



## Hostel Management System

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### ABSTRACT

The Hostel Management System is an application which has been designed for the management of different activities within a hostel. The number of colleges and universities is growing rapidly over the past few years. Consequently, the number of accommodation rooms is also increasing "to provide housing for students" at this institution. Therefore, it is a lot of work for the person in charge of the lodging facility and software is usually not available to do so. 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. The effectiveness of the system could be improved, thereby overcoming its negative effects.

Keywords: Online Hostel Management, Web Application, Database Management.

### 1. INTRODUCTION

Using a manual system is not advised in the modern era of automated systems, whether they be hardware or software. Typically, hostels lacking a management system are closed once a year. Manual verification of the registration forms and other data recovery procedures is carried out, in many cases, by handwriting on paper. Therefore, it is possible to prevent a recurrence. using an automatic mechanism. A computerized system that will assist in reducing the amount of human input was designed in response to the shortcomings of the current methods. With this system in place, by improving the efficiency of the system, it is possible to improve on the weaknesses that are present under the current manual method. It is intended, with the hostel administration in mind, to allow student records of their rooms and belongings to be preserved. It's going to save them from the heavy manual work where it would be very difficult to find student records, college invoices, or any information on those who left the dorm in the first place.

#### A. Objectives

Managing the specifics of rent, allotments, hostels, rooms, and payments is the major goal of the hostel administration system. It keeps track of all the data pertaining to rent, beds, payments, and rent. Access is restricted to the administrator only because the project was created with administration in mind. The project's goal is to develop an application that will lessen the amount of human labor required to manage the hostel, beds, rent, and allotments. It keeps track of every piece of data regarding payments, rooms, and hostels.

- The platform provides search functions based on several criteria. Payments, Rooms, Hostel, and Rent
- Personnel data for students, employees, and courses is also sold online via the College Management System.
- Offer the ability to make reservations.
- You may make updates to your website without hiring a web designer.
- Maintains a record of all the details regarding beds, rooms, allotments, etc.
- Oversee the allocation of data.
- Displays details and an explanation of the rent and hostel
- To improve the effectiveness of rent and allocation management.
- It deals with keeping an eye on room transactions and information.
- Keep track of the rental details

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## II. PROBLEM DEFININATION

The maintenance and operation of a hostel bring with them many disadvantages. Particularly when it comes to the manual system. As the majority of hostels are run by a single manager, the officer may not even know how many students there are in his room. To find out if a room is inhabited or not, he must proceed room by room. People may occasionally owe money at the hostel; these debts are recorded on papers, large notebooks, and occasionally receipts. It would never be possible to determine whether a student is due money or not if the books disappear or are stolen. It also becomes challenging to assign rooms since the officer might not know which rooms are accessible. Finding all the stories at some of these hostels that have a large number of rooms would be more time-consuming, thus making it hard to find a room. Furthermore, it's possible that the officer is unaware of how many pupils are in a room or whether it's full.

### A. Existing System

The current approach requires a lot of work, is manual, and takes a long time. While we may apply online for hostels under the current system, the allocation procedures are still done by hand. Corruption in the process of allocating resources and calculating hostel fees might result from it. Complaint registration and mess calculation are not handled by the current system.

### B. Proposed System

The goal of this project is to provide a system for recording and displaying data about or within a hostel. The hostel officer will be able to oversee the hostel's operations with the use of this technology. This system would offer comprehensive details on each hostel student. It will show whether rooms are available or not and the number of people in a particular room. Information on students who have made complete payments or who still owe will also be provided via this. Additionally, a report on the summary information about the fees and invoices that students are due will be given via this system. There is also a user module available for the hostel officer or personnel. Additionally, the administrator will have access to an administrator module where they may add, update, and remove personnel data. Using PHP and XAMPP servers, this system will be constructed using the Software Development Life Cycle (SDLC). While XAMPP is appropriate for databases due to its extensive capabilities and security, PHP and JS are better suited for creating and designing web-based applications

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## III. LITERATURE REIVIEW

In [1], a hostel's web version was suggested. Management system and integration of an RFID system for gate pass purposes. This web interface was created using PHP-MySQL technology. It reduces the efforts made by the hostel's manager and owner while managing the hostel. It removes the pen and paper idea, which we have been using since ancient times. This system has an administrator, warden, and student modules, each with their own different dashboards and roles. In addition to providing solutions for manual hostel management problems, the framework that was developed also provides data, such as hostel, student, and room data. The administrators of this system are able to send notifications or notices to students through the email system. It is a secure online website accessible anywhere on the globe. They proposed the use of RFID tags for the tracking purposes of students. RFID tags are given to students during hostel registration, so administrators can track student activity on a single dashboard. In [2], a web-based hostel management system is proposed. The three main elements are room assignment, automated bill computation, student information, automatic bill calculation, and room allocation. Students and administrators have different dashboards. To take a seat in the hostel, the student must register his or her details on the portal. The administrator will allot the room number along with assets like chairs, tables, and beds. In [3], a web-based hostel management system is proposed. This web portal is developed using ASP.NET and SQL server technology. This system has three actors: the administrator, the hostel clerk, and the student. This system provides facilities like student-driven hostel registration, invoice generation and printing, automatic due calculation and notification, student hostel clearance management, etc. The online gate pass application form for hostel students has been proposed in [4]. Gate Pass Management System is the software application used to manage the entry and exit of students on short-term and longterm leave. The hostel warden issues the gate pass after receiving approval from the HOD, hostel warden, or hostel manager. Or hostel manager and issued by the hostel warden. In this system, the student makes a request for entry or leave by filling in the different details. The higher authority verifies the details from the database; if they are valid, permission is granted or denied. The respected student is notified by email about his or her confirmation before time. The system's purpose is to document the pupils' actions and specifics. The system's goal is to "save paper" by utilizing technology. In [7], the personality-based hostel allocation system is shown by the fact that the pupils are assigned to rooms based on their temperaments. They use a first-come, first-served approach for student registration, where the registration system will ask a few questions and the student has to answer them. Their answers are then recorded in a database through a web portal. The approach to student selection is automatic and adopted from Eric Jorgenson's open-four temperament scale test, which is used to develop a sorting algorithm that judiciously detects and allocates students to available rooms within hostel accommodation. This system is web-based and made up of PHP and MySQL technology. This system consists of the implementation of the above-described algorithm, which processes the personality based on the answers given by students to the questions, sorts the students according to their personalities, and allocates the room only. The allocation of bed space and any other hostel amenities are excluded using this method. In [5], a desktop-based hostel with just one user management software is demonstrated. It is made up using Microsoft's Visual Basic, and it consumes SQL Server as the backend. It has only one user, known as an administrator. It performs student management, maintains IN-OUT records, hostel management, and report generation. In [6], a biometric authentication-based hostel management system is demonstrated. One of the most common problems at the hostel is security. To keep up with day-to-day attendance verification is a sophisticated and time-consuming system for hostel management. Wardens manually track hostel students' attendance under the current method. This study addresses the prevention of a complete issue in the hostel management system and also suggests a monitoring mechanism. This system has only one user as

administrator, which can be a college principal or warden. The dormitory uses a biometric method to accommodate a large number of students. This technology automatically tracks students' arrivals and departures from the dorm and sends parents alert SMS messages to ensure their safety.

## IV. REQUIREMENT ANALYSIS

### A. Functional Requirements

1. The user shall generate a user profile containing the following information: user account number, full name, address, phone number, and room number.
2. Users will change the status of their dues in the database according to whether they are paid or not.
3. Users must allow the warden to add new users to the system's database.
4. The user must allow the guardian to cancel the registration from the system's database.

### B. Non-Functional Requirements

1. The system shall be capable of operating reliably. It's always got to be raised up and running.
2. A high performance should be achieved by the system.

### C. Hardware Requirements

A major task related to software development is the section on hardware configuration. The speed and efficiency of the whole system may be negatively affected by a lack of random-access memory. This process must be very strong enough to run all the operations. You should be able to store a program or file on your hard drive. A. Size of cache: 512 KB3. RAM: 512 MB (minimum) B. Network Card: A 100 Mbps speed may be achieved with any card. Network connection: UTP, or coaxial cable connection Printer: An inkjet or laser-color printer provides at least 1000 dpi. Hard disk: 80 GB E. Mouse: 104 keys (US Key, Serial, USB, or PS/2).

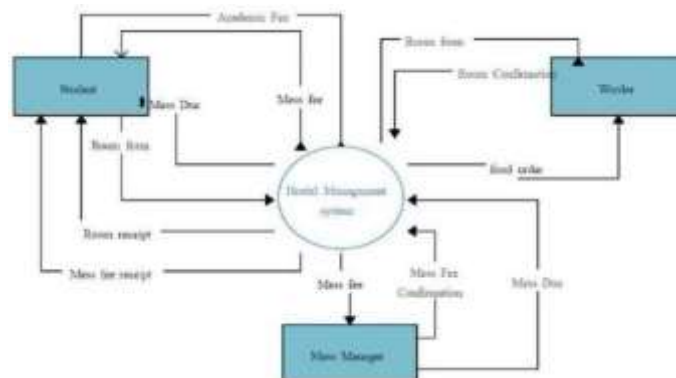
### D. Software Configuration

The compatibility section of the software is one of the most important parts of a system development, since it undergoes geometric evolution on the market. The chosen software should be compatible with the firm, as well as to one user, and it should be viable for the system. This document provides a comprehensive explanation of the software requirement specification. The study of requirement specification is focused especially on the functioning of the system. It enables the analyst or developer to comprehend the system, the task at hand, the desired performance level, and the associated interfaces that need to be set up

1. Language to use: latest version of HTML and PHP, JavaScript, AJAX, CSS and Apache Server
2. Database: MySQL XAMPP server
3. User Interface: HTML, AJAX, CSS, JFRAME
4. Web browser: Internet Explorer 8 or later, Mozilla and etc. Chrome
5. Software: MySQL Server and XAMPP 6. Operating system: Windows XP or newer versions

## V. SYSTEM DESIGN

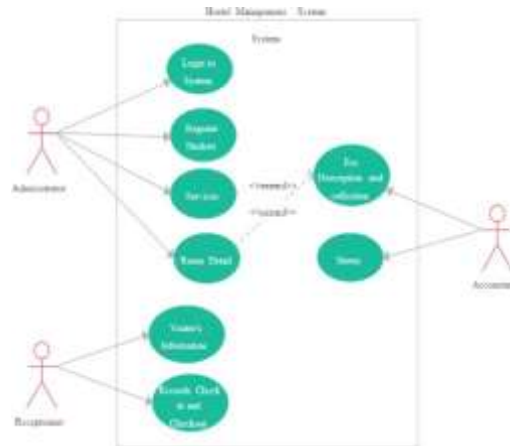
### A. Data Flow Diagram



A data flow diagram for a hostel management system is a visual representation that illustrates the flow of information within the system. It highlights the data movement between them by identifying the processes, data sources, and destinations. A DFD would highlight activities related to hostel

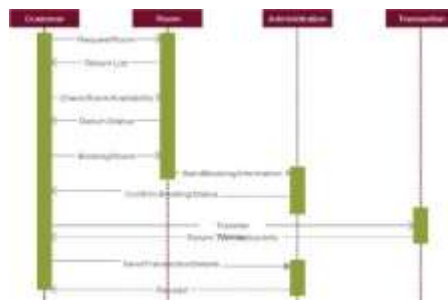
administration, such as student check-ins, room allocations, fee payments, and record-keeping. Each of these tasks is represented as a process node, and the direction of data flow is indicated by arrows. This graphical tool helps with the analysis, planning, and optimization of the system's activities for increased efficacy and efficiency by offering a simple, clear perspective.

### B. Use case Diagram



The use case diagram is a graphic depiction of the interaction among the elements of the hostel management system. The hostel management system's system needs are identified, outlined, and organized using this process. In the context of the Hostel Management System, there are four key actors: the super admin, system user, allots, and hostel owner. They are responsible for carrying out various use cases, including managing the hostel, beds, rooms, rent, allots, payments, hostel facilities, users, and preparing the full hostel management system. The Hostel Management System's UML use case diagram displays the primary components, which are depicted in the image below.

### C. Sequence Diagram



The sequence diagram of the hostel management system shows where admins will be able to log in to their account using their credentials. After logging in, the user can manage all the operations on the hostel: rooms, allotments, payments, and rent. All the pages, such as Allots, Payments, and Rent, are secure, and users can access them after logging in. The tile diagram below helps demonstrate how the tile login page works in a hostel management system. The various objects in the Payments, Hostel, Rooms, Allots, and Rent pages interact throughout the sequence, and the user will not be able to access this page without verifying their identity. This is the UML sequence diagram of the hostel management system, which shows the interaction between the objects of rooms, allotments, hostels, rent, and payments

## VI. FEASIBILITY STUDY

### A. Technical Feasibility

Determining the technical feasibility of a proposed system depends on the system's technology, which encompasses the hardware and software used in the system. It also takes into account whether the technology used is up-to-date and whether the users will require any system modifications as advancements in technology occur. The host management system is technically feasible as it utilizes the Windows platform, an Apache XAMPP server, MySQL for the database, PHP as the programming language, and HTML or XML as the user interface.

### B. Economic Feasibility

The most common approach to evaluating a new system's effectiveness is through cost-benefit analysis, which is an economic analysis. The internet provides easy access to PHP, HTML, XML, and MySQL databases

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## VII. RESULT ANALYSIS

As a result, we have developed a way to make hostel booking more sophisticated utilizing technologies like HTML, CSS, JS, PHP, MySQL, and BOOTSTRAP in order to overcome the manual techniques. This project can be used as a hybrid; all the hostels can register themselves, and the students can book it according to their needs. Also, we have added grievance and filter functionality to our project. With a proper future scope, it will be good for use.

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## VIII. ACKNOWLEDGEMENT

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## CONCLUSION

Thus, we have developed PHP-MySQL source code, which would help in developing the online hostel management system. It will lessen the amount of work required to maintain the hostel for the owner and management. It will eliminate the need for traditional pen-and-paper methods. The developed system provides solutions to manual hostel management problems and also provides information such as hostel information, hostel room information, and hostel account information. It is an online software or website, so anyone can access it from anywhere without any complexity with the help of a working internet connection.

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