

Hostel Management System

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Abstract: *In today's developing world, managing hostel activities and task is getting unorganized and also consumes a lot of time, energy and manpower. Students, Parents, Hostel In-charge and management face challenges in due to manual setup like error in entries, fees management, miscommunication between the student and the hostel in-charge, up-to-date announcements.*

The aim of this project is to provide smooth, digitalized platform for carrying out hostel operations without hustle. This project will fulfil the need of hostel management as it is time saving, cost efficient, can store records and provide security. The Hostel Management System simplifies the task like Booking a room for student in which a student will login and apply for the same, Online Consultancy can be done, view room details, register complaints and will be updated with all the announcements- all in one place. Hostel In-charge can manage student data, record complaints and post announcements this will improve communication and workload. After successful login the students and hostel in-charge are directed to dashboard where they have their personalized data and have relevant information of the hostel facilities. All this student records, complaints, room details and announcements are secure and maintained by firebase database. This application is user-friendly for both student and the staff as it is convenient and organized..

Keywords: hostel operations

I. INTRODUCTION

A Hostel Management System is digitalized platform where a student can login and upload all his credentials and book a room as per his availability. This information can also be access by the hostel in-charge to maintain the records. This provides a student will their personalized data, details of their room whether the room is approved or rejected, once approved a room is allocated to a student and he/she can also log complaints and will be up-to-date with the announcements.

The main goal of this system is to reduce time, energy and manpower as it is digitalized. Using this application parents are free to consult the hostel authorities for enquiries and access the details of their child by login. This system will ease the work of the management by maintaining all the records in an organized manner to avoid any inconvenience.

II. LITERATURE

Managing Hostel operations has been traditionally done using manual process such a maintaining physical registers for each step such as student records, fees collections, allotment of rooms, complaints, announcements, check-in and check-out data etc. This method is time and energy consuming which can lead to human errors and often result in mismanagement of the crucial data. With the evolution of the technology, multiple digital platforms are introduced to manage hostel operations.

Using digitalized application will improve efficiency and transparency. Earlier systems were just focused on student admission and room allocation but modern hostel management applications integrate modules for storing student data, logging complaints, viewing announcements, accessing the update whether the student's request for room has been approved or rejected, room details, room view and floor plan. Clous-based databases like firebase are used to securely store and manage hostel- related data.



Research also suggests that providing role-based access (student, admin, warden) enhances data privacy and system security. Additionally, mobile-friendly applications allow students to access information and services anytime, improving user satisfaction. Automation of complaint management and announcement posting reduces administrative burden and speeds up response times.

Digital hostel management system leads to better organization, improves communication between students and management, and creates a more efficient and user-friendly environment.

III. METHODOLOGY

This system was developed using a structured approach to ensure efficiency, transparency, user-friendliness and security. The process started with gathering the requirements from students, hostel wardens and administrators to understand their needs such as student registrations, room allocation, complaints management, announcement updates etc.

After gathering the requirements, the system architecture for frontend and backend was designed. Technologies such as **JavaScript & VScode** were selected for application development and **Firebase** was selected as the real-time cloud database for storing student data, room details, complaints, and announcements securely.

The development phase includes building separate modules:

User Registration and Login: Secure sign-up and login for students and admins.

Dashboard: personalized dashboard for both students and staff.

Room Management: Allocation and monitoring of hostel rooms once the room is approved.

Complaint System: Students can easily file complaint and staff can track it on their system.

Announcement Module: Administrators can post important notices for students.

Once the development is complete, the system underwent testing, including unit testing for individual modules to ensure module work together properly and checks whether the system meets the users need.

Continuous monitoring, error fixing and updating the application is part of ongoing maintenance to ensure the Hostel Management System remains reliable, secure and user-friendly.

IV. RESULTS

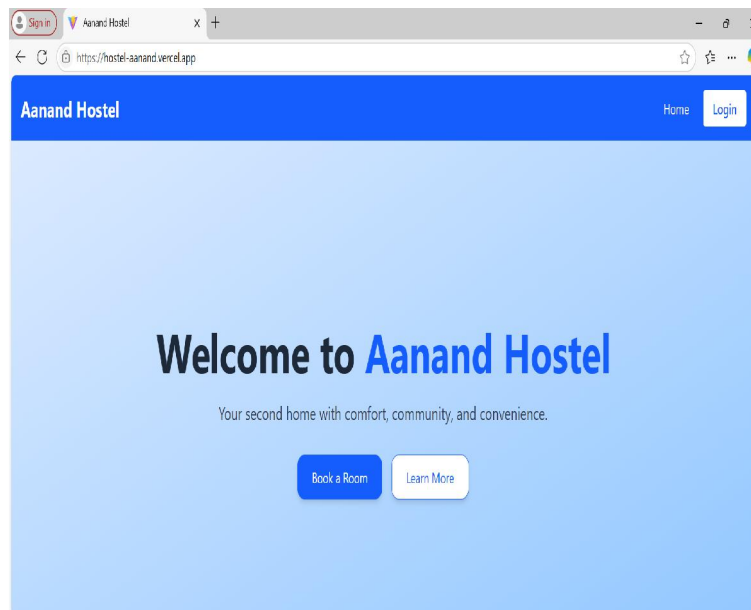


Fig 1. Main Page



Aanand Hostel Home Login

Student Login

Enter your credentials to access your account

Email address
Email

Password
Password

Sign In

[Create account.....](#)

Fig 2. Login Page

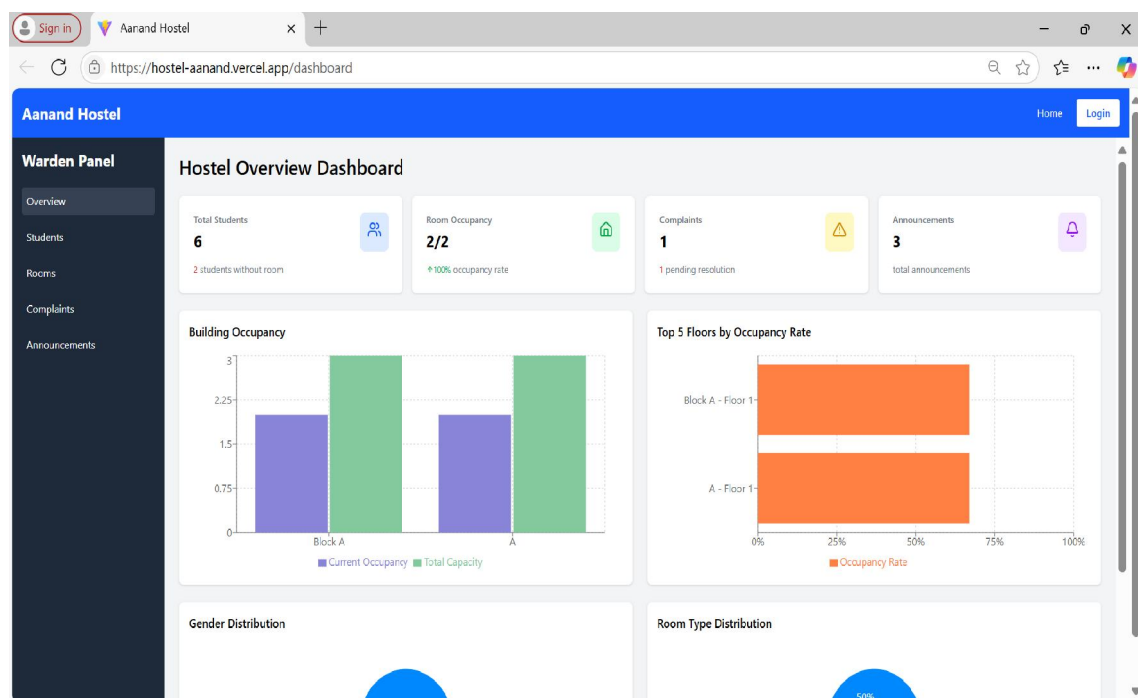


Fig 3. Dashboard



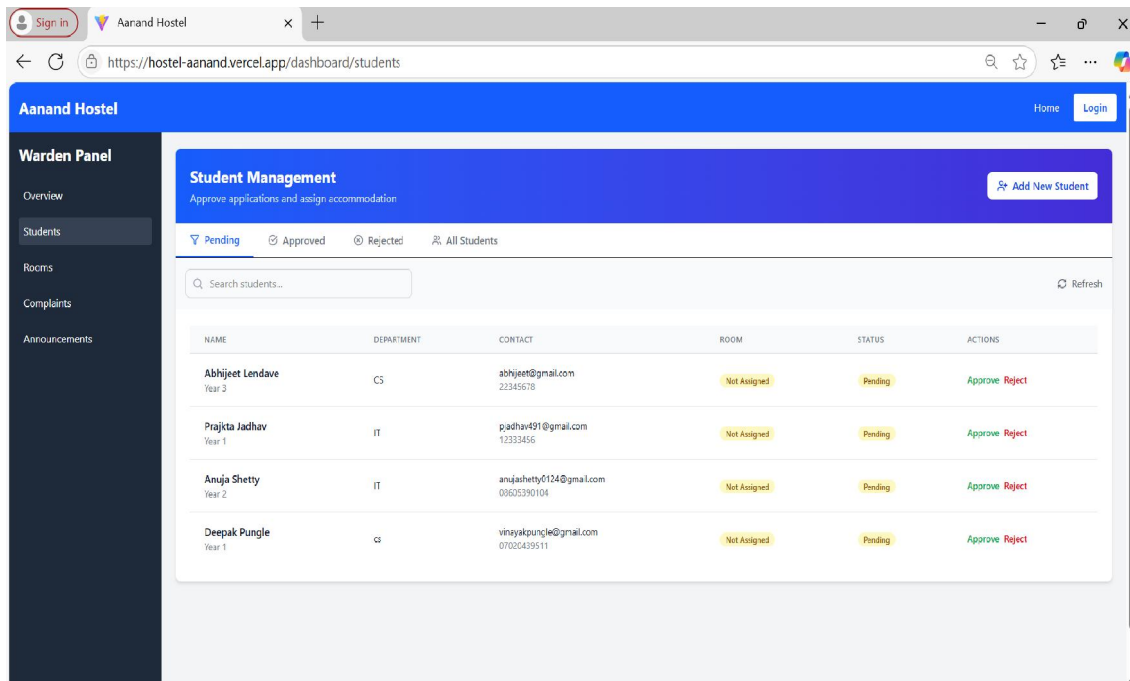


Fig 4. Student Management Page

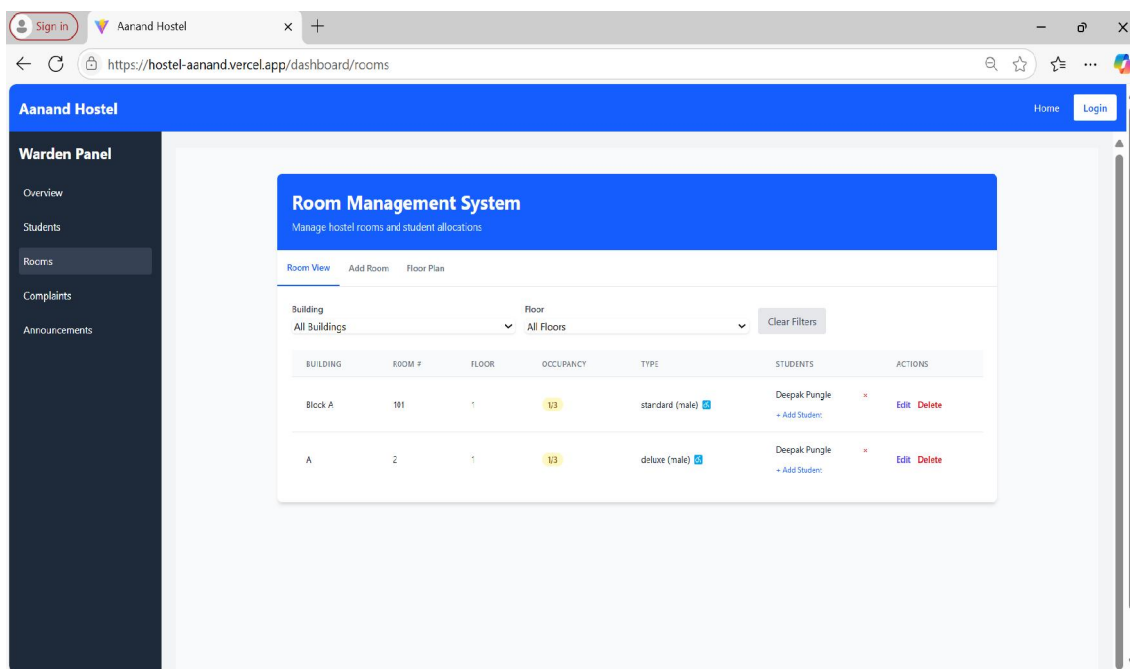


Fig 5. Room Management Page



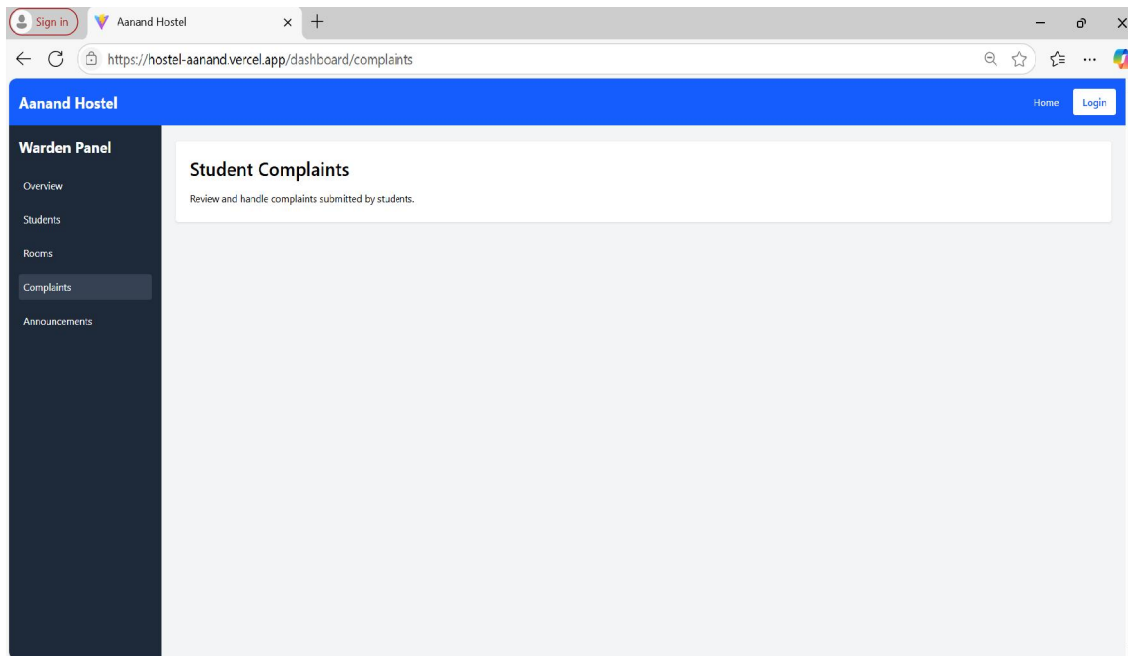


Fig 6. Student Complaint Page

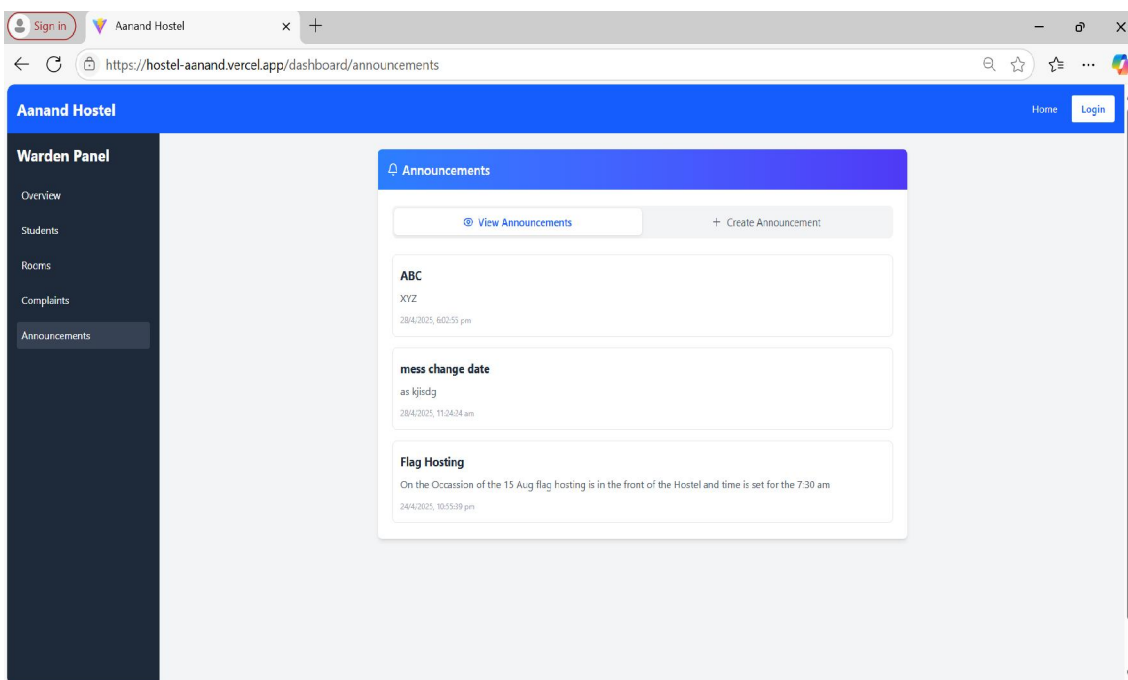


Fig 7. Announcement Page



V. CONCLUSION

Thus, we have finally created the Hostel Management System Application helping students and hostel administrators to ease their work by use this user-friendly platform for accessing, managing, securing, uploading, editing and maintaining their critical records/data.

We have added features like complaint and announcement for the student as well as the hostel in-charge as the student can log their complaint anytime and the hostel in-charge will be solving it as early as possible and keeping the students updated with all the important announcement so that they don't miss out on one. Using this system, human prone errors will be reduced and the data will be managed, organized and stored at one place.

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