

# DORMLINK- BRIDGING HOSTEL LIFE

Anuradha M Sandi<sup>1\*</sup>, Venkatesh<sup>2</sup>, Sandeep<sup>3</sup>, Vinay<sup>4</sup>

Department of Computer Science and Engineering

GuruNanak Dev Engineering College

Bidar, Karnataka, India

mrvenkatesh818@gmail.com

## Abstract

Life in a hostel plays a significant role in shaping a student's academic journey as well as their social development. Yet students often struggle with communication and coordination. Traditional notice boards, manual complaint handling, and scattered messaging systems fail to meet the expectations of today's digitally connected generation. To address these challenges, DormLink has been developed as a digital platform designed to streamline hostel life and enhance interaction between students and administrators. The platform centralizes by providing an efficient system for managing students and tracking complaints, mess offs, attendance tracking, suggestion box. Built using the MERN stack—MongoDB, Express.js, React.js, and Node.js—DormLink offers a secure, responsive, and user-friendly interface. The system incorporates role-based access, giving students and administrators distinct dashboards and functionalities. Administrators can handle complaints, and generate insightful reports. By digitizing the key aspects of hostel communication and collaboration, DormLink not only reduces administrative workload but also enriches the student experience, creating a more connected, transparent, and engaging hostel environment.

Keywords: Attendance tracking, Complaint management, Hostel management, MERN stack, Role-based access, suggestion box.

## I. Introduction

Hostels form an integral part of student life by providing accommodation and fostering social interaction, teamwork, and personal growth. Despite their importance, hostel administration remains one of the least digitized areas in educational institutions. Most hostels rely on physical registers, notice boards, and messaging apps, resulting in delayed communication, inefficient complaint handling, and poor record maintenance. DormLink is proposed as a web-based hostel management system that bridges communication gaps between students and administrators. It provides a centralized digital platform for announcements, complaints, attendance, and mess management, ensuring transparency and accountability.

## II. Background Study

Several existing studies emphasize the need to replace manual hostel operations with web-based systems to improve efficiency, transparency, and record management. The Hostel Management System (HMS) is a web-based program that makes it easier to run hostels in schools and other places where people can stay. The project required a lot of research and analysis of current systems, figuring out what users needed, and sending out surveys to get a clear idea of what the system should include and what problems it should solve. [1]. Researchers also stress that traditional paper-based methods lead to errors, delays, and poor accountability, motivating. The Hostel system is a web design which is designed for managing different functions in the hostel. This project is aiming to put less burden or human work and make hostel issuing much simpler for residents and admin [3]. Many systems focus on reducing human effort, improving data consistency, and enabling secure access through

authentication mechanisms. The Automated Hostel Management System is a technology-based application designed to address various challenges faced in hostel administration. [5]. This system can be accessed by hostel administrators, and students, with different levels of access and functionality based on their roles [7]. Furthermore, studies point out the importance of dashboards, feedback mechanisms, and student interaction [8], [9]. The project aims to address the challenges of running a hostel by preventing issues arising from manual operations. Identifying weaknesses of existing systems leads to the design of a Computer System that will be compatible with an existing system, making it more user friendly and further website oriented [14]. By automating workflow, this system minimises human labour and poor management [15]. Managing educational institutions and hostels by hand has grown more challenging as their numbers continue to rise. By simplifying procedures that were previously completed on paper, this system overcomes those difficulties. All things considered, it greatly improves the speed, accuracy, and convenience of hostel administration for both staff and students [16]. The hostel management system designed in this study keeps track of all the available rooms and its occupants [19].

## III. Problem Statement

Hostel management often lacks a unified communication system, relying on notice boards and informal messages that create information gaps. Complaints are handled without proper tracking or digital records, leading to poor

transparency and delayed resolution. The absence of role-based access causes operational confusion, while dependence on paper records makes data management inefficient. These limitations also reduce student engagement, as there is no proper platform for feedback or interaction with hostel authorities.

#### IV. Proposed System

DormLink is designed as a comprehensive web application with the following features:

##### 1. Centralized System

multi tools platform like student records, mess offs, fee records, complaint management. It allows transparency accountability and suggestions.

##### 2. Structured Complaint Lifecycle Management

Allows a well-defined platform which helps students and hostel management to handle complaints efficiently.

##### 3. Role-Based Dashboards (Student/Admin)

separate dashboard for student and admins. Where students get feature like complaint, suggestions, mess off requests. And admin with student management fees billings, respond with complaints and feedbacks.

##### 4. Mess-Off Management

mess off request for students for students with adjustable dates. And admin can approve or reject the mess off request.

#### V. Methodology

DormLink application is built using the MERN stack a modern web development application which is used by both hostel management and students and application is created using MongoDB, Express.js, Node.js and React.js. MongoDB is used for primary database storage keeps records of students, logins, complaints, suggestions, fees, and helps admin to manage logs efficiently. Node.js and Express.js serves as backend service for application which manages work like api creation routing complaint and feedback workflow authentications. React.js is used for smooth frontend designs for student and admin dashboard.

The figure is a module structure of DormLink web app. The process starts with login user where user either student or admin login in into their dashboard by using their credential i.e. user id and password. Upon login each user get access to their dashboard and features can be seen like for students feature like mess offs, complaint box, suggestion box, fee invoices can be seen, similarly for admin features like fees

management, mess offs, complaint box, add students can be seen.

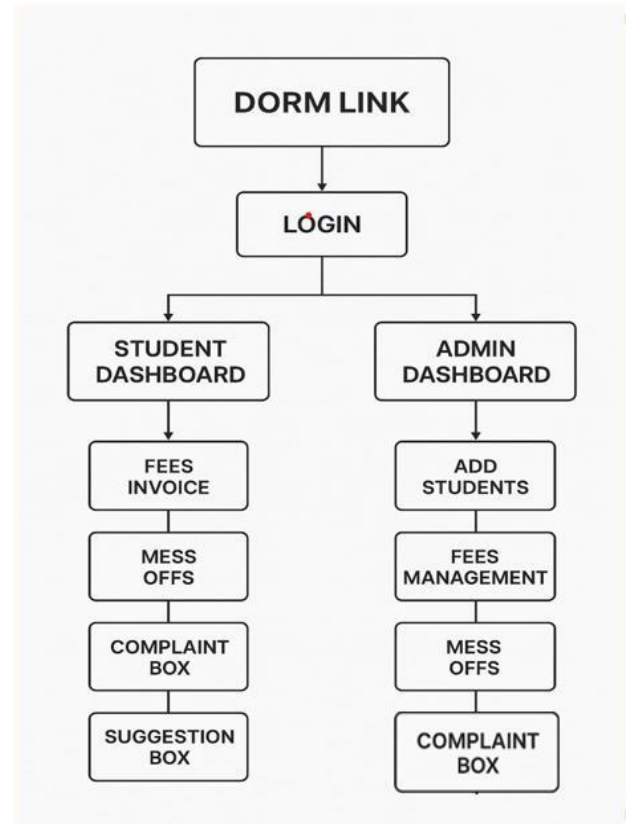


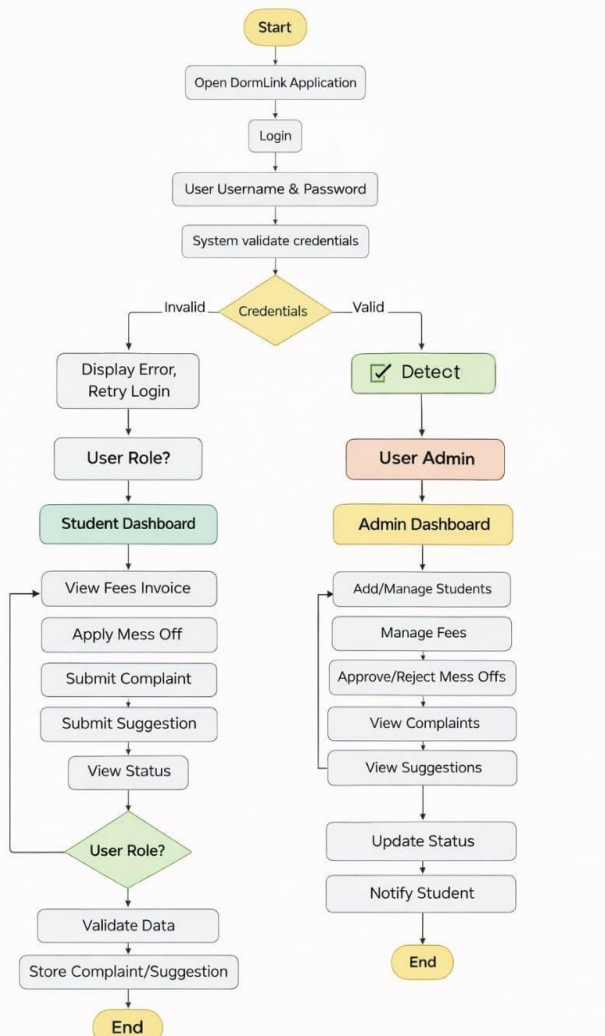
FIG1 DATA FLOW DIAGRAM

1. Student Dashboard: after entering student id credential student get access to

- mess offs: apply for mess offs for particular period of time.
- complaint box: raise issues through the complaint box system.
- suggestion box: share ideas or feedback using the.
- fee invoices: Students can view their billing invoices.

2. Admin Dashboard: after entering admin ide credential admin get access to

- fees management: admin can send fees invoice to admin
- mess offs: admin can accept or reject student mess off request
- complaint box: review or resolve issues
- Add students: Admins can add and manage students

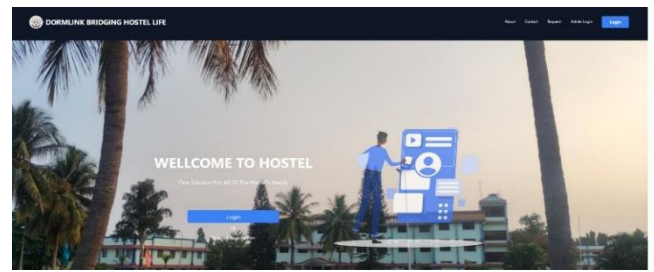


**FIG 2 ACTIVITY DIAGRAM**

When user starts the web app and login using user id and password of his role that is either as admin or as student he lands of respective dashboard. If user enter invalid credentials the either of them cannot login into their account. Once the user login as student, student can view mess off request complaint feedback suggestion and fees options. And if admin login admin can see student record manage fees, approve or reject mess off, and view and respond to complaint and feedback given by student.

**VI. Results and Discussion**

Using web app called DormLink improved complaint resolution time, better communication clarity, and higher student participation in hostel activities. The system provided administrators with real-time data insights and reduced paperwork significantly.



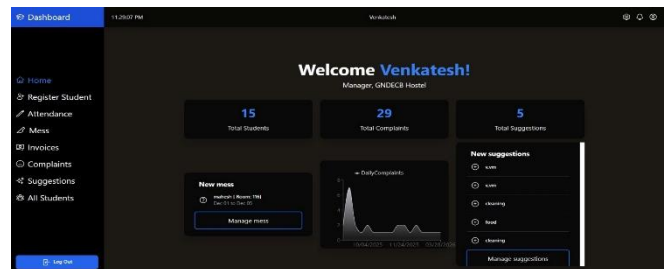
**FIG 3 DORMLINK HOMEPAGE**

Homepage when web application opened. There are two options for logging in one for admin and another for student login.



**FIG 4 LOGIN PAGE**

Login page where user can enter their credential and login into their respective dashboard.



**FIG 5 ADMIN DASHBOARD**

Admin dashboard where all features like register students, attendance, mess, invoice, complaints, suggestion can be accessed and managed efficiently.



**FIG6 STUDENT DASHBOARD**

Student dashboard where all features for student like mess offs attendance, fee invoices, complaint box, suggestion box is showing complete overview of his account.

## VII. Conclusion and future works

DormLink successfully digitizes hostel operations by providing a unified, secure, and scalable platform. It bridges the communication gap between students and administrators while ensuring transparency and efficiency. The system enhances the overall hostel living experience and aligns with the digital transformation initiatives in educational institutions. Further upgrading DormLink with ai based complaint prioritization can help admin manage the important complaints first and use of biometric attendance system can ensure accurate and tamper proof attendance record and online payment gateway integration enable fee transaction within platform can be done.

## REFERENCES

- [1] Eweoya Ibukun, Awoniyi Amos, Adeniyi Oluwabamise, “DEVELOPMENT OF WEB-BASED HOSTEL MANAGEMENT SYSTEM”, British Journal of Computer, Networking and Information Technology, Volume 8, ISSN: 2689-5315 (pp. 30-41), 2025
- [2] Prof. Vallabh Shinde, Anushka Shelke, Sanskruti Thorat, “HOSTEL AND MESS ADDRESSING WEBSITE”, International Journal of Creative Research Thoughts (IJCRT), Volume 12, ISSN: 2320-2882 5, May 2024
- [3] Prof. M. Gudadhe, Ankit Bhojer, Ashwin Karwade, Vinod Dhaware, “HOSTEL FACILITY MANAGEMENT SYSTEM WEBSITE”, International Research Journal of Modernization in Engineering Technology and Science, Volume:04, e-ISSN: 2582-5208, June-2022
- [4] Kartik Chaudhri, Riddhi Kevat, “Digitalized Hostel Management System”, International Journal of Scientific Research in Computer Science, Engineering and Information Technology Volume 7, ISSN: 2456-3307 366-371, April-2021
- [5] Prof. M. Gudadhe, Ankit Bhojer, Ashwin Karwade, Vinod Dhaware, “AUTOMATED HOSTEL FACILITY MANAGEMENT SYSTEM WEBSITE”, International Research Journal of Modernization in Engineering Technology and Science, Volume:04, Issue:06 June-2022
- [6] Prof. Shyamsundar, Mr. Rohit Jadhav, Ms. Sakshi, Mr. Shashikant Jadhav, “Hostel Management System and Aggregation”, International Research Journal of Modernization in Engineering Technology and Science, Volume:05, Issue:03, June-2021
- [7] Prof. S.P. Gunjal, Nitin Kobarne, Pratik Borkar, Hritik Khemnar, Amit Thakur, “HOSTEL MANAGEMENT SYSTEM”, Department of IT Engineering, SKN Sinhgad Institute of Technology and Vol. F, Issue 5, May 2026
- Science, Lonavala, India, ISSN: 2349-6002, Volume 11 Issue 6, November 2024
- [8] Abhishek Gaur, Saumya Askar, Archana Ubale, “HOSTEL MANAGEMENT SYSTEM”, International Journal of Advanced Research in Science, Communication and Technology (IJARSCT), Volume 3, Issue 1, August 2023
- [9] Abhishek Pundir, Akarsh Singh, Tanvisha Varshney, Tanvi Singh, Ayushi Gupta, “THE SMART DASHBOARD FOR HOSTEL MANAGEMENT SYSTEM ACTIVITIES”, international journal of creativeresearchthoughts, Volume 9, Issue 6, ISSN: 23202882, June 2021
- [10] Kola Ayanlowo<sup>1</sup>, O. Shoewu<sup>2</sup>, Segun O. Olatinwo<sup>3</sup>, “DEVELOPMENT OF AN AUTOMATIC HOSTEL MANAGEMENT SYSTEM”, Journal of Science and Engineering, Volume/Issue: Vol. 5, Issue 1 Pages: 1–10, 2014
- [11] Akorede M. Diyaolu, Omolara B. Abodunrin, Abdullateef A. Adedamola. Rotimi S, “E-BASED HOSTEL MANAGEMENT SYSTEM”, International Journal of Innovative Science and Research Technology, Volume 9, Issue 6 ISSN No: -2456-2165, June – 2024
- [12] U. Elakkiya<sup>1</sup>, P. Nirmala Priyadarshini, “WEB-BASED HOSTEL MANAGEMENT SYSTEM FOR IMPROVING SUSTAINABLE PERFORMANCE OF EDUCATIONAL INSTITUTIONS”, International Journal of Latest Trends in Engineering and Technology Vol. (10), Issue (1), pp.050-053, e-ISSN:2278-621X ,2021
- [13] Samruddhi G. Bendre<sup>1</sup>, Vaishnavi S. Labhasetwar<sup>2</sup>, Pranali R. “DESIGN AND IMPLEMENTATION OF HOSTEL ALLOCATION SYSTEM” international journal of progressive research in engineering management and science (ijprems) Vol. (04), Issue (10), pp: 1362-1367, e-ISSN: 2583-1062, October 2024
- [14] Rachana Rajendra Patil, Aditya Krishna Sapkal, Sujal Suresh Thakre, “HOSTEL MANAGEMENT SYSTEM” International Journal of Research Publication and Reviews Index VOLUME (4), Issue (12), December 2023
- [15] Ch. Srinivasa Rao, Sajiya Parveen, dr. k. Swapna, “DEVELOPMENT OF A WEB-BASED INTEGRATED HOSTEL MANAGEMENT SYSTEM FOR ANDHRA UNIVERSITY”. Published In Volume 16, Issue 2, April-June 2025