

Room Finder-Find Rental Room and Roommate

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Abstract — To Address the growing challenge of finding safe and affordable accommodation, students and working professionals often struggle with issues such as unverified listings, high brokerage costs, and lack of short-term rental options. This paper focuses on the design and development of a Room Finder Application integrated with Firebase Realtime Database and Google Maps APIs to transform the accommodation search experience. The mobile application enables users to search and pre-check available rooms, hostels, and PGs based on real-time availability, distance from institutions, budget range, and essential amenities. Furthermore, the system offers a Roommate Finder option, which assists users in identifying compatible roommates through verified profiles, lifestyle preferences, and secure in-app communications.

Keywords: Smart Room Discovery, Location-Based Accommodation Finder, Nearby Hostel & PG Suggestions, Smart Roommate Matching, Community-Based Room Sharing

I. INTRODUCTION

The ever-increasing demand for safe, affordable, and student-friendly accommodation has posed significant challenges such as unverified listings, high brokerage charges, lack of short-term rental options, and difficulties in finding compatible roommates. Such inefficiencies lead to wasted time, financial burden, and inconvenience for students and working professionals who relocate to educational or employment hubs. To overcome these challenges, the Room Finder Application provides a modern approach by integrating real-time data, location-based services, and digital verification systems. The mobile application allows users to search and filter nearby rooms, hostels, and PGs based on rent, distance, gender-specific requirements, and available amenities. A dedicated Roommate Finder option further enhances the platform by enabling users to connect with verified profiles, check compatibility based on lifestyle preferences, and establish secure in-app communication.

II. FEATURES OF THE SYSTEM

A. Smart Accommodation Search with Real-Time Updates

The system allows users to efficiently search for available rooms, hostels, and PGs through a simple mobile application interface. Users receive real-time updates on availability, rent changes, and occupancy status. Notifications about newly listed accommodations ensure users can plan their search effectively without missing potential options.

B. Roommate Finder and Compatibility Matching

A unique feature of the application is the Roommate Finder, which helps users identify compatible roommates based on lifestyle preferences, interests, and verified profiles. Users

can communicate securely within the app to finalize arrangements, reducing the risk of mismatched or unsafe co-living situations. Compatibility scores and mutual preferences enhance the overall experience of sharing accommodation.

C. User-Friendly Interface and Personalized Filters

The application provides an interactive, user-friendly interface for easy navigation. Users can filter accommodations based on type (room, hostel, or PG), distance from college, rent range, amenities, and gender-specific preferences. Personalized settings allow users to save preferred localities and notification preferences to optimize their search process.

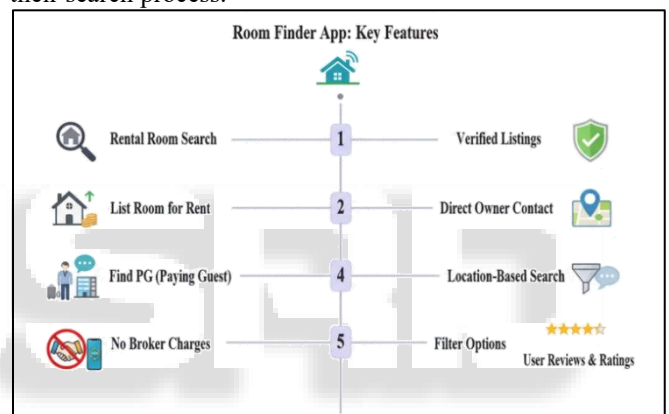


Fig. 1: Benefits

III. RISK MANAGEMENT AND USER FEEDBACK

A. Risk Management

Room Finder application ensures risk management by minimizing issues such as fake listings, unverified landlords/roommates, and scams. The system uses identity verification (via phone number/email verification) and historical data of listings to identify suspicious activities. Users are alerted about potential risks like duplicate postings or incomplete information. This proactive approach enhances safety, reduces chances of fraud, and makes the process of finding rooms/PGs/roommates more reliable.

B. Mechanism for Users' Feedback

The application integrates a feedback and rating mechanism where users can review landlords, roommates, and PG/Hostel facilities. After renting or sharing a space, users can give feedback on cleanliness, amenities, rent fairness, and overall experience. This aggregated feedback helps other users make informed decisions and also improves service quality by highlighting areas of improvement.

IV. ROOM & ROOMMATE MATCHING AND LOCATION TRACKING

A. Roommate & PG Integration

Apart from finding rooms, the system also provides roommate-matching and PG/Hostel finding features. Users can filter based on preferences like budget, gender, lifestyle, or location. For PGs/Hostels, information like rent, amenities (Wi-Fi, food, security), and reviews are available to help users choose the best accommodation option.

B. Location Tracking and Navigation

The app provides location-based search to help users easily find available rooms, roommates, or PGs nearby. Integrated with Google Maps, it suggests best routes to the property and shows nearby facilities (colleges, bus stops, gyms, hospitals, etc.). Users can also get alerts if a listed property is in a high-demand area or if new listings become available in their preferred location.



Fig. 2: Main goals of the project

V. CONTINUOUS SYSTEM ENHANCEMENT THROUGH USER INPUT AND OPERATIONAL DATA

The development of Room Finder depends largely on continuous user input and feedback. Reviews and ratings given by tenants and roommates help refine the recommendation algorithm. Operational data such as trending locations, average rent in an area, or popular PGs are analyzed to provide smarter suggestions. This continuous feedback loop ensures that the app remains updated, user-friendly, and efficient in solving real-life accommodation problems.

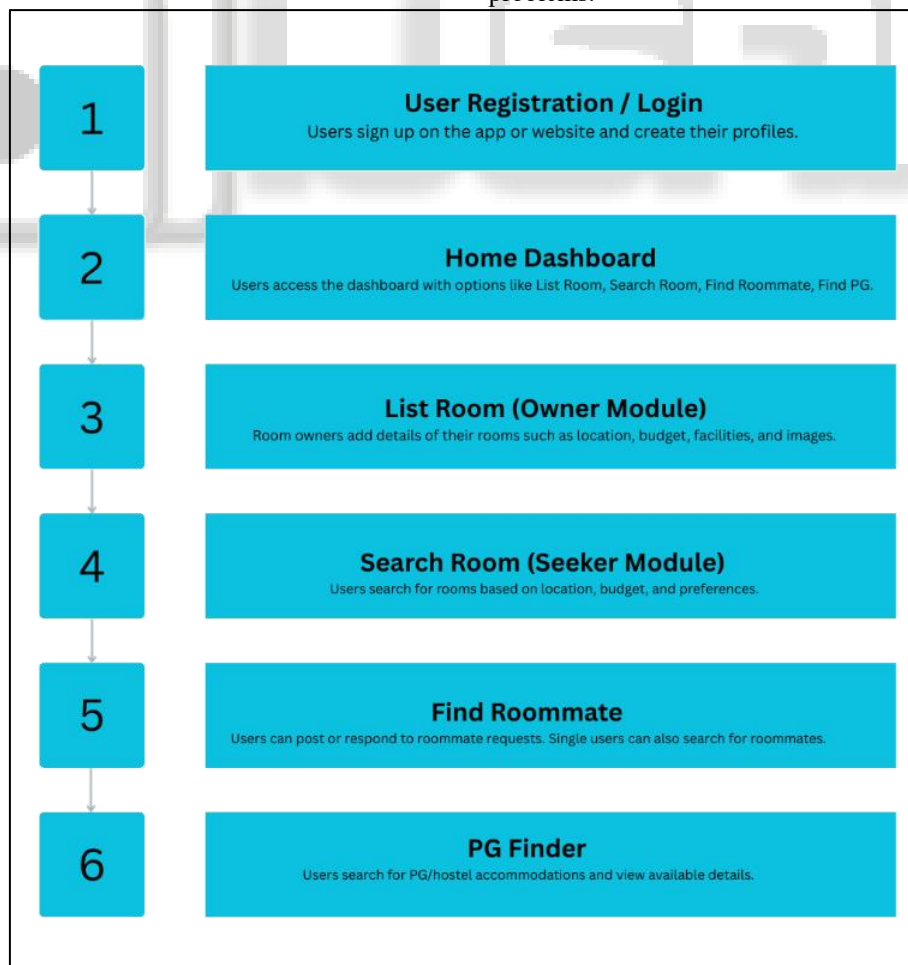


Fig. 3: App Workflow

VI. CONCLUSION

Room Finder application is an innovative solution that integrates room, roommate, and PG/Hostel search into a single platform. With risk management, verified listings, feedback mechanisms, and location-based search, the system ensures a safe and convenient experience. By optimizing the process of searching, verifying, and selecting accommodation, the app saves time, reduces risks, and improves overall user satisfaction. It provides students, working professionals, and families with a seamless, reliable, and sustainable way to find their ideal living space.

ACKNOWLEDGMENT

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