

Bachelor of Computer Applications (BCA) Programme

Minor Project Report

BCA Sem V AY 2024-25

Project Title: Hotel Management System

by

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Project Guide by: Akansha Srivastav Acknowledgement

The success and final outcome of this project required a lot of guidance and

assistance from many people and we are extremely fortunate to have got this all

along the completion of our minor project work. Whatever we have done is only

due to such guidance and assistance.

I would not forget to thank I/C Principal Dr. Aditi Bhatt, IQAC coordinator and trust

representative Dr. Vaibhav Desai, In-charge of IT Department Dr. Vimal Vaiwala,

Head of the Department Prof.Nainesh Gathiyawala and Minor Project guide

Akansha Srivastav and all other Assistant professors of SDJ International

College, who took keen interest on our project work and guided us all along, till

the completion of our project work by providing all the necessary information for

developing a good system.

I am extremely grateful to her/him for providing such a nice support and guidance

though she/he had busy schedule managing the college dealings.

I am thankful and fortunate enough to get support and guidance from all Teaching

staffs of Bachelor of Computer Application Department which helped us in

successfully completing our project work. Also, we would like to extend our

sincere regards to all the non-teaching staff of Bachelor of Computer Application

Department for their timely support.

Srushti Gangani (5777) Dhruvisha Kathiriya (5797) Krina Chothani (5978) Aayushi Gajera (6015)

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1 Introduction

1.1 Description:

A hotel management system (HMS) is software that helps hotels run smoothly. It combines tasks like booking rooms, managing checkins, and handling payments into one easy platform. This makes it simpler for staff to provide better service to guests.

With an HMS, many tasks are automated, which reduces mistakes and saves time. For example, guests can check in and out quickly, and housekeeping can see which rooms need cleaning in real time. This allows staff to focus more on helping guests and making their stay enjoyable.

Additionally, modern HMS features tools to track sales and analyze guest data. This helps hotel managers make smart decisions about pricing and marketing. Overall, an HMS improves hotel operations and creates a better experience for guests, leading to happier customers and more revenue.

A hotel management system (HMS) is a tool that helps hotels manage their daily operations. It organizes tasks like booking rooms, checking guests in and out, and handling payments all in one place. This makes it easier for hotel staff to provide great service.

Using an HMS saves time and reduces mistakes. Guests can check in quickly, and housekeeping knows which rooms need attention right away. This means staff can spend more time focusing on guest needs.

1.2 Profile:

Project Title	Hotel Management System
Name of theCollege	SDJ International College, Vesu
Duration	3 Months
Front - EndTool	HTML, CSS , Javascript
Back - EndTool	Microsoft SQL Server
Project Type	Web Application
Language	PHP(Preprocessor Hypertext)
Team Size	4 Member
Internal Guide	Akansha Srivastav
Submitted By	1. Gangani Srushti PravinBhai
	2. Kathiriya Dhruvisha BhaylalBhai
	3. Chothani Krina BhaveshBhai
	4. Gajera Aayushi GopalBhai
Submitted To	SDJ International College,Vesu



2 Environment Description

2.1 Hardware Requirements

Hardware configuration		
Processor	Intel(R) Core(TM) i3-5005U CPU @ 2.00GHz 2.00 GHz	
RAM	4 GB	
Hard disk	4 GB	
System Type	64-bit Operating System,X64-based Processor	

Software Requirements

Software configuration		
Browser	Microsoft Internet Explorer, Mozzilla firefox and Google	
Operating System	Windows 10 pro	
IDE	Microsoft VS code	
Database	PHP myadmin	
Language	PHP	



2.2 Technologies Used

Front-End	Microsoft VS code
Back-End	PHPmyadmin



3 System Analysis and Planning

The planning for a hotel management system (HMS) starts with understanding what the hotel needs to run smoothly and keep guests happy. This involves talking to staff and guests to find out their requirements. The design focuses on making an easy-to-use system that includes features like booking, billing, and secure data handling.

Once the design is ready, the hotel selects the right technology and creates a plan for implementation, including staff training. Testing is done to fix any issues before the full launch. Finally, ongoing support is set up to keep the system running well and to continuously improve the guest experience.

3.1 Existing System and its Drawbacks

Manual Processes :

The current system relies heavily on paper records, leading to inefficiencies and a higher risk of errors.

> Limited Integration :

Existing systems often do not integrate well with other software, making it difficult to manage reservations and payments effectively.

Poor Communication :

Communication between departments is often lacking, resulting in slow service and guest dissatisfaction.

Slow Check-In/Check-Out :

Manual check-in and check-out processes create long wait times for guests, impacting their overall experience.

Lack of Real-Time Data :

Staff often do not have access to real-time information about room availability and guest preferences, hindering effective management.

Weak Reporting Tools :

Current systems typically lack robust reporting features, making it hard for managers to analyze performance and make informed decisions.



3.2 Feasibility Study

The Feasibility study summarizes the findings and offers a recommendation on whether to move forward with the hotel management system based on its technical, economic, operational, legal, schedule, and risk feasibility. Here are some key factors to consider in a feasibility study for a Hotel management system:

> Technical Feasibility:

This checks if the current technology can support the new hotel management system. It looks at available hardware, software, and whether staff have the skills needed for implementation.

> Economic Feasibility:

This analyzes costs versus benefits. It estimates development and maintenance expenses and compares them to potential gains like improved efficiency and increased revenue.

Operational Feasibility :

This assesses how well the new system fits into daily operations. It considers staff readiness to adopt the system and the impact on existing workflows, including training needs.

Legal Feasibility :

This ensures the system complies with laws and regulations, particularly regarding data protection and privacy for guest information.

Schedule Feasibility:

This evaluates the timeline for implementing the system, setting realistic deadlines for each phase, from development to training and launch.

> Risk Assessment:

This identifies possible challenges, such as technical issues or staff resistance, and suggests ways to address these risks.



3.3 Requirement Gathering and Analysis

- Systems are only dependent on accurate data. It depends on well organized data to be stored in system. It provides direction to system analyst and designers to design a system that is efficient.
- To collect requirement for Hotel Management System, following steps were carried out:
- ➤ I got several information from my mentor Akansha Srivastav(as out Project Guide). She helped us to understand required functionalities, also noted down some useful features to be included and also to know what about input and output.
- I also got help from senior software developer.
- With the documentation help, Document all gathered requirements in a clear and organized manner. This includes creating use cases and requirement specifications to provide a comprehensive overview for the development team.



4 Proposed System

4.1 Scope:

The scope of a Hotel management system refers to the boundaries and limitations of the project, including its objectives, deliverables, and the features and functions it will include. Here are some key elements to consider when defining the scope of a Hotel management system:

- > Room Management
 - Manage room availability, bookings, and check-ins/check-outs.
- Guest Management
- Store and access guest profiles, preferences, and history for personalized service.
 - > Billing and Invoicing
 - Automate billing processes, including payments and invoice generation.
 - > Reservation System
 - Provide online and offline booking options for guests.
 - > Housekeeping Management
 - Track room cleaning status and assign tasks to housekeeping staff.
 - Reporting and Analytics
 - Generate reports on occupancy rates, revenue, and guest demographics.
 - > User Management
 - Control access for different staff roles and set permissions accordingly.
 - Marketing Tools
 - Include features for promotions, discounts, and loyalty programs.
 - Customer Support
- Offer support features like chat or ticketing systems for guest inquiries and issues.



4.2 Project modules

1. Admin Module:

The Admin Module provides hotel staff with tools to manage rooms and bookings, process check-ins, and oversee user accounts. It also includes reporting features for tracking revenue and occupancy, along with settings for payment methods and staff access

2. User Module:

The **User Module** lets guests register, log in, and search for available rooms. They can book rooms, manage reservations, make secure payments, and leave reviews about their stay.

4.3 Module vise objectives/functionalities Constraints

- 1) Admin:
 - Objectives of admin are described below.
 - Admin manage the system and control the system.
 - Admin manage the restaurant and users.
 - Admin also accept the user and any other hotel related problem.

2) User(Customer):

- Objectives of user are described below.
- User logged in the website.
- User give review on hotel services.
- User see all hotel details.

Module vise objectives:

The objectives of a hotel management system can very depending on the specific requirements of the organization. However, some general module-wise objectives of a hotel management system could include:



User Module Objectives

- Registration/Login : Allow guests to create accounts and securely log in.
- Room Search: Enable users to search for available rooms by date and type.
- Booking Management : Facilitate easy booking, modification, and cancellation of reservations.
- Payment Processing : Provide secure online payment options for bookings.
- Feedback System: Enable guests to leave reviews and feedback on their stay.

> Admin Module Objectives

- Dashboard Overview : Offer a real-time view of bookings and occupancy rates.
- Room Management : Allow admins to add, update, or remove room details and availability.
- Booking Oversight : Manage all bookings, including check-ins and check-outs.
- User Account Management : Oversee user profiles and handle inquiries or issues.
- ReportingTools: Generate reports on revenue and occupancy trends for analysis.
- Settings Configuration : Manage hotel settings, payment methods, and staff permissions.

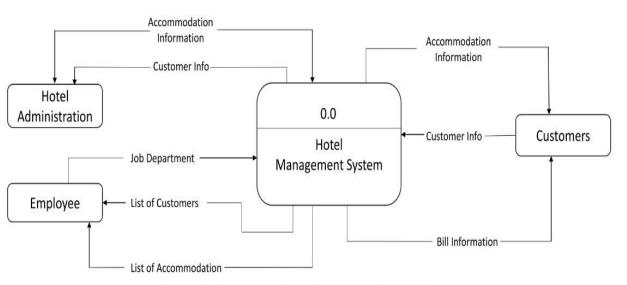


5 Detail Planning

5.1 Data Flow Diagram

0 leval dfd:

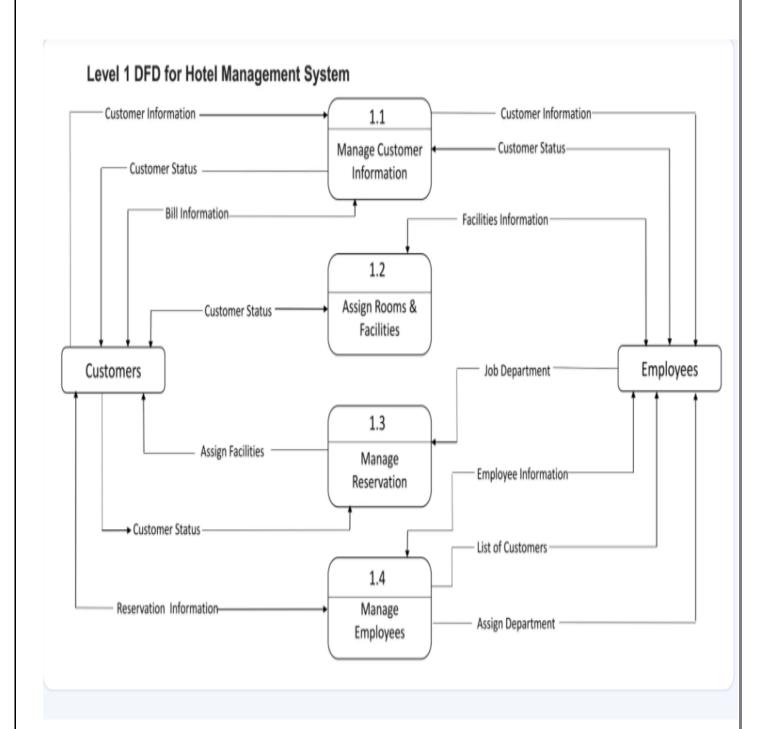
0 level DFD



Context Diagram for Hotel Management System



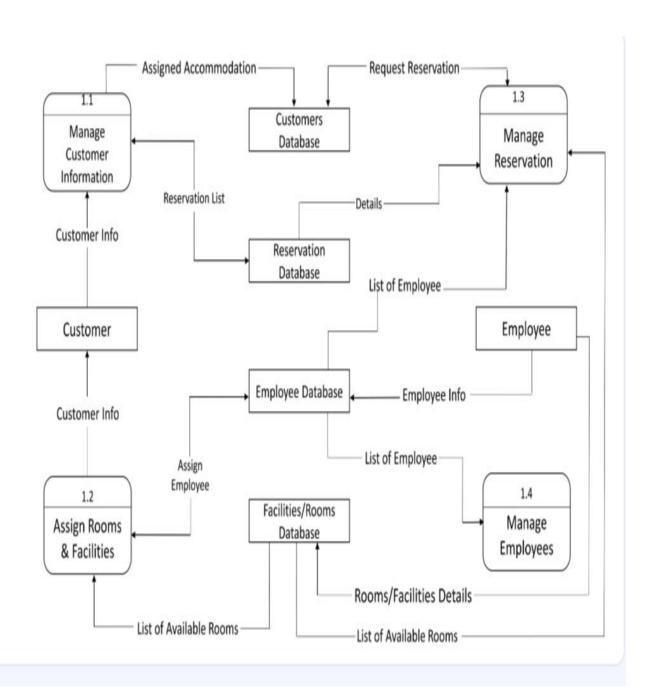
Level 1 DFD





2 level Data Flow Diagram:

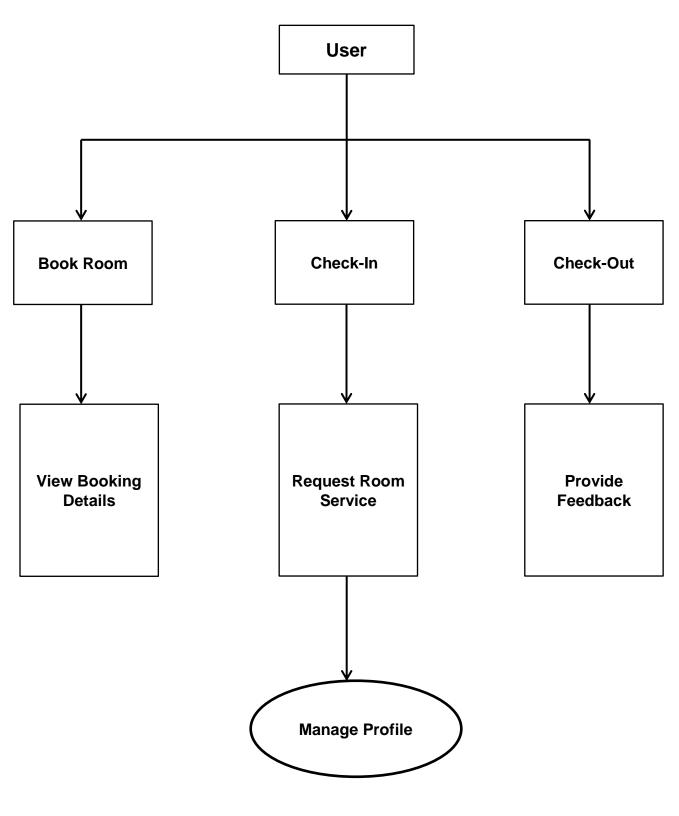
level 2 DFD

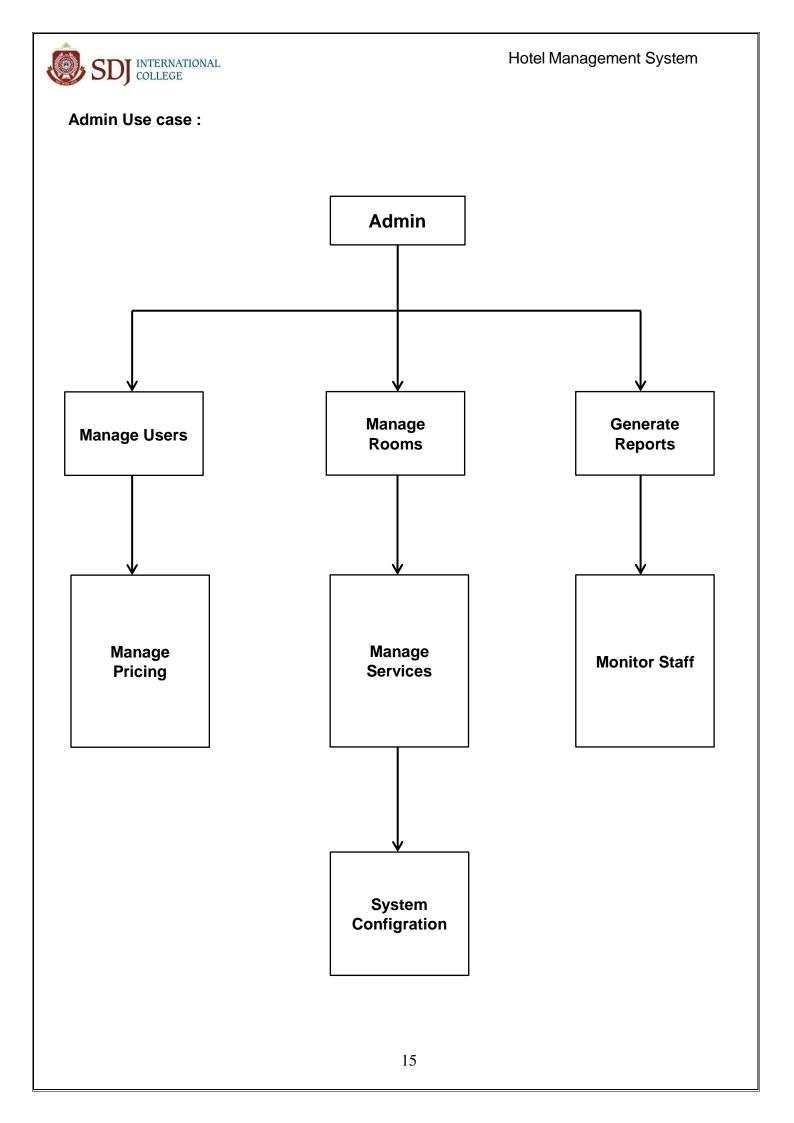




Use case diagram:

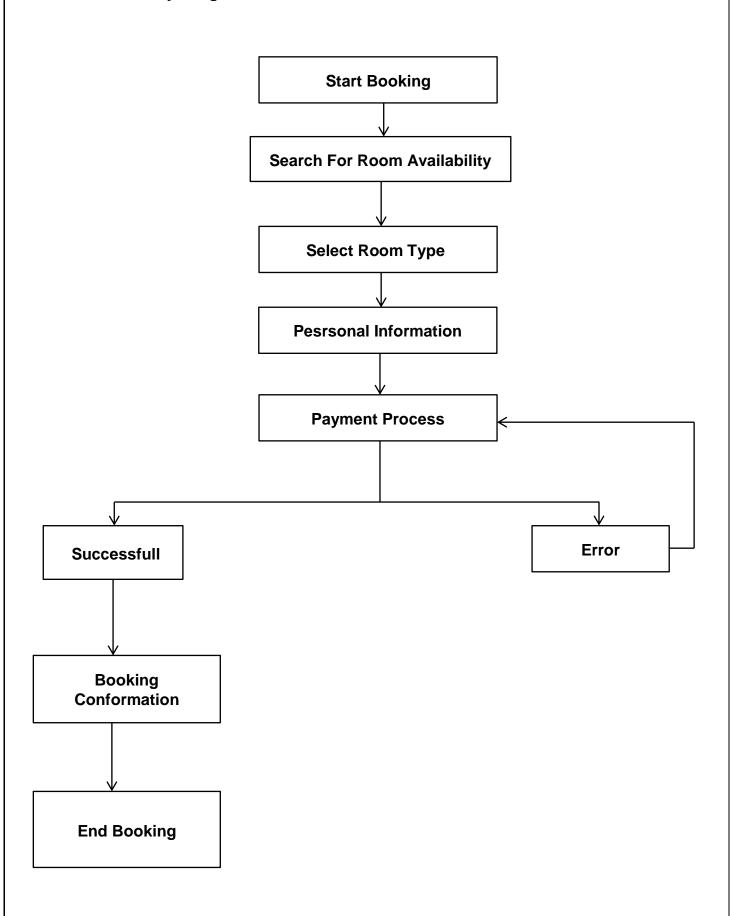
User:







b. Activity Diagram





5.2 Process_specification:

c. Data Dictionary

user	
Alias	Null
Where used/how used	To retrive or store users Detail
Description	id +name+userame+email+password + created_at

Staff_type	
Alias	Null
Where used/how used	To retrive or store staff detail
Description	Staff_type_id+staff_type

shift	
Alias	Null
Where used/how used	To retrive or store staff working shift Detail
Description	Shift_id+shift_timing.

Room_type	
Alias	Null
Where used/how used	To retrive or store available rooms types
Description	Room_type_id+room_type+price+max_person.

Emp_history	
Alias	Null
Where used/how used	To retrive or store employee history Detail
Description	Id,emp_id,shift_id,from_date,to_date,created_date
Supplementary information	p_id must be unique

Hotel Management System



customer	
Alias	Null
Where used/how used	To store customers Details
Description	customer_id,customer_name,contact_no,email,id_card_type _id,id_card_no,address.

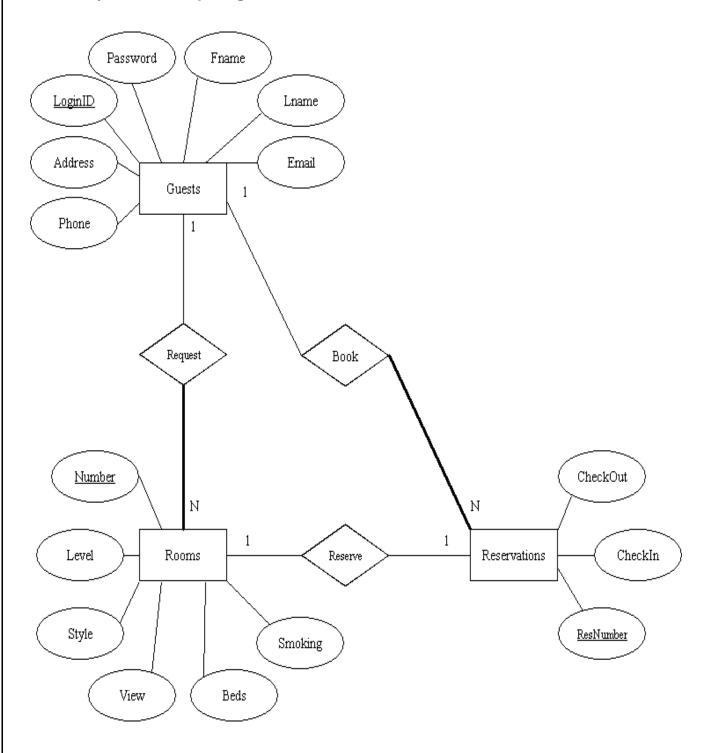
complaint				
Alias	Null			
Where used/how used	To retrieve or store customer's comlaint Detail			
Description	id,complainant_name,complaint,created_at,resolve_status,re solve_date,budget.			

	staff
Alias	Null
Where used/how used	To retrive or store staff details
Description	Emp_id,emp_name,staff_type_id,shift_id,id_card_type,addre ss,contact_no,salary,joining_date

booking				
Alias	Null			
Where used/how used	To retrive or store room booking details.			
Description	booking_id,customer_id,room_id,booking_date,check_in,check _out,total_price,remaining_price,payment_status			



5.3 Entity-Relationship Diagram





System Design

Database Design

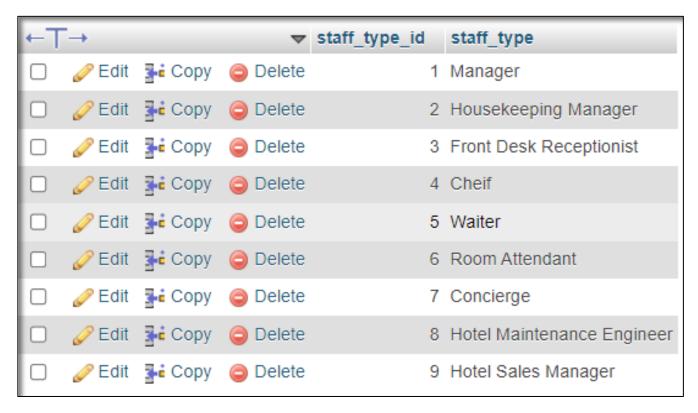
User:

Description: This table can store borrowers details like id, name, username, email, password, create_at.



Staff_type:

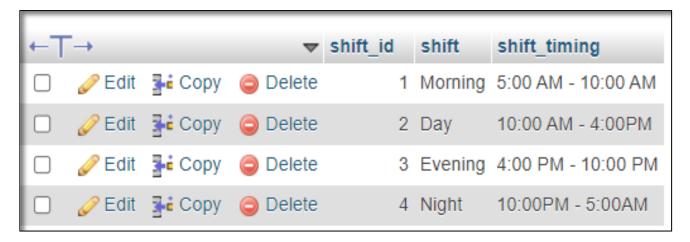
Description: This table can store staff deatils like staff_type_id,staff_type.





shift:

Description: This table can store staff working shifts details list like shift_id,shift,shift_timing.



Room_type:

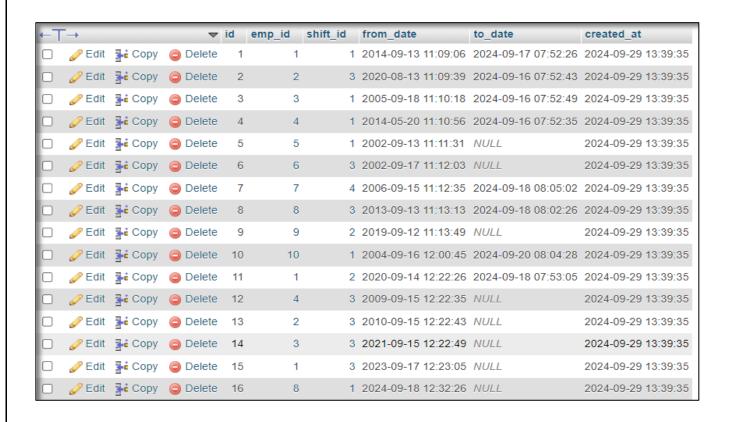
Description: This table can store available rooms types detailes like room_type_id,room_type,price,max_person.

←T	·→		▽	room_type_id	room_type	price	max_person
		≩ € Сору	Delete	1	Single	1000	1
		≩ Сору	Delete	2	Double	1500	2
		≩ Сору	Delete	3	Triple	2000	3
	<i></i> €dit	≩ сору	Delete	4	Family	3000	2
		≩ Сору	Delete	5	King Sized	5500	4
		≩ Сору	Delete	6	Master Suite	6500	6
	<i></i> €dit	≩ Сору	Delete	7	Mini-Suite	3600	3
	Ø Edit	≩ Сору	Delete	8	Connecting Rooms	8000	6
	<i></i> €dit	≩ € Сору	Delete	9	Presidential Suite	21000	4
	<i>⊘</i> Edit	≩ € Copy	Delete	10	Murphy Room	6900	3



Emp_history:

Description: This table can store employee history details like id,emp_id,shift_id,from_date of joining,to_date.



customer:

Description : This table can store customers deails like customer_id,customer_name,contact_no,email,id_card_type_id,id_card_no,address .

-Τ			▽	customer_id	customer_name	contact_no	email	id_card_type_id	id_card_no	address
	<i></i> € Edit	≩ Сору	Delete	1	l aayushi gajera	7540001240	aayushig02@gmail.com		1 422510099122	3166 Rockford Road
		≩ Сору	Delete	2	2 krina chauthani	2870214970	krinac@gmail.com		2 422510099122	1954 Armory Road
	<i> Edit</i>	≩ Сору	Delete	9	B Dhruvisha kathiriya	1247778460	dhruvishak@gmail.com		1 422510099122	4879 Shearwood Forest Drive
	<i>⊘</i> Edit	≩ Сору	Delete	4	1 rutvi vaghani	1478546500	rutviv@gmail.com		3 0	926 Richland Avenue
	<i></i> € Edit	≩ Сору	Delete	5	jenil bhalani	2671249780	jenilb@gmail.com		1 422510099122	4698 Columbia Road
	<i></i> € Edit	≩ Сору	O Delete	6	6 kevin asodariya	1245554780	kevin@gmail.com		AASS 12454784541	4764 Warner Street
	<i></i> €dit	≩ Сору	Delete	7	7 bhautik gajera	2450006974	bhautikg@gmail.com		1 457896000002	1680 Brownton Road
	<i>⊘</i> Edit	≩ Сору	Delete	8	3 heet gangani	2457778450	heet@gmail.com		1 147000245810	766 Lodgeville Road
	<i></i> € Edit	≩ Сору	Delete	g	9 srushti gangani	5489626841	themoon5star@gmail.com		3 RKCS10257A	Premium Home Stay, Near krishna Guest House, Praya
	<i>⊘</i> Edit	≩ Сору	Delete	10) neeta gangani	2584136941	neeta@gmail.com		4	krishna appartment, banglore.
	<i></i> €dit	🏰 Сору	Delete	11	1 aayushi gajera	2055825623	aayushi02@gmail.com		2 RKCS1064712	sitanagar soci,surat,gujarat



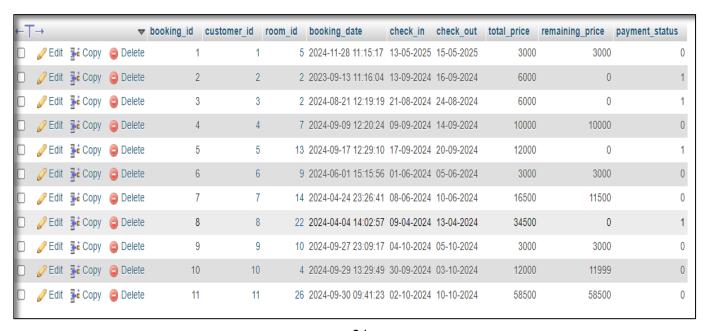
complaint:

Description: This table can store comlaints of custmers details like id,complainant_name,complaint,created_at,resolve_status,resolve_date,budget.



booking:

Description: This table can store room booking detais like booking_id,customer_id,room_id,booking_date,check_in,check_out,total_price,remaining_price,pay ment_status.





> Directory structure :

- Login.php
- Index.php
- Header.php
- Db.php
- Ajax.php
- Functionmis.php
- Emp_history.php
- Dashboard.php
- Reservation.php
- Room_manag.php
- Sllidebar.php
- Staff_manag.php
- Notification.php
- Footer.php
- Logout.php
- Complain.php
- Add_emp.php
- 404.php



❖ Counters:

- avrooms-count.php
- bookedroom-count.php
- checkedin-count.php
- checkedin-count.php
- income-count.php
- pendingpay-count.php
- pendingpayment.php
- reserve-count.php
- room-count.php
- staff-count.php



6.2 User Interface:

User_login :

Description: User can login.



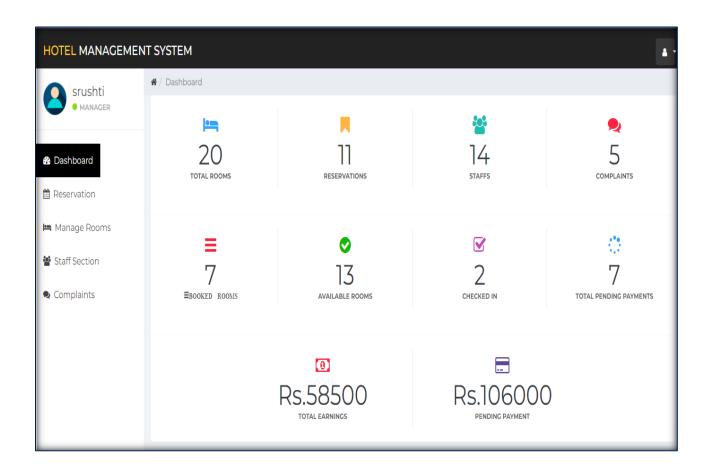
> Output Design:





> Dashboard_Page:

Description : Display All Important Details To Manage Hotel Management System .



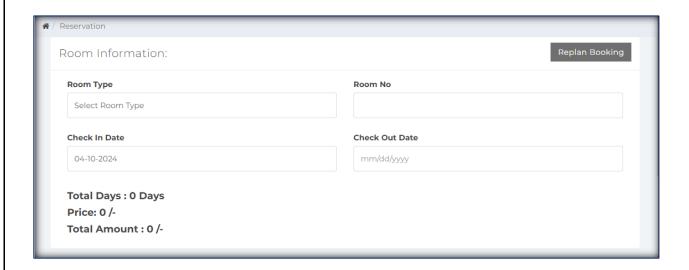


Reservation :

Description: All Details About Room, Customer details.

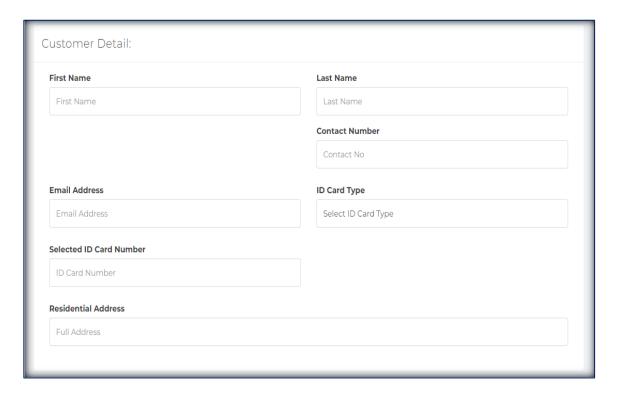
Room Information :

Description: Room Details.



> Customer Details:

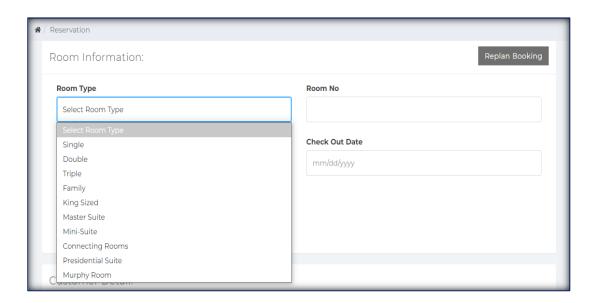
Description: Customer Details.





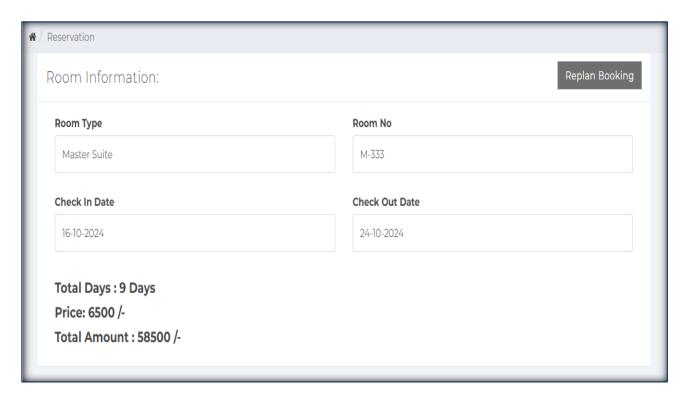
Reservation_Output :

Description: Room Types And Information About Room Availability.



> Room Information output :

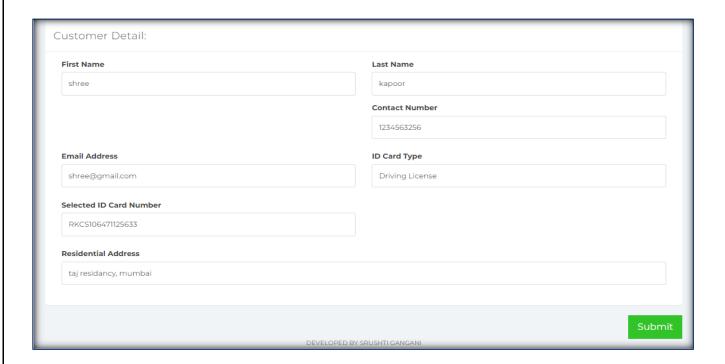
Description: About Room Price And Total Reservation Amount Details.





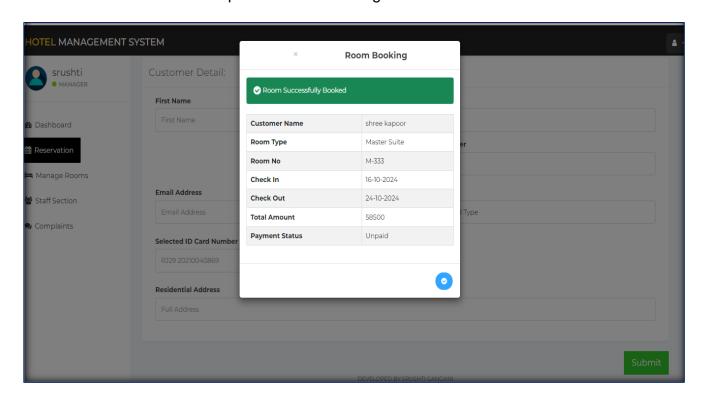
Customer Information design :

Description: Customer's Personal Details.



> Submit Output :

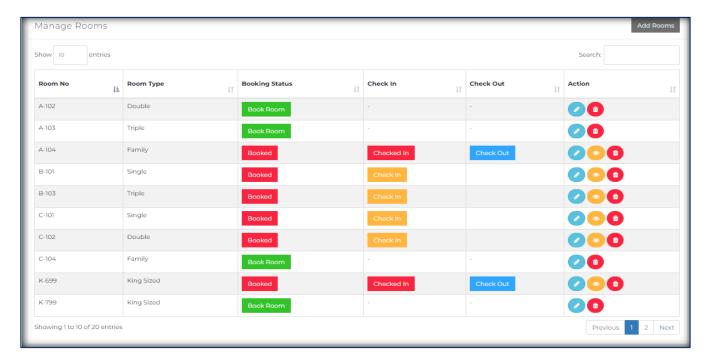
Description: Room Booking Successful Details.





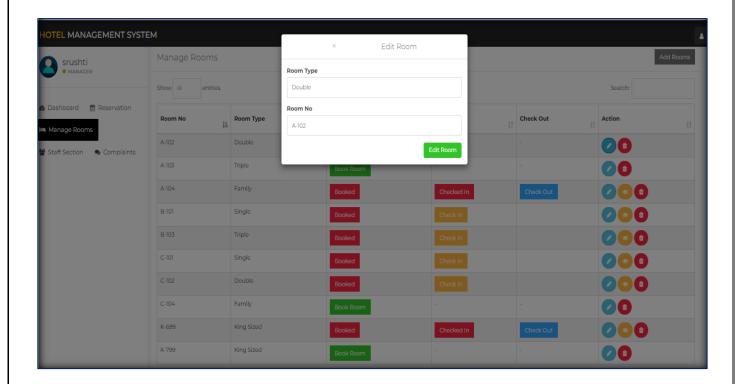
> Room Management Design :

Description: All Details About Room Availability (Booked Or Not).



> Edit Room:

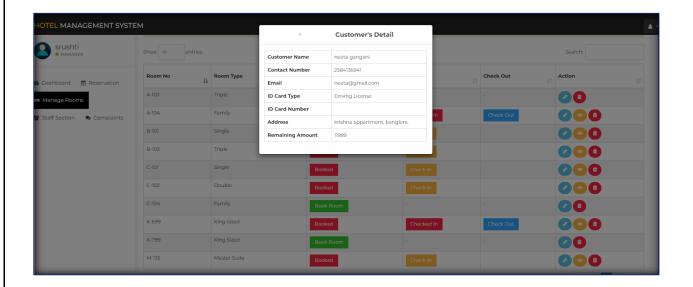
Description: User can edit there booked room type or room no.





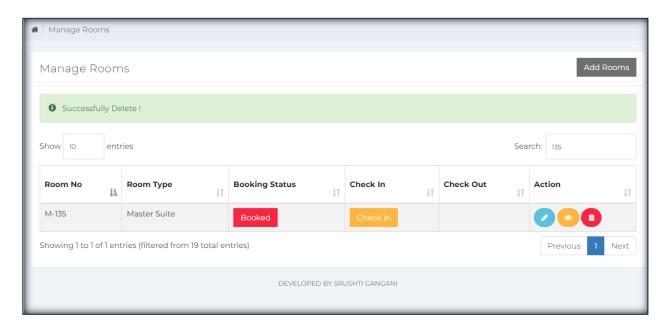
Show Customer Details:

Description: Show customers Details.



> Search Details:

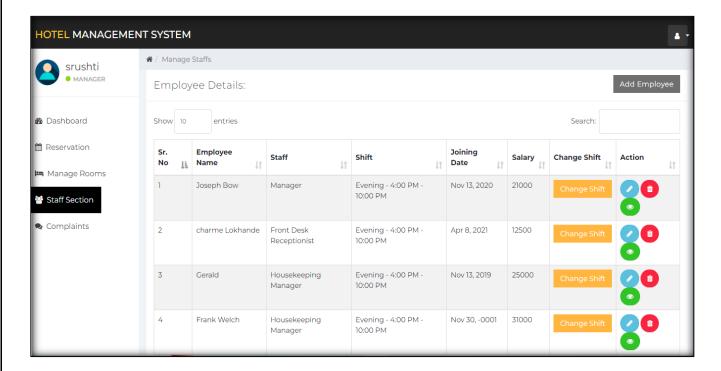
Description: Search Details About Any Information.





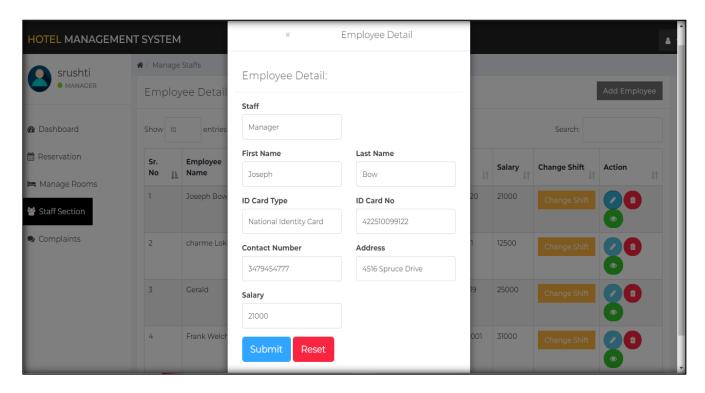
Staff Details :

Description : Employee details.



> Edit employee details :

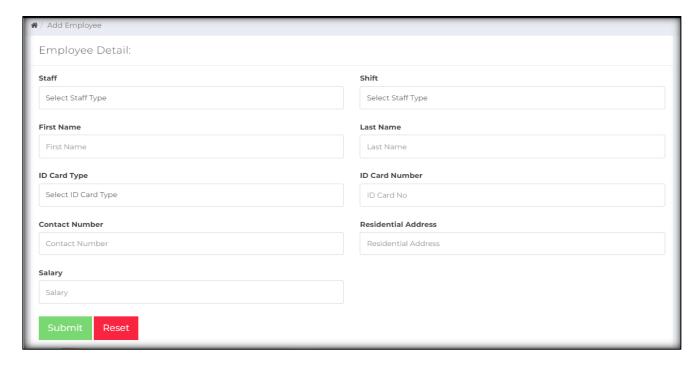
Description: Edit Employee Details.





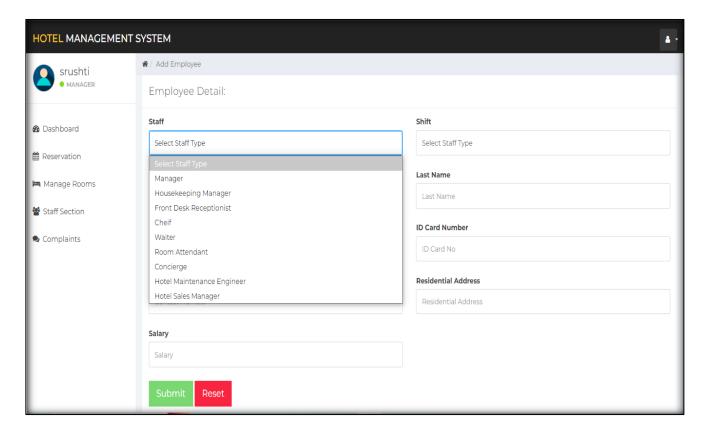
> Insert Employee :

Description : Add New Employee Details.



> Staff Type Details :

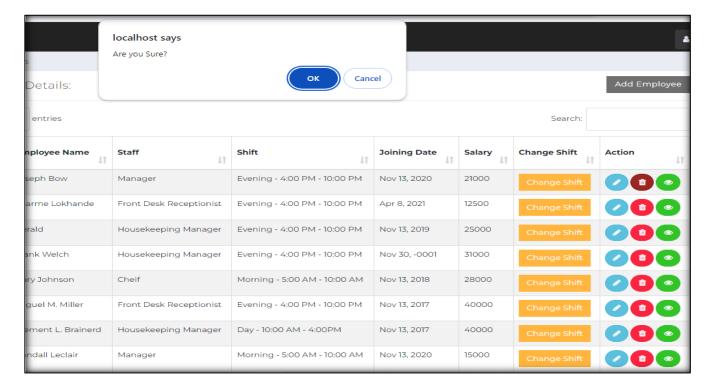
Description: Staff Type Details.





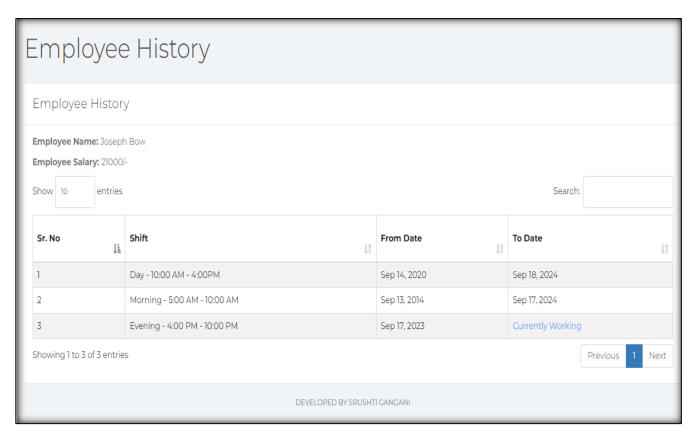
Delete Details Output :

Description : For Delete Employee data.



> Show Details:

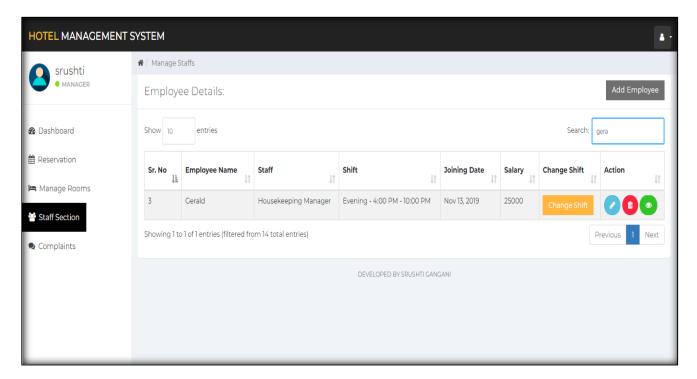
Description: Employee History Details.





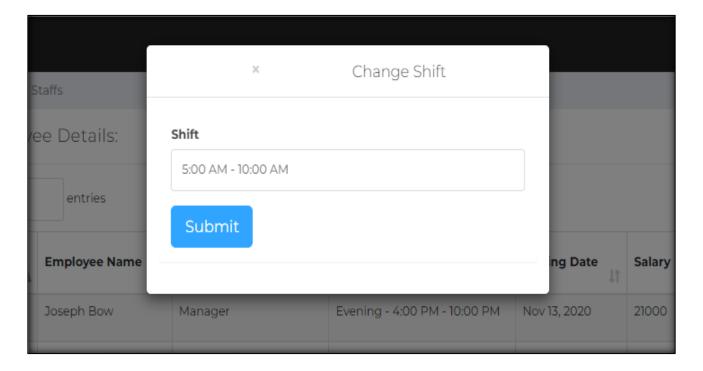
Search employee Data :

Description: Search Perticular Employee Details.



> Employee Change shift Output:

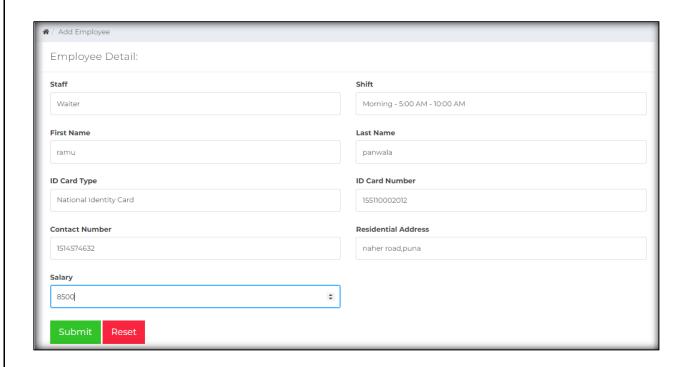
Description: For Changing Employee Work Shift Timing.

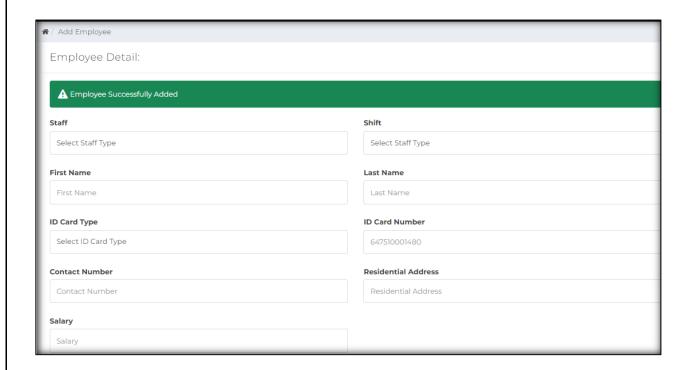




> Add new Employee Output :

Description: For Displaying Success Massage.

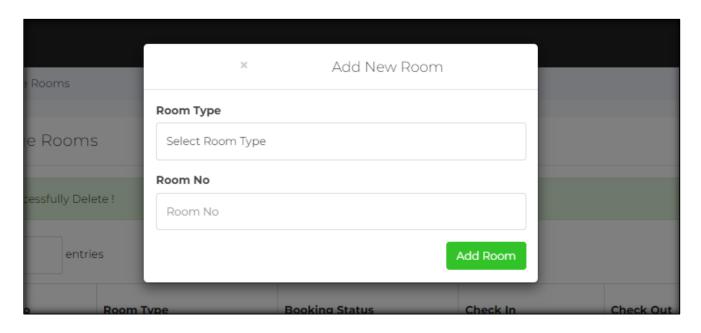






> Add New Room:

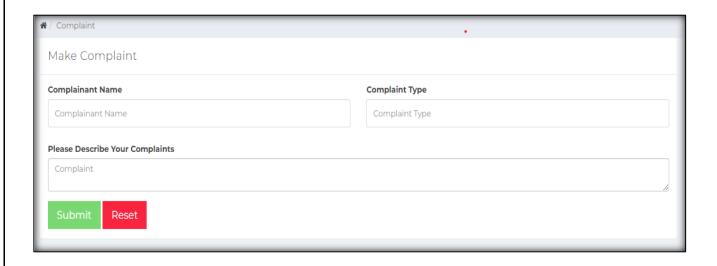
Description: For Editing Room Type.





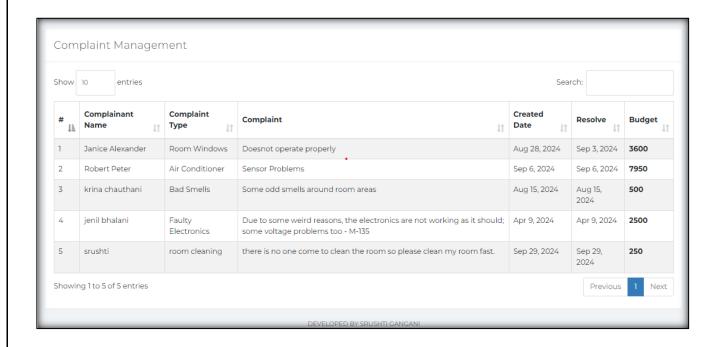
Comlaint Details:

Description: Add comlaint Information.



Comlaint Management :

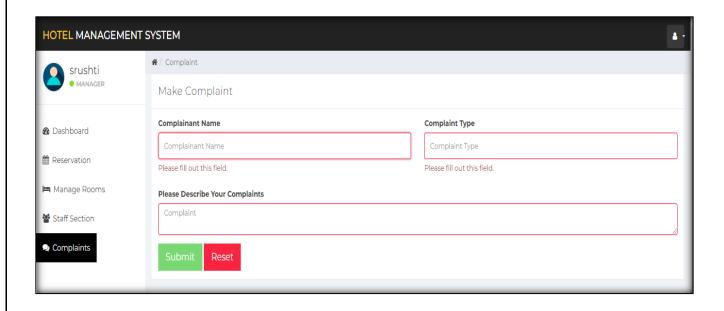
Description: For Managing All Comlaints of Customers.





Error Display:

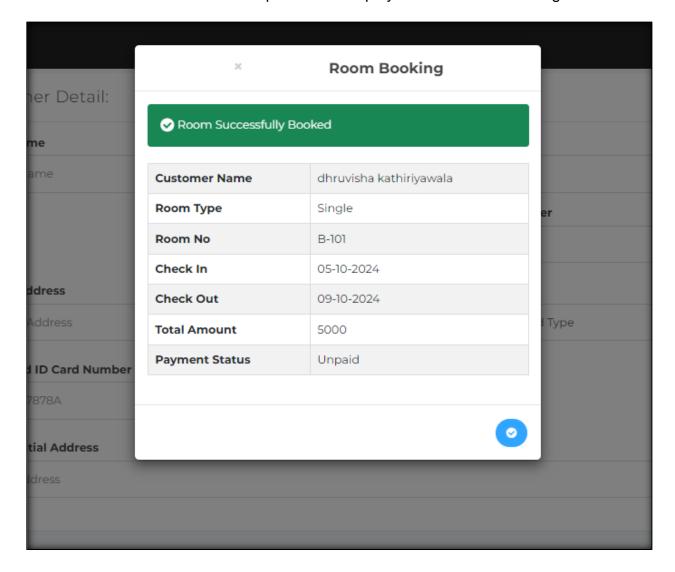
Description: It Shows Required Fields.





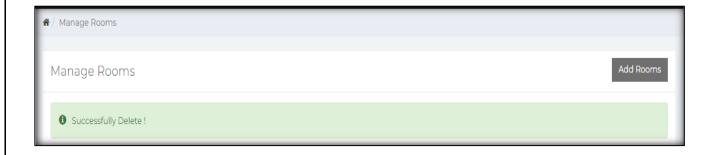
Success Message output:

Description: For Display Room Booked Massage.



Delete Massage Display:

Description: Display Massage For Delete Data Successfully.



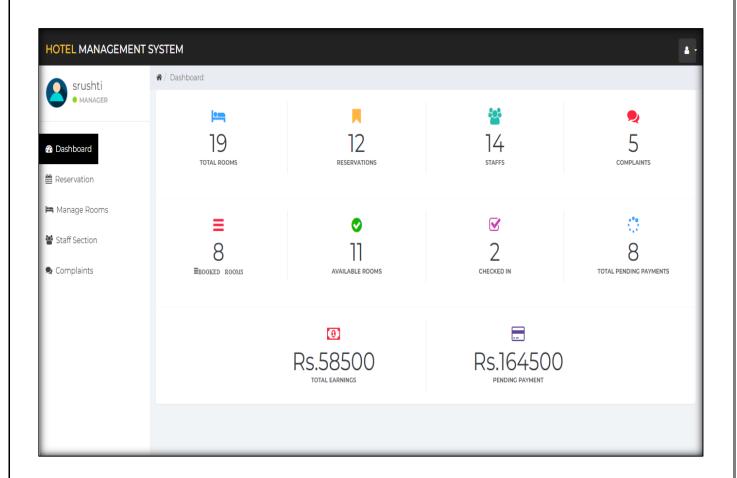


Description: Customer's Compalint Successfully Delivered Message.



Dashboard Design :

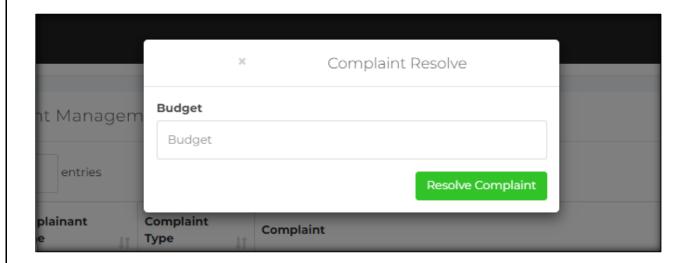
Description: Display Dashboard Design.





> Complaint resolve output :

Description: Customer's Complaint Resolve Details.

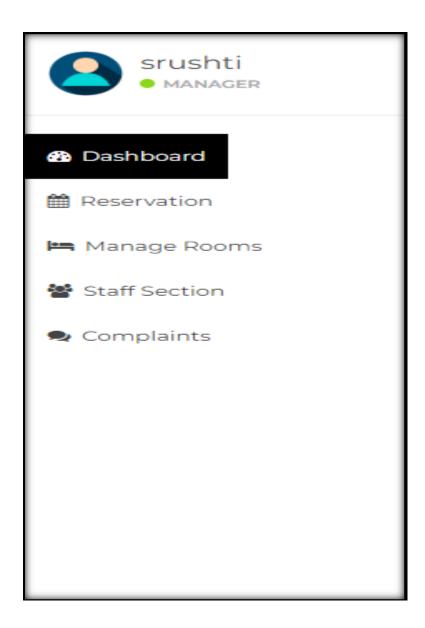


Description: Complaint Solve Successfully Message.



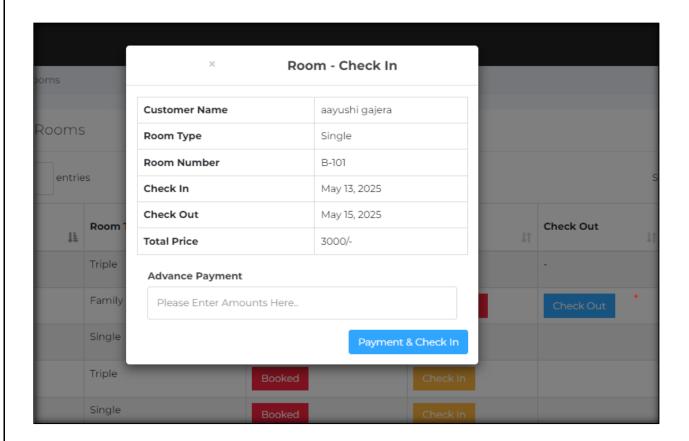


> Navbar Design:

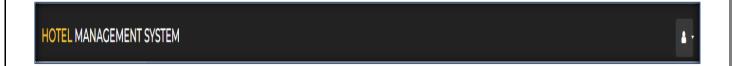




> Payment Check-In Design :

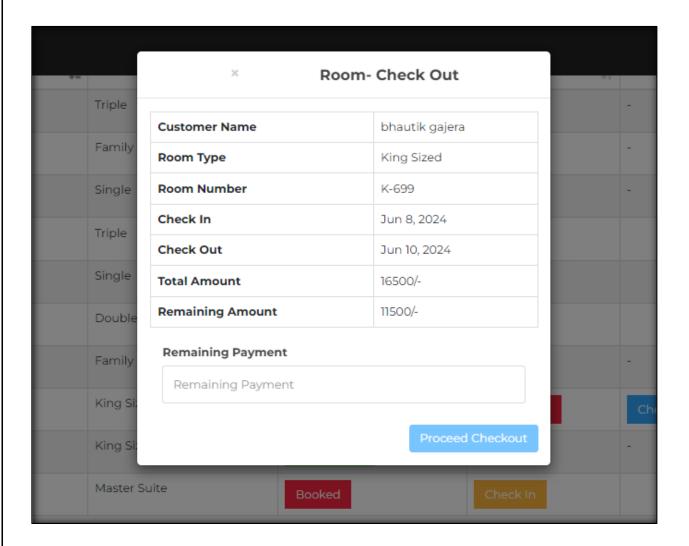


> Head Bar Design:





> Check-Out Output:



➤ Logout Design :





7.1 Software Testing:

 Software testing in a hotel management system is a critical aspect of ensuring that the system performs as intended and meets the needs of its users. Here are some key areas to consider when testing a loan management system:

Reservation Management :

- Test the ability to create, modify, and cancel reservations.
- Verify availability checking and conflict resolution.
- Check confirmation notifications (email/SMS).

User Authentication :

- Ensure secure login/logout for staff and customers.
- Test different user roles (admin, receptionist, manager) and permissions.

Room Management :

- Verify room details (type, rates, amenities).
- Check room status updates (available, occupied, out of service).

Billing and Payments :

- Test the accuracy of billing calculations (room charges, taxes, discounts).
 - Verify payment processing (credit card, cash, online payments).
 - Check invoice generation and history tracking.

Customer Profiles :

- Ensure proper creation and editing of guest profiles.
- Verify tracking of customer preferences and history



Reporting and Analytics :

- Test generation of various reports (occupancy rates, revenue reports).
- Ensure data accuracy and performance of report generation.

Integration with Third-Party Services :

- Verify integrations with payment gateways, booking engines, or external APIs.
 - Check synchronization with online travel agencies (OTAs).

User Interface and Usability :

- Test for intuitive navigation and layout.
- Verify responsiveness on different devices (desktop, tablet, mobile).

Performance Testing**

- Evaluate system performance under peak loads (high reservations).
- Check for response times and system stability.

> Security Testing:

- Test for vulnerabilities (SQL injection, cross-site scripting).
- Ensure data protection and compliance with regulations (GDPR, PCI DSS).

Backup and Recovery :

- Verify backup procedures and data restoration processes.
- Test system recovery after a failure or crash.



> Customer Support Features :

- Test support ticket creation and management.
- Verify live chat or helpdesk functionalities.

➤ Multilingual and Multi-Currency Support**

- Ensure the system supports multiple languages and currencies if applicable.

By focusing on these key areas, you can ensure that the hotelmanagement system is robust, user-friendly, and reliable for both staff and customers. If you need further details on any specific area, let me know!



Limitations and Future Scope of Enhancements

! Limitation:

While a hotel management system can bring many benefits to easy andfast booking management , there are some limitations to keep in mind. Here are a few examples:

-	
➤ Cos	st : - High initial investment and ongoing maintenance costs can be e for smaller hotels.
➤ Con	nplexity : - Some systems can be overly complex, requiring extensive or staff.
·	gration Issues : - Difficulties integrating with existing systems (e.g., g, CRM) can limit functionality.
	lability : - Some systems may not scale well with increasing hotel size or properties.
➤ Limi	ited Customization : - Pre-packaged solutions may not fully meet the unique all hotels.
	a Security Risks : - Storing sensitive customer data poses security risks if ately protected.
> Reli	ance on Internet Connectivity : - Many systems require stable internet

connections; outages can disrupt operations.



 User Interface Limitations: Poorly designed interfaces can lead to inefficiencies and user frustration.
 Inflexibility: Rigid workflows may not accommodate unique processes or changing business needs.
 Customer Support Issues : Inadequate customer support can lead to prolonged downtime and frustration.
 Limited Reporting Capabilities : Some systems may lack comprehensive reporting and analytics features.
 Updates and Upgrades : Frequent updates may be required, which can disrupt operations and require retraining.
 Mobile Accessibility: Not all systems offer robust mobile access for staff on the go.
Addressing these limitations requires careful selection, implementation, and ongoing management of the hotel management system. If you have any specific limitations in mind or need further details, let me know!



Future Scope of Enhancements:

The hotel management system has significant potential for future enhancements to improve its functionality, efficiency, and user experience. Here are some potential areas of development:

Al and Machine Learning Integration :

- Implementing AI for personalized guest experiences, predictive analytics for occupancy forecasting, and dynamic pricing strategies.

Mobile Applications :

- Developing robust mobile apps for guests to manage bookings, check-in/out, and access services on the go.

Contactless Technology :

- Expanding contactless check-in/check-out, digital room keys, and payment options to enhance guest safety and convenience.

Internet of Things (IoT):

- Utilizing IoT for smart room controls (lighting, temperature) and monitoring of equipment (HVAC, appliances) for better efficiency.

Enhanced Reporting and Analytics :

- Advanced analytics for deeper insights into guest preferences, market trends, and operational efficiency.

Cloud-Based Solutions :

- Transitioning to fully cloud-based systems for better scalability, accessibility, and reduced maintenance costs.

Integrated Marketing Tools :

- Incorporating tools for targeted marketing campaigns, loyalty programs, and personalized promotions based on guest data.

Blockchain for Security :

- Using blockchain technology for secure transactions and guest identity verification, enhancing data security.



Sustainability Features :

- Integrating features to track and optimize energy consumption, waste management, and sustainability practices.

Multi-Property Management :

- Enhancing functionalities to manage multiple properties from a single dashboard, improving operational efficiency.

Social Media Integration :

- Allowing guests to book or interact via social media platforms, making reservations easier and increasing engagement.

Customizable User Interfaces :

- Providing more options for hotels to customize interfaces to suit their specific branding and operational needs.

Virtual Reality (VR) and Augmented Reality (AR) :

- Implementing VR/AR for virtual tours of rooms and amenities, enhancing guest engagement before booking.

Improved Guest Feedback Systems :

- Advanced tools for collecting, analyzing, and responding to guest feedback in real time.

Enhanced Security Measures :

- Implementing advanced security features like biometric authentication and real-time threat monitoring.

These enhancements can help hotel management systems stay competitive, improve guest satisfaction, and streamline operations. If you'd like more information on any of these areas, just let me know!



Conclusion

a hotel management system (HMS) is a vital tool for enhancing operational efficiency, improving guest experiences, and maximizing revenue in the hospitality industry. By automating essential functions such as reservations, billing, and customer management, HMS enables hotel staff to focus on providing exceptional service.

As the industry evolves, incorporating advancements like AI, IoT, and cloud solutions will further enhance these systems, allowing hotels to meet the changing demands of tech-savvy guests. Despite existing limitations, ongoing innovations and enhancements present significant opportunities for hotels to streamline operations, ensure data security, and create personalized experiences.

In a competitive market, investing in a robust hotel management system is not just beneficial; it is essential for long-term success and sustainability. Embracing these technologies will ultimately lead to improved guest satisfaction, increased loyalty, and a stronger bottom line.



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