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## **Hostel Hub: Integrated Automation for Modern Living**

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### **ABSTRACT**

The Hostel Management Framework is web application which is created for booking the hostel for individual and managing different activities in the hostel. This project is expected to limit human works and make hostel allocation much easier for students as well as hostel administrators with the help of this web application. The particular project deals with the problems on managing a hostel and manages hostel details, room details, student records, and easy way of room allocation. The developed system overcome the drawbacks of manual hostel management it's said to be more user-friendly, GUI oriented, reliability, efficient and secured with access control mechanism.

Keywords: Web application, Hostel management, Hostel security

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### **1. Introduction**

This Hostel Management System is developed in favors of the hostel management team which helps them to save the records of the students about their rooms and other things. It helps them from the manual work from which it is very difficult to find the record of the students and the information about those ones who had left the hostel years before. This solution is developed on the plight of the hostel management team, through this they cannot require so efficient person to handle and manage the affairs of the students in the hostel, all you need to do is to login as administrator and you can see the information of all the students who have obtained and registered their hostel form, click verify to ascertain their eligibility and allocate them to the available hostel. Identification of the problems of the existing hostel management leads to the development of computerized solution that will be compatible to the existing hostel management with the solution which is more users friendly and more GUI oriented. We can improve the efficiency of the hostel management, thus overcome the drawbacks of the existing management.

The Hostel Management system will be developed by us students we will using framework, databases, and many practice to complete our project.  
1. Development Environment Microsoft Visual Studio: Visual studio (Community) It includes a visual designer for creating forms, drag-and-drop controls, and code editing features .

2. Programming languages: C#: Most commonly used language for WinForms development

3. .NET Framework: .NET Framework (versions 4.x and earlier): WinForms is build on the .NET Framework. Choose the version that aligns with your application's requirements. Available libraries include System.Windows.Forms for UI for controls and System.Drawing for graphics.

4. Technologies and Libraries Windows Forms (System.Windows.Forms): Core library for designing the graphical user interface.

GDI+ (System.Drawing): Used for custom graphics rendering and working with images.

ADO.NET (System.data): For database connectivity and data handling.

MySql.Data.MySqlClient : MySQL data connectivity

LINQ: For querying and managing collections or database.

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### **2. Literature Survey**

As the topic mentions above "Hostel Management System" is software that is developed to help in managing various activities in the hostel. In this literature survey we researched for multiple sites for hostel management and came across few which were similar to what we needed. We have listed the survey to research for our project, using this survey we will be able to add and make changes to our project step by step. The project has been equally 2 divided and completed by all four members of the group. This web interface was created using 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.[1] 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.[2] A web-based hostel management system is proposed. This web portal is developed using 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.[3] 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.[5] A biometric authentication-based hostel management system is demonstrated. One of the most common problems at the hostel is security. 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.[6] This Hostel Management System is developed in favor of the hostel management team which helps them to save the records of the students about their rooms and other things. It helps them from the manual work from which it is very difficult to find the record of the students and the information about those ones who had left the hostel years before. This solution is developed on the plight of the hostel management team, through this they cannot require so efficient person to handle and manage the affairs of the students in the hostel, all you need to do is to login as administrator and you can see the information of all the students who have obtained and registered their hostel form, click verify to ascertain their eligibility and allocate them to the available hostel. Identification of the problems of the existing hostel management leads to the development of computerized solution that will be compatible to the existing hostel management with the solution which is more users friendly. We can improve the efficiency of the hostel management, thus overcome the drawbacks of the existing management.[4]

### 3. Proposed 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 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. 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.

### 4. Methodology

A Hostel Management System (HMS) is a software application that helps streamline the administration and operations of a hostel. It allows for efficient management of various tasks such as room allocation, student registration, fee management, maintenance tracking, and more. Hostel Management system is the system that manages the student data, staff data, students admission process and create receipt for the fees paid by the student who stay in the hostel and also help in maintaining visitor's messages. This system is designed in favour of the hostel management which helps them to save the records of the students about their rooms.

This system design is to be divide into two section or portion. Administration and Student section.

### 5. DATA FLOW CHART:



Fig.1: Diagram for login process

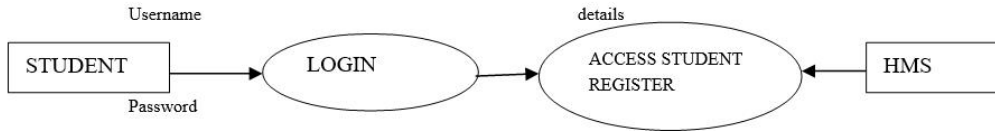


Fig.2: Diagram for student module

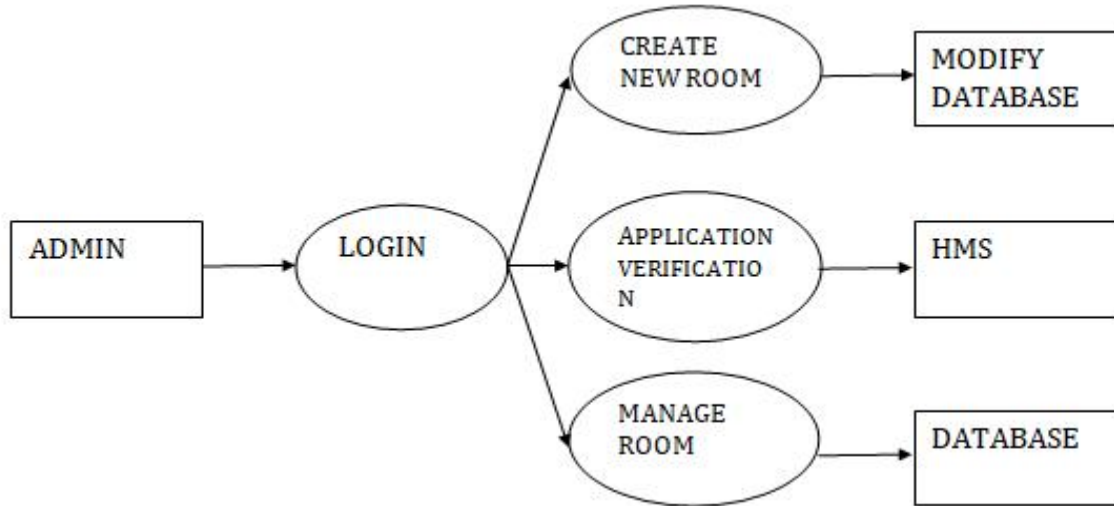


Fig.3: Diagram for Admin module

6. Result

1. Home Page:



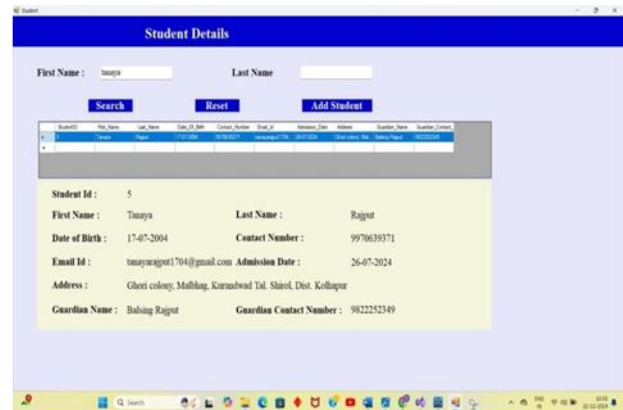
2. Booking Details:



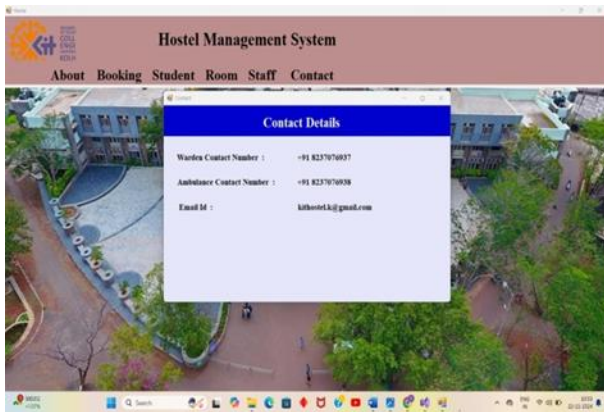
3. Hostel Details:



4. Student Details:



### 5. Contact Details:



### 6. Room Details:



### 7. Conclusion

The increasing number of educational institutions has led to a rise in hostels, creating challenges for manual hostel management. This project focuses on developing user-friendly hostel management software to address these issues. The system automates tasks like managing hostel information, room details, and accounts, reducing the strain on administrators. It improves upon existing manual processes by offering a stable, cost-effective, and adaptable solution for efficient hostel management. Identification of the drawbacks of the existing system leads to the designing of computerized system that will be compatible to existing system with the system which is more users friendly. The developed system provides solution to manual hostel management problems and also provides information such as hostel information, hostel room information, and hostel accounts information. The software offers stability, cost-effectiveness and usability. It provides the most flexible and adaptable standards management system solutions for hostel.

### Future scope

Future developments in hostel management system are solve their issues. Future developments in hostel managements system are likely to focus on increased automation, integration with smart technologies like IOT devices, AI powered room allocation, and enhanced mobile app functionality and improved data analytics to provide a more personalized and efficient experience for student while streamlining operations for hostel management team. In this app, we already set a platform as the users want. We also take some user feedback. But it needs more user feedback. As much we get feedback it becomes easy to make this app more user-friendly. It needs to involve the authority to solve this kind of issue. We also need authority's feedback to solve their issues. Future developments in hostel management system are likely to focus on increased automation, integration with smart technologies like IOT devices, AI-powered room allocation, and enhanced mobile app functionality, and improved data analytics to provide a more personalized and efficient experience for student while streamlining operations for hostel management team.

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