SYSTEM OVERVIEW

The system architecture for the **Smart Room Accommodation and Tracking System** is designed to provide a seamless and efficient experience for managing hostel accommodations. The architecture comprises a robust frontend for user interaction and a powerful backend for handling server-side logic and database management.

1. Frontend

- **Technologies**: HTML, CSS, JavaScript

- **Responsibilities**:

  - **User Interface (UI)**: The frontend is built using HTML, CSS, and JavaScript to create a dynamic and responsive user interface. This ensures that users, including students, faculty, and administrators, have an intuitive experience when navigating through the application.

  - **Real-Time Updates**: JavaScript enables real-time updates for room availability and occupancy status, enhancing user experience by providing immediate feedback.

  - **Interactive Elements**: The application uses JavaScript to manage interactive elements, such as booking forms and status updates, allowing users to easily make reservations and check the status of rooms.

2. Backend

- **Technologies**: PHP, MySQL

- **Responsibilities**:

- o **Server-Side Logic**: PHP handles server-side logic, including processing user requests, managing sessions, and executing business rules related to room allocation and booking management.

- o **Database Management**: MySQL is used to manage the system's relational database, which stores critical data such as user credentials, room details, booking information, and occupancy status.

- o **Security and Authentication**: The backend implements secure user authentication and authorization mechanisms to ensure that only authorized users can access specific features and data.

3.Database:

- **Technology**: MySQL

- **Responsibilities**:

- o **Data Storage**: MySQL serves as the central repository for storing all data related to hostels, including details about rooms, bookings, users, and occupancy status.

- o **Data Integrity**: The database is designed to ensure data integrity and prevent issues like double booking using constraints and transaction management.

- o **Scalability**: MySQL supports scalability, allowing the system to handle increasing amounts of data as the number of users and bookings grows.

1. **Modules Description**

   This section outlines the various modules implemented in the Smart Room Accommodation and Tracking System:

   - **Booking and Reservation Module**:

- o Allows users to make reservations and manage bookings through an interactive interface.

- o Prevents double booking by dynamically updating room availability in real time.

- **Occupancy Tracking Module**:

  - o Tracks the occupancy status of each room using a color-coded system (e.g., green for vacant, ash for fully occupied).

  - o Provides a visual representation of room status.

- **User Management Module:**

  - o User Profiles: Allows users to create and manage their profiles, including personal information, booking history, and preferences.

  - o Role-Based Access Control: Implements different access levels for students, hostel managers, and administrators, ensuring that each user has access to relevant functionalities.

- **Admin Dashboard Module:**

  - o Offers a centralized dashboard for administrators to manage all aspects of the hostel operations, including bookings, user management, and maintenance requests.

- **Search and Filter Module:**

  - o Provides users with advanced search and filtering options to quickly find available rooms based on preferences such as price, amenities, and location.

o Enhances user experience by streamlining the process of finding suitable accommodations.
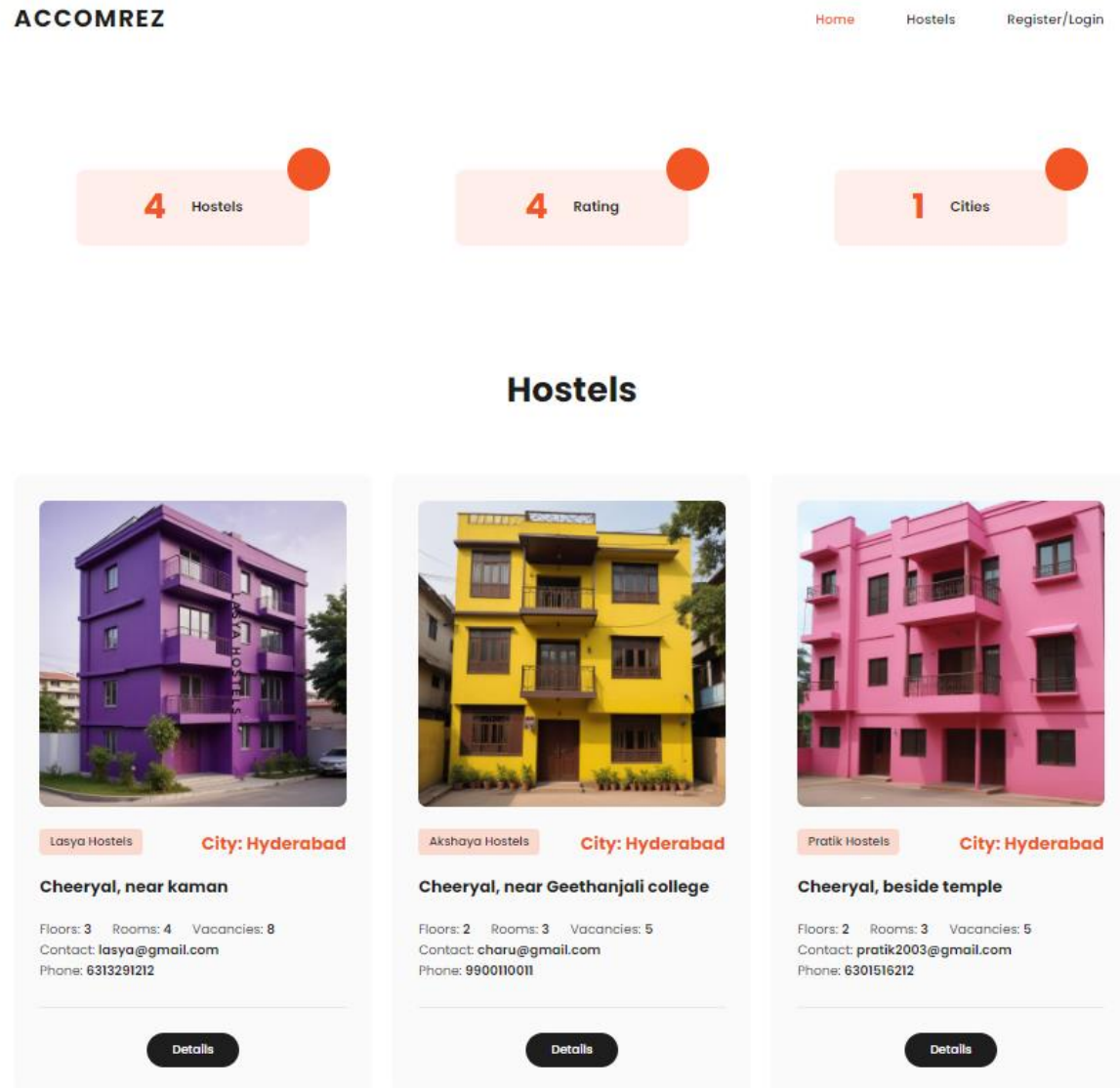

Fig Home page

HOSTELS

Hostels

We currently have 4 hostels in 1 cities.

Lasya Hostels   **City: Hyderabad**

Cheeryal, near kaman

Floors: 3   Rooms: 4   Vacancies: 8
Contact: lasya@gmail.com
Phone: 6313291212

Details

Akshaya Hostels   **City: Hyderabad**

Cheeryal, near Geethanjali college

Floors: 2   Rooms: 3   Vacancies: 5
Contact: charu@gmail.com
Phone: 9900110011

Details

Pratik Hostels   **City: Hyderabad**

Cheeryal, beside temple

Floors: 2   Rooms: 3   Vacancies: 5
Contact: pratik2003@gmail.com
Phone: 6301516212

Details

Balaji Hostels   **City: Hyderabad**

Cheeryal, opp temple

Floors: 3   Rooms: 5   Vacancies: 3
Contact: suresh@gmail.com
Phone: 9011192319

Details

Fig Hostels

Fig Hostel details

Fig Visualization of room occupancy
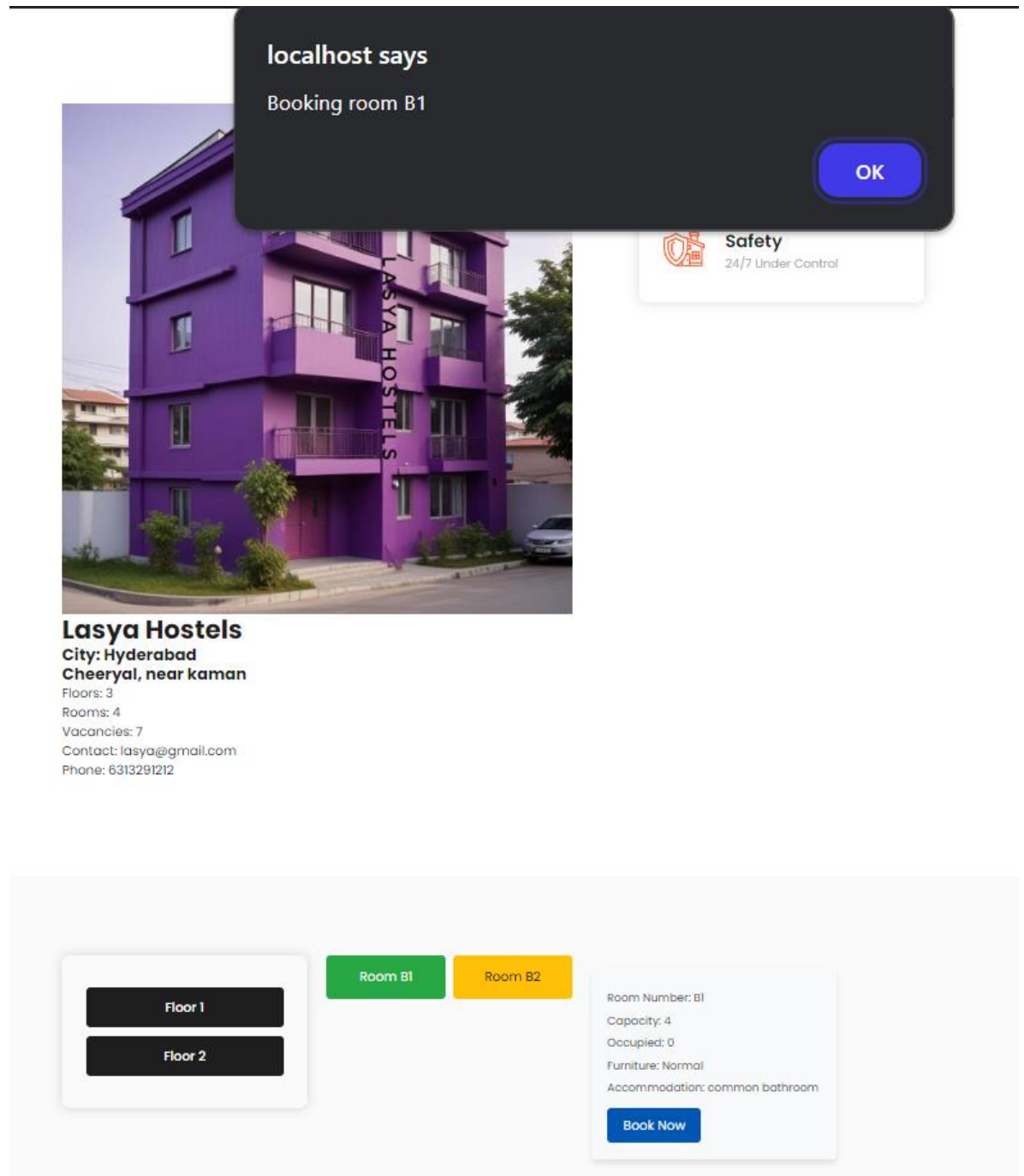
localhost says

Booking room B1

OK

Safety
24/7 Under Control

Lasya Hostels
City: Hyderabad
Cheeryal, near kaman
Floors: 3
Rooms: 4
Vacancies: 7
Contact: lasya@gmail.com
Phone: 6313291212

Floor 1

Floor 2

Room B1   Room B2

Room Number: B1
Capacity: 4
Occupied: 0
Furniture: Normal
Accommodation: common bathroom

Book Now

Fig Conformation box

Fig Hostel change conformation box

We are pleased to inform you that your reservation request has been received and confirmed.

Fig Confirmation Message

Fig Login Page

REGISTER NOW

enter your name

enter your email

enter your password

confirm your password

select type

Register Now
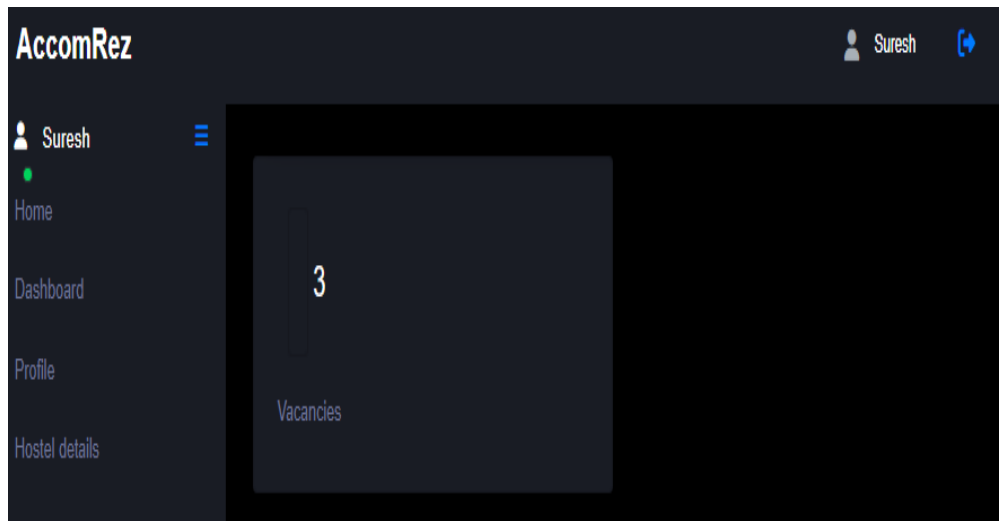
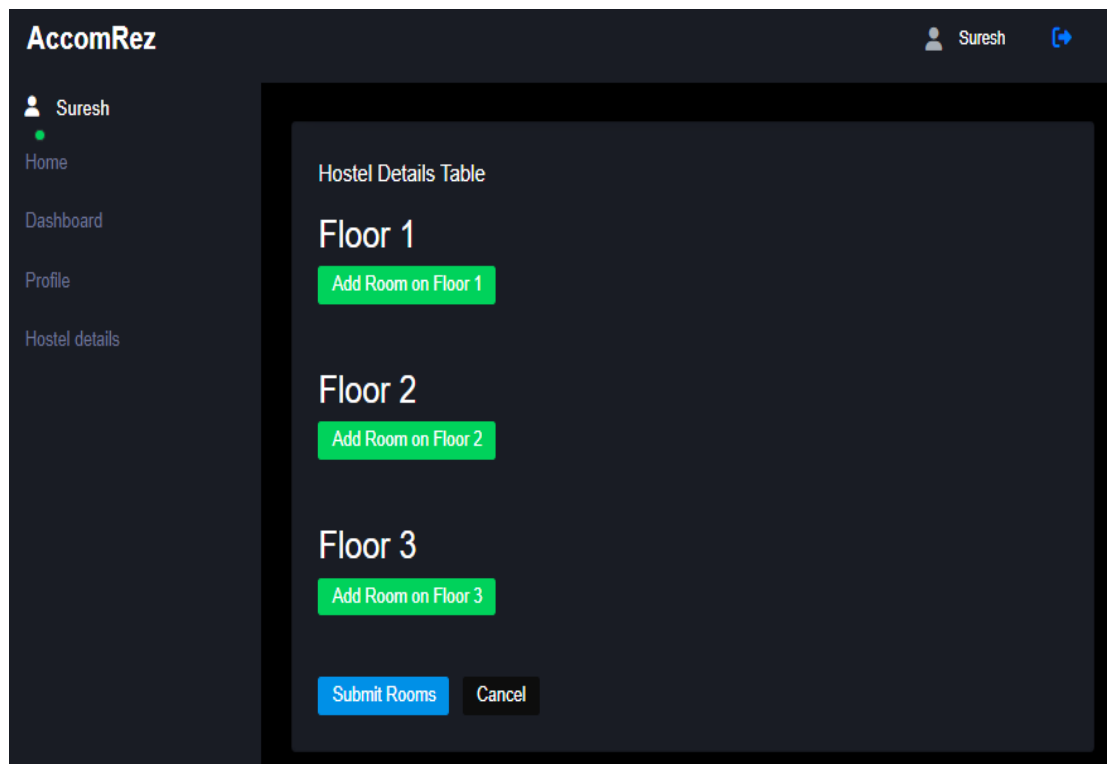already have an account? login now

Fig Register Page

Fig Admin Dashboard

Fig Add Hostel Details

Fig Admin Profile