International Journal on Science and Technology (IJSAT)
E-ISSN: 2229-7677 ● Website: www.ijsat.org ● Email: editor@ijsat.org

Development of a Web-Based Integrated Hostel Management System for Andhra University

Ch. Srinivas Rao[1], Md. ShajiyaParveen[2], Dr. K. Swapna[3]

[1,2] B.Tech Student, Department of Information Technology and Computer Applications, College of Engineering (A), Andhra University.

[3,] Assistant Professor, Department of Information Technology and Computer Applications, College of Engineering (A), Andhra University.

Abstract

Hostels serve as a second home for students and are vital to institutional efficiency. In this present or exiting system are Manual management systems lead to errors, delays, and lack of transparency. This project introduces an "Development of Web-Based Integrated Hostel Management System for Andhra University" to digitize hostel operations. This System manages room allotment, student records, mess billing, attendance, and payments. Admins have full control, while wardens handle daily tasks with ease. Students can access services, pay fees, and submit feedback or complaints online. This system automates processes, reducing human effort and corruption. It provides real- time data access for efficient decision-making and management. The Development of Web-Based Integrated Hostel Management System for Andhra University system manages the Digital record-keeping replaces paperwork, saving time and resources. Overall, the system enhances transparency, accountability, and service quality.

Keywords: Room Allotment, Attendance, Hostel Fees, OTP Verification**.**

1. Introduction

The Development of a Web-Based Integrated Hostel Management System for Andhra University revolutionizes hostel administration by digitizing tasks like room allocation, fee tracking, and visitor management. This project replaces outdated paper methods with a centralized, interactive platform built using PHP, MySQL, HTML, CSS, and JavaScript. Key highlights include secure role-based logins, automated room distribution, and real-time student registration. The system enhances data protection through encrypted credentials and allows parents to access live reports on student occupancy and finances. In this Development of a Web-Based Integrated Hostel Management System for Andhra University, Features like complaint tracking and auto-email alerts streamline communication. This digital solution minimizes manual errors, reduces staff workload, and ensures a smoother, more transparent hostel experience for all users.

1.1 Objectives

1. The system is developed to digitalize and simplify core hostel administrative tasks like rent handling, bed tracking, and student fee management.

2. This project minimizes manual intervention by automating essential activities such as room distribution, fee processing, and attendance logging.

3. A secure, unified database structure maintains detailed records of students, room assignments, and financial transactions for streamlined access and control.

4. Features like online payment portals and live room availability views significantly enhance workflow and operational speed.
5. Automated email notifications keep stakeholders informed with timely updates on dues and room status.

2. Problem definition

Conventional hostel management relies on outdated manual workflows, causing inefficiencies, biased allocations, and inconsistent records. This is a lack of automation and secure digital systems hinders transparency, remote accessibility, and streamlined communication

2.1 Existing System

Existing hostel management systems are primarily manual and based on physical registrations and spreadsheets to manage student records, spatial allocation, fee costs, measurement calculations, and presence tracking. This approach is time-consuming, prone to human error, and inefficient when modifying large volumes of data. Manual room assignments often lead to overbooking, wrong tasks and preferences. Fees collection and charges are not transparent, leading to delayed payments and disputes. There is no actual monitoring, automatic reporting, or appropriate safety measures. This means that data management and communication between hostel authorities and students is slow and unreliable.

2.2 Proposed System

The proposed web-based hostel management system for Andhra University automates and centralizes key hostel functions, including student registration, room allocation, fee processing, and presence tracking. Built with PHP, MySQL, HTML, CSS, and Bootstrap, it offers a responsive and user-friendly interface accessible across devices. In this system, role-based access ensures secure data handling for students, staff, and administrators. Automated email alerts enhance communication for room assignments, payments, and updates. In this development of web-based hostel management system project, Real-time analytics aid in effective decision-making while reducing manual tasks and errors.

3. requirement analysis

1. User Management: Supports secure, role-based access for students, staff, and wardens.
2. Room Allocation: Automates room assignments using predefined rules and real-time availability.
3. Online Payments: Allows students to pay hostel and mess fees through integrated gateways.
4. Complaint & Feedback System: Students can submit complaints and feedback; staff can respond and take action.
5. Guest Tracking: Staff can digitally log and monitor student visitors.
6. Profile Management: All users can update avatars and personal details securely.
7. Report Generation: Generates reports on space allocation, billing, and student data.
8. Email Notifications: Sends OTPs, fee reminders, and updates automatically via email.
9. System Design: Built using HTML, CSS, JavaScript (frontend), PHP (backend), and MySQL (database).
10. Non-functional Features: Ensures high availability, scalability, security, and responsive design.

4.1 system architecture

4.1.1 Admin Architecture

In the below Architecture diagram for an administrator in managing hostel data includes adding blocks, defining fee structures, assigning rooms, and registering employees.

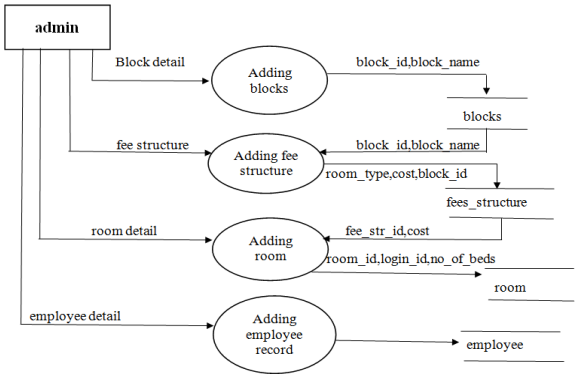

Figure 1 : Architecture Diagram for admin

4.1.2 Hosteller Architecture

Below is a hosteller Architecture diagram that outlines a hosteller's complete digital interaction room signing up and logging in to exploring room availability, proceeding with admission, and completing payments.

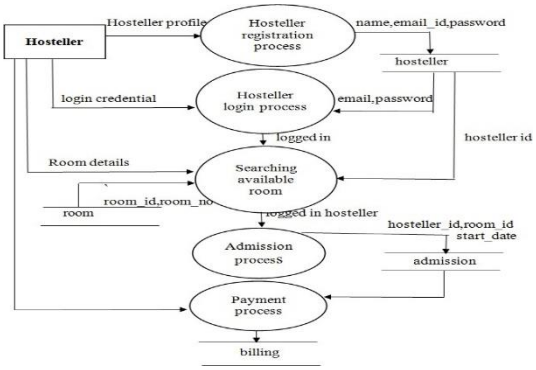

Figure 2: Architecture Diagram For Hosteller

4.1.3 Warden Architecture

The Architecture below represents the warden's function in accessing hosteller records and managing attendance. The process begins with retrieving the hosteller list using login credentials, followed by recording daily attendance data, including date and status, which is then saved in the attendance database.

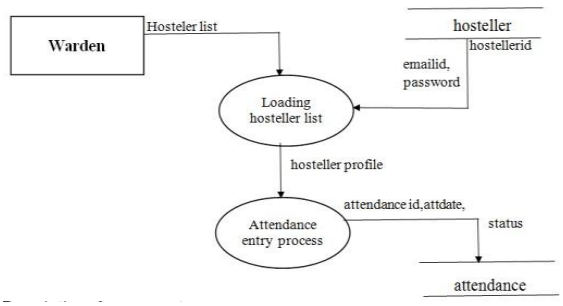

Figure 3: Architecture Diagram For Warden

4.1.2 Guest Architecture

The Architecture illustrates the guest workflow, starting with account registration using personal credentials. Once logged in, guests can book rooms for specific dates and proceed with payment.

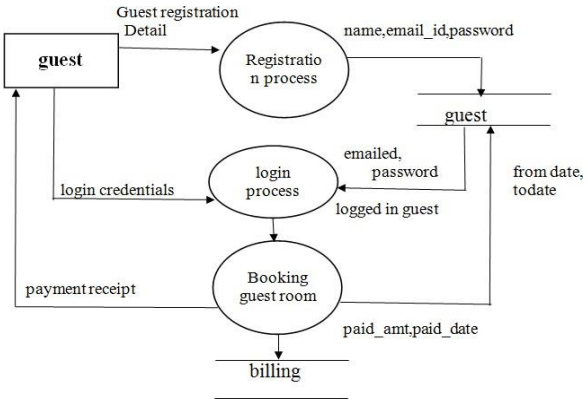

Figure 4 **:** Architecture Diagram For Guest

5. Feasibility study

5.1 Technical Feasibility

The proposed development of a web-based integrated hostel management system is technically feasible due to a wide range of supported technologies such as PHP, MySQL, HTML, CSS, JavaScript, and boat traps. These project tools are compatible with open source, platforms, and most systems, ensuring easy development and delivery. The system follows a three-stage architecture to smoothly integrate scalability, maintainability and backend logic into a user-friendly front-end. The technology used is known to the developer, making implementations and future upgrades technically easier to manage.

5.2 Economic feasibility

Based on open source technology, the project is economically profitable and eliminates the licensing costs of development tools and databases. This system reduces manual workload, paper use and management efforts, leading to long-term cost savings. It also makes it an inexpensive solution to minimize billing errors, improve rate research efficiency, and reduce resource waste in the middle of chaos. Initial investments are minimal, and returns on capital are high due to increased operational efficiency and reduced employment population.

6. Result and analysis

The implementation of the Development of Web-Based Integrated Hostel Management System for ANDHRA UNIVERSITY has significantly improved the efficiency of hostel administration by automating key processes such as room allocation, payment handling, and student record management. The system has been tested and evaluated based on various parameters, ensuring its effectiveness.

6.1 Home page

The homepage offers an intuitive platform where students, staff, and visitors can easily access services like room booking, fee tracking, and attendance. This project the home Secure login and registration features, enhancing user experience while maintaining data confidentiality.

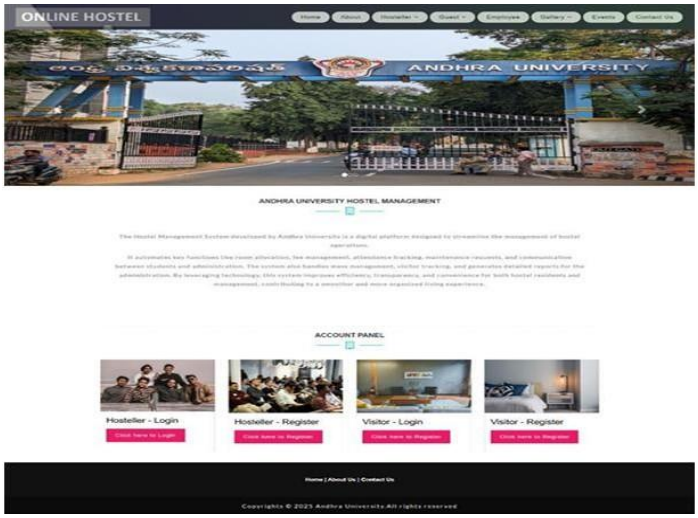

Figure 6.1: Home page of hostel management

6.2. Hoteller Registration Page

Students can apply for hostel accommodation by submitting personal, parental, and contact information, with OTP validation ensuring secure access. Post-verification, they gain access to manage room bookings, fee transactions, and renewal processes efficiently

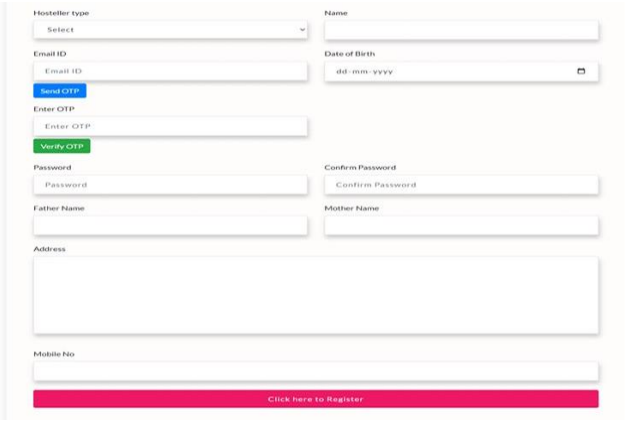

Figure 6.2: Hosteller registration panel

6.3 Booking of Room

It ensures a hassle-free allocation process, allowing users to pick specific room numbers before proceeding with payment and confirmation

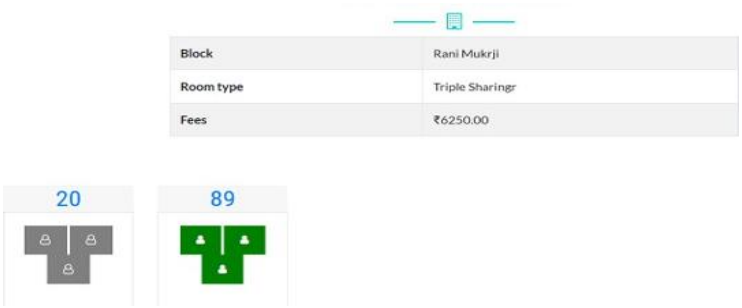

Figure 6.3 : Booking for a Room

6.4 Student Admission Page

The Student Registration Committee will use options such as veg and veg to select space settings and meals to allow applicants to request Hostel.

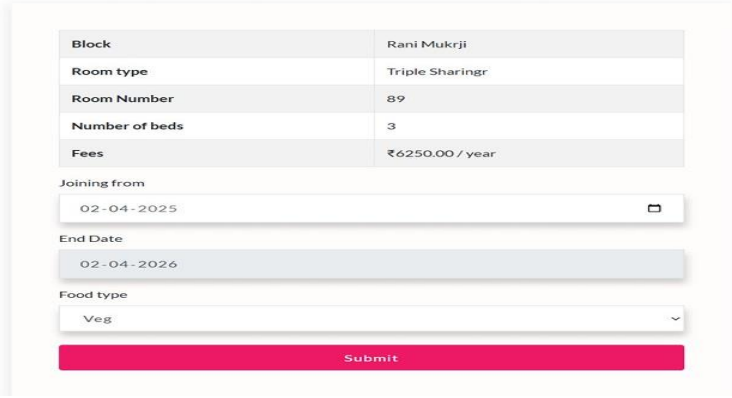

Figure 6.4: student admission page

6.5 Admin Login Page

Admin Page of the Andhra University Hostel Management System acts as a secure control center for handling room assignments, fee records, attendance, and mess operations with login credentials.

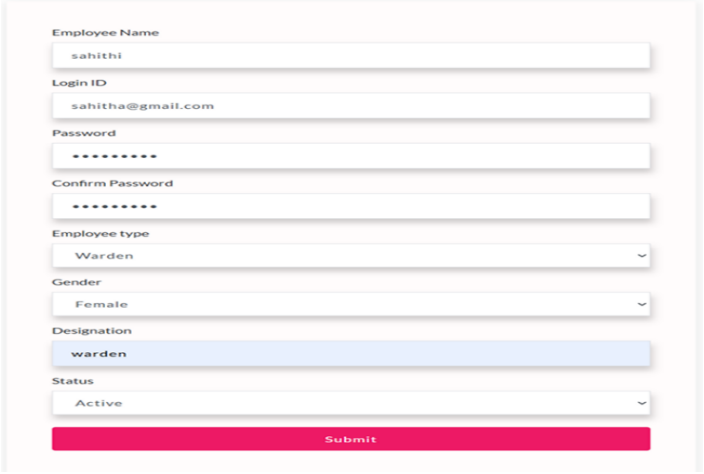

Figure 6.5 : Admin Login Portal

6.6 Adding Employee Page

This Employee Registration form collects key details like name, role, ID, and designation to accurately categorize staff such as wardens or security personnel.

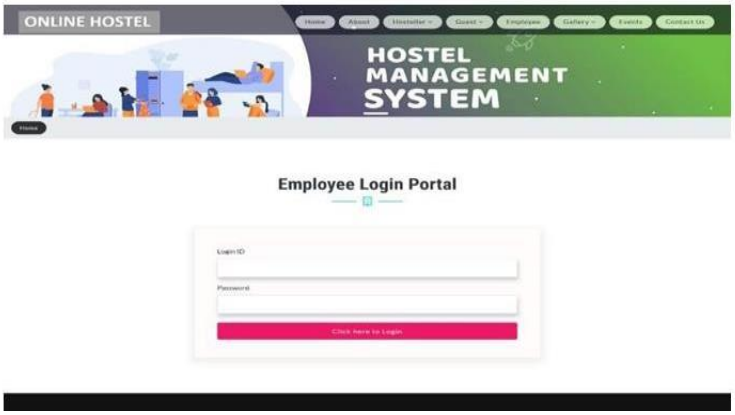

Figure 6.6: Employee Page

6.7 Adding Mess Bill Page

This Mess Bill Entry module allows administrators to register monthly fees for attendance, rental, supply companies, and maintenance costs.Administrators can edit individual entries before completion to ensure accurate claims and financial clarity for residents.

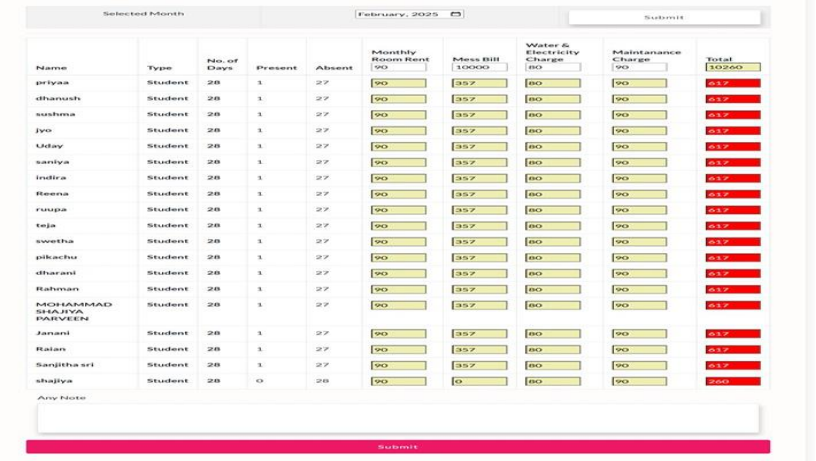

Figure 6.7 : Adding Mess Bill

6.10 Guest Booking For Hostel Page

The Guest Room Booking Panel offers a user-friendly interface where guests can reserve rooms by entering stay dates, purpose, and notes.

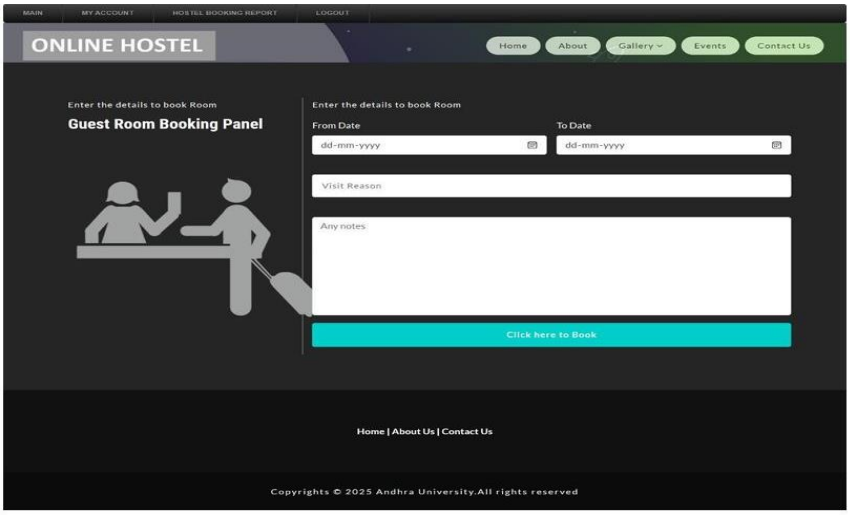

Figure 6.10: Guest booking for hostel

7. Conclusion and future scope

The Development of a Web-Based Integrated Hostel Management System designed for Andhra University modernizes hostel administration by replacing traditional manual methods with a digital, centralized solution. This project improves processes like room allocation, fee handling, attendance monitoring, and mess bill tracking, ensuring greater accuracy and transparency. With secure login and role-specific dashboards for students, wardens, and admins, the system boosts efficiency and communication. Its responsive interface reduces administrative workload and enhances user interaction.

Future upgrades may include mobile app access, biometric or RFID-based attendance, and AI chatbots for real-time support. Adding different modules for visitor logs, maintenance requests, and event scheduling can further align the system with evolving smart campus needs.

8. Aknowledgement

I would like to show my greatest appreciation to Dr. K. SWAPNA enough for his tremendous support and help; without his encouragement and guidance, this project would not have materialized.

I would like to thank Prof. Kunjam Nageswara Rao, head of the department, information technology and computer applications, Andhra University College of Engineering(A), for his encouragement and valuable guidelines in bringing shape to the dissertation.

I wish to express thanks to Prof. G. Sasi Bhushana Rao, Principal, Andhra University College of Engineering (A), for helping me in completing the project work on time.

I would like to thank teaching staff and non-teaching staff members of the Department of Information Technology and Computer Applications, Andhra University College of Engineering (A), Visakhapatnam, for their constant support in the successful completion of my study.

Finally, I express my indebtedness to my beloved parents and friends, without whose blessings and encouragement, I would not have completed my work fruitfully

References

1. "Development of Web-Based Hostel Management System," Eweoya Ibukun, Awoniyi Amos, Adeniyi Oluwabamise, Okesola Kikelomo, Udosen Alfred, Adigun Taiwo, Fatade Oluwayemisi, Amusa Afolarin, British Journal of Computer, Networking and Information Technology, Volume 8, Issue 1, pp. 30-41, 2025.
2. "Development of an E- Based Hostel Management System," Akorede M. Diyaolu, Omolara B. Abodunrin, Abdullateef A. Adedamola, Rotimi S. Ogunode, Oluwatoyin Omoloba, Faculty of Pure & Applied Sciences, Computer Science Department, Federal School of Surveying, Oyo, Oyo State, Nigeria, 2025.
3. "Cloud Based Hostel Facility Automation System,"
   Sneha Agrawal, Sugandh Rastogi, Shivani Trivedi, Department of Computer Science and Engineering, ABES Engineering College, Ghaziabad, India, 2025.
4. "Hostel Management System (HMS)," Prof. Deepali Narkhede, Rutuja Bamgude, Mayuri Sonawane, Mandar Shevade, Department of Information Technology Engineering, Shivajirao S. Jondhale College of Engineering, University of Mumbai, 2025.
5. "Hostel Management System," Prof. M. Gudadhe, Ankit Bhoyar, Ashwin Karwade, Vinod Dhaware, International Research Journal of Modernization in Engineering Technology and Science (IRJMETS), Volume 4, Issue 6, June 2022.