organizes.

- **Providing dates**

In Planning dates, Event Manager provides the next available date for the event on which event can be organized.

- **Managing resources**

In managing resources, various commodities and hotel supplies such as bed linens, toiletries management is essential. We also check whether the food and beverages are not being waste. This enhances guest satisfaction, and maximize revenue opportunities.

- **Handling promotion**

In handling promotion, Human resource promotes their employees to new position according to their skills and knowledge.

### **Situation/content/location**

- **Low Stocks**

Manager checking stocks of goods and commodities.

- **Venue:**

Event Manager planning an events venue on the traditional occasion.

- **Handling Complaint:**

Manager handling complaint of the customer to satisfy the needs of them.

### **Props/possible solutions**

- Computer
- Pens
- Debit Cards
- Rooms
- Smart phone



**The 10 Problems which we saw in our domain are:**

- Lengthy check-in and check-out processes due to manual paperwork and documentation, resulting in excessive paper usage and wastage. Lots of paperwork which results in waste of paper.
- Ineffective customer relationship management (CRM) tools, leading to difficulties in managing guest information and preferences.
- Insufficient support or training provided to staff, resulting in difficulties in utilizing the system effectively.
- Difficulty in accessing real-time information about room availability and pricing.
- Challenges in managing guest information and preferences without a centralized database.
- Limited payment options, such as cash-only transactions, which may not be convenient for some customers.
- Limited access to customer reviews and feedback, making it challenging to address customer concerns and improve the overall guest experience. Can not apply for loan online.
- Systems restrict access to information and require physical presence to retrieve or update data.
- Slow booking process, due to manual data entry causing delays or customer dissatisfaction.
- Systems face higher risks of data loss due to physical damage, theft, or hardware failure.
- Generating detailed reports, analyzing trends, or extracting insights from data can be more difficult and time-consuming.

## CHAPTER 4: PHASE 3: PRODUCT DEVELOPMENT CANVAS

### 4.1 Product Development Canvas

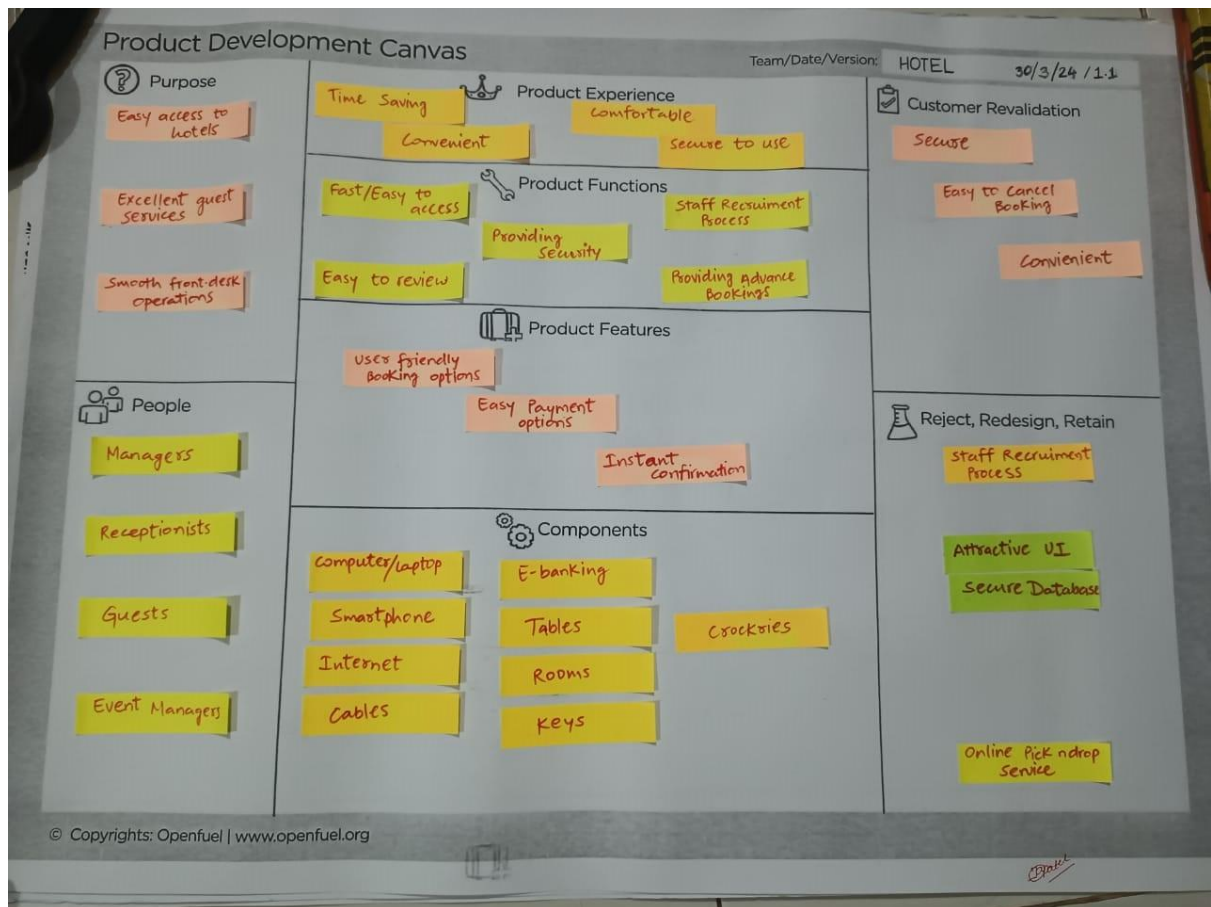


Figure:4.1.1 Product Development Canvas

#### Purpose

It refers to the purpose of the concept that we are developing.

- The purpose of using the product development canvas is to outline and clarify various element related to development of the system. It helps to clearly define problem that hotel aims to address. It is very easy to access and provides excellent guest services.

#### People

They are the key customer segment who will use this product/ service or the end product of the concept we are pursuing.

- Managers
- Guest
- Event Manager
- Receptionist

**Product experience**

- Product experience refers to the overall impression that customers have when interacting with a product throughout their entire journey.
- Time saving: we don't need to go to the hotel for booking room, it can be done through website
- Secure to use
- Convenient: easy to use
- Comfortable: easy to operate
- Security: without authentication no one can access account so this will provide security from unauthenticated users

**Product functions**

Product Functions refers to specific tasks that a product is designed to perform. These Functions are the features and functionalities that enable the product to meet needs and requirements of its users. The functions required in our device are:

- Easy to access: anyone can access the website easily. Providing Advance bookings: advance booking is available here
- Providing Security: It provides security to quest
- Easy to review: this gives security to transactions and data
- Staff recruitment Process: In this staff are recruited.

**Product features**

Product features refers to the specific characteristics, qualities, or attributes of a product that provide benefits and fulfill the needs of customers.

The features required in our product are:

- User friendly booking options: Easily operated system.
- Easy payment Options: Customer can pay the money in cash or e-banking form.
- Instant Confirmation: Immediate checking whether rooms are available or not.

**Components**

Components built up the features. They are the can be major components or the auxiliary (additional) components that make the major components work. The components required in an audio translator are:

- Computer
- Laptop

- Smart phones
- Internet
- Cablese
- e-Banking
- e-booking
- Tables
- Rooms
- Keys
- Crockerries

### **Customer revalidation**

Customer revalidation refers to the process of continuously engaging with customers and gathering feedback to ensure that the product meets their needs and expectations.

- Secure
- Easy to carry: Easy to portable
- Time savior: Time saving
- Comfortable: providing ease and relaxation
- Convenient: easy to useful

### **Reject, redesign, retain**

Rejection of those features or functions that customers didn't find useful. Redesigning those that were partially useful and retaining those that met the bar.

#### **Reject:**

According to the customer review about hotel management, we are removing the features of online staff recruitment process for the convivence and security of the customers.

#### **Redesign:**

We are working to interact the customer by updating UI-User Interface and we have also designed the secure database to provide security of our data from unauthorized users.

#### **Retain:**

Staffs are facing problem in delivering the food far away the hotel. Thus, in future we are planning to do online delivery to satisfy the needs of customers.

## 4.2 Problem Statement

The existing system does not provide facility of online delivery for the far away living customers so the customer has to go to hotel for taking food. It is possible that taking food will consume so much time as more customers is waiting in the queue for their order.

## CHAPTER 5: PROOF OF CONCEPT

### 5.1 Introduction to LNM Matrix

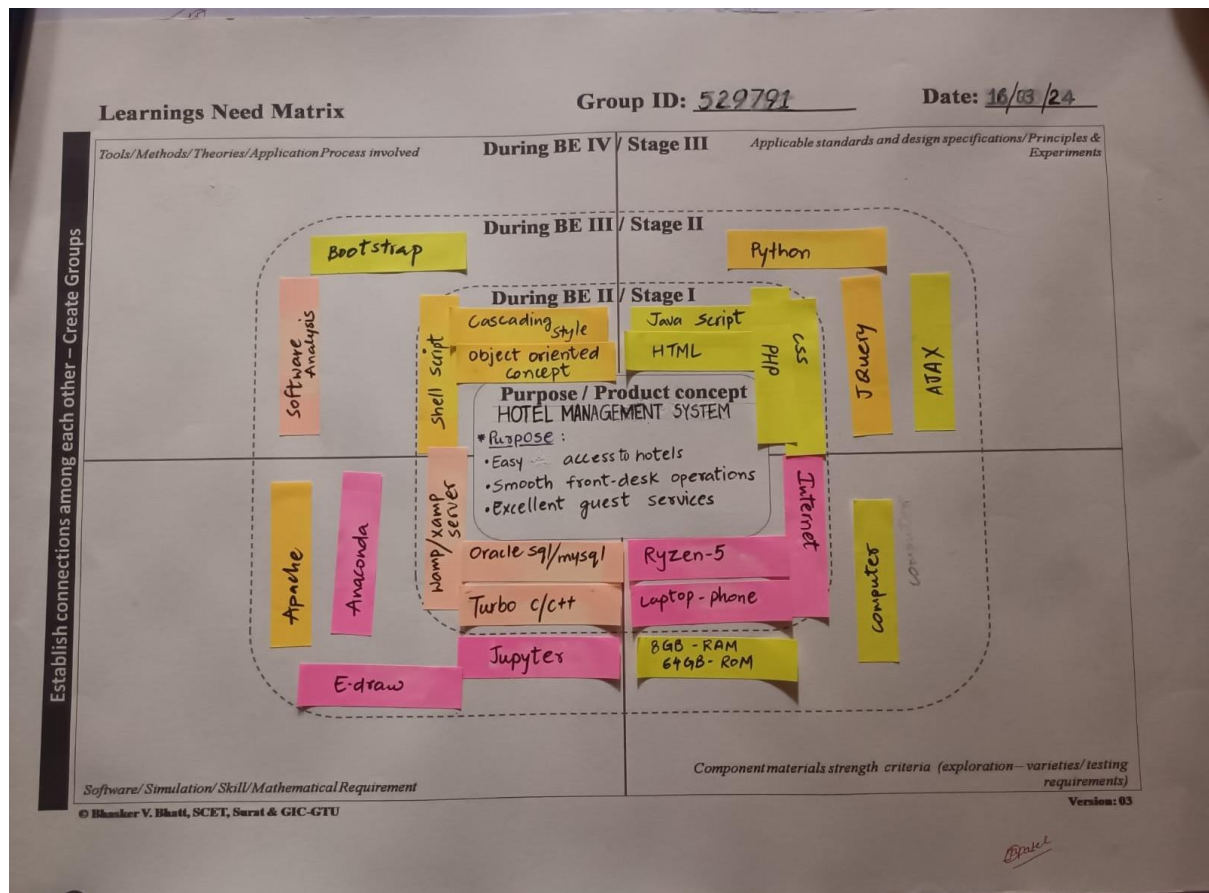


Fig 5.1.1 LNM matrix

LNM – Learning Needs Matrix will help us to identify the learning requirements at an early stage along with prioritization of specific learning along with defined time duration/ time allocation for each. Identification will be focused with listing out Syllabus based and out of syllabus learning & skill development.

A Learning Need Matrix in the context of hotel management refers to a tool or framework that helps identify the learning needs of individuals or teams within the hotel industry. It assists in assessing the current skill levels, knowledge gaps, and training requirements of employees in various areas of hotel management.

By using a Learning Need Matrix, you can ensure that your hotel staff receives targeted and relevant training to enhance their skills and knowledge in specific areas of hotel management. This approach can contribute to the overall improvement of service quality, operational efficiency, and guest satisfaction in your hotel.

## 5.2 Design for cost:

### 5.2.1 : Hardware support and Estimation

Table 5.1 Hardware Estimate Cost

Sr.No	Hardware Requirement	Estimate cost
1	Computer	35000-40000
2	Server	15000-25000
3	Router	25000-30000
4	Inverter	60000-70000
5	LAN wire	10000-15000

### 5.2.2 : Software Estimation

Table 5.2 Software Estimate Cost

Sr.No	Software Requirement	Estimate Cost
1	OS (Windows 11)	15000-20000
2	Microsoft Office	50000-10000
3	Edraw	1000-5000

### 5.2.3 : Communication Interface Requirement

Table 5.3 Communication Interface Cost

Sr.No	Communication Interface	Estimate Cost
1	Internet	5000-10000
2	Payment gateway	12000-20000
3	Telephones	15000-20000

### 5.3 ROUGH PROTOTYPE

The online hotel management system prototype aims to enhance the overall guest experience, improve operational efficiency, and increase revenue for hotels. It will be developed iteratively, with regular feedback from users and stakeholders, to ensure that it meets their needs and expectations. The online system is a web-based application aimed at simplifying and automating the hotel management process. It serves as a centralized platform for hotel administrators, staff, and guests to effectively manage and streamline various hotel operations. The prototype will focus on essential features such as online booking and reservation management, guest check-in and check-out, room and inventory management, billing and invoicing, and reporting.

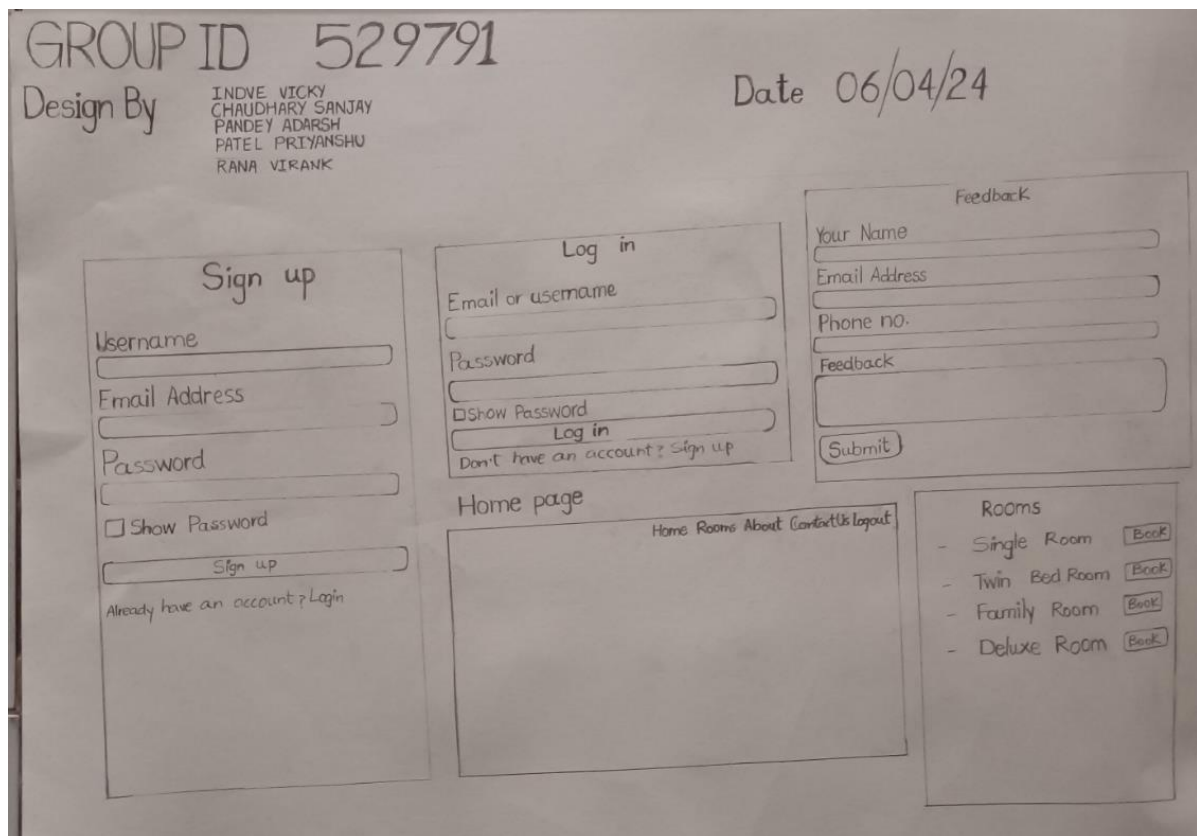


Fig: 5.3.1 Rough Prototype model



## CHAPTER 6: IMPLEMENTATION

### 6.1 SAMPLE SCREENSHOT

#### Sign Up

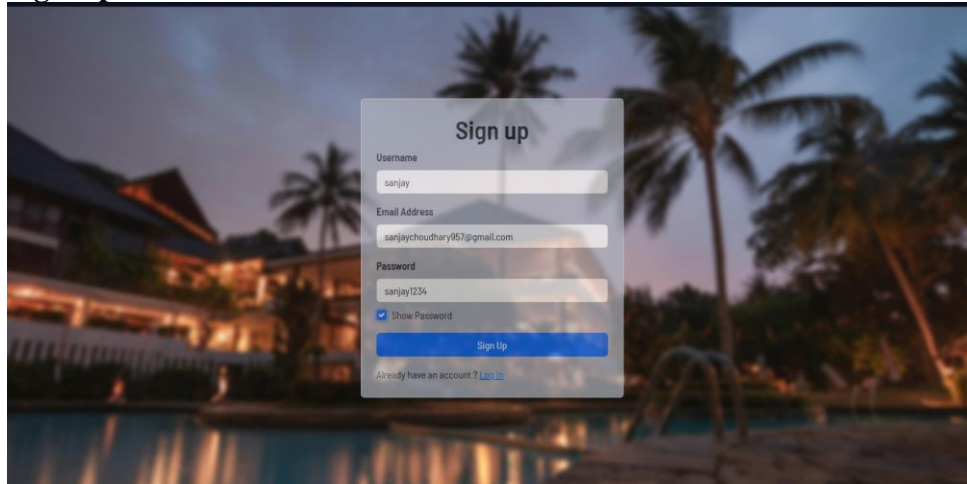


Fig:6.1.1

#### Log-in

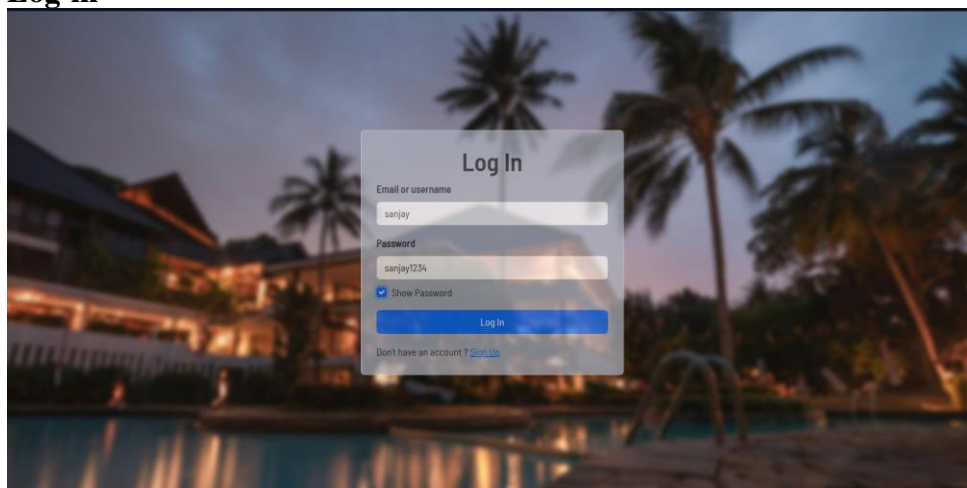
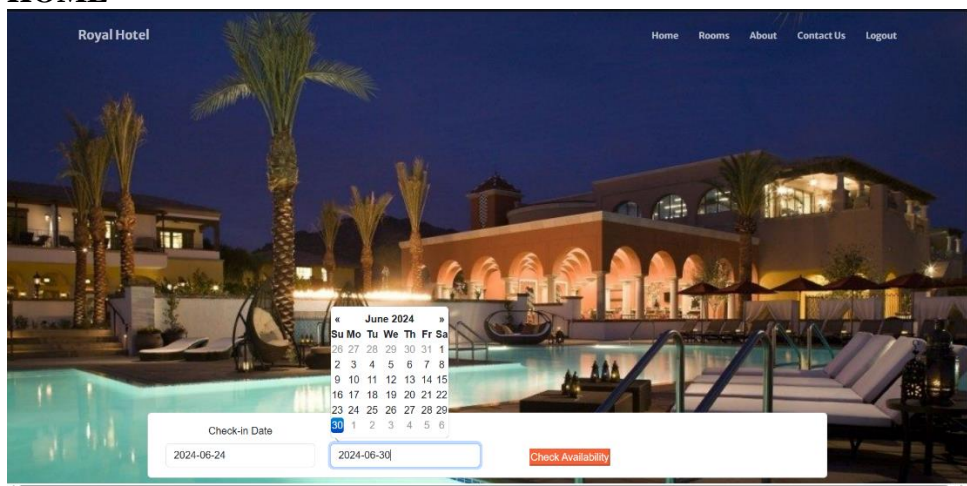


Fig:6.1.2

#### HOME



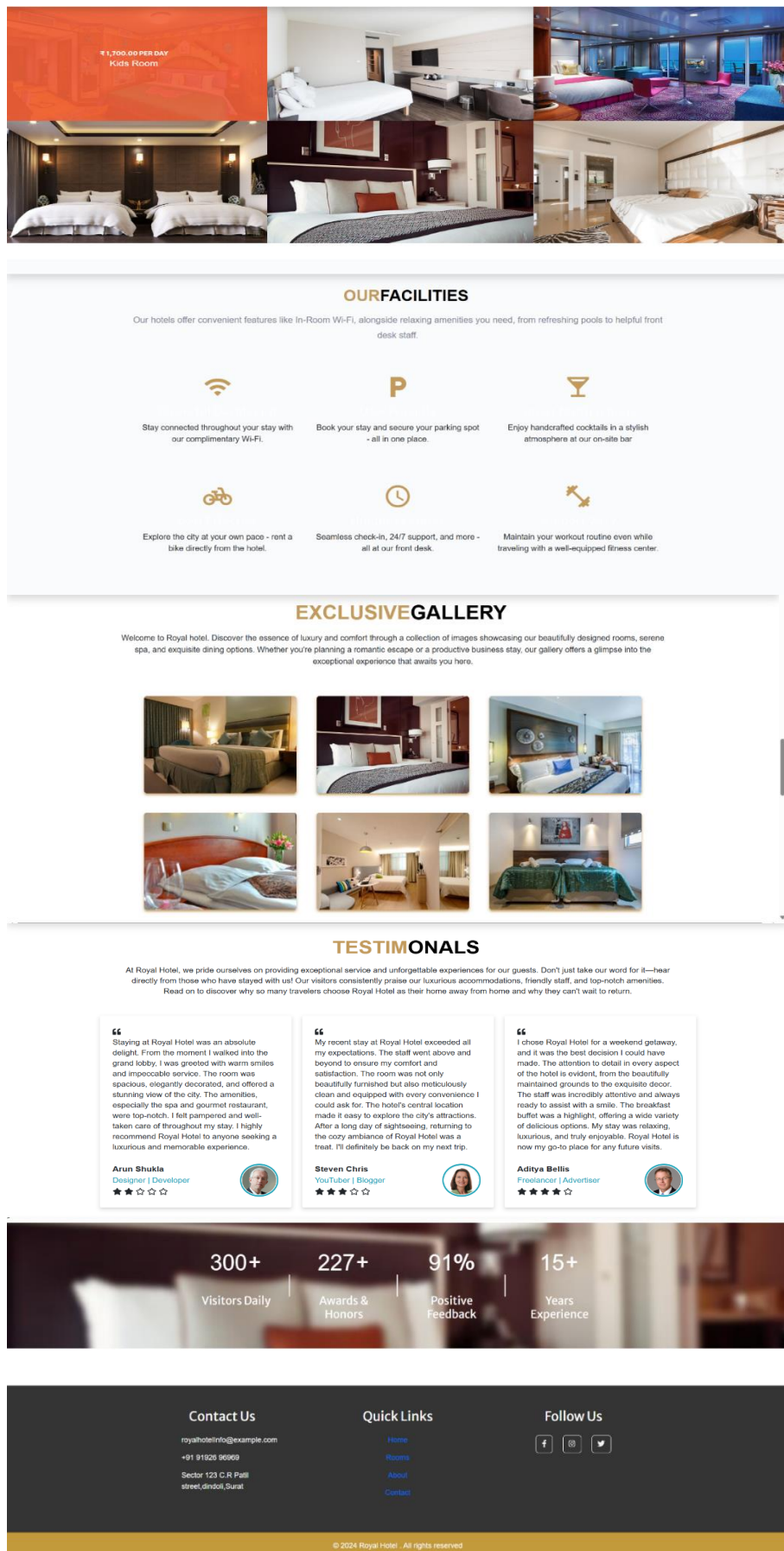


Fig:6.1.3

## Rooms

The screenshot displays the 'Rooms' section of the Royal Hotel website. At the top, there's a navigation bar with 'Home', 'Rooms', 'About', 'Contact Us', and 'Logout'. Below the navigation bar is a large hero image of the hotel at night with the word 'ROOMS' overlaid. Underneath the hero image is a booking form with 'Check-in Date' (2024-06-24) and 'Check-out Date' (2024-06-27) fields, and a 'Check Availability' button. Below the form are three room listings:

- Single Room:** ₹ 500.00 / per day. Features: Free WiFi, Free TV, Free dining, support\_agent. Includes a 'Book now' button.
- Twin Bed Room:** ₹ 1,000.00 / per day. Features: Free WiFi, Free TV, Free dining, support\_agent. Includes a 'Book now' button.
- Family Room:** ₹ 350.00 / per day. Features: Free WiFi, Free TV, Free dining, support\_agent. Includes a 'Book now' button.

At the bottom, there's a footer section with 'Contact Us' (royalhotelinfo@example.com, +91 91926 96969, Sector 123 C.R. Patel street, dindoli, Surat), 'Quick Links' (Home, Rooms, About, Contact), and 'Follow Us' (Facebook, Instagram, Twitter). The footer also includes a copyright notice: © 2024 Royal Hotel. All rights reserved.

Fig:6.1.4

## Booing

The screenshot displays the 'Booing' section of the Royal Hotel website. A 'Book' form overlay is visible, containing the following fields:

- Name: virank
- Contact #: 5634112096
- Check-in Date: 24-06-2024
- Check-in Time: 17:14
- Days of Stay: 6

Below the form are 'Save' and 'Cancel' buttons. The background shows the same room listings as in Fig:6.1.4, but they are dimmed.

Fig:6.1.5



## About

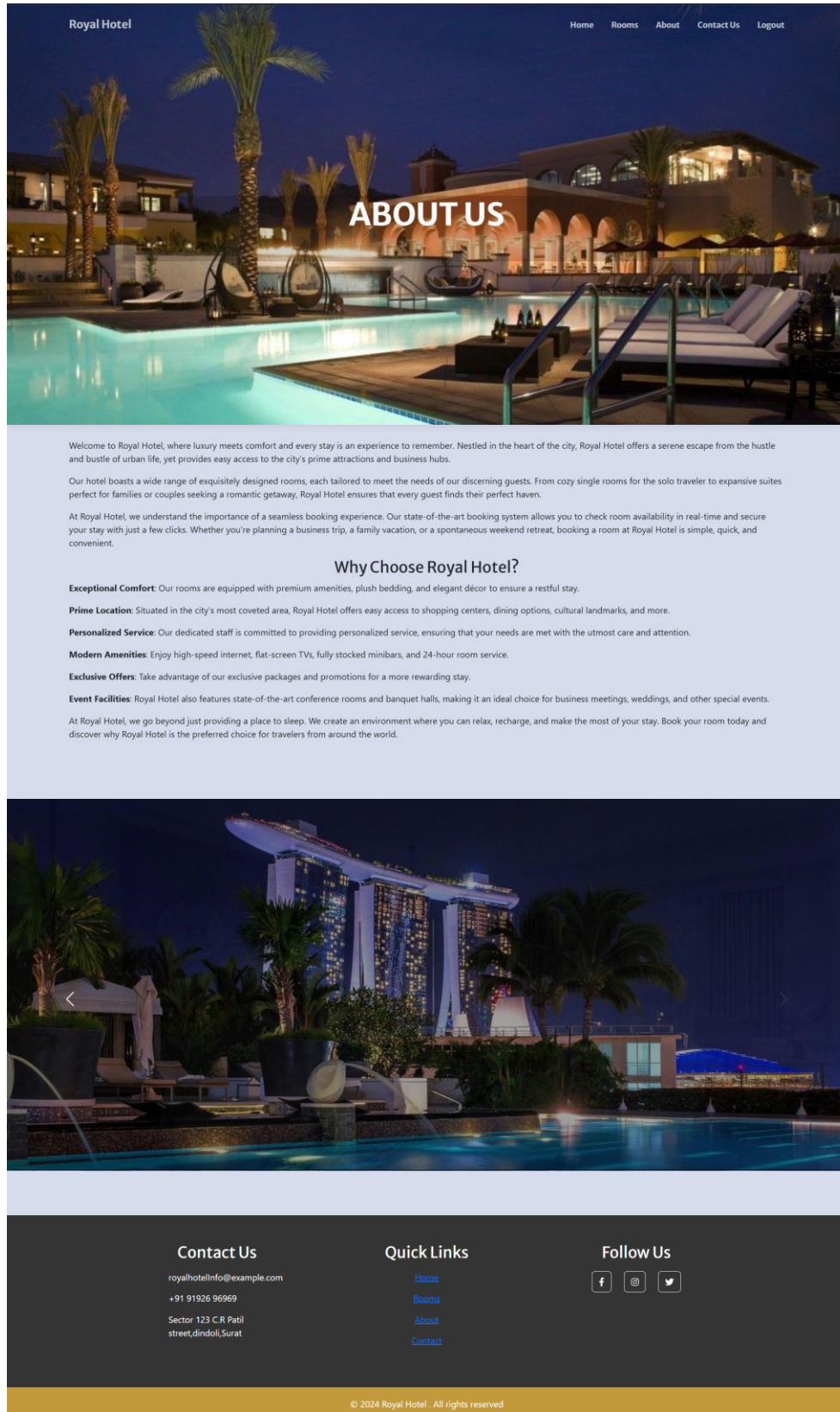


Fig:6.1.6

## Contact

Royal Hotel

Home Rooms About Contact Us Logout

# CONTACT US

Your Name:  
Enter your name

Email Address:  
name@example.com

Phone No:  
XXX-XXX-XXXX

Rate Us:  
☐ 4★ & above  
☐ 3★ & above  
☐ 2★ & above  
☒ 1★ & above

Feedback:

Submit

Mansi Residency  
CR Patel Rd, C R Colony, Dindoli, Surat,  
Gujarat 394210  
[View larger map](#)

### Contact Us

royalhotelinfo@example.com  
+91 91926 96969  
Sector 123 C.R Patil  
street,dindoli,Surat

### Quick Links

[Home](#)  
[Rooms](#)  
[About](#)  
[Contact](#)

### Follow Us

[f](#) [@](#) [t](#)

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**Fig:6.1.7**

## ADMIN PANEL

### login

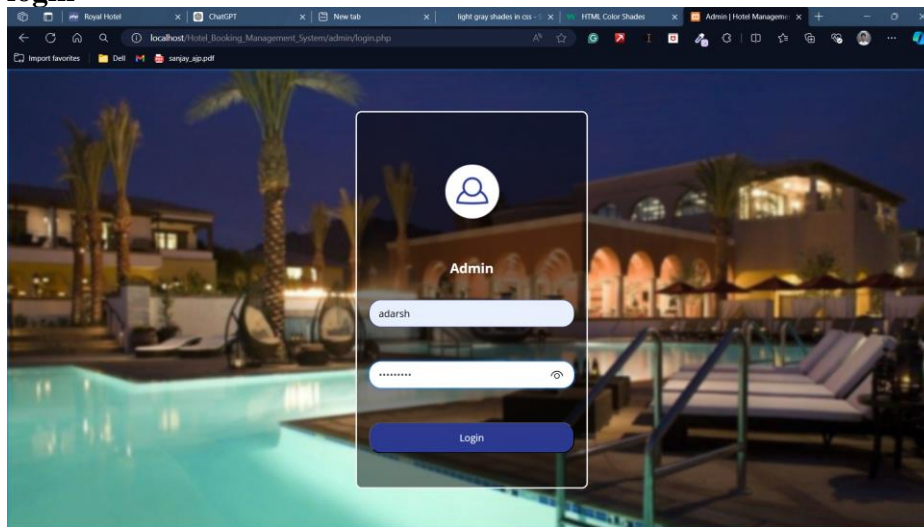


Fig:6.1.8

### Home(Adminstrator)

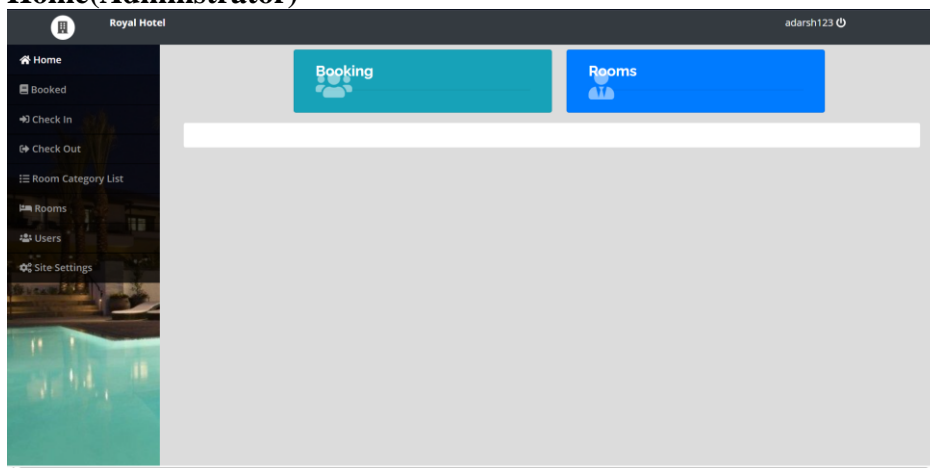


Fig:6.1.9

### Booked section

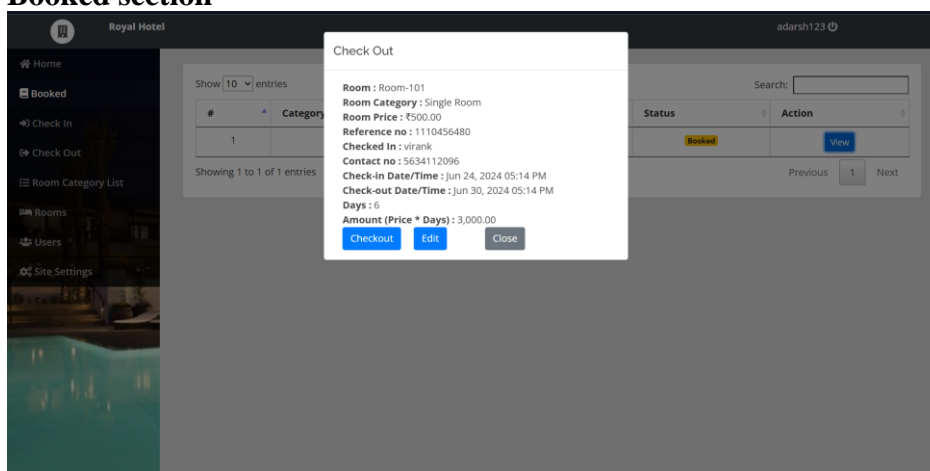


Fig:6.1.10

## Check-in

Royal Hotel | adarsh123

Category: All [Filter]

Show 10 entries | Search:

#	Category	Room	Status	Action
1	Twin Bed Room	Room-102	Available	Check in
2	Family Room	Room-201	Available	Check in
3	Deluxe Room	Room-301	Available	Check in

Showing 1 to 3 of 3 entries | Previous 1 Next

Fig:6.1.11

## Check-out

Royal Hotel | adarsh123

Category: All [Filter]

Show 10 entries | Search:

#	Category	Room	Reference	Status	Action
1	Single Room	Room-101	1813442777	Checked-Out	View
2	Deluxe Room	Room-301	2423126161	Checked-Out	View
3	Single Room	Room-101	1110456480	Checked-in	View

Showing 1 to 3 of 3 entries | Previous 1 Next

Fig:6.1.12

## Room categories

Royal Hotel | adarsh123

Room Category Form

Category: [Text Field]

Price: [Text Field]

Image: [Choose File] No file chosen

[Save] [Cancel]

#	Img	Room	Action
1		Name : Deluxe Room Price : ₹2,000.00	[Edit] [Delete]
2		Name : Single Room Price : ₹500.00	[Edit] [Delete]
3		Name : Family Room Price : ₹3,500.00	[Edit] [Delete]
4		Name : Twin Bed Room Price : ₹1,000.00	[Edit] [Delete]
5		Name : Premium Room Price : ₹3,000.00	[Edit] [Delete]
6		Name : Kids Room Price : ₹1,700.00	[Edit] [Delete]

localhost/hotel\_booking\_management\_system/admin/index.php?page=rooms

Fig:6.1.13



## Users

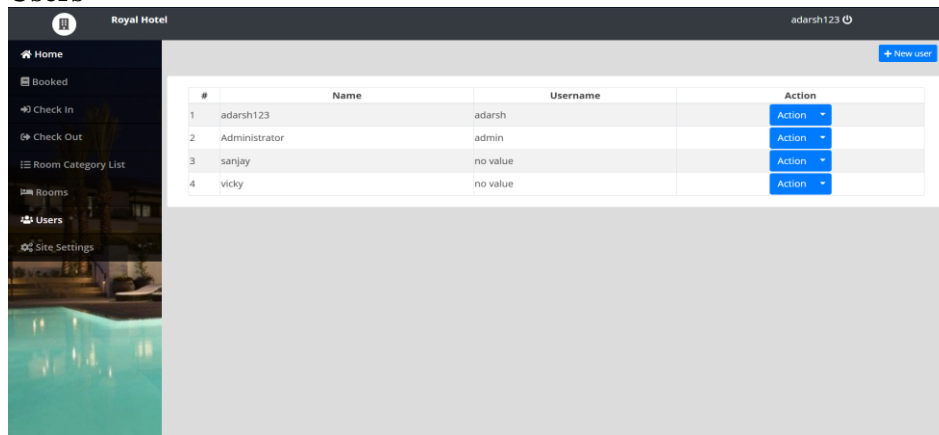


Fig:6.1.14

## Rooms

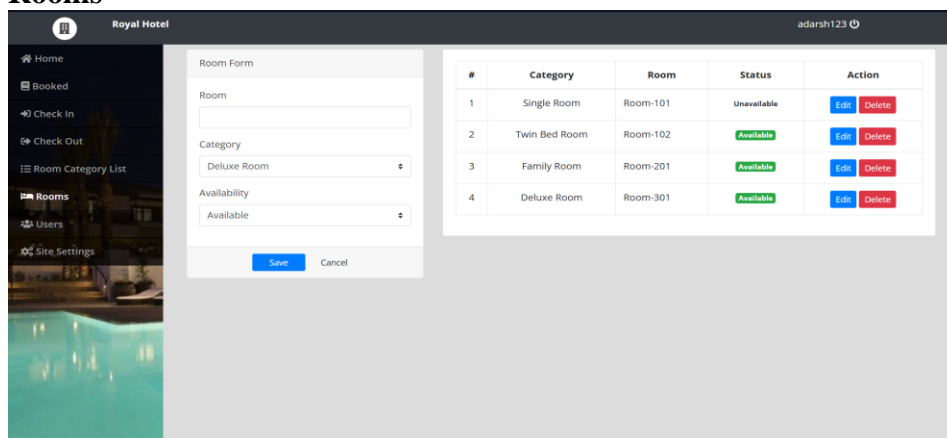


Fig:6.1.15

## Site setting

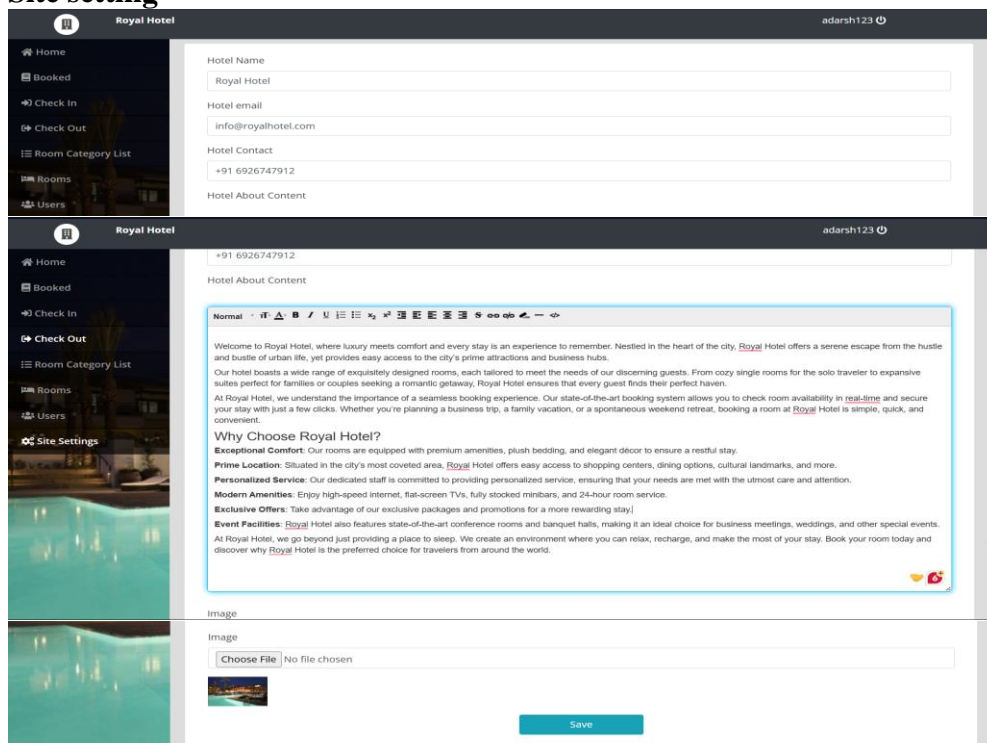


Fig:6.1.16



## 6.2 SAMPLE CODING

### ➤ Index File:

```
<!DOCTYPE html>
<html lang="en">
<?php
session_start();
if (!isset($_SESSION["loggedin"]) || $_SESSION["loggedin"] !== TRUE) {
    echo "<script>" . "window.location.href='./login.php';" . "</script>";
    exit;
}
include ('header.php');
include ('admin/db_connect.php');

$query = $conn->query("SELECT * FROM system_settings limit 1")->fetch_array();
foreach ($query as $key => $value) {
    if (!is_numeric($key))
        $_SESSION['setting_' . $key] = $value;
}
?>
<link href="https://fonts.googleapis.com/icon?family=Material+Icons" rel="stylesheet">
<link href="https://cdn.jsdelivr.net/npm/bootstrap@5.3.3/dist/css/bootstrap.min.css"
rel="stylesheet"
integrity="sha384-
QWTKZyjpPEjISv5WaRU9OFeRpok6YctnYmDr5pNlyT2bRjXh0JMhY6hW+ALEwI
H" crossorigin="anonymous">
<link rel="stylesheet" href="https://cdnjs.cloudflare.com/ajax/libs/lightgallery-
js/1.4.0/js/lightgallery.min.js">
<style>
header.masthead {
    background: url(assets/img/<?php echo $_SESSION['setting_cover_img'] ?>);
    background-repeat: no-repeat;
    background-size: cover;
}
/* footer---starts */
footer {
    background: #343434;
    padding-top: 50px;
    margin-top: 80px;
}

.container_footer {
    width: 1140px;
    margin: auto;
    display: flex;
    justify-content: center;
    color: white;
```

```
}

.footer-content {
  width: 33.3%;
}

h3 {
  font-size: 28px;
  margin-bottom: 15px;
  text-align: center;
}

.footer-content p {
  width: 190px;
  margin: auto;
  padding: 7px;
}

.footer-content ul {
  text-align: center;
}

.list {
  padding: 0;
}

.list li {
  width: auto;
  text-align: center;
  list-style-type: none;
  padding: 7px;
  position: relative;
}

.list li::before {
  content: "";
  position: absolute;
  transform: translate(-50%, -50%);
  left: 50%;
  top: 100%;
  width: 0;
  height: 2px;
  background: white;
  transition-duration: .5s;
}

.list li:hover::before {
  width: 70px;
}
```

```
.social-icons {
  text-align: center;
  padding: 0;
}

.social-icons li {
  display: inline-block;
  text-align: center;
  padding: 5px;
}

.social-icons i {
  color: white;
  font-size: 50px;
}

a {
  text-decoration: none;
}

a:hover {
  color: white;
}

.social-icons i:hover {
  color: white;
}

.bottom-bar {
  background-color: #C29A3C;
  text-align: center;
  padding: 10px 0;
  margin-top: 50px;
}

.bottom-bar p {
  color: white;
  margin: 0;
  font-size: 16px;
  padding: 7px;
}

/* footer----ends */

</style>

<body id="page-top">
  <!-- Navigation-->
  <div class="toast" id="alert_toast" role="alert" aria-live="assertive" aria-atomic="true">
    <div class="toast-body text-white">
```

```

    </div>
</div>
<nav class="navbar navbar-expand-lg navbar-light fixed-top py-3" id="mainNav">
  <div class="container">
    <a class="navbar-brand js-scroll-trigger" href="/"><?php echo
$_SESSION['setting_hotel_name'] ?></a>
    <button class="navbar-toggler navbar-toggler-right" type="button" data-
toggle="collapse"
      data-target="#navbarResponsive" aria-controls="navbarResponsive" aria-
expanded="false"
      aria-label="Toggle navigation"><span class="navbar-toggler-
icon"></span></button>
    <div class="collapse navbar-collapse" id="navbarResponsive">
      <ul class="navbar-nav ml-auto my-2 my-lg-0">
        <li class="nav-item"><a class="nav-link js-scroll-trigger"
href="index.php?page=home">Home</a></li>
        <li class="nav-item"><a class="nav-link js-scroll-trigger"
href="index.php?page=list">Rooms</a></li>
        <li class="nav-item"><a class="nav-link js-scroll-trigger"
href="index.php?page=about">About</a></li>
        <li class="nav-item"><a class="nav-link js-scroll-trigger"
href="index.php?page=contact">Contact Us</a></li>
        <li class="nav-item"><a class="nav-link js-scroll-trigger"
href="/logout.php">Logout</a></li>
      </ul>
    </div>
  </div>
</nav>
<?php
$page = isset($_GET['page']) ? $_GET['page'] : "home";
include $page . '.php';
?>
<div class="modal fade" id="confirm_modal" role='dialog'>
  <div class="modal-dialog modal-md" role="document">
    <div class="modal-content">
      <div class="modal-header">
        <h5 class="modal-title">Confirmation</h5>
      </div>
      <div class="modal-body">
        <div id="delete_content"></div>
      </div>
      <div class="modal-footer">
        <button type="button" class="btn btn-primary" id='confirm'
onclick="">Continue</button>
        <button type="button" class="btn btn-secondary" data-
dismiss="modal">Close</button>
      </div>
    </div>
  </div>
</div>
</div>

```

```

<div class="modal fade" id="uni_modal" role='dialog'>
  <div class="modal-dialog modal-md" role="document">
    <div class="modal-content">
      <div class="modal-header">
        <h5 class="modal-title"></h5>
      </div>
      <div class="modal-body">
      </div>
      <div class="modal-footer">
        <button type="button" class="btn btn-primary" id='submit'
          onclick="$('#uni_modal form').submit()">Save</button>
        <button type="button" class="btn btn-secondary" data-
dismiss="modal">Cancel</button>
      </div>
    </div>
  </div>
</div>
<!-- Test-footeer -->
<footer>
  <div class="container_footer ">
    <div class="footer-content">
      <h3>Contact Us</h3>
      <p>royalhotelInfo@example.com</p>
      <p>+91 91926 96969</p>
      <p>Sector 123 C.R Patil street,dindoli,Surat</p>
    </div>
    <div class="footer-content">
      <h3>Quick Links</h3>
      <ul class="list">
        <li class="text-white"><a href="index.php?page=home">Home</a></li>
        <li><a href="index.php?page=list">Rooms</a></li>
        <li><a href="index.php?page=about">About</a></li>
        <li><a href="index.php?page=contact">Contact</a></li>
      </ul>
    </div>
    <div class="footer-content">
      <h3>Follow Us</h3>
      <ul class="social-icons">
        <li><a class="btn btn-outline-light btn-floating m-1"
          href="https://www.facebook.com/vicky.indve.7?mibextid=ZbWKwL"
          role="button"><i
            class="fab fa-facebook-f"></i></a></li>
        <!-- <li><a class="btn btn-outline-light btn-floating m-1"
          href="https://www.google.com/royalhotel/wikipedia" role="button"><i class="fab fa-
google"></i></a></li> -->
        <li><a class="btn btn-outline-light btn-floating m-1"
          href="https://www.instagram.com/priyanshu_patel.__"
          role="button"><i class="fab fa-instagram"></i></a></li>
        <li><a class="btn btn-outline-light btn-floating m-1"
          href="https://www.twitter.com/hotel" role="button"><i

```

```
        class="fab fa-twitter"></i></a></li>
    </ul>
</div>
</div>
<div class="bottom-bar">
    <p>&copy; 2024 Royal Hotel . All rights reserved</p>
</div>
</footer>
<?php include ('footer.php') ?>
</body>
<?php $conn->close() ?>
</html>
```

## CHAPTER 7: ADVANTAGES & DISADVANTAGES

### Advantages:

- **Convenience:** Customers can book rooms anytime, from anywhere, without needing to call or visit the hotel.
- **Real-time Availability:** Users can instantly check room availability, making the booking process faster and more efficient.
- **Wide Reach:** The website can attract customers from different geographical locations, increasing the hotel's potential customer base.
- **Reduced Workload:** Automation of bookings reduces the workload on hotel staff, allowing them to focus on other important tasks.
- **User Experience:** A well-designed website can provide a seamless and user-friendly booking experience, enhancing customer satisfaction.
- **Cost-Effective Marketing:** The website can serve as a marketing tool, showcasing the hotel's amenities, special offers, and customer reviews.
- **Data Collection:** The website can collect valuable customer data for targeted marketing and improving services based on customer preferences and feedback.
- **Immediate Confirmation:** Customers receive instant booking confirmation, which builds trust and reliability.
- **Multiple Payment Options:** The website can offer various payment methods, catering to different customer preferences and increasing booking rates.
- **Competitive Advantage:** Having an efficient online booking system can give the hotel a competitive edge over others that may not offer such services.

### Disadvantages:

- **Technical Issues:** Website downtime or technical glitches can disrupt the booking process and lead to customer dissatisfaction.
- **Security Concerns:** Handling online payments and customer data requires robust security measures to prevent data breaches and fraud.
- **Maintenance Costs:** Regular updates and maintenance of the website can incur additional costs.
- **Dependency on Technology:** Over-reliance on the website may lead to problems if there are connectivity issues or system failures.
- **Complex Navigation:** Poorly designed websites can frustrate users, leading to a negative experience and potential loss of bookings.

- **Competition:** Competing with numerous other hotel booking websites can be challenging, requiring constant optimization and marketing efforts.
- **Initial Setup Costs:** Developing a functional and appealing website can require significant initial investment.
- **Customer Service Limitations:** Some customers may prefer personalized service and might feel that the website lacks the human touch.
- **Limited Customer Interaction:** Less direct interaction with customers can mean fewer opportunities to upsell additional services or address specific needs.
- **Market Saturation:** With many hotels having online booking systems, standing out in a saturated market can be difficult without unique features or offers.



## CONCLUSION

In conclusion we believe this project if properly utilized will save time, reduce the amount of work the administration has to do, and will replace the stationery material with electronic apparatus. The system should also serve as a major tool to improving the efficiency in hotel management. Hence a system with expected results has been developed but there is still room for improvement. In terms of experience gained through the duration of this project study, the students have been able to have broader knowledge about the management of hotel organization using manual and automated procedures

## REFERENCES

- **Wikipedia**  
[https://en.wikipedia.org/wiki/Hotel\\_Management](https://en.wikipedia.org/wiki/Hotel_Management)
- **Vizologi**  
<https://vizologi.com/business-strategy/case-studies/tag/hotel/>
- **Chatgpt**  
<https://chat.openai.com/>
- **Copilot**  
<https://copilot.microsoft.com/>
- **Github**  
<https://github.com/>
- **Stackoverflow**  
<https://stackoverflow.com/>
- **Bootstrap**  
<https://getbootstrap.com/>
- **E-hotelier**  
<https://insights.ehotelier.com/insights/2019/03/08/8-ideas-for-hotel-management-that-will-boost-your-business/>