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TECHNOLOGY
(CDAC-ACTS)
BHUJBAL KNOWLEDGE CITY,NASHIK**

Documentation On
“Paying Guest”
PG-DAC March 2024

Submitted

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Project Guide

Table of Contents

1. Introduction

- a. Problem Statement
- b. Aim & Objectives

2. Overall Description

- a. Proposed Methodology
- b. Design and Implementation Constraints

3. Requirements Specification

- a. External Interface Requirements

4. System Diagram

- a. Project Architecture Diagram
- b. Fuctionality Diagram

5. Table Structure

- a. Users
- b. Bill
- c. Booking
- d. Complaints
- e. Feedback
- f. Room
- g. Images
- h. Payment
- i. Pg

6. Screenshots

7. Conclusion

References a. Future Scope

1. INTRODUCTION

Introduction:

The Paying Guest (PG) Management System is a dynamic and comprehensive web-based application created to streamline the management of paying guest accommodations. The system is specifically designed to meet the needs of both PG owners and tenants, offering an integrated platform where all PG-related activities can be managed seamlessly. By utilizing modern web technologies, the PG Management System provides a user-friendly experience that covers the entire spectrum of operations, from room bookings and management to billing, payments, and feedback. This introduction delves into the specific roles and tasks of both PG owners and tenants within the system.

Problem Statement:

Managing paying guest accommodations involves multiple complex tasks that can be time-consuming and prone to errors if handled manually. Both PG owners and tenants face various challenges that make the management and booking of accommodations inefficient, leading to dissatisfaction and operational difficulties. The key problems can be summarized as follows:

1. Inefficient Property and Room Management

- PG owners often struggle to manage multiple properties and rooms effectively. Keeping track of available rooms, updating property details, and managing room statuses are cumbersome when done manually. This can lead to booking errors, double bookings, or failure to update information promptly, resulting in lost opportunities and tenant dissatisfaction.

2. Complicated Booking Process

- Tenants often face difficulties in finding and booking suitable accommodations. The lack of a centralized system means they must rely on various sources to find available PGs, leading to a time-consuming and frustrating experience. Moreover, the absence of real-time availability information can result in booking conflicts and unmet expectations.

3. Billing and Payment Issues

- The manual generation of bills, tracking of payments, and handling of overdue bills can be challenging for PG owners. Tenants, on the other hand, may experience difficulties in receiving, viewing, and paying their bills on time, especially if there is no online payment option. These issues can lead to financial discrepancies and strained relationships between tenants and owners.

4. Lack of Feedback and Complaint Resolution Mechanism

- Without a structured system to handle feedback and complaints, tenant issues may go unaddressed, leading to dissatisfaction and negative reviews. PG owners may miss out on valuable insights that could help improve their services and attract more tenants.

Aims

The aim of the Paying Guest (PG) Management System is to create an efficient, user-friendly, and secure platform that streamlines the management of paying guest accommodations for both PG owners and tenants. The system seeks to automate and simplify various tasks related to property management, room bookings, billing, payments, and tenant interactions, ultimately enhancing the overall experience for all users involved. The key objectives include:

Objectives

1. Efficient Property and Room Management:

2. To provide PG owners with a streamlined system for registering, updating, and managing multiple properties and rooms, including handling availability, rent, and room details with ease.

3. Seamless Booking Experience:

4. To create an intuitive booking interface for tenants that allows them to search for, view, and book PG accommodations in real-time, ensuring accuracy and reducing the chances of double bookings or errors.

5. Automated Billing and Payment Processing:

6. To implement an automated billing system that generates bills based on tenant usage and stay duration, coupled with secure online payment gateways to facilitate easy and prompt payments.

7. Effective Feedback and Complaint Resolution:

8. To develop a structured feedback and complaint management system that allows tenants to easily provide feedback or raise complaints, ensuring that PG owners can address issues promptly and maintain high service standards.

9. Enhanced Security and Privacy:

10. To incorporate strong security features, including encrypted data storage and secure authentication, to protect sensitive tenant and owner information and ensure compliance with data protection standards.

11. Improved User Interaction and Interface:

12. To design a responsive, user-friendly interface that simplifies interactions for both PG owners and tenants, reducing the learning curve and making the management of PG accommodations more accessible and efficient.

13. Comprehensive Reporting and Analytics:

14. To offer PG owners insights and reports on property performance, tenant satisfaction, and financial metrics, enabling them to make informed decisions and improve their business operations.

15. **Scalability and Flexibility:**

16. To build a system that can scale with the growth of the PG business, accommodating more properties, rooms, and users without compromising performance or user experience.

17. **Integration with External Services:**

18. To provide the ability to integrate with external services, such as payment gateways, location services, and communication tools, enhancing the functionality and reach of the PG Management System.

19. **Sustainability and Long-Term Viability:**

20. To ensure that the system is designed with long-term sustainability in mind, using robust technologies that require minimal maintenance and offer easy updates and enhancements in the future.

2. OVERALL DESCRIPTION

Overall Description of the Society Management System

2.1 Product Perspective

The Society Management System is a comprehensive, web-based application designed to automate and streamline the operations of housing societies, ensuring smooth functioning and enhanced communication among members. The primary objective of this system is to manage various society-related activities, such as billing, voting, event management, and member communication, in a unified and user-friendly platform.

The system automates the generation of monthly maintenance bills, allowing society members to view and track their payment status through their accounts. Additionally, it features an online bill payment system, enabling members to pay their dues conveniently. Another key feature is the online voting system, which allows members to vote for society positions such as Secretary, Chairman, and Treasurer. This system ensures that members can actively participate in society governance from the comfort of their homes.

Moreover, the system includes a special functionality where members can advertise their houses for rent or sale, making it easier for them to manage property transactions within the society. The platform also keeps members updated on society happenings, with a dedicated dashboard that provides access to recent news, posts, and notifications.

Overall, the Society Management System aims to facilitate efficient management, transparency, and active participation within the society, benefiting both administrators and members.

2.2 Product Functions

1. User Registration:

- New members can register on the website by providing necessary details, creating an account for accessing society-related services.

2. User Login:

- Registered users can log in to the system using their credentials. Upon login, the system differentiates users into different roles:
 - **System Admin:** Manages the entire system, including user records, site content, and overall administration.
 - **Secretary:** Manages society activities, including voting, hall allocations, and complaint resolution.
 - **Member:** Manages their profile, views notices, participates in voting, and communicates with society management.

3. Dashboard Access:

- After logging in, users are directed to a dashboard with various options based on their role. For instance:
 - **Administrator:** Can insert posts, manage site content, users, and view reports.
 - **Secretary:** Can update maintenance bills, respond to complaints, and manage voting processes.
 - **Member:** Can view recent posts, vote for candidates, send complaints, and search for other members.

4. **Society Management:**

- On the society dashboard, the following functionalities are available:
 - **Administrator:** Can select members for voting, manage complaints, update billing status, generate reports, and manage hall bookings.
 - **Secretary:** Can update maintenance bill prices and respond to member complaints.
 - **Member:** Can view society posts, participate in voting, send complaints, and manage their profiles.

5. **Society Portal Access:**

- The main site provides users with options to log out or access their society dashboard, where they can stay informed about recent news and notifications.

6. **House Advertisement:**

- Members can advertise their houses for rent or sale through the system, making it easier to find buyers or tenants within the society.

2.3 User Classes and Characteristics

1. **System Admin:**

- Manages the entire system, including user records, site content, and administration tasks.

2. **Secretary/Society Admin:**

- Manages society activities, including conducting votes, handling complaints, and managing hall allocations.

3. **Users:**

- Regular society members who use the system for information exchange, participating in votes, making payments, and managing their profiles.

Design and Implementation Constraints:

- **Security and Privacy:**
- Compliance with data protection regulations (e.g., GDPR, CCPA).
- Secure authentication, encryption, and access controls.

- **System Integration:**

- Compatibility with existing systems and third-party services.
- Efficient handling of API integration and potential downtimes.

- **Performance and Scalability:**

- Ability to handle multiple concurrent users and scale as needed.
- Optimized database performance for fast response times.

- **User Experience:**

- Responsive design for various devices and browsers.
- Intuitive and user-friendly interface.

- **Technical Constraints:**

- Use of compatible technology stack and frameworks.
- Cross-browser compatibility.

- **Data Management:**

- Regular data backups and robust recovery plans.
- Adherence to data retention policies.

- **Compliance with Standards:**

- Adherence to industry standards and legal requirements.
- Compliance with local and national laws.

- **Budget and Resources:**

- Staying within the allocated budget for development and maintenance.
- Availability of necessary development resources.

- **Maintenance and Support:**

- **External Interface Requirements:**

User Interfaces:

- **Web Interface:** The system will provide a web-based interface accessible via major web browsers (Chrome, Firefox, Safari, Edge). The interface will be responsive, ensuring compatibility with desktops, tablets, and smartphones.

- **Login/Registration:** Users can register or log in through secure forms with email and password authentication. The interface will include role-based access controls for different user types (Admin, Secretary, Member).
- **Dashboard:** After login, users will be directed to a dashboard tailored to their role, providing access to relevant features such as profile management, bill payments
- **Billing and Payments:** A user-friendly interface for viewing and paying bills online, with options to view payment history and current statuses.
- **Communication and Notifications:** Interfaces for sending and receiving notifications, including system announcements, event alerts, and complaint updates.
- **Property Management:** For members looking to rent or sell their property, an interface will be provided to list and manage property ads.

Hardware Interfaces:

- **Server Requirements:** The system will run on web servers that meet the minimum specifications for hosting web applications, including adequate CPU, memory, and storage capacity to handle expected user load and data.
- **Client Devices:** The system will be compatible with standard desktop computers, laptops, tablets, and smartphones. It does not require any specialized hardware for end users.
- **Payment Gateway Integration:** The system will interface with external payment gateways to process online transactions securely. This may involve API integrations with payment service providers.
- **Backup and Recovery Hardware:** The system will utilize backup hardware solutions for data storage and recovery, ensuring data integrity and availability in case of system failures.

This includes, but not limited to, general network connection at the server/hosting site, network server and network management tools.

Application Interfaces:

Web Browser:

The system is a web-based application; clients need a modern web browser such as Mozilla Firefox, Internet Explorer, Opera, and Chrome. The computer must have an Internet connection in order to be able to access the system.

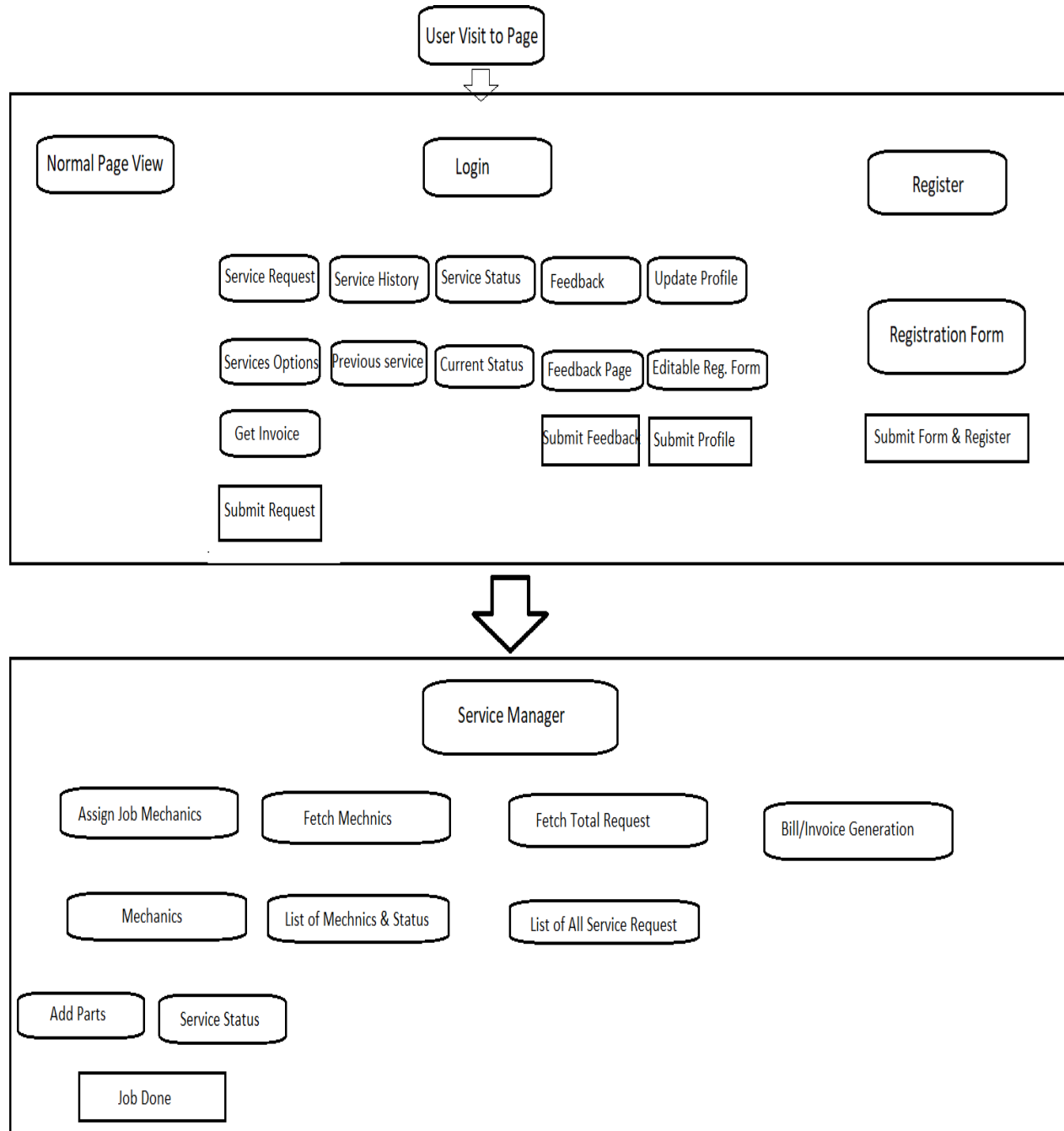
Communications Interfaces:

- This system uses communication resources which includes but not limited to, HTTP protocol for communication with the web browser and web server and TCP/IP network protocol with HTTP protocol.
- This application will communicate with the database that holds all the booking information. Users can contact with server side through HTTP protocol by means of a

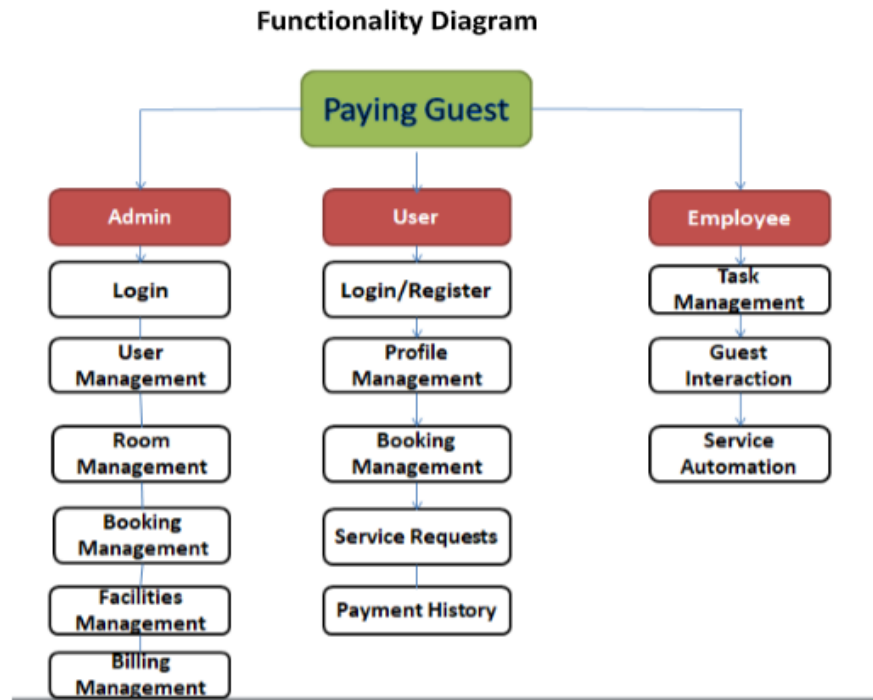
function that is called HTTP Service. This function allows the application to use the data retrieved by server to fulfill the request fired by the user.

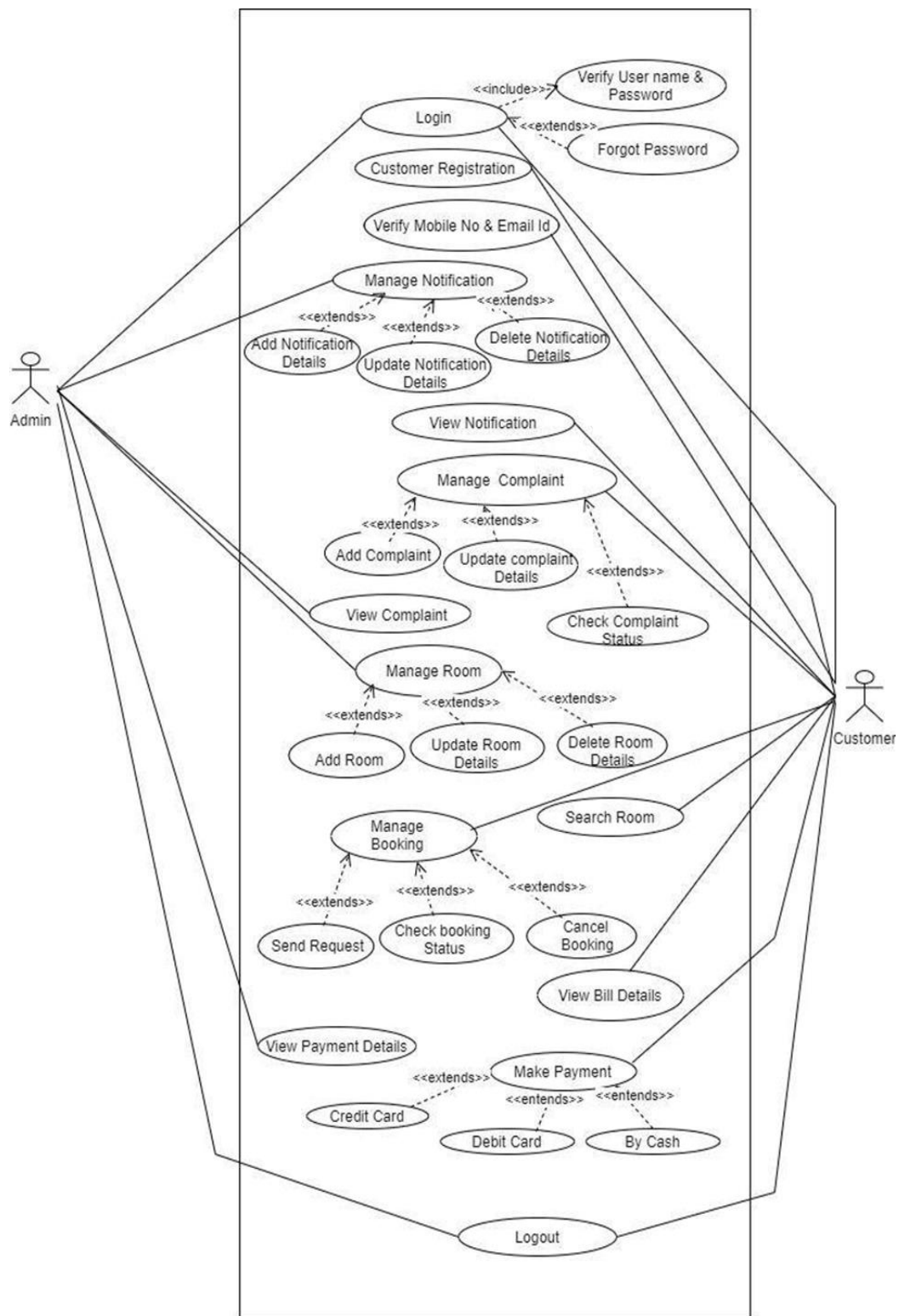
3. SYSTEM DIAGRAMS

Flow Chart



Project Architecture Diagram:
Functionality Diagram





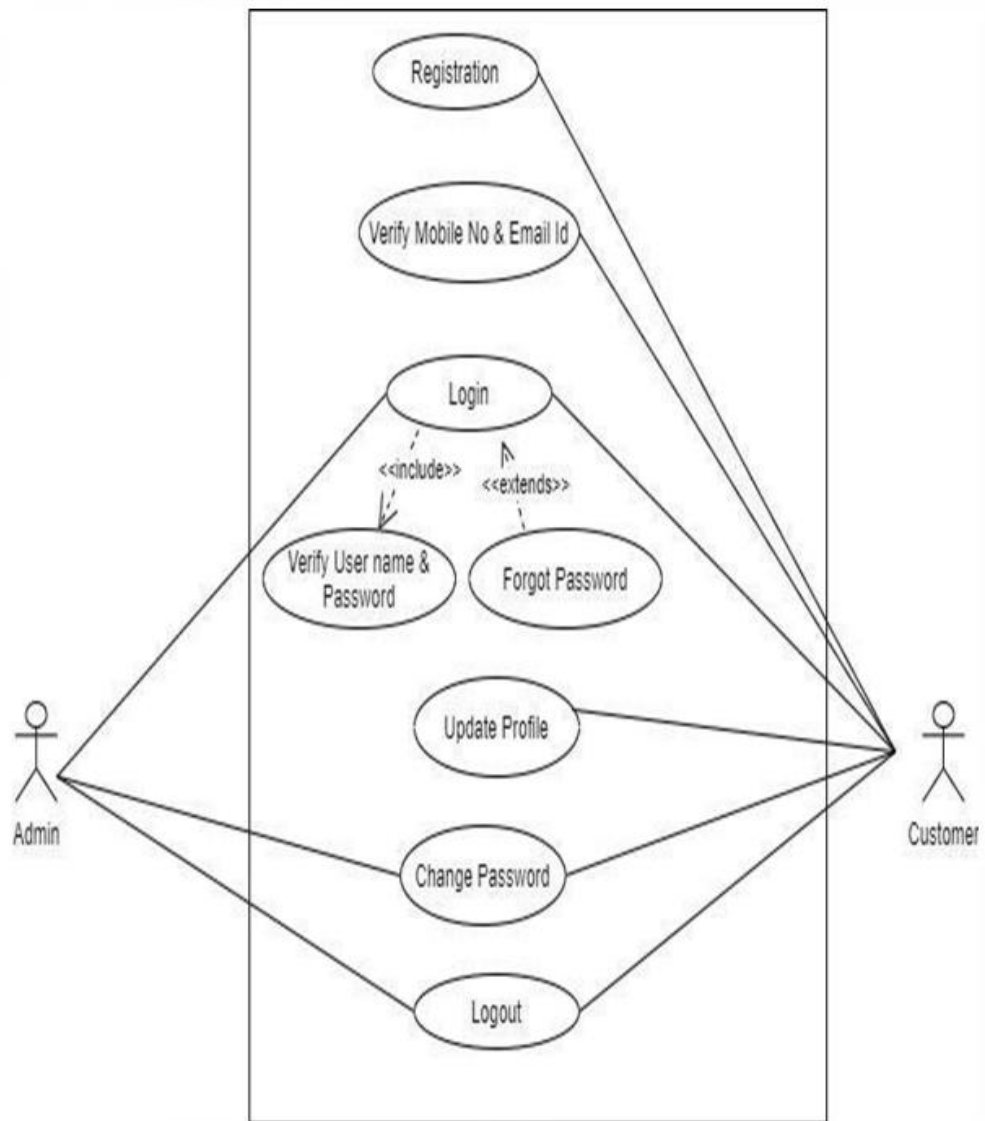


TABLE STRUCTURE

User Table:

```
mysql> select * from user;
```

user_id	address	email	mobile_no	name	password	role
1	Bangalore	saarabhsyadav1999@gmail.com	8097673768	Saurabh Yadav	\$2a\$10\$8s0/GCIkoFexzbXcBsGjmORM.rthrd0ojUoIwpZlgA4FsNlrS/0F2	user
2	Mumbai	meghanapawar360@gmail.com	9767376812	Meghna Pawar	\$2a\$10\$CU4eVz4X/OTW6yFzH/6qD.DNpTvMNF8ypzApyN2MM4Efsoa0iGzv0	user
3	Nandgaon	hemant@gmail.com	8421077563	Hemant Borse	\$2a\$10\$g8GkqQF.W5vSvz7ExLF6B0eoy8tcUC8SDkeGCvk6qGY8bMDwFQrLK	user
4	Mumbai	saarabh@gmail.com	8765463210	Saurabh	\$2a\$10\$kk7PFhcnMDx6S3StwDslwD0asr.oOpTx6FKCFVjVj/mbgI4GEPHuD.	admin
5	Yewla	om@gmail.com	7008001234	Om Sonawane	\$2a\$10\$u7S728GoVumota0VX0lK6uQ8v0M0Nfd34ad0cQt5m80H7npyK.dWW	user
6	Nashik	charli@gmail.com	7854967212	charlee	\$2a\$10\$02Rbsnr2dqKhmFEP.G/DAepu.eTCiCWFC4xZUIbUEvWl88IuIwLfI	admin
7	Jalgaon	mahesh@gmail.com	7568912567	mahesh	\$2a\$10\$vbWso44.G9LG7MogmgVmT.WXtixJziOK3oJB6iHRYD4eZQqJ7TWbi	user
8	Pune	Tejas17@gmail.com	7889886412	Tejas	\$2a\$10\$1puMzLz8zy9Jst/pcdUFRdXajkNuFeWQ/FNTWcrR0f99DUxXGyeq	admin
9	Mumbai	sonali@gmail.com	7654321987	Sonali	\$2a\$10\$1cNFZ05B4fyT1IjYbI/P6u0faBV698HmtFIAVSUOGkGS6eRXup4hW	user

```
9 rows in set (0.00 sec)
```

```
mysql> select * from room;
```

room_id	area	capacity	floor_number	is_available	rent	room_number	type	pg_id
1	200	5	5	0x00	5500	101	Single	1
2	350	7	5	0x00	6000	501	Single	2
3	450	10	5	0x01	5499	101	master	4
4	450	10	3	0x00	5999	303	master	3

```
4 rows in set (0.00 sec)
```

```
mysql> select * from pg;
```

pg_id	address	contact_no	owner_name	pg_name	user_id
1	Mumbai	8097673768	NULL	Horizon PG	8
2	Nashik	7018017432	NULL	Gurukul PG	8
3	Mumbai	9293949512	NULL	MTS	8
4	pune	9395979813	NULL	Sarvagya PG	6

```
4 rows in set (0.00 sec)
```

```
mysql> select * from booking;
```

booking_id	booking_date	booking_status	check_out_date	room_id	user_id
1	2024-09-14	CONFIRMED	NULL	1	7
2	2024-10-21	CANCELLED	NULL	2	7
3	2024-09-18	CONFIRMED	NULL	2	2
4	2024-10-15	CONFIRMED	NULL	4	7

```
4 rows in set (0.00 sec)
```

```
mysql> desc images;
```

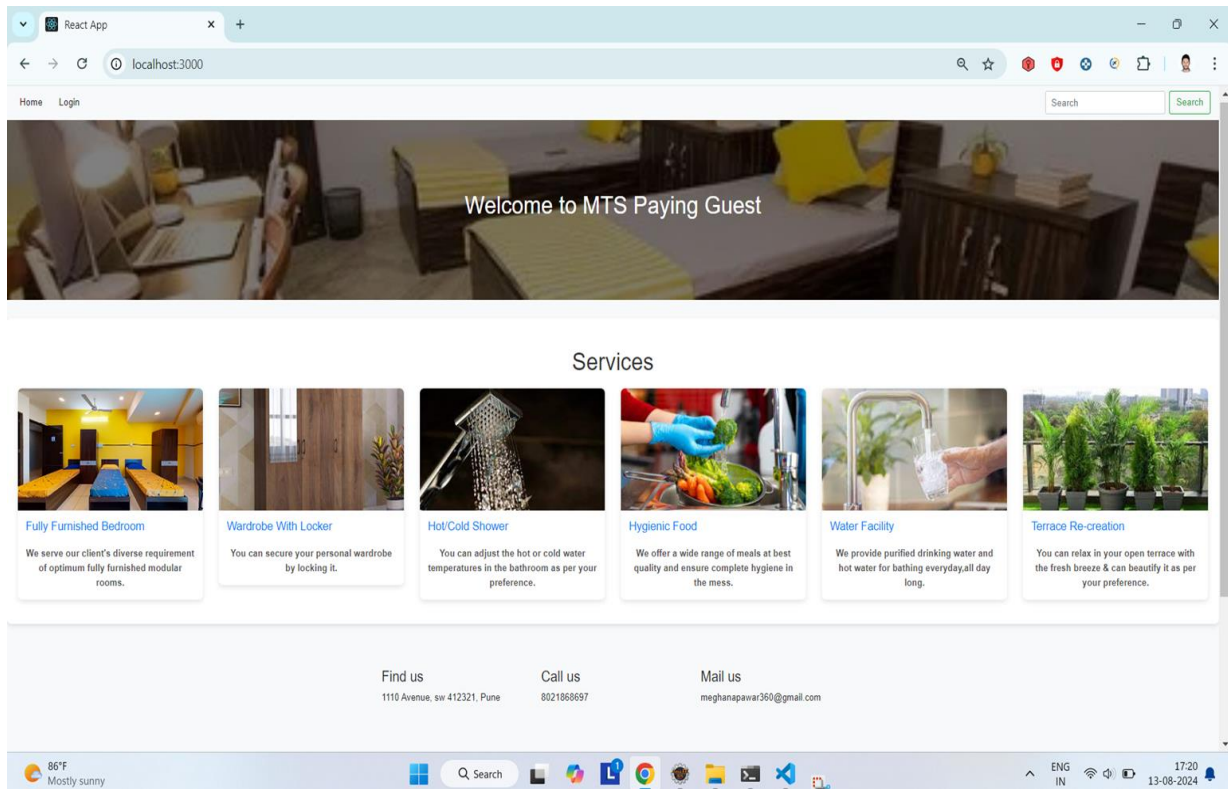
Field	Type	Null	Key	Default	Extra
id	bigint	NO	PRI	NULL	auto_increment
imagedata	longblob	YES		NULL	
room_id	bigint	YES	MUL	NULL	
pg_id	bigint	YES	MUL	NULL	

```
4 rows in set (0.00 sec)
```

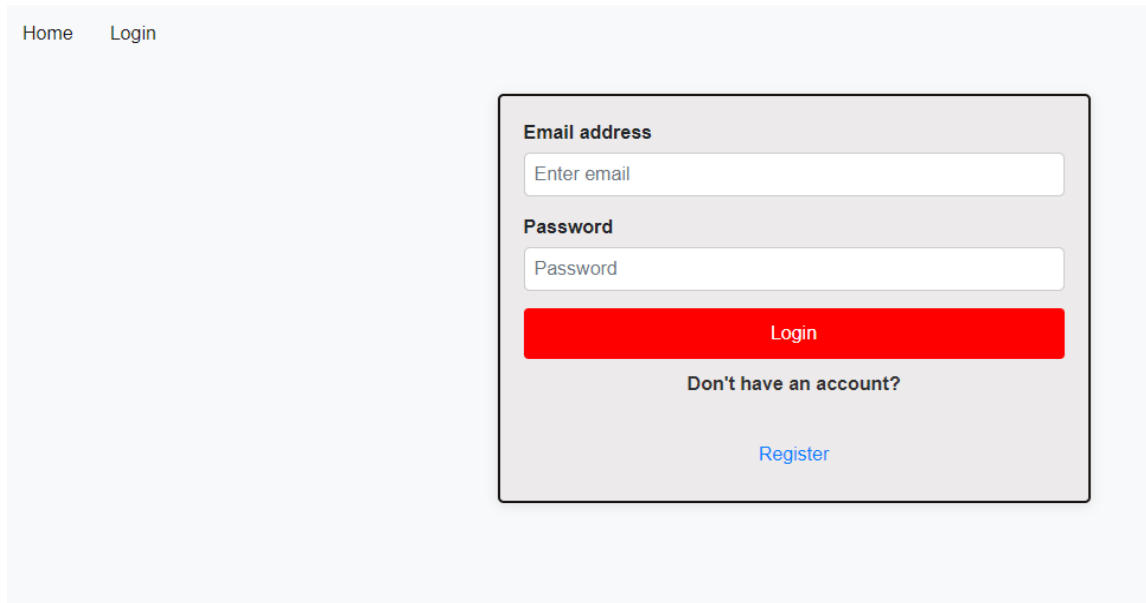
Provide All Table Details ...

7. SCREENSHOTS

1. Home page



2. Login page-



A mockup of a login page. At the top left, there are two links: "Home" and "Login". The main content is a light gray box containing a login form. The form has two input fields: "Email address" with a placeholder "Enter email" and "Password" with a placeholder "Password". Below these fields is a prominent red "Login" button. Under the button is the text "Don't have an account?" followed by a blue "Register" link.

Home Login

Email address

Enter email

Password

Password

Login

Don't have an account?

[Register](#)

3. User Registration page-

[Home](#) [Login](#)

Registration

Name:

Email:

Mobile Number:

Address:

Password:

Role:

User ▼

Register

[Acti](#)
[Go to](#)

4 .user profile

[Home](#) [Profile](#) [Show Booking](#) [Bill](#) [Payments](#) [Support](#) [Logout](#)

User Profile


Name: Tejas Shendkar
Email: tejasshendkar117@gmail.com
Mobile No: 7888166172
Address: Shrirampur

Update Profile

Change Password

4. User Home

[Home](#) [Profile](#) [Show Booking](#) [Bill](#) [Payments](#) [Support](#) [Logout](#)




Mauli Krupa

Contact: 7043651265

Address: Pune

[View All Rooms](#)




Shri Ganesh

Contact: 8715468952

Address: HR76+RXM, Ward No. 8, Aundh Gaon, Aundh, Pune, Maharashtra 411007

[View All Rooms](#)



Black Diamant

Contact: 7458321867

Address: Charwad wasti . Sinhgad college main campus S. No. 44/1, Off, Sinhgad Rd, Vadgaon Budruk, Pune, Maharashtra 411041

[View All Rooms](#)

[Activate Windows](#)
Go to Settings to activate Windows.

5. Service – rooms

[Home](#) [Profile](#) [Show Booking](#) [Bill](#) [Payments](#) [Support](#)

[Logout](#)



Room Number: 201

Area: 200

Capacity: 3

Floor: 2

Type: Single Room

Rent: ₹5000 per month

PG Name: Shri Ganesh

[Know More](#)

Activate Windows

Go to Settings to activate Windows.

6. Room Details

Room Details



Room Number: 201

Area: 200

Capacity: 3

Floor: 2

Type: Single Room

Rent: ₹5000 per month

Availability: Available

PG Details

Name: Shri Ganesh

Owner:

Contact: 8715468852

Address: HR76+RXM, Ward No. 8, Aundh Gaon, Aundh, Pune, Maharashtra 411007

[Book Now](#)

Update PG

Mauli Krupa

Owner Name

7043651265

Pune

Update PG



Manage Rooms

Room ID	Room Number	Area	Capacity	Floor Number	Type	Rent	Available	Actions
1	101	340	3	1	Master	5000	No	<button>Update</button> <button>Delete</button>
2	102	300	2	0	Double room	6000	Yes	<button>Update</button> <button>Delete</button>
3	201	200	3	2	Single Room	5000	Yes	<button>Update</button> <button>Delete</button>

Activate Windows

Go to Settings to activate Windows.



Manage PGs

Register New PG

PG ID	PG Name	Contact No	Address	Actions
1	Mauli Krupa	7043651265	Pune	Update Delete Add Room
2	Shri Ganesh	8715468952	HR76+RXM, Ward No. 8, Aundh Gaon, Aundh, Pune, Maharashtra 411007	Update Delete Add Room
3	Black Diamant	7458321867	Charwad wastli . Sinhgad college main campus S. No. 44/1, Off, Sinhgad Rd, Vadgaon Budruk, Pune, Maharashtra 411041	Update Delete Add Room

Activate Windows
Go to settings to activate Windows.

Register Room

Room Number:

Area:

Capacity:

Floor Number:

Type:

Rent:

Upload Images:

 No file chosen

Add Room

Update Room

Room Number:

Area (sq ft):

Capacity:

Floor Number:

Type:

Rent (₹):

Availability:



Update Room

Activate Windows

Go to Settings to activate Windows.

6. CONCLUSION

The paying guest project has demonstrated the viability of providing high-quality, comfortable accommodations that meet guest needs. The successes and challenges encountered provide a solid foundation for ongoing improvement and future growth. By addressing the identified challenges and implementing the recommendations, we can enhance the guest experience and operational efficiency moving forward.

Thank you for your attention to this project, and we look forward to the continued development and success of our paying guest accommodation service.

Future Scope:

The PG Management System has a wide range of growth opportunities. By focusing on innovation, expanding features, and addressing market needs, you can create a robust platform that not only simplifies PG management but also enhances the overall tenant experience.

6.REFERENCES

References:

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- <https://stackoverflow.com/questions/77338670/how-to-resolve-spring-boot-database-error>
- <https://getbootstrap.com/docs/5.3/getting-started/introduction/#cdn-links>
- <https://youtube.com/playlist?list=PL8p2I9GklV46469T9uxQ2ORe4AOzsQLb9&si=6PYQrh2lwnrgmO5r>
- [https://www.javatpoint.com/spring boot-crud-operations](https://www.javatpoint.com/spring_boot-crud-operations)