



Efficient Hostel Management System for Multiple Hostels in Academic Institutions

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Abstract: "Efficient Hostel Management System for Multiple Hostels in Academic Institutions" is a web based software application developed for managing various activities in multiple hostels in an academic organization. In the olden days the number of students in an educational institution is very less and it is enough to use a single hostel for all those students. But now-a-days the number of educational institutions and the students staying at hostels is increasing rapidly.

Hostels are becoming more prevalent in order to accommodate the enormous number of students. As a result, the person in charge of overseeing hostel operations has a lot of responsibility, and software is not utilized in this situation. With the help of this web application, issues with handling various hostel students' data are resolved, and issues with maintaining manually are avoided.

The development of new software applications that will be compatible with the existing system and also have with better user friendly and more GUI focused results from identifying the shortcomings of the present system (here manual). We need to increase the proposed system's efficiency and accuracy in order to address the shortcomings of the current system.

Keywords: Hostel, Students, web application, academic organization, educational institution etc.

1. Introduction

1.1. Brief introduction

The web-based multi-hostel management system was developed to better effectively house college students on campus. Additionally, this project maintains information on every student living in an organization's many dorms. The coordinator for the hostel who made the call is in charge of it. He will serve in that capacity. It makes sense to organize the housing of numerous hostels on a campus to accommodate a big number of students. Through online visibility of available rooms in various hostels, this document aims to reduce the amount of manual work required for hostel allocation and simplify the task for hostel officials. Students can learn more about their roommates' personal information.

1.2. Project Objectives

- Separately list the students who have moved out of residence as hostellers.
- When the admin confirms the allocation, the student's information is automatically added to the hosteller's record.
- It is also added to the empty student's record when vacating is verified or after the course finish date.
- Admin can look up students using their student IDs, names, or phone numbers.

2. Related Work

In this[1] paper The Hostel Management System (HOMASY) is a computerized solution developed using PHP programming language and MySQL database application. The system aims to provide a stress-free, reliable, and efficient process for both students and staff involved in registration and hostel management.

By utilizing PHP and MySQL, HOMASY offers a user-friendly interface and automated functionalities that streamline various hostel management processes. The system ensures a hassle-free experience for students during registration and provides comprehensive tools for staff to effectively manage hostel operations.

In this[2] hostel management system framework aims to automate all activities occurring in a hostel. It addresses the major drawbacks of the current scenario by providing data security, integration, and efficient data retrieval, resulting in smooth operations and saving human effort and time.

By implementing the proposed framework, hostel activities such as registration, room allocation, fee management, attendance tracking, and complaint management can be automated. This automation eliminates manual processes and reduces the chances of errors, ensuring smoother and more efficient operations.

In this[3] hostel management system solution, it aims to enhance and advance the existing system by incorporating modern technologies such as HTML, CSS, JavaScript, PHP, MySQL, and Bootstrap. This project is designed as a hybrid platform where multiple hostels can register themselves, and students can conveniently book accommodations based on their specific requirements. Additionally, grievance management and filter functionality have been incorporated into the project to further enhance user experience and satisfaction. The solution also considers future scope and scalability to ensure its long-term usefulness and effectiveness.

The goal of this project[4] is to create a system for recording information and displaying it in or around a hostel. This approach will make it easier for the hostel officer to run the hostel's business. A student's whole profile will be available thanks to this technology. It will display the number of persons in each room as well as whether or not a room is available. This will also reveal which pupils have paid in whole or still owe money. Additionally, this system would give a summary of the fees and bills that students are owed. A user module for staff or the hostel officer is also included.

3. Existing System

There is no particular software application to manage the students at multiple hostels and at present the thing is done through manual process which requires a lot of efforts and which consumes a lot of time. In the existing system we can manage the students of one particular hostel in which the students can apply for the hostel online but the allotment processes are done manually, which may lead to problems in the allocation process.

Disadvantages

- More human strength.
- The hostel coordinator is under more stress and pressure.
- Repeating the same process.
- Minimal security.
- Redundancy in data.
- A challenge to manage.
- The challenge of updating data.
- Keeping records is challenging.

4. Proposed System

This project is mainly developed for keeping records and showing information about the students located in various hostels. This system will help the hostel coordinator to be able to manage the students of the hostels in an organization. This system will provide full information like student name, student id, college he/she belongs to, father and mother mobile numbers etc., about a student in the hostel.

The coordinator can also view the room's availability and the number of students in a particular room. It provides the reports of the students based on college wise or hostel wise and it can also shows the students of all the hostels in a single report. There will also be an administrator module which will be accessed by the administrator and has the ability to add, delete and update hostel and room details. This system will be developed with PHP and XAMPP server. PHP and MySQL are good for the development and design of web based applications whiles XAMPP is good for databases because of its security and its advanced features and properties.

5. Hardware Requirements

It is important to choose the suitable and compatible hardware configuration to the development of software. The low configured hardware may effect on the efficiency and speed of the developed software. We need to keep the operations of our application in mind while choosing the hardware for the development of any kind of software application.

1. Users Processor: Pentium III and above Processor speed: 1.2 GHz Onwards
2. System Memory: 256 MB minimum (512 MB recommended)
3. RAM: 512 MB (Minimum)
4. Network Card: Any card can provide a 80mbps speed Network connection: UTP or Coaxial cable connection
5. Hard disk: 100 GB
6. Keyboard & Mouse: 104 keys US Key Serial, USB or PS/2 and an Optical Mouse

6. Software Requirements

The selection of compatible software is a major element in the development of a software application since the software in the market is experiencing in geometric progression. The selected software should be acceptable by the users who are interacting with the system. The software requirement specification describes how a system should act, appear or perform.

Technology Implemented	: Apache Server
Language Used	: HTML, Bootstrap, PHP, JAVA SCRIPT.
Database	: MySql XAMPP Server
User Interface	: HTML, CSS, Bootstrap.
Web Browser	: Internet Explorer 7(or newer) or Mozilla Firefox, Google Chrome.
Software	: MySQL Server & XAMPP
Operating System	: Windows XP or Higher Versions

7. System Overview

Multi Hostel Management System makes hostel students data maintenance easy and requires less man power and less time as well as cost for maintaining it. HTML, CSS and Bootstrap are used for designing front end development of the system.

For web development the JavaScript, PHP is also implemented having the major role in validation and for whole processing. The MySQL is used as the backend for this application.

HTML (Hypertext Markup Language) [5] is a text-based language used to describe the organization of material in an HTML file. A webpage's markup gives web browser instructions on how to display text, images, and other multimedia.

On a web server, PHP code is often processed by a PHP[6] interpreter, which can be implemented as a module, daemon, or Common Gateway Interface (CGI) executable. The output of PHP code that has been interpreted and executed on a web server may make up all or part of an HTTP response, and this output could take the shape of any type of data (such as produced HTML or binary image data).

MySQL [7] is a key component of many of the most widely used software stacks for creating and sustaining anything from robust, data-driven B2B services to customer-facing web apps. Due to MySQL's open-source nature, dependability, and broad feature set, as well as continued development and support from Oracle, it is used as the backend by a number of key websites, including Facebook, Flickr, Twitter, Wikipedia, and YouTube.

It has mainly one module that is Admin module.

#Admin Module

The admin in other terms the hostel coordinator has all the privileges to add or delete or update the students in different hostels. He/she has also capable to change the room/hostel of a student. He/she can take the reports of the hostellers based on student wise or hostel wise or college wise in a campus. It is efficient to handle more number of students in multiple numbers of hostels. By using the student id it get all the details of the student when we required.

8. Database Design

Data design in the hostel management system involves the structuring and organization of data to effectively store and retrieve information related to students, rooms, payments, and other relevant data. The data design ensures efficient data management, accurate reporting, and smooth system operations.

The following are the different table structures using in this project.

hostelroom	
Field	Type
room_no	varchar(5)
floor	varchar(5)
room_type	varchar(10)
no_beds	varchar(10)
beds_occ	varchar(10)

hostel	
Field	Type
hid	varchar(20)
hname	varchar(50)
no_floors	int(5)
ac_rooms	int(5)
non_ac_rooms	int(5)
warden_name	varchar(100)
warden_mobile	bigint(10)

Student	
Field	Type
hid	varchar(50)
rno	int(10)
sid	varchar(50)
sname	varchar(150)
clg	varchar(100)
spec	varchar(50)
branch	varchar(10)
year	varchar(10)
gender	varchar(10)
smobile	bigint(15)
email	varchar(100)
fname	varchar(100)

fmobile	bigint(15)
address	varchar(300)
photo	varchar(100)
status	varchar(10)
dov	date

9. Result Analysis

Figure 1: Login Page

**Shri Vishnu Educational Society
Hostel Management System**
Vishnupur:Bhimavaram

Admin Login

User Name

Password

Activate Windows
Go to Settings to activate Windows.

Figure 2: Home Page

**SVES
Hostel Management system**
Vishnupur:Bhimavaram

Today is 01-11-2022

- Home
- Hostel
- Room
- Book Room
- View Data
- Reports
- Search
- Vacate Reports
- Summary Report

Welcome to Shri Vishnu Educational Society Hostels

Activate Windows
Go to Settings to activate Windows.

Figure 3: Room Availability Page

Rooms in CVR

Rooms in Floor 1

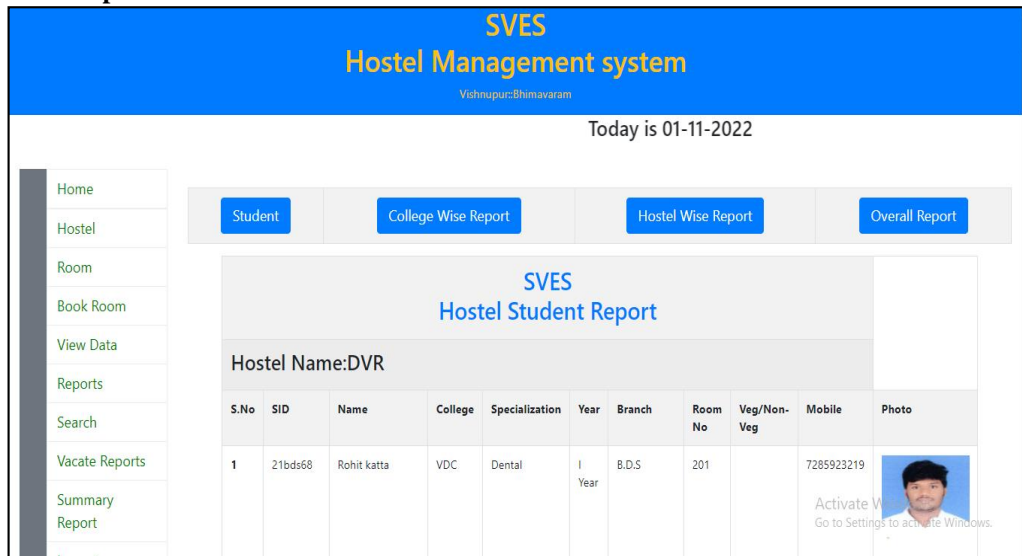
101 Room Type: Non_A/c No. of beds: 4 Occupied: 3	102 Room Type: Non_A/c No. of beds: 4 Occupied: 1	103 Room Type: Non_A/c No. of beds: 4 Occupied: 3	104 Room Type: Non_A/c No. of beds: 4 Occupied: 0	105 Room Type: Non_A/c No. of beds: 4 Occupied: 0	106 Room Type: Non_A/c No. of beds: 4 Occupied: 1
107 Room Type: Non_A/c No. of beds: 4 Occupied: 0	108 Room Type: Non_A/c No. of beds: 4 Occupied: 0	109 Room Type: Non_A/c No. of beds: 4 Occupied: 0	110 Room Type: TV room No. of beds: 0 Occupied: 0	111 Room Type: Non_A/c No. of beds: 4 Occupied: 0	112 Room Type: Non_A/c No. of beds: 4 Occupied: 1
113 Room Type: Non_A/c No. of beds: 4 Occupied: 0	114 Room Type: Non_A/c No. of beds: 4 Occupied: 0	115 Room Type: Non_A/c No. of beds: 4 Occupied: 0	116 Room Type: Non_A/c No. of beds: 4 Occupied: 0		

Rooms in Floor 2

201 Room Type: Non_A/c	202 Room Type: Non_A/c	203 Room Type: Non_A/c	204 Room Type: Non_A/c	205 Room Type: Non_A/c	206 Room Type: Non_A/c
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Activate Windows
Go to Settings to activate Windows.

Figure 4: Hostel wise Report



10. Conclusion

In conclusion, the "Multi Hostel Management System" is a web-based software application designed to address the challenges faced by academic institutions in managing multiple hostels. The system offers a range of features and benefits, including accommodation management, student information management, room and inventory management, attendance and leave management, fee management, complaints and maintenance tracking, and comprehensive reporting capabilities.

By implementing this system, academic institutions can significantly improve the efficiency and accuracy of their hostel management processes. The system eliminates the need for manual record-keeping and streamlines various administrative tasks, ultimately saving time and effort for hostel administrators. It provides a user-friendly interface and a centralized platform for managing student accommodation, ensuring accurate records, efficient resource allocation, and timely communication with students.

Overall, the "Multi Hostel Management System" contributes to a more organized, systematic, and hassle-free management of hostels in academic institutions. It enhances the overall student hostel experience, promotes transparency, and enables administrators to make data-driven decisions. With this software application, academic institutions can effectively manage their hostel facilities and meet the growing demands of student accommodation in a more efficient and effective manner.

11. Future Work

For future work, there are several potential enhancements and additions that can further improve the functionality and usability of the system. Some areas of focus could include:

Integration with payment gateways: Adding the capability to facilitate online fee payments by integrating the system with popular payment gateways, ensuring convenient and secure transactions.

Mobile application: Developing a mobile application that allows students, hostel staff, and administrators to access the system and perform various tasks on their mobile devices, providing greater flexibility and convenience.

Integration with access control systems: Integrating the system with access control systems, such as smart cards or biometric systems, to automate hostel entry and ensure enhanced security.

Communication and notification features: Implementing features that enable effective communication between hostel staff, students, and parents/guardians, such as automated notifications for important updates, announcements, and emergency situations.

By incorporating these future enhancements, the "Multi Hostel Management System" can further streamline hostel operations, improve communication and transparency, and enhance the overall efficiency and effectiveness of hostel management in academic institutions.

12. References

- [1]. Design and Implementation of Hostel Management System (HOMASY): LASU as Case Study. O. Shoewu¹; S.A. Braimah¹; and O. Duduyemi²
<https://www.researchgate.net/publication/326493698>
- [2]. Ritesh Kumar Bista | Aman Jung Karki | Beesu Venkat Mouneesh Reddy | Utkarsh Aakash | Dr. Rajasimha A Makaram | Shilpa Das "Hostel Management System" Published in International Journal of Trend in Scientific Research and Development (ijtsrd), ISSN: 2456-6470, Volume-2 | Issue-4, June 2018, pp.856-862, URL: <https://www.ijtsrd.com/papers/ijtsrd14110.pdf>
- [3]. https://www.researchgate.net/publication/356579821_Hostel_Management_System_and_Aggregation
- [4]. Prof. Deepali Narkhede, Rutuja Bamgude, Mayuri Sonawane, Mandar Shevade
DOI Link: <https://doi.org/10.22214/ijraset.2022.41186>
- [5]. HTML (Hypertext Markup Language) <https://www.theserverside.com/definition/HTML-Hypertext-Markup-Language>
- [6]. PHP
<https://en.wikipedia.org/wiki/PHP>
- [7]. What is MySQL? Everything You Need to Know
<https://www.talend.com/resources/what-is-mysql/#:~:text=MySQL%20is%20integral%20to%20many,%2C%20data%2Ddriven%20B2B%20services.>