

Smart Student Support System for Hostels

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Abstract - Student accommodation management involves addressing various concerns such as complaint resolution, communication, support services, and hostel administration. Traditional hostel systems often lack efficient mechanisms for handling student queries and providing timely assistance. This paper presents an Intelligent Student Support System for Hostels that integrates role-based access control, complaint management, and AI-assisted student support into a unified web platform. The proposed system is developed using Django, React, CSS, JavaScript, and SQLite. Students can register complaints, track issue status, access hostel information, and receive instant assistance through an AI-powered chatbot. Wardens and administrators can efficiently manage complaints, monitor student requests, and improve communication. The system enhances transparency, reduces administrative workload, and improves the overall hostel experience.

Key Words: *Hostel Management, Student Support System, Artificial Intelligence, Chatbot, Complaint Management, Django, Web Application*

1.INTRODUCTION

Hostels play an important role in providing accommodation and support services to students pursuing higher education. Managing student concerns effectively is essential for maintaining a comfortable and productive hostel environment.

Traditional hostel management methods rely heavily on manual processes for complaint registration, issue tracking, and communication. These approaches often result in delayed responses, lost records, and reduced student satisfaction.

To overcome these challenges, an intelligent student support system is proposed. The system enables students to access support services digitally while providing administrators and wardens with efficient management tools. The integration of artificial intelligence further improves responsiveness through automated query handling and support assistance.

2.RELATED WORK

Several hostel management systems have been proposed to digitize hostel operations. Existing solutions mainly focus on room allocation, fee management, and attendance monitoring.

Recent developments have introduced web-based platforms and mobile applications for hostel administration. Some systems

incorporate chatbot technology for automated communication; however, many lack comprehensive complaint tracking and support mechanisms.

The proposed system combines AI assistance, complaint management, and role-based access control to provide a complete student support environment within hostel infrastructure.

3.OBJECTIVES

The major objectives of the proposed system are:

- To provide an intelligent support platform for hostel students.
- To automate complaint registration and tracking.
- To enable secure communication between students and hostel authorities.
- To provide instant responses using AI chatbot technology.
- To reduce manual administrative workload.
- To improve transparency and service efficiency.

4.PROPOSED METHODOLOGY

The proposed system follows an Agile development approach and consists of three major modules.

4.1 Student Module

- Registration and login.
- Profile management.
- Complaint submission.
- Complaint tracking.
- Access to hostel information.
- Interaction with AI chatbot.

4.2 Warden Module

- View complaints.
- Update complaint status.
- Manage student records.
- Monitor hostel activities.
- Communicate with students.

4.3 Administrator Module

- User management.
- Complaint supervision.
- Hostel data management.
- Report generation.
- System monitoring.

4.4 AI Chatbot Module

- Answering common hostel-related queries.
- Providing information regarding hostel facilities.
- Guiding students through complaint procedures.
- Redirecting unresolved issues to concerned authorities.

5.SYSTEM ARCHITECTURE

The proposed Intelligent Student Support System for Hostels is developed using Django, HTML, CSS, JavaScript, and SQLite to provide efficient hostel support and administration. The system allows students to register complaints, track issue status, access hostel information, and interact with an AI-powered chatbot for instant assistance. The Django backend processes user requests and manages communication between students, wardens, and administrators through role-based access control. All user information, complaints, and support records are securely stored in the SQLite database

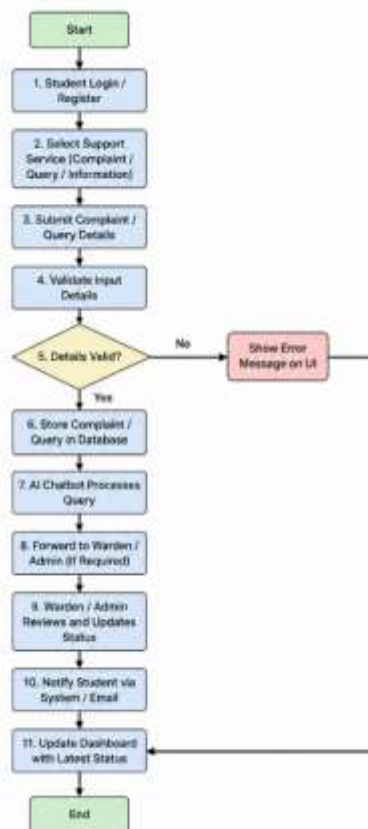


Fig. 1. INTELLIGENT STUDENT SUPPORT SYSTEM WORKFLOW

6.IMPLEMENTATION

The Intelligent Student Support System for Hostels was implemented and tested in a real-time environment to evaluate its functionality, reliability, and user experience. The system was developed using Django, HTML, CSS, JavaScript, and SQLite. Students were able to register, log in, submit complaints, track complaint status, and interact with the AI-powered chatbot for hostel-related assistance. The chatbot successfully responded to common queries and guided users through support procedures. Complaint records were securely stored in the database and automatically forwarded to the

appropriate warden or administrator when required. The dashboards were updated instantly whenever complaint statuses changed, ensuring transparency and effective communication. During testing, the system demonstrated reliable performance, smooth user interaction, accurate complaint tracking, and efficient management of student support requests without noticeable delays



Fig 1. Student Dashboard

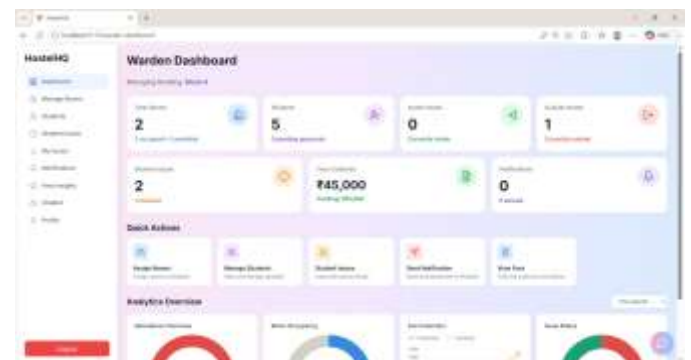


Fig 2. Warden Dashboard

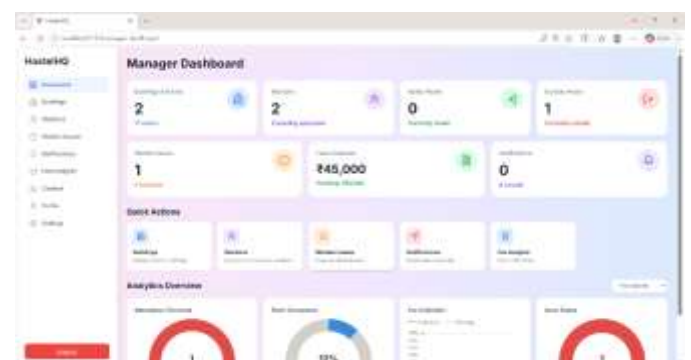


Fig 3. Manager Dashboard

7.LIMITATIONS

7.1 Network Dependency:

The system requires a stable internet connection for accessing the web application, chatbot services, and database operations. Network interruptions may affect complaint submission, status updates, and communication between users and hostel authorities.

7.2 Chatbot Response Accuracy:

The AI chatbot can efficiently answer common hostel-related queries; however, its responses depend on the available knowledge base. Complex or uncommon issues may still require manual intervention from wardens or administrators.

7.3 Data Security and Privacy:

Since student information, complaints, and support records are stored digitally, there is a risk of unauthorized access if proper authentication, encryption, and security measures are not maintained.

7.4 Scalability Constraints:

The current system uses SQLite as the database, which may face performance limitations when deployed in large institutions with a high number of students, complaints, and concurrent users.

8.CONCLUSION

The Intelligent Student Support System for Hostels provides an effective solution for improving hostel communication, complaint handling, and student assistance. By integrating AI-powered support with role-based administration, the system enhances operational efficiency and student satisfaction. The proposed solution offers a scalable foundation for future intelligent hostel management applications.

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