

HOSTEL MANAGEMENT SYSTEM

Project submitted to the
SRM University – AP, Andhra Pradesh
for the course project of

CSE305L Software Engineering Lab

Submitted by

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May, 2023

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Abstract

The Hostel Management System is a software solution designed to manage and streamline the management of hostels. The system provides an easy and efficient way to manage the entire hostel operations, including room allotment, fee collection, inventory management. It aims to reduce the administrative workload and improve the overall efficiency of the hostel management and enhance communication between the students and the hostel staff. With the ability to generate reports and analytics, administrators can gain insights into the overall decisions. The hostel management system offers a friendly interface and secure data storage, making it a valuable tool for any institution managing student accommodation.

The Hostel Management System consists of multiple modules that enable the hostel staff to perform their tasks effectively. The room allotment module allows the staff to assign rooms to students based on their preferences and availability. The fee collection module automates the process of collecting and recording fees, making it easier to track payments and outstanding balances. The inventory management module enables the staff to track the stock levels of various items such as food, toiletries, and cleaning supplies.

1. Introduction

The Hostel Management System is a user-friendly programme that makes hostel management easier. It automates operations like student check-ins, room allocations, and billing, making administrative work easier for hostel personnel. This system also includes a centralised database for storing student data and payment records, allowing for easy access and organisation. The Hostel Management System is a vital tool for efficient hostel management due to its user-friendly interface.

1.1 PURPOSE

The purpose of a hostel management system software is to automate and streamline the administrative tasks involved in managing a hostel, including registration of guests, room allocation, fee management, attendance tracking, and other related tasks. Hostel management system software can reduce the amount of time and help maintain accurate records of guest details and help maintain a secure and safe environment.

1.1.1 SCOPE

The hostel management system software covers all aspects of hostel operations, from guest management to billing and payment processing, to help streamline administrative tasks, improve efficiency, and enhance the guest experience.

1.2 Intended Audiences

This application is primarily meant for all project developers affiliated with this project. The specification is divided into numerous sections or members that can be read and referred to as follows.

project manager - to manage all the processes in the project

software designer - design the models and diagrams that help the programmer in the implementation phase

software tester - to test system by using dummy data
database administrator-to perform database operations

software analyst - to analyze the requirements of the hostel management system

1.3 Additional audience

Students who are planning to stay in hostel.

2.Literature Review

The software typically includes modules for guest management, room management, reservation management, billing and payment processing, inventory management, staff management, reporting and analytics, and security and access control. These modules work together to provide a seamless and efficient experience for both staff and guests.

- Room management features enable staff to create and manage room types, room allocation, and room availability status.
- Billing and payment management features enable staff to manage billing and payment processing for room charges, additional services, and other fees.
- Staff management features enable staff to manage staff details, attendance tracking and roles and responsibilities.
- Security and access control features provide security such as access control, user authentication, and backup and recovery options.

3. Discussion

The goal of this application is to provide automated software to do hostel operations. By digitizing the paperwork, this software provides convenience and flexibility to the hostel's staff. This approach enhances reliability while minimizing maintenance risk. The hostel management system is a user-friendly software application that keeps track of all the data needed to run the hostel.

The hostel administration system is a completely separate product; it is not a component of any other system. We have user interfaces, which will be segmented as follows:

1. Administrative interfaces

The administrative interface controls the account view in this reusable add, ,remove new staff in the system in the administration. Your administrator will confirm newly added department administrators will be able to access all the information about hostel staff students and also manage them. The information included in the report generated for the student can be accessed by the administrator.

2. student interfaces

To begin, the login screen appears where the user must enter his or her login name and password for user authentication. Following login, the main page will be presented, displaying all of the information and operations supplied by the hostel administration system. The information displayed includes the fee information; maintenance that include mess, student profile; room change or allocation request.

4. System Requirements

4.1 Functional Requirements

4.1.1 Student Management:

=>Student registration and profile creation

=>Capture and storage of student information (e.g.,name,contact details, identification documents).

4.1.2 Hostel Booking:

Online hostel booking system for students to book rooms in advance. Managing changes to reservations, including modifications, cancellations, and refunds.

4.1.3 Room and Bed allocation:

Room allocation based on student preferences, such as room type, bed size, and amenities. Efficient management of room inventory and availability. Tracking of bed occupancy within each room.

Ability to accommodate group bookings or assign adjacent rooms. Handling special requests(handicapped) or room transfers.

4.1.4 Billing and Payment:

Automated generation of invoices for room charges, additional services, and taxes. Support for different payment methods (cash, credit card, online payment).

4.2 Non-functional Requirements

4.2.1 Performance requirements

The application shall be based on HTML, CSS, Javascript, PHP, and SQL. It can be executed on any platform. The performance may depend on the hardware and software components of the system, the application is executed.

4.2.2 Safety Requirements

The database may get crashed in case of any operating system failure or malicious program attack. Maintaining backup is highly recommended.

4.2.3 Security Requirements

The application software uses efficient access control protocol to avoid unauthorized access of the database.

4.2.4 Software quality attributes

- Reliability and Availability: The project handles the data with sql database
- Maintainability: The system is capable of backing up the data at regular intervals.
- Portability: The HMS needs a computer with Microsoft OS.

The software is resilient and fault tolerant to achieve availability. It is interoperable because of the automated report sent to the developer for solving the issue later on.

4.3 Product functions

The hostel management project has the potential to invigorate the fundamental management system. The system enables the following functions to be performed.

- students information record
- Room status details
- Fee information
- Staff details

Various additional tasks performed meeting the specifications are supplied to suit the requirements of database administrators, students, and administrators with role-based updating and providing privileges. Details collected from students like name, guardian details, year of education or employment details, etc.

Information provided by the administrator to the students:

- student details
- room details
- mess details

Updates possible by the data administrator:

- student details
- mess details
- Fee details

5. Proposed Scheme

The proposed concept specifies the form and architecture of our Hostel Management system and includes all of the necessary technology specifics and capabilities to ensure a faultless user experience. The following is an outline of the planned plan

5.1.1 Design/implementation constraints

- The developed system should run under any platform Unix, Linux Windows
- There can be any security risk involved
- Details provided by the individual during his signup should be stored in the database
- student details can be updated and changed by the administrator, database manager.

5.1.2 Assumptions and dependencies

- Details provided by the individual is genuine
- Roles and tasks are predefined and limited
- Fee transactions can be done in offline mode.

5.2 External Interface Requirements

5.2.1 User interfaces

- Administrative interface

An administrator is responsible for keeping track of all users and transactions in the database, as well as maintaining data for each profile. All data is being preserved at the admin level.

- student interface

Every student who has a room in the hostel has a database and a hostel account can view their data. This privilege will be shown only after administrative clearance. students may check their data anytime and make necessary changes.

5.2.2 Hardware interfaces

Hardware interfaces exist in computing systems between any components such as storage devices other input-output devices
Processor - Intel Core 2 duo or higher
Ram - 3GB
Monitor- 15 color monitor
mouse keyboard hard disk

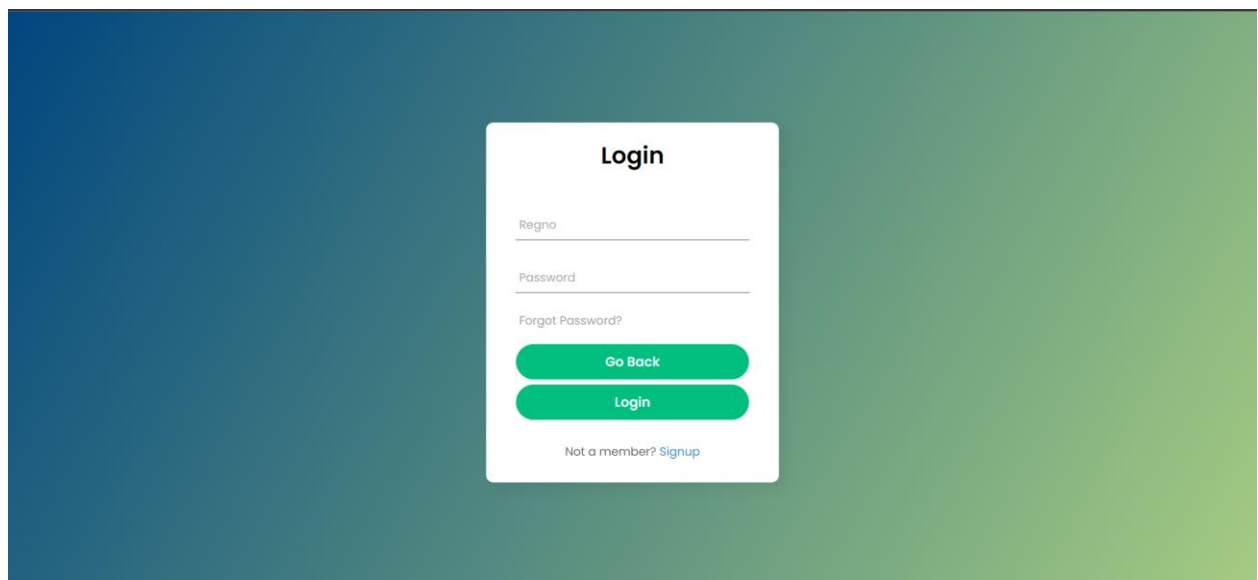
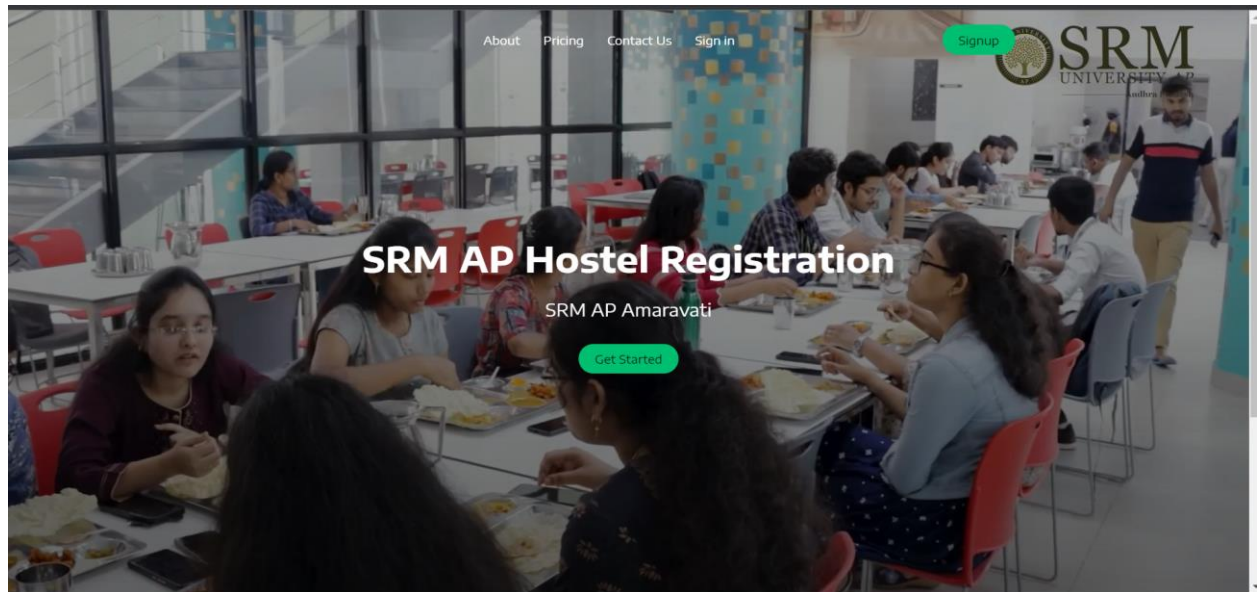
5.2.3 Software interfaces

The software is developed with the support of HTML, CSS , JavaScript, PHP, and XAMPP. Windows XP or above should be installed in the system and an application package should be installed

5.2.4 Communication protocols and interfaces

This system is a standalone product and does not require any communication interfaces

6. Results/Screenshots



Registration

Full Name

Reg No

Email

Phone Number

Password

Confirm Password

Gender
☐ Male ☐ Female

[Go Back](#) [Register](#)

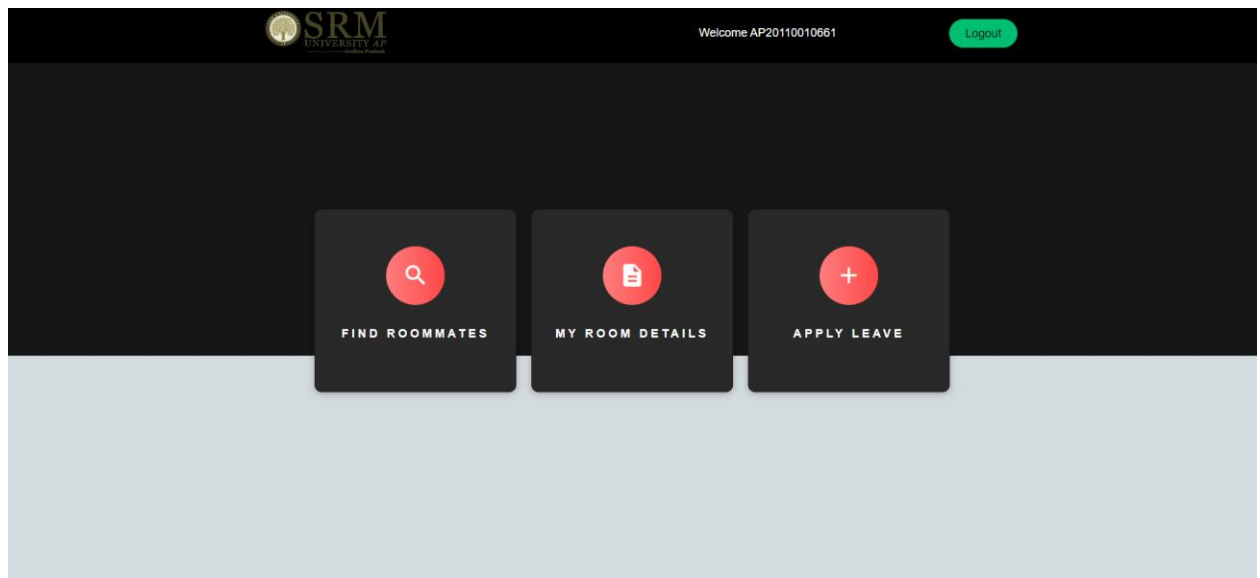
Admin Login

Employee ID

Password

Forgot Password?
[Contact](#)

[submit](#)



Registration

Full Name

yaswanth

Block Name

Cblock

From

dd-mm-yyyy

Reason

Reason

Reg No

AP20110010661

Room no

1

To

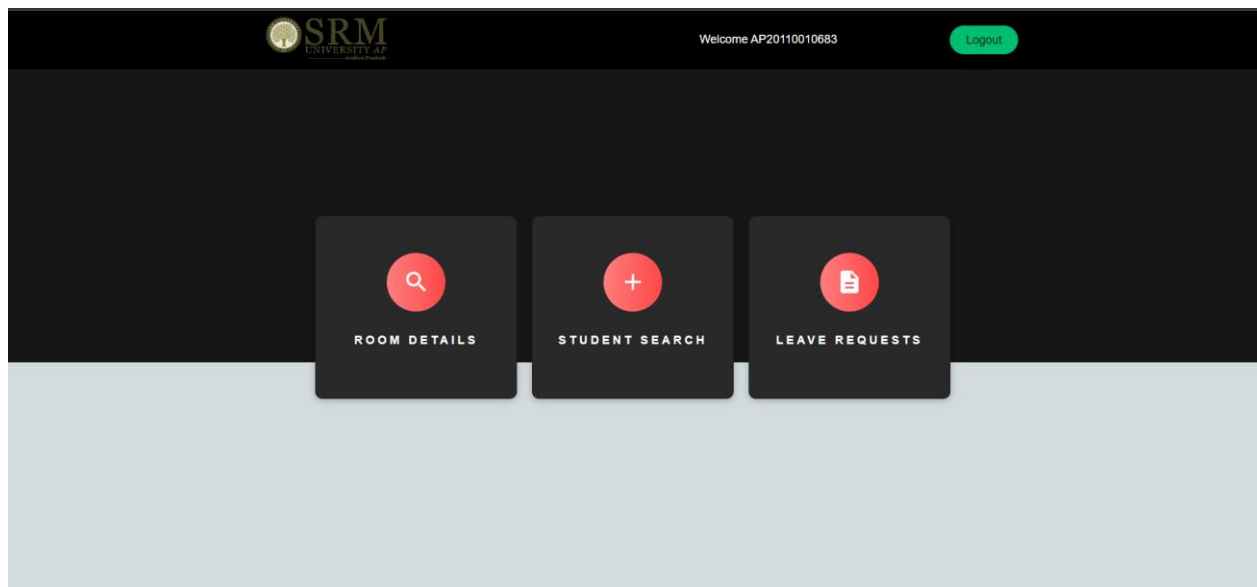
dd-mm-yyyy

Go Back

Submit



Student Record					
RegNo	Name	Email	Phone no	Block	Room no
AP20110010661	yaswanth	7901525324	srikanth_estamsetty@srmmap.edu.in	Cblock	1



Male					
Reg No	Name	Phone no	Email	Block	Room no
AP20110010661	yaswanth	7901525324	srikanth_estamsetty@srmmap.edu.in	Cblock	1
AP20110010685	Srikanth	7901525324	srikanth_estamsetty@srmmap.edu.in	Kblock	1

female					
Reg No	Name	Phone no	Email	Block	Room no
AP20110010668	Kavya	9234567891	kavya@srmmap.edu.in	NULL	1



Enter student regno.

Reg No	Name	Phone no	Email	Block	Room no
AP20110010661	yaswanth	7901525324	srikanth_estamsetty@srmmap.edu.in	Cblock	1

Reg No	Name	Block	Room No	From Date	To Date	Reason	Action
AP20110010661	yaswanth	Cblock	1	2023-05-26	2023-05-31	fever	rejected

7. Conclusion

To summarise the project's description:

The project is based on the user's requirement specification and an analysis of the existing system, with flexibility for future extension.

The increased functionality of today's software necessitates a more systematic approach to software development. This hostel management software is for those who want to keep track of a variety of activities in the hostel. The number of educational institutions has been significantly expanding in recent years. As a result, the number of hostels available for students studying at this university is expanding. As a result, the person in charge of the hostel is under a lot of stress, and software is rarely employed in this situation. This solution addresses the challenges of running a hostel and avoids the issues that arise when done manually.

The identification of the existing system's flaws leads to the creation of a computerised system that is compatible with the existing system while being more user friendly and GUI oriented.

8.Future Work

There are various possible areas for additional expansion and improvement of the Student Hostel Management System project in the future. Integrating artificial intelligence (AI) skills to automate operations such as room allocation, anticipating occupancy trends, and selecting roommates based on preferences and compatibility may be among them. In addition, integrating a comprehensive financial management module allows students to examine and control their expenses, such as rent, utilities, and food plans, all within the system. In addition, incorporating a sophisticated reporting and analytics tool can give hostel administrators with useful insights into occupancy rates, student satisfaction levels, and resource utilisation, enabling for data-driven decision-making and ongoing improvement. Integrating the system with mobile apps can improve accessibility and convenience for students by allowing them to check room availability, submit maintenance requests, and more.

9. References

<https://www.ijraset.com/research-paper/hostel-management-system-hms>