STREAMLINING HOSTEL OPERATIONS THROUGH AUTOMATION

A DESIGN PROJECT REPORT-3

Submitted by

MEGASRI A

SANGEETHA S

SRINIDHI M

VARSHINI D

in partial fulfillment for the award of the degree of

BACHELOR OF ENGINEERING

in

COMPUTER SCIENCE AND ENGINEERING

K. RAMAKRISHNAN COLLEGE OF TECHNOLOGY

(An Autonomous Institution, affiliated to Anna University Chennai and Approved by AICTE, New Delhi)

SAMAYAPURAM – 621 112

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(AUTONOMOUS)

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BONAFIDE CERTIFICATE

Certified that this project report titled **“STREAMLINING HOSTEL OPERATIONS THROUGH AUTOMATION”** is the bonafide work of the students **MEGASRI A (811721104067), SANGEETHA S (811721104087), SRINIDHI M (811721104101), VARSHINI D (811721104119)** who carried out the project under my supervision. Certified further, that to the best of my knowledge the workreported herein does not form part of any other project report or dissertation on thebasis of which a degree or award was conferred on an earlier occasion on this orany other candidate.

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INTERNAL EXAMINER **EXTERNAL EXAMINER**

DECLARATION

We jointly declare that the project report on **"STREAMLINING HOSTEL OPERATIONS THROUGH AUTOMATION "** is the result of original workdone by us and best of our knowledge, similar work has not been submitted to **"ANNA UNIVERSITY CHENNAI"** for the requirement of Degree of **BACHELOR OF ENGINEERING**. This project report is submitted on the partial fulfilment of the requirement of the award of Degree of **BACHELOR OF ENGINEERING**.

Signature

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Place: Samayapuram

Date:

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ABSTRACT

Hostel management system is a software developed for managing various activities in the hostel. For the past few year the numbers of educational institutions are increasing rapidly. There by the numbers of hostels are also increasing for the accommodation of the students studying in the institution and hence there is a lot of strain on the person who are running the hostel and software are not usually used in this context. The project deals with the problems on managing the hostel and avoids the problems which occur when carried manually. Identification of the drawbacks of the existing system leads to the designing of computerized system that will be compatible to the existing system with the system which is more user friendly and more GUI oriented. We can improve the efficiency of the system, thus overcome the drawbacks of the existing system.

The system designed for the college hostel streamlines transaction management, enabling enhanced control and prompt responses. This eliminates time day and paper transactions being marked. The Warden is provided with a better control over the transactions like adding the details of new students in the hostel, modifying the details of the students, deleting the students, viewing the students details in the Hostel.

The aim of the project is to reduce the effect of wardens and provide better service to the students. The goal of this project is to develop a system for the computerization of the Hostel. The common transactions of the hostel includes the maintenance of mess bills, information about students in the hostel, enrolling of new students and their payments and dues are stored into the databases and reports are generated according to the user requirements.

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LIST OF ABBREVIATIONS

HMS	-	Hostel Management System
HWarden	-	Hostel Warden
Res	-	Resident or Residence
Admn	-	Administration
Regn	-	Registration
Accn	-	Accommodation
Rm	-	Room
Bd	-	Bed
Maint	-	Maintenance
WiFi	-	Wireless Fidelity
DOR	-	Date of Registration
DOJ	-	Date of Joining
DOB	-	Date of Birth
ID	-	Identification

CHAPTER 1

INTRODUCTION

This system is designed in favor of the hostel management 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 mess bills of the students, and the information of about those ones who had left the hostel. All the hostels at present are managed manually by the hostel office. The Registration form verification to the different data processing is done manually. There are a lot of repetitions which can be easily avoided and hence there is a lot of strain on the person who are running the hostel and software's are not usually used in this context. This particular project deals with the problems on managing a hostel and avoids the problems which occur when caried manually Identification of the drawbacks of the existing system leads to the designing of computerized system that will be compatible to the existing system with the system which is more user friendly. We can improve the efficiency of the system, thus overcome the drawbacks of the existing system. We design this system of the hostel management especially for the college hostel, through this they cannot require so efficient person to handle and calculate the things. This system automatically calculates all the bills and issued the notifications for those students who are against some rules.

1.1 PROJECT OVERVIEW

The aim of the Hostel Management System is to do all the activities of Hostel in systemic way. It is a web based software to provides college students accommodation to the university hostel more efficiently. It is headed by Warden, who will be the administrator. The project keeps details of the hostellers and applied students. The main theme of this project is to minimize human works and makes the hostel activities more easier. This project providing online application for hostel, automatically select the students from the waiting list and mess calculation, complaint registration, noticeboard etc. Students will get approval notification can view notice board, hostel fee by login into the online system.

1.2 PROBLEM STATEMENT

The Hostel Management System is developed for advancing the activities of the hostel. The main benefit of the software is to remove manual system. Since most hostels are being run by only one hostel manager. The number of students in a room, the students who owe to the hostel are saved on papers or sometimes receipts. If these documents should go missing or stolen, one would never be able to know. The employees might not know the number of students in a room or know if a room is full or not. This project will be great relief to the employees. This will help to carry out the activities of Hostel in an efficient way. Therefore, the need arises for a comprehensive Hostel Management System (HMS) that addresses these challenges by integrating automated processes, facilitating transparent communication, enhancing security measures, and providing efficient tools for administration and resident interaction. Such a system would not only streamline hostel operations but also improve the overall experience for both administrators and residents, ultimately contributing to a more efficient and secure hostel environment.

1.2.1 GOALS

Hostel Management System is designed for better interaction between students, hostel owners, and accounts. Hostel Management System handles all the requirements for easy Hostel Management for a college. This application will help the Hostel to centralized the activities and maintain data transparency where needed and properly store data for regular operations and future analysis. Here students can search for the hostels listed and the owners can maintain and manage data regarding the hostel facilities and the fee billing system. The application will be easy to use for both beginners and advanced users features a familiar and well thought out, an attractive user interface, combined with strong searching insertion and reporting capabilities.

1.3 OBJECTIVE OF THE PROJECT

- To get the hostel information like facilities and the fee structure.
- To maintain the students/ hosteller database under the single system.
- To register the enquire regarding hostels.
- Admin can edit notice board and each student can view it.
- Hostel owner can calculate hostel fee including mess fee and can edit mess menu.
- Hostellers can check the status of every month’s hostel fee.
- To automate each and every activity of the manual system.
- To make it easier for data collection, storage and referencing reliable.
- To store the data of all current students and also the students who had left the hostel.
- To provide a quick response with very accurate information when needed.

1.4 SCOPE OF THE PROJECT

The scope of a Hostel Management System (HMS) project encompasses a broad range of functionalities aimed at enhancing the efficiency and effectiveness of hostel operations. It involves the development and implementation of software that facilitates tasks such as room allocation, resident registration, fee management, inventory tracking, and communication between administrators and residents. The system may also include features for generating reports, managing security, and integrating with other campus or facility management systems. Additionally, the scope may extend to providing online portals for booking, payments, and resident feedback. By automating and centralizing these processes, an HMS project aims to streamline hostel management, improve resource utilization, and enhance the overall experience for both administrators and residents.

HMS is a wide range of functionalities aimed at optimizing the management of hostel facilities. Key aspects include but are not limited to online booking systems, room allocation algorithms, resident information management, billing and payment processing, inventory tracking, and reporting capabilities. Additionally, the system may incorporate features such as staff management, security access control, and communication tools for efficient interaction between administrators, staff, and residents. The project scope also extends to user-friendly interfaces accessible via web or mobile platforms, ensuring convenience and accessibility for both administrators and residents. By addressing these aspects comprehensively, the HMS project aims to streamline hostel operations, enhance user experience, and improve overall efficiency in managing hostel facilities.

CHAPTER 2

LITERATURE SURVEY

2.1 TITLE: DEVELOPMENT OF HOSTEL MANAGEMENT SYSTEM

AUTHORS: JOHN DOE

YEAR: 2023

The Development of Hostel Management System (HMS) represents a significant contribution to the realm of hospitality management, particularly in the context of hostel facilities. This project aims to address the various challenges encountered in managing hostels efficiently by leveraging modern technology and software solutions. The HMS offers a comprehensive suite of features including online booking, room allocation, resident information management, billing and payment processing, inventory tracking, and reporting functionalities. Additionally, the system incorporates user-friendly interfaces accessible via web or mobile platforms to ensure convenience and ease of use for administrators, staff, and residents alike. Through the development of this HMS, the project endeavors to streamline hostel operations, enhance user experience, and improve overall efficiency in hostel management. The insights gained from this project are valuable not only for hostel administrators but also for stakeholders in the broader hospitality industry seeking innovative solutions to optimize their operations.

This paper provides an overview of the development process of a hostel management system, focusing on the integration of various features such as room allocation, billing, and staff management. It discusses the challenges faced during implementation and offers insights into effective solutions.

2.2 TITLE: DESIGN AND IMPLEMENTATION OF HOSTEL MANAGEMENT SYSTEM

AUTHOR: JANE SMITH ET AL.

YEAR:2021

Smith et al. detail the design and implementation of a hostel management system tailored to the needs of a specific institution. The paper highlights the importance of user-friendly interfaces and efficient database management in ensuring the system's effectiveness. The Design and Implementation of Hostel Management System (HMS) presents a comprehensive solution tailored to address the intricate needs of managing hostel facilities in the modern era. This project encompasses the design, development, and deployment of an innovative HMS that incorporates advanced features to streamline hostel operations and enhance user experience. Key functionalities include online booking systems, room allocation algorithms, resident information management, billing and payment processing, inventory tracking, and reporting capabilities. Moreover, the system integrates user-friendly interfaces accessible via web and mobile platforms, ensuring accessibility and convenience for administrators, staff, and residents. Through meticulous design and rigorous implementation, this HMS aims to revolutionize hostel management practices, optimizing efficiency and effectiveness in the administration of hostel facilities. The insights gained from this project offer valuable guidance to hostel administrators and stakeholders in the hospitality industry seeking to leverage technology to enhance their operations.

2.3 TITLE: ENHANCING HOSTEL MANAGEMENT THROUGH TECHNOLOGY INTEGRATION

AUTHOR: EMILY BROWN

YEAR:2020

Brown explores the potential benefits of integrating emerging technologies such as IoT (Internet of Things) and AI (Artificial Intelligence) into hostel management systems. The paper discusses how these technologies can streamline processes and improve overall efficiency.

Enhancing Hostel Management Through Technology Integration explores the transformative potential of incorporating modern technology into hostel management practices. This paper investigates the utilization of software solutions, digital platforms, and communication tools to streamline hostel operations and improve overall efficiency. By analyzing case studies and industry trends, the author highlights the benefits of technology integration in areas such as online booking systems, room allocation algorithms, resident information management, billing and payment processing, inventory tracking, and reporting capabilities. Furthermore, the paper examines the impact of user-friendly interfaces accessible via web or mobile platforms on enhancing user experience for administrators, staff, and residents. Through this research, valuable insights are provided for hostel administrators and stakeholders in the hospitality industry, emphasizing the importance of embracing technological advancements to optimize hostel management practices in the digital age.

2.4 TITLE: A COMPARATIVE STUDY OF HOSTEL MANAGEMENT SYSTEMS

AUTHOR: MICHAEL JOHNSON

YEAR: 2019

Johnson's study compares different hostel management systems available in the market, analyzing their features, usability, and scalability. The paper offers valuable insights for institutions seeking to adopt or upgrade their hostel management systems.

This study conducts a comparative analysis of various Hostel Management Systems (HMS) to evaluate their features, functionalities, and effectiveness in addressing the needs of hostel administrators and residents. The research assesses a range of HMS solutions available in the market, considering factors such as online booking systems, room allocation algorithms, resident information management capabilities, billing and payment processing methods, inventory tracking mechanisms, and reporting functionalities. Additionally, the study examines user interfaces, accessibility, and overall user experience across different HMS platforms.

Through this comparative analysis, the research aims to identify strengths, weaknesses, and areas for improvement in existing HMS solutions. The findings of this study provide valuable insights for hostel administrators, software developers, and stakeholders in the hospitality industry, guiding future developments and enhancements in hostel management technology.

CHAPTER 3

EXISTING SYSTEM

For the past few years the number of educational institutions are increasing rapidly. Thereby the number of hostels are also increasing for the accommodation of the students studying in this institution.[1] And hence there is a lot of strain on the person who are running the hostel and software's are not usually used in this context. This particular project deals with the problems on managing a hostel and avoids the problems which occur when carried manually Identification of the drawbacks of the existing system leads to the designing of computerized system that will be compatible to the existing system with the system which is more user friendly. [2] We can improve the efficiency of the system, thus overcome the following drawbacks of the existing system.[3]

Disadvantage of Existing System are:

- Difficulty to handle.
- Difficulty to update data.
- Backup data can be easily generated.
- Lack of privacy
- Risk in the management of the data.
- Less Security
- Less User-friendly
- Accuracy not guaranteed

CHAPTER 4

PROPOSED SYSTEM

The drawback of the existing system is that it is very difficult to retrieve data from record. It is also difficult to handle the whole system manually and it is less accurate and to keep the data in records for future reference because it may get destroyed. [4] Moreover it is very difficult to retrieve data. Redundancy of data may occur and this may lead to this inconsistency. The manual system is so time-consuming. The proposed system is very easy to operate. Speed and accuracy are the main advantages of proposed system. There is no redundancy of data. The data are stored in the computer secondary memories like hard disk etc., it can be easily access and used at any time. The proposed system will easily handle all the data and the work done by the existing systems. The proposed system eliminate the drawbacks of the existing system to a great and it provides tight security to data.

Advantages of Proposed System are:

- It can be easily accessed globally with help of Internet.
- Maintaining records will be easier because all details are stored in database and retrieved easily from it.
- Interactive and attractive design.
- Provides online paying of bills and servicing easily.
- User can easily pick the nearby hostel
- Less human error
- High security

CHAPTER 5

SYSTEM ARCHITECTURE

The hostel management system is designed with a comprehensive architecture encompassing both frontend and backend components. At its core, the frontend relies on HTML, CSS, and JavaScript to provide an intuitive user interface. HTML pages are crafted to facilitate various functionalities such as user authentication, room allocation, and hostel details display.[5] CSS styling enhances the visual appeal and user experience, while JavaScript handles client-side interactions and form validations, ensuring seamless user interaction. Routing mechanisms are established to direct requests to appropriate handlers, enabling functionalities like user registration, hostel details retrieval, and database interactions.

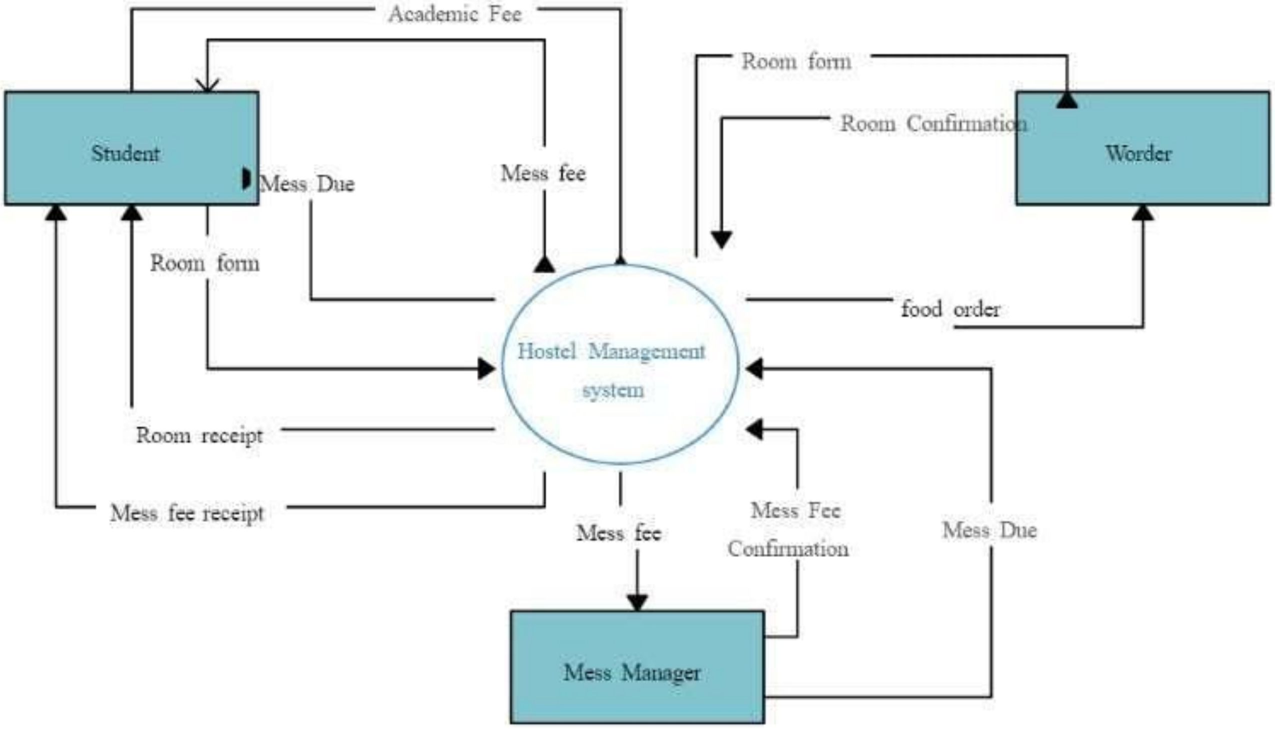


Fig 5.1 System Design

5.1 DATA FLOW DIAGRAM

A two-dimensional diagram that explains how data is processed and transferred in a system. The graphical depiction identifies each source of data and how it interacts with other data sources to reach a common output. [6] Individuals seeking to draft a data flow diagram must identify external inputs and outputs, determine how the inputs and outputs relate to each other, and explain with graphics how these connections relate and what they result in. This type of diagramhelps business development and design teams visualize how data is processed and identify or improve certain aspects.

USER LOGIN:

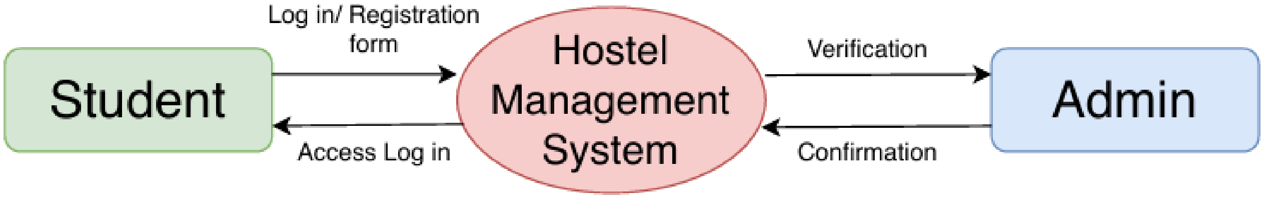


Fig 5.2 Login Process

STUDENT MODULE:

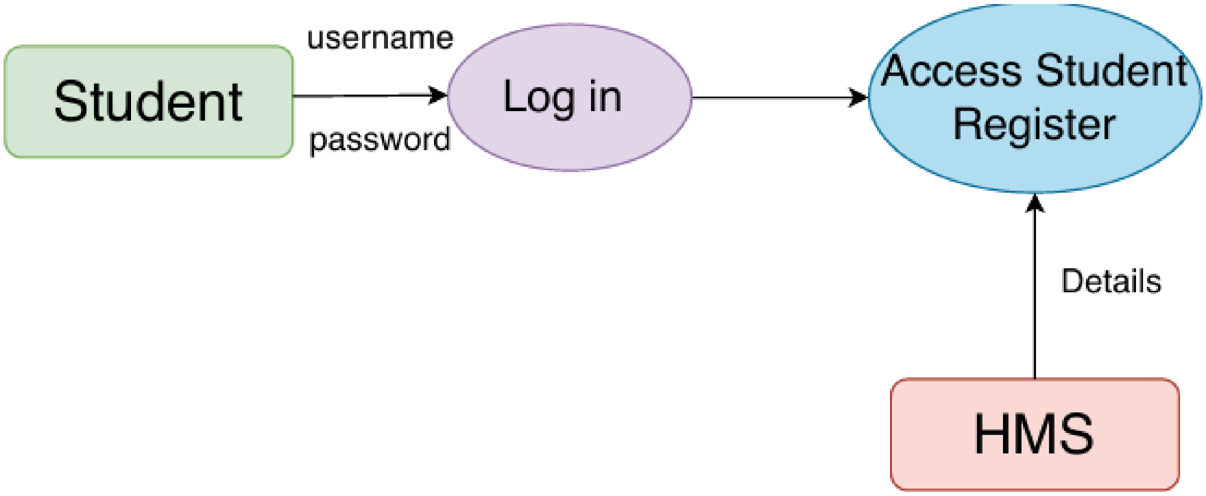


Fig 5.3 Student Login

ADMIN MODULE:

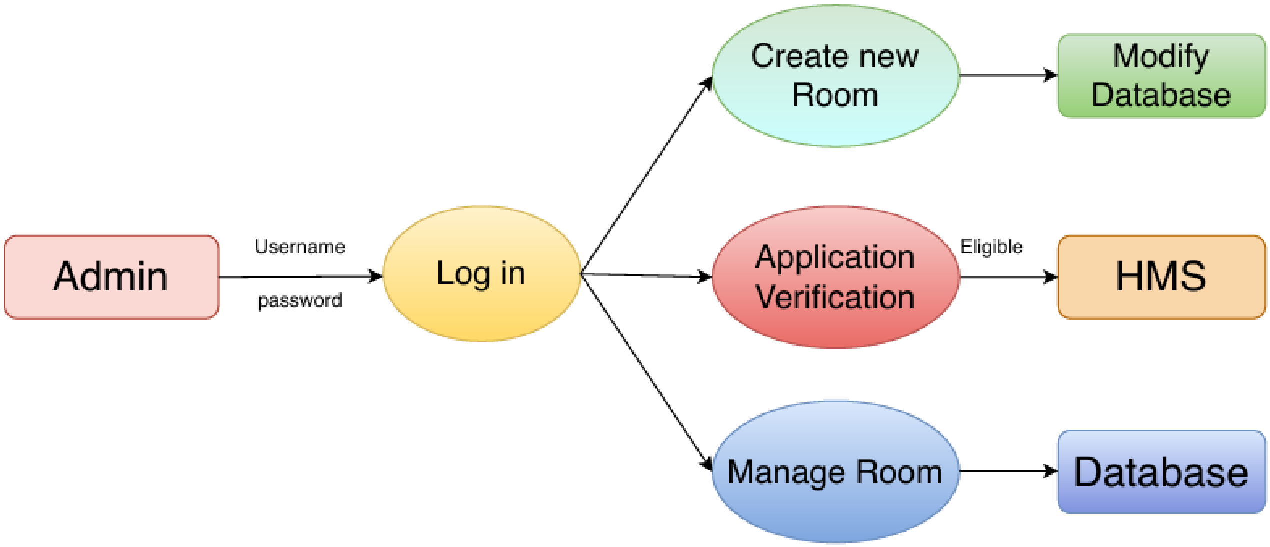


Fig 5.4 Admin Login

LEVEL 1 DIAGRAM:

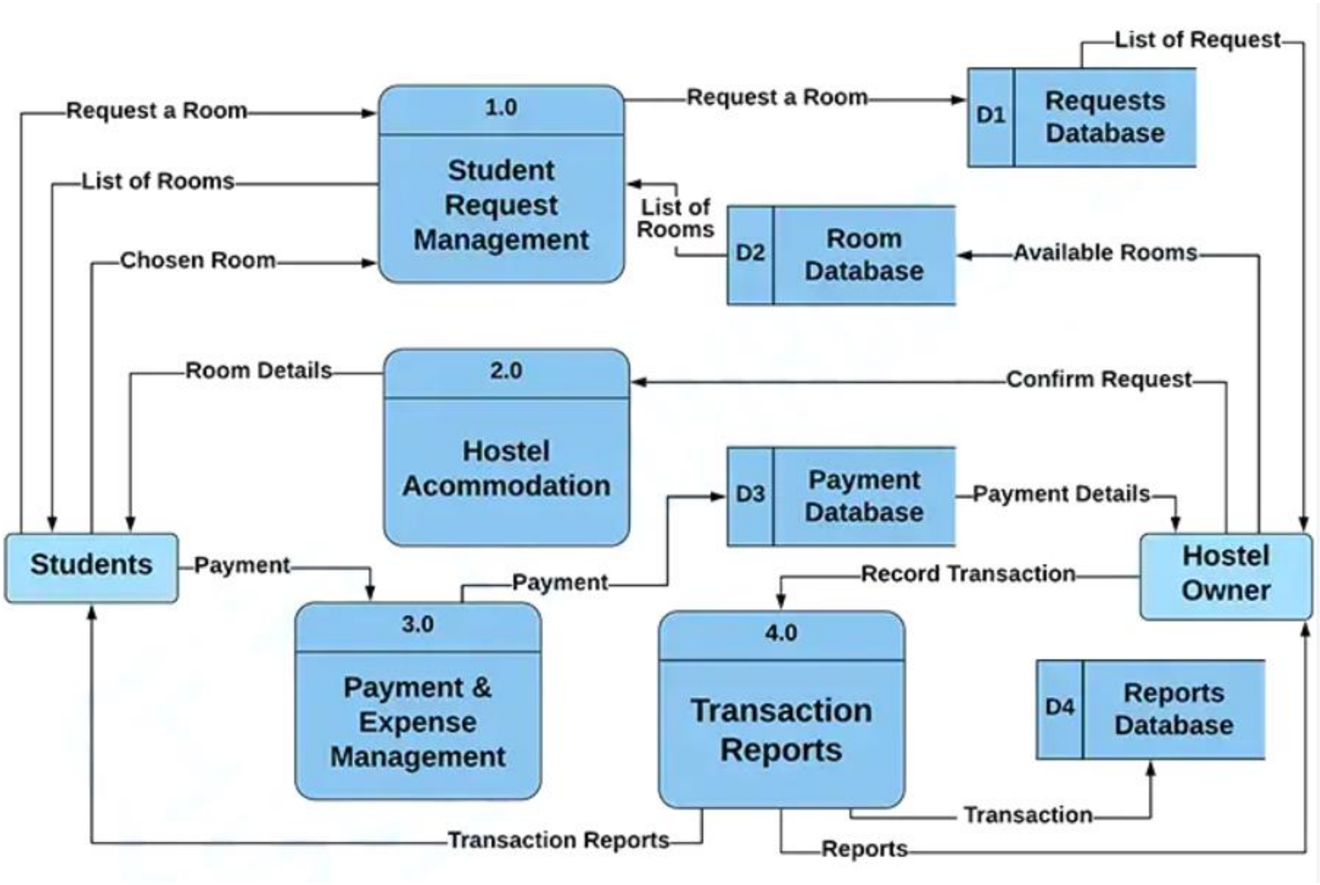


Fig 5.5 LEVEL 1 Diagram

5.2 USE CASE DIAGRAM

Use case diagrams are usually referred to as behavior diagrams used to describe a set of actions (use cases) that some system or systems (subject) should or can perform in collaboration with one or more external users of the system (actors). A use case diagram at its simplest is a representation of a user's interaction with the system that shows the relationship between the user and the different use cases in which the user is involved. Each of these use cases explains how the system handles the actions or scenarios requested by the user.

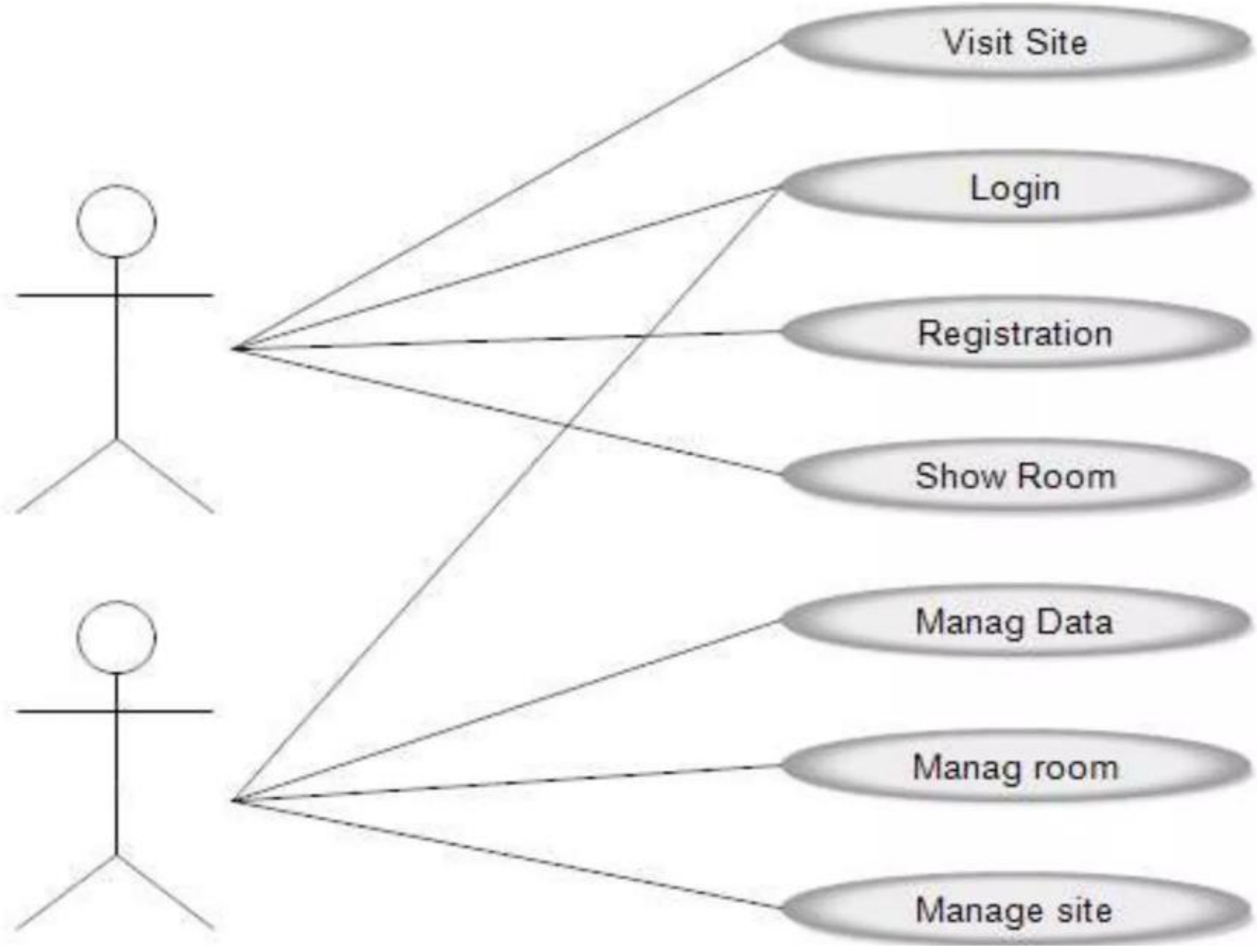


Fig 5.6 Use Case Diagram

5.3 ACTIVITY DIAGRAM

An activity diagram visually presents a series of actions or flow of control in a system similar to a flowchart or a data flow diagram. Activity diagrams are often used in business process modeling. They can also describe the steps in a use case diagram. Activities modelled can be sequential and concurrent.

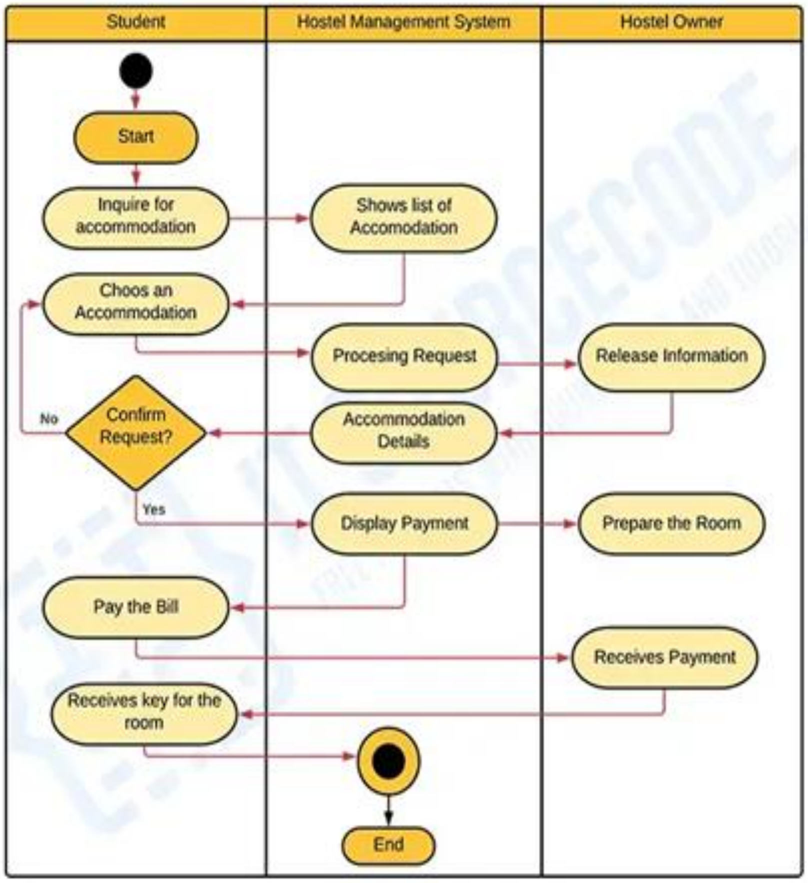


Fig 5.7 Activity Diagram

5.4 SEQUENCE DIAGRAM

This sequence diagram illustrates the interaction between a student and the hostel management system when booking a room. The student initiates the process by requesting a room booking , after which they provide their user credentials. The system then verifies the user credentials and fetches the available rooms, which are presented to the student.

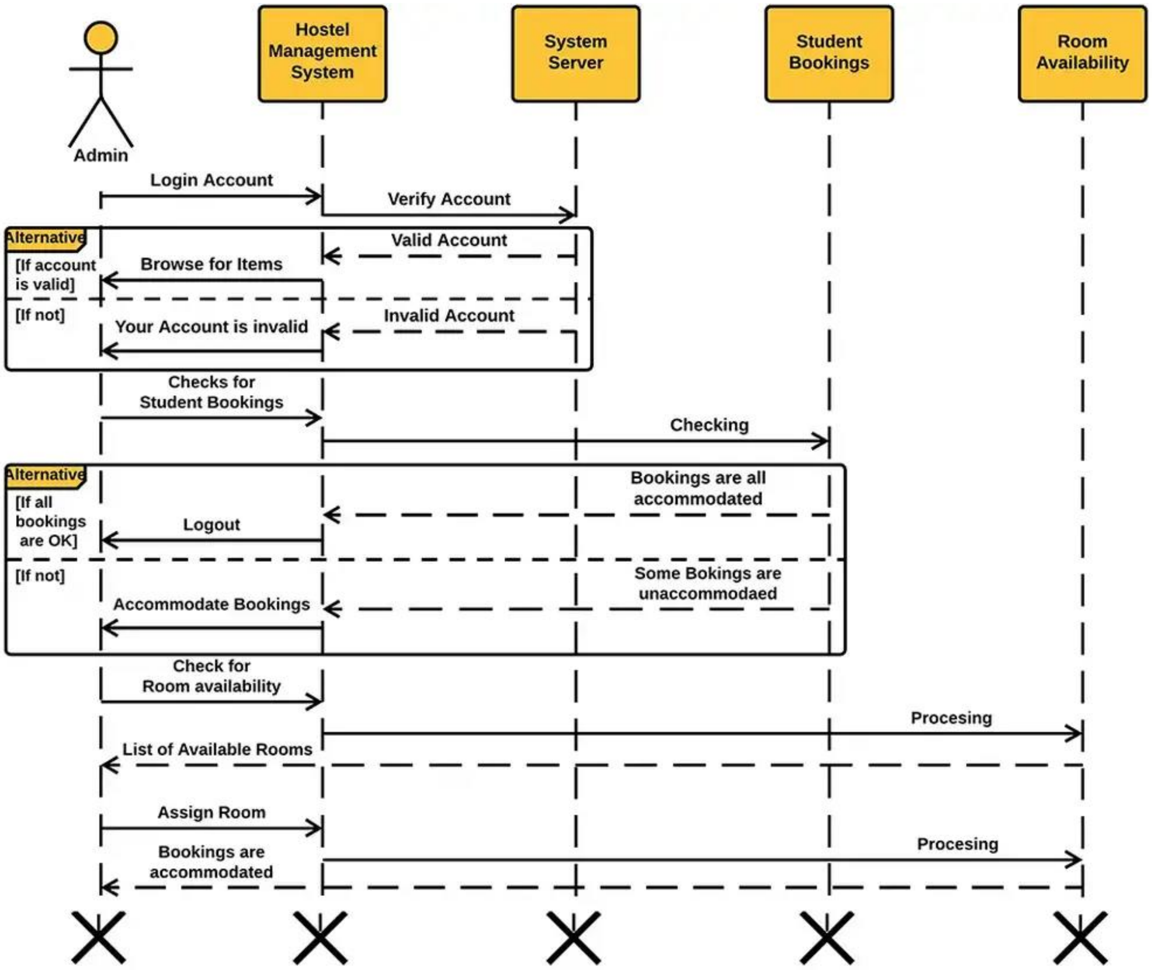
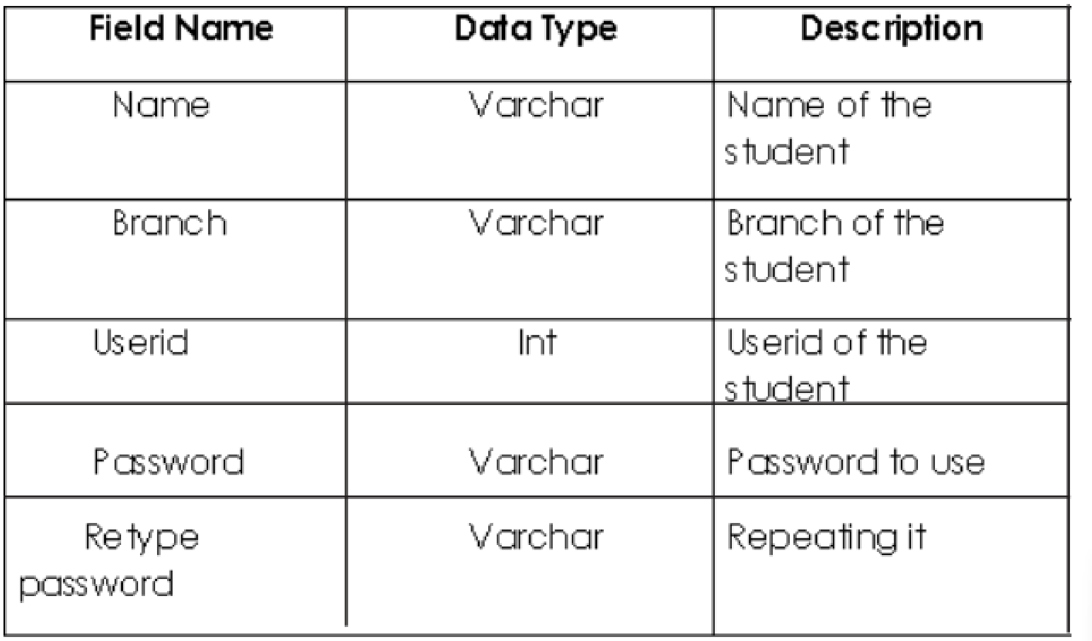


Fig 5.8 Sequence Diagram

5.5 DATABASE DESIGN:

The data in the system has to be stored and retrieved from database. Designing the database is part of system design. Data elements and data structures to be stored have been identified at analysis stage. They are structured and put together to design the data storage and retrieval system. A database is a collection of interrelated data stored with minimum redundancy to serve many users quickly and efficiently. The general objective is to make database access easy, quick, inexpensive and flexible for the user. Relationships are established between the data items and unnecessary data items are removed. Normalization is done to get an internal consistency of data and to have minimum redundancy and maximum stability. This ensures minimizing data storage required, minimizing chances of data inconsistencies and optimizing for updates.

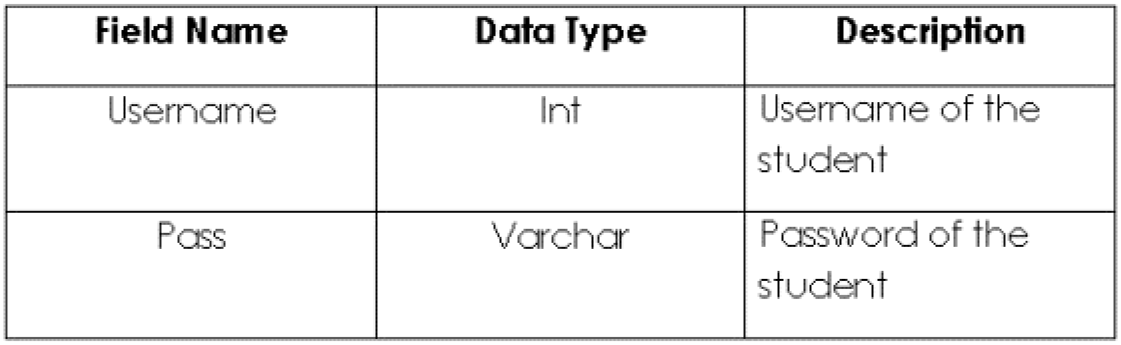
5.1 STUDENT ACCOUNT CREATION:



Field Name	Data Type	Description
Name	Varchar	Name of the student
Branch	Varchar	Branch of the student
Userid	Int	Userid of the student
Password	Varchar	Password to use
Retype password	Varchar	Repeating it

Table 5.1 Student account creation

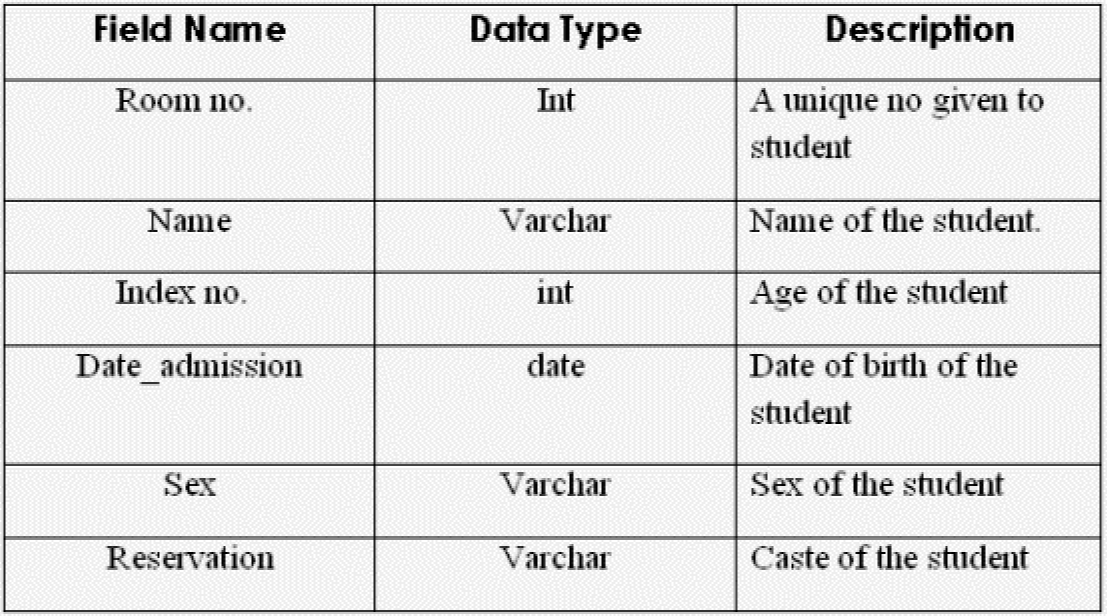
5.2 ADMINISTRATOR LOGIN:



Field Name	Data Type	Description
Username	Int	Username of the student
Pass	Varchar	Password of the student

TABLE 5.2 Administrator Login

5.3 ALLOTMENT AND VACATING:



Field Name	Data Type	Description
Room no.	Int	A unique no given to student
Name	Varchar	Name of the student.
Index no.	int	Age of the student
Date_admission	date	Date of birth of the student
Sex	Varchar	Sex of the student
Reservation	Varchar	Caste of the student

TABLE 5.3 Allotment and Vacating

CHAPTER 6

SYSTEM REQUIREMENTS

6.1 SOFTWARE REQUIREMENTS

Operating system	:	Windows 10
Coding Language	:	HTML, JAVA AND JS
Tool	:	VS CODE
Database	:	MySQL

6.2 HARDWARE REQUIREMENTS

System	:	Pentium I7
Hard Disk	:	500 GB
Monitor	:	15 VGA Color
Mouse	:	Logitech
Ram	:	8GB

6.3 HARDWARE DESCRIPTION

6.3.1 WINDOWS 10

Windows 10 is a major release of Microsoft's Windows NT operating system. It is the direct successor Windows 10 was made available for download via MSDN and TechNet, as a free upgrade for retail copies of Windows 8 and Windows 8.1 users via the Windows Store, and to Windows 7 users via Windows Update.

Windows 10 receives new builds on an ongoing basis, which are available at no additional cost to users, in addition to additional test builds of Windows 10, which are available to Windows Insiders.Devices in enterprise environments can receive these updates at a slower pace, or use long-term support milestones that only receive critical updates, such as securitypatches, over their ten-year lifespan of extended support In June 2021.

6.3.2 HTML

HTML, or Hyper Text Markup Language, is the standard markup language used to create web pages. It’s a combination of Hypertext, which defines the link between web pages, and Markup language, which is used to define the text document within tags to structure web pages. This language is used to annotate text so that machines can understand and manipulate it accordingly. HTML is human-readable and uses tags to define what manipulation has to be done on the text.

6.3.3 JAVA

Java is one of the most popular and widely used programming language and a platform that was developed by James Gosling in the year 1982. It is based on the concept of Object-oriented Programming. A platform is an environment in that develops and runs programs written in any programming language. Java is a high-level, object-oriented, secure, robust, platform-independent, multithreaded, and portable programming language.

Creating Java projects helps sharpen your skills and boosts your confidence as a developer. It provides practical application of theoretical knowledge. Building a portfolio showcasing completed projects empowers you for job interviews, giving you solutions, code, apps, and projects to display to recruiters.

6.3.4 JAVASCRIPT

JavaScript is the most powerful and versatile web programming language. It is used for making the websites interactive. JavaScript helps us add features like animations, interactive forms and dynamic content to web pages. JavaScript is a programming language used for creating dynamic content on websites. It is a lightweight, cross-platform and single-threaded programming language. JavaScript is an interpreted language that executes code line by line providing more flexibility. It is a commonly used programming language to create dynamic and interactive elements in web applications. It is easy to learn.

6.4 HTML AND FRONT END DEVELOPMENT

Hyper Text Markup Language (HTML) is the basic scripting language used by web browsers to render pages on the world wide web.

Fig 6.1 HTML 5

The important features of HTML:

Markup Language: HTML is a markup language used to structure content on the web by using tags and attributes to define elements and their relationships.

Hypertext: HTML allows for the creation of hyperlinks, which enable users to navigate between documents or different parts of the same document.

Platform Independence: HTML is platform-independent, meaning it can be displayed on any device or operating system that has a web browser.

Semantic Markup: HTML provides semantic elements that convey meaning about the content they enclose, making it easier for search engines and screen readers to understand the structure of a web page.

Document Structure: HTML documents have a defined structure consisting of a head section (<head>) where metadata is placed, and a body section (<body>) where the main content of the document resides.

Multimedia Support: HTML supports embedding multimedia elements such as images, audio, and video into web pages using appropriate tags like <img>, <audio>, and <video>.

Forms: HTML provides form elements like <form>, <input>, <select>, <textarea>, etc., allowing users to input data which can be submitted to a server for processing.

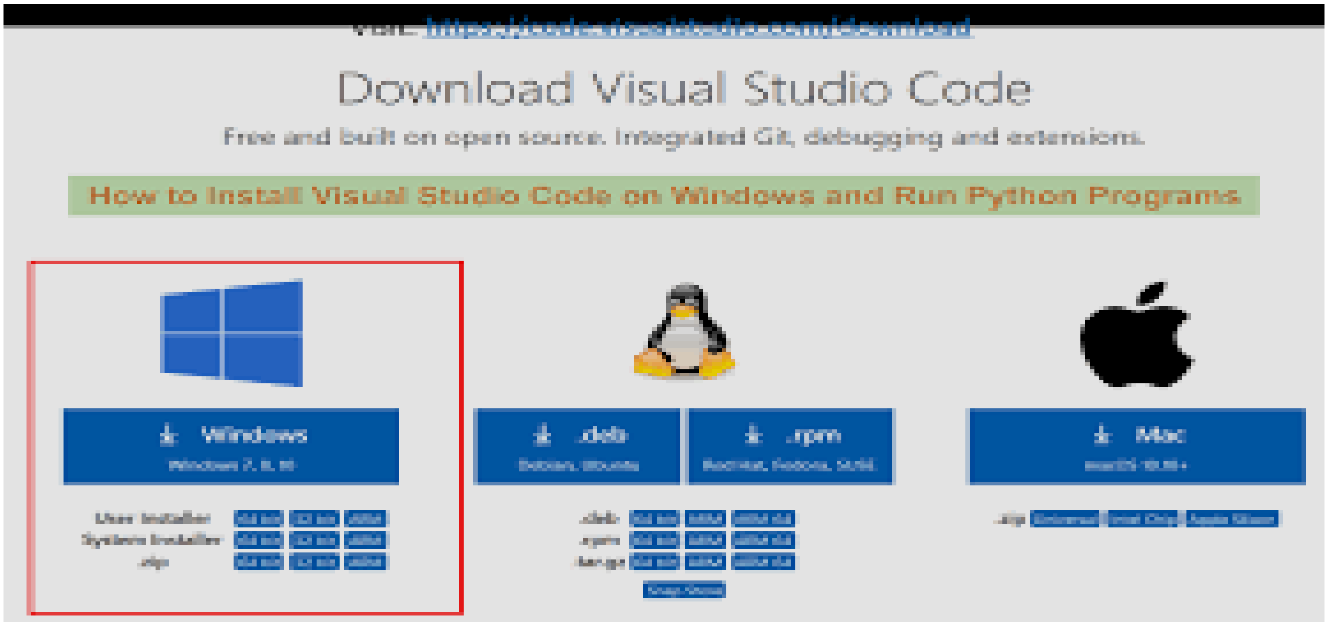
Accessibility: HTML supports accessibility features like alt attributes for images, ARIA roles and attributes for enhanced accessibility for users with disabilities.

Compatibility with CSS and JavaScript: HTML works seamlessly with CSS (Cascading Style Sheets) for styling web pages and JavaScript for adding interactivity and dynamic behavior.

Evolution and Standards Compliance: HTML evolves over time, with new features being added and existing features being improved. It is maintained by the World Wide Web Consortium (W3C) and WHATWG, ensuring compliance with web standards.

6.4.1 VISUAL STUDIO CODE

Visual Studio Code is a lightweight but powerful source code editor which runs on your desktop and is available for Windows, macOS and Linux. It comes with built-in support for JavaScript, TypeScript and Node.js and has a rich ecosystem of extensions for other languages and runtimes (such as C++, C#, Java, Python, PHP, Go, .NET).



Visit: https://code.visualstudio.com/download

Download Visual Studio Code

Free and built on open source. Integrated Git, debugging and extensions.

How to Install Visual Studio Code on Windows and Run Python Programs

Fig 6.2 VS CODE INSTALLATION

6.5 VS CODE EXTENSIONS

Visual Studio Code (VS Code) is a highly customizable code editor that supports a wide range of extensions for various programming languages and tasks. It offers features like IntelliSense, debugging, version control integration, and an extensive marketplace for extensions. With its lightweight design and robust performance, VS Code caters to beginners and experienced developers alike. Here are some common extensions that can enhance your development experience when working with HTML, PHP, and Java Servlets.

HTML

- HTML Snippets

Provides a set of common HTML snippets to speed up the coding.

- Auto Close Tag

Automatically adds a closing tag when you type an opening tag.

- Auto Rename Tag

Renames matching tags as you edit the start or end tag.

- HTML CSS Support

Provides CSS support for HTML documents.

- Prettier - Code Formatter

A popular code formatter that supports HTML, CSS, and JavaScript.

PHP

- PHP Intelephense

Offers advanced PHP language features, including IntelliSense, code navigation, and more.

- PHP Debug

Adds debugging capabilities for PHP using X Debug.

- PHP Snippets

Provides a collection of useful PHP code snippets.

- PHP Namespace Resolver

Helps manage and import PHP namespaces automatically.

- PHP CS Fixer

A tool to automatically fix PHP coding standards issues.

Java Servlets

- Java Extension Pack

A collection of essential Java extensions, including language support and IntelliSense.

- Java Debug

Provides debugging capabilities for Java applications.

- Maven for Java

Adds support for managing Java projects using Maven.

- Tomcat for Java

Helps you run and debug Java web applications in Apache Tomcat.

- Java Test Runner

Provides capabilities to run and debug Java test cases.

- Spring Boot Extension Pack

6.5.1 HTML CODE DESCRIPTION

6.5.1.1. HTML Structure:

The HTML code defines the structure of a web page for a Hostel Management App.

It includes:

Document Type Declaration (<!DOCTYPE html>):

Specifies the document type and version of HTML being used.

HTML Tag:

Defines the root of the HTML document.

Head Section:

Contains metadata and external resources used by the page, such as CSS and JavaScript links.

Body Section:

Contains the visible content of the page, including navigation bars, forms, and other elements.

6.5.1.2. CSS Styling:

The CSS styles define the appearance of various elements on the page, including the navbar, forms, buttons, and alerts. Key styling features include:

Navbar:

Styling for the navigation bar at the top of the page.

Functionality Bar:

Styling for the bar containing buttons to access different functionalities.

Forms:

Styling for input forms used for various actions like rating food, checking availability, etc.

Alerts:

Styling for alert messages displayed on the page.

6.5.1.3. JavaScript Functionality:

The JavaScript code provides interactive functionality to the web page. Key features include:

Owl Carousel Initialization:

Configures and initializes the Owl Carousel for displaying images.

Form Visibility Toggling:

Functions to show/hide different forms based on user interactions.

Full Calendar Integration:

Initializes Full Calendar to display a calendar for checking leave schedules.

Form Submission Handling:

Functions to handle form submissions such as rating food, checking room availability, etc.

Local Storage Usage: Handles storing and retrieving data from local storage for cleaning requests.

6.5.4.1 External Dependencies:

The page relies on several external resources, including:

Full Calendar Library:

Used for displaying the calendar view.

jQuery Library:

Required for DOM manipulation and event handling.

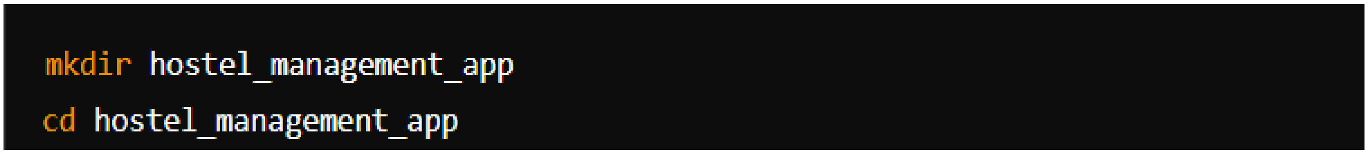
Owl Carousel Library:

Used for the image carousel feature.

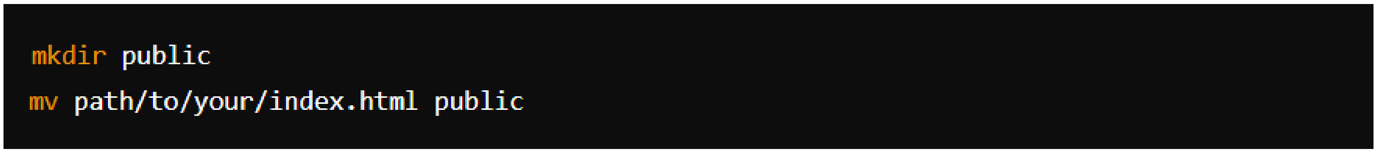
Font Awesome Icons:

Provides icons used in the user details section.

6.5.2 CREATION OF NEW DIRECTORIES

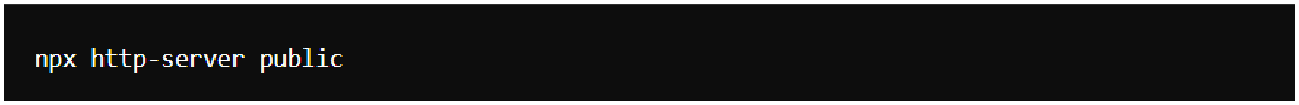


```
mkdir hostel_management_app
cd hostel_management_app
```



```
mkdir public
mv path/to/your/index.html public
```

Fig6.4 COMMAND PROMPT



```
npx http-server public
```

Fig6.5 STARTING OF HTTP SERVER

- **mkdir Hostel_management_app**

Description:

This command creates a new directory named hostel_management_app.

Explanation:

The mkdir command stands for "make directory", and it's used to create a new directory. Here, we're creating a directory to hold our Hostel Management App files.

- **cd Hostel_management_app**

Description:

This command changes the current working directory to hostel_management_app.

Explanation:

The cd command stands for "change directory", and it's used to navigate between directories in the terminal. Here, we're moving into the directory we just created to work on our Hostel Management App.

- **npm init -y**

Description:

This command initializes a new Node.js project with default settings.

Explanation:

npm is the package manager for Node.js, and the init command initializes a new Node.js project. The -y flag is used to accept all default settings without prompting for input. This command creates a package.json file which stores metadata about the project.

- **4. npm install http-server --save-dev**

Description:

This command installs the http-server package as a development dependency for the project.

Explanation:

npm install is used to install packages from the npm registry. Here, we're installing http-server, which is a simple, zero-configuration command-line HTTP server for serving static files. The --save-dev flag tells npm to add http-server as a development dependency in the package.json file

6.6 HTTP

HTTP (Hypertext Transfer Protocol) is the foundation of data communication on the World Wide Web. It is a protocol that governs how data is transmitted between a client (such as a web browser) and a server.

Purpose:

The primary purpose of HTTP is to facilitate communication between clients and servers, enabling the exchange of various types of data, including text, images, and multimedia content.

Structure:

HTTP operates as a request-response protocol, where clients send requests to servers and servers respond with the requested resources. Each HTTP transaction consists of a request message and a corresponding response message.

Methods:

HTTP defines several methods (also known as verbs) that indicate the desired action to be performed on a resource. Common methods include GET (retrieve data), POST (submit data), PUT (update data), DELETE (remove data), and more.

Status Codes:

HTTP status codes are included in response messages to indicate the outcome of a request. Status codes are categorized into five classes, ranging from informational responses (1xx) to successful responses (2xx), redirection (3xx), client errors (4xx), and server errors (5xx).

Versions:

HTTP has evolved over time, with multiple versions released. The two most widely used versions are HTTP/1.1 and HTTP/2. HTTP/1.1 has been in use for many years, while HTTP/2 introduced improvements in performance, including multiplexing, header compression, and server push.

Security:

HTTP can be secured using HTTPS (HTTP Secure), which encrypts data transmitted between clients and servers using SSL/TLS encryption. HTTPS helps protect sensitive information from eavesdropping and tampering by malicious actors. HTTP is a fundamental protocol that underpins the functioning of the modern web. Understanding its principles, methods, status codes, and security considerations is essential for web developers and network administrators to ensure efficient and secure communication over the internet.

CHAPTER 7

SYSTEM TESTING

The purpose of testing is to discover errors. Testing is the process of trying to discover every conceivable fault or weakness in a work product. It provides a way to check the functionality of components, Sub-assemblies, assemblies and\or a finished product It is the process of exercising software with the intent of ensuring that the Software system meets its requirements and user expectations and does notfail in an unacceptable manner. There are various types of test type addresses a specific testing requirement.

7.1 TESTING STEPS

- Unit Testing
- Integration Testing
- Functional Testing
- System Testing
- White Box Testing
- Black Box Testing
- Output Testing
- User Acceptance Testing

7.1.1 TYPES OF TESTS

7.1.1.1 UNIT TESTING

Unit testing involves the design of test cases that validate that the internal program logic is functioning properly, and that program inputs produce validoutputs. All decision branches and internal code flow should be validated. It is the testing of individual software units of the application .it is done after the completionof an individual unit before integration.

7.1.1.2 SYSTEM TESTING

System testing ensures that the entire integrated software system meets requirements. It tests a configuration to ensure known and predictable results. An example of system testing is the configuration oriented system integration test. System testing is based on process descriptions and flows, emphasizing pre-driven process links and integration points.

7.1.1.3 WHITE BOX TESTING

White Box Testing is a testing in which in which the software tester has knowledge of the inner workings, structure and language of the software, or at least its purpose. It is purpose. It is used to test areas that cannot be reached from a black box level.

7.1.1.4 BLACK BOX TESTING

Black Box Testing is testing the software without any knowledge of the inner workings, structure or language of the module being tested. Black box tests, as most other kinds of tests, must be written from a definitive source document, such as specification or requirements document, such as specification or requirements document. It is a testing in which the software under test is treated, as a black box . cannot “see” into it. The test provides inputs and responds to outputs without considering how the software works.

CHAPTER 8

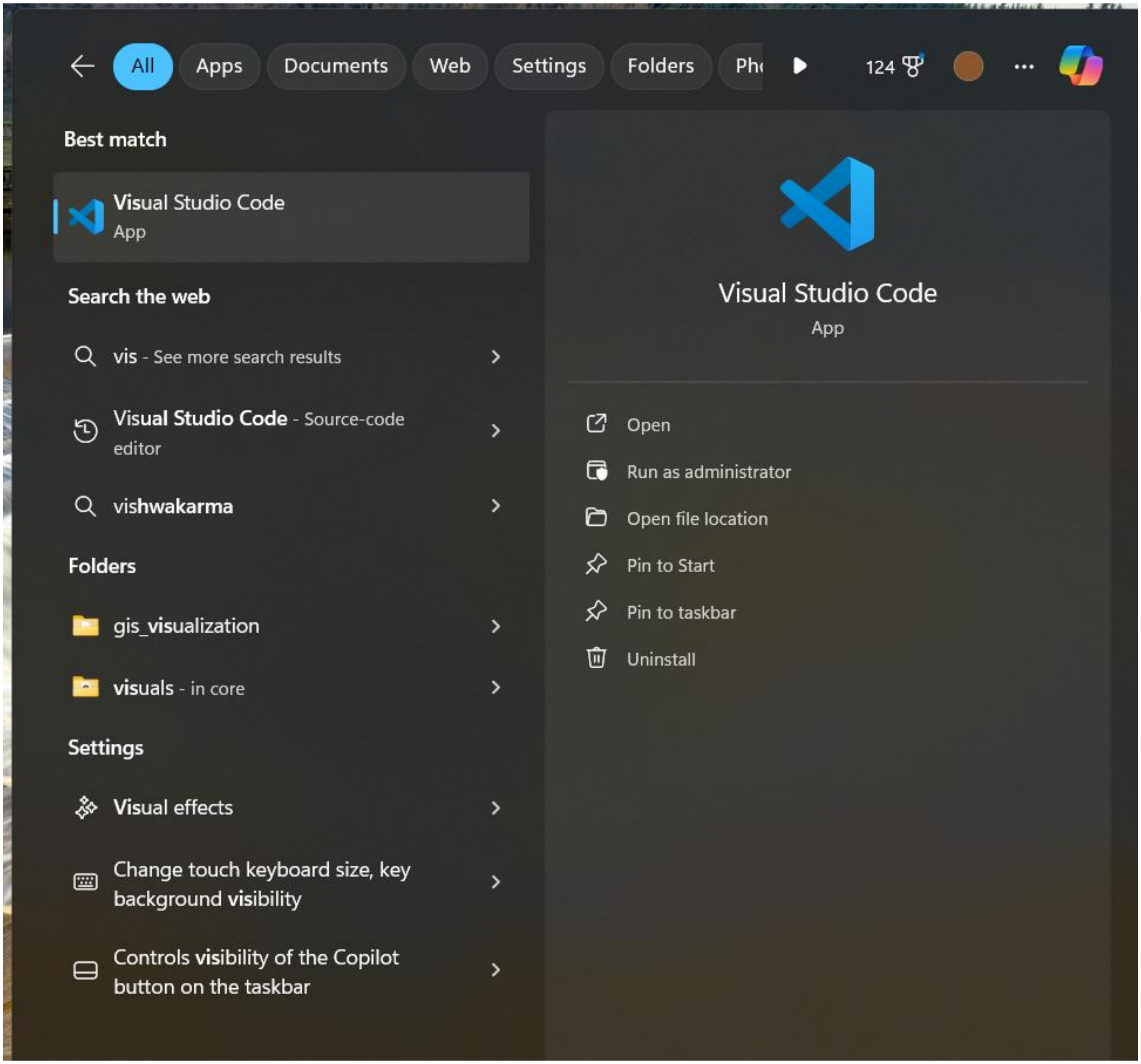
CONCLUSION AND FUTURE WORK

In conclusion, the implementation of a Hostel Management System (HMS) significantly enhances the efficiency and organization of hostel operations. By automating key processes such as room allocation, fee management, and maintenance requests, the system reduces administrative burden, minimizes errors, and improves the overall experience for residents and staff. The integration of features like real-time notifications, online payment processing, and comprehensive reporting further streamlines management tasks and facilitates prompt decision-making.

Looking forward, future work could focus on incorporating advanced technologies such as artificial intelligence and machine learning to predict maintenance needs, optimize resource allocation, and personalize resident services. Additionally, expanding mobile application functionalities and integrating Internet of Things (IoT) devices for smart room management could provide further convenience and efficiency. Continuous feedback from users will be crucial in refining the system, ensuring it evolves to meet the dynamic needs of modern hostel environments.

APPENDIX A

IDLE OPEN WINDOW



All Apps Documents Web Settings Folders Ph 124

Best match

Visual Studio Code
App

Search the web

vis - See more search results

Visual Studio Code - Source-code editor

vishwakarma

Folders

gis_visualization

visuals - in core

Settings

Visual effects

Change touch keyboard size, key background visibility

Controls visibility of the Copilot button on the taskbar

Visual Studio Code
App

Open

Run as administrator

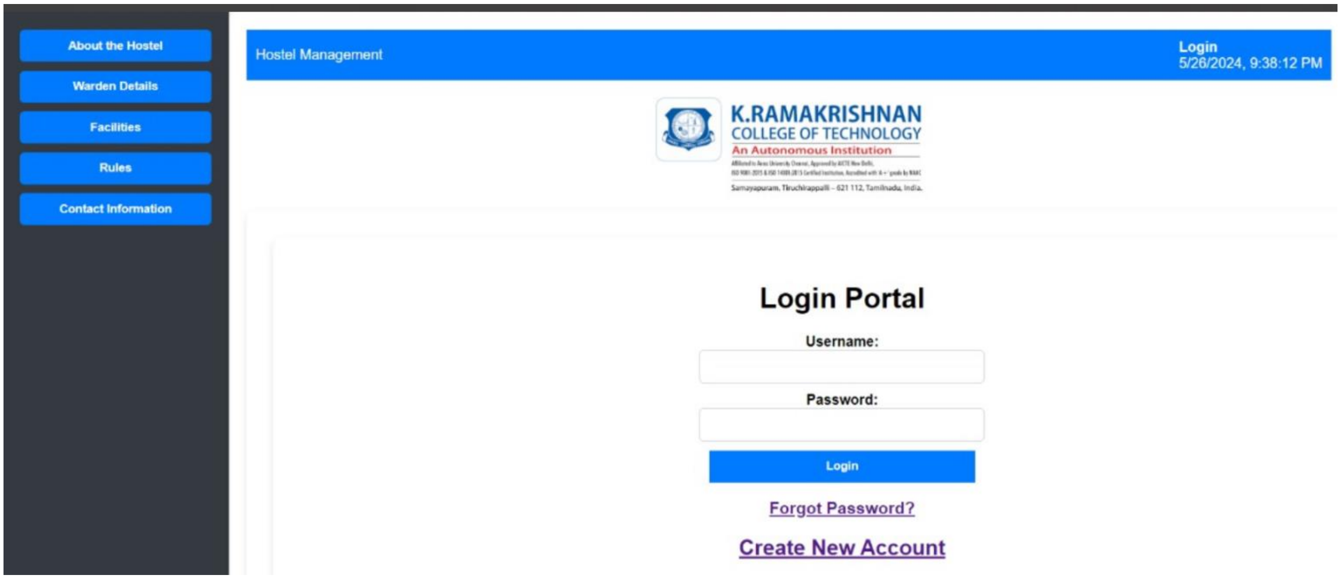
Open file location

Pin to Start

Pin to taskbar

Uninstall

LOGIN PAGE



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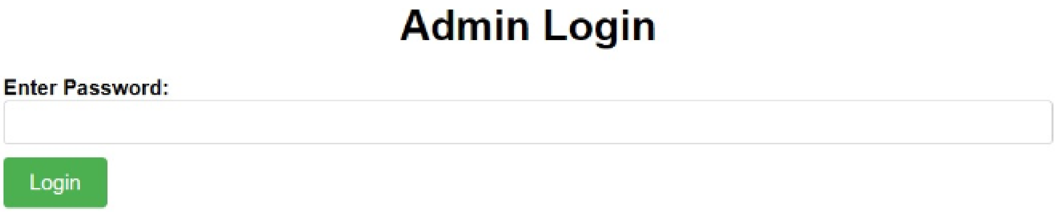
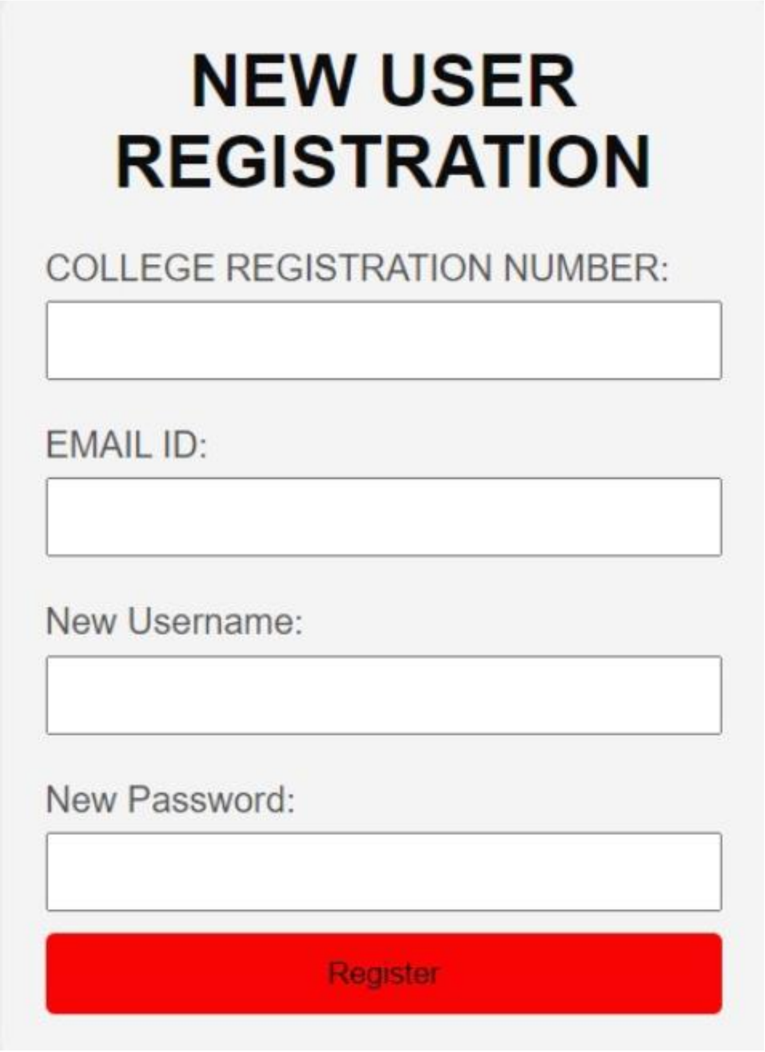
Samayapuram, Tiruchirappalli – 621 112, Tamilnadu, India.

ADMIN PAGE



REGISTRATION PROCESS



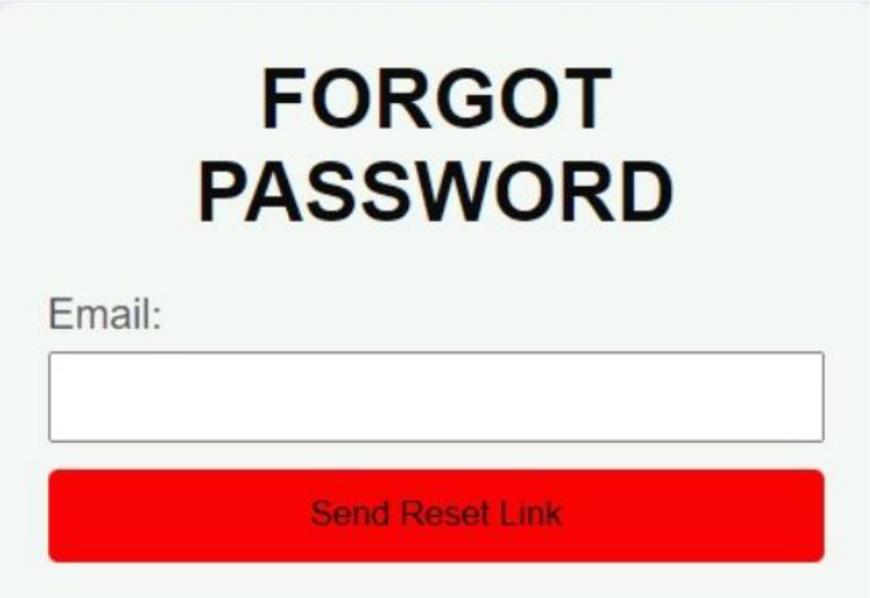
NEW USER REGISTRATION

COLLEGE REGISTRATION NUMBER:

EMAIL ID:

New Username:

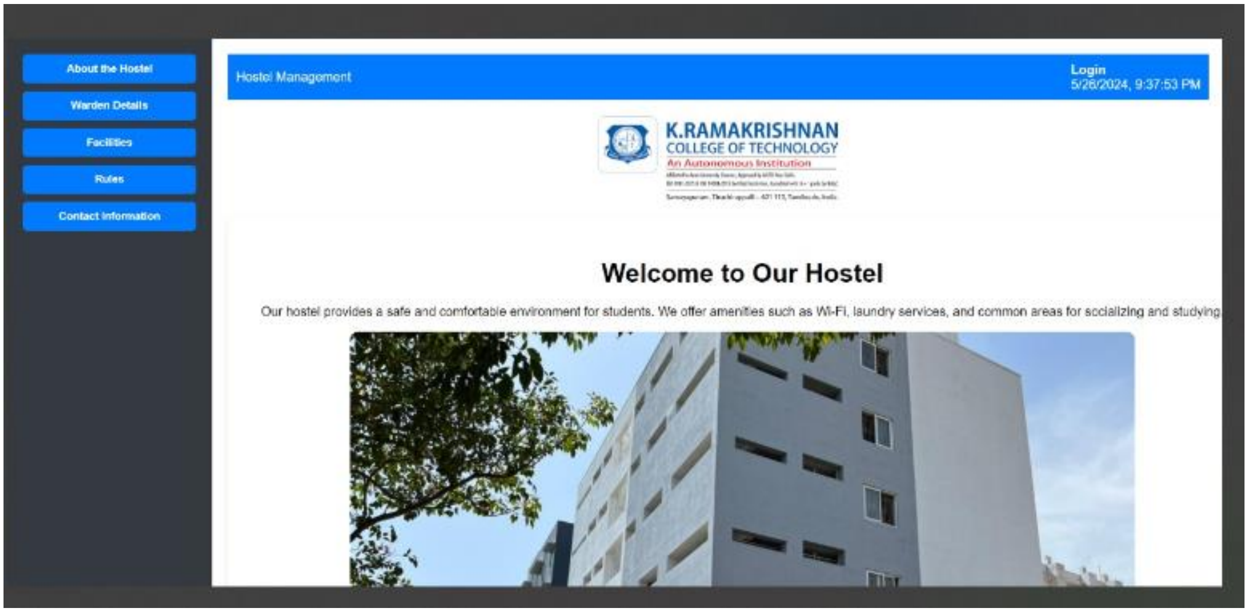
New Password:



FORGOT PASSWORD

Email:

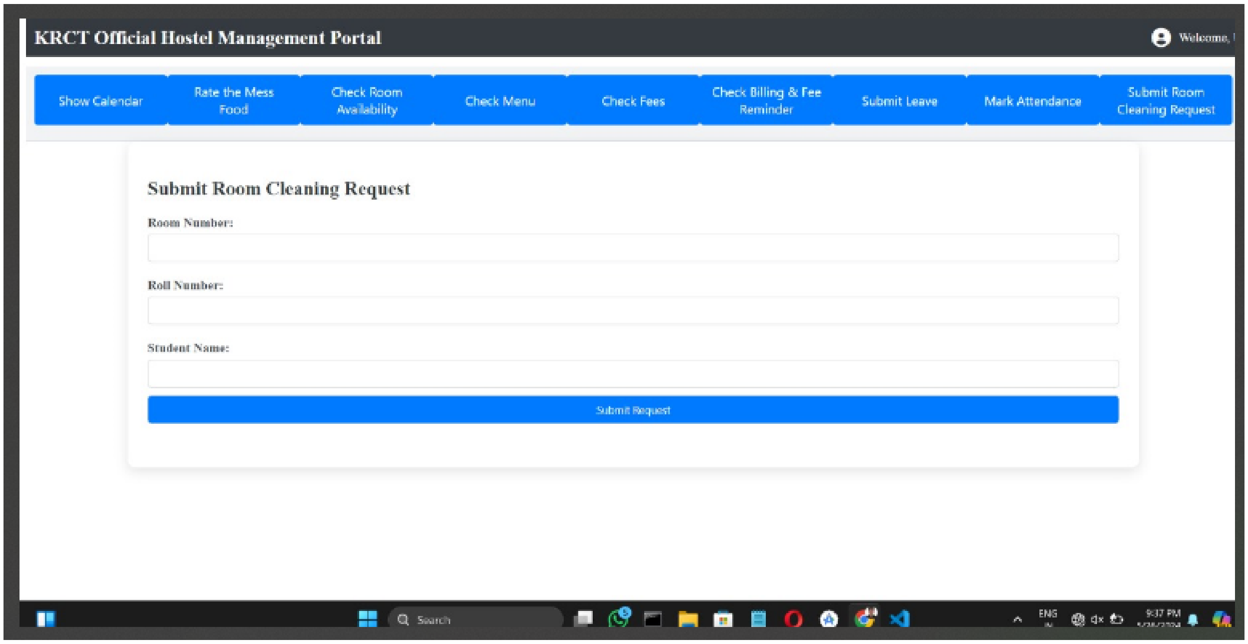
HOME PAGE



Welcome to Our Hostel

Our hostel provides a safe and comfortable environment for students. We offer amenities such as Wi-Fi, laundry services, and common areas for socializing and studying

REQUEST PAGE

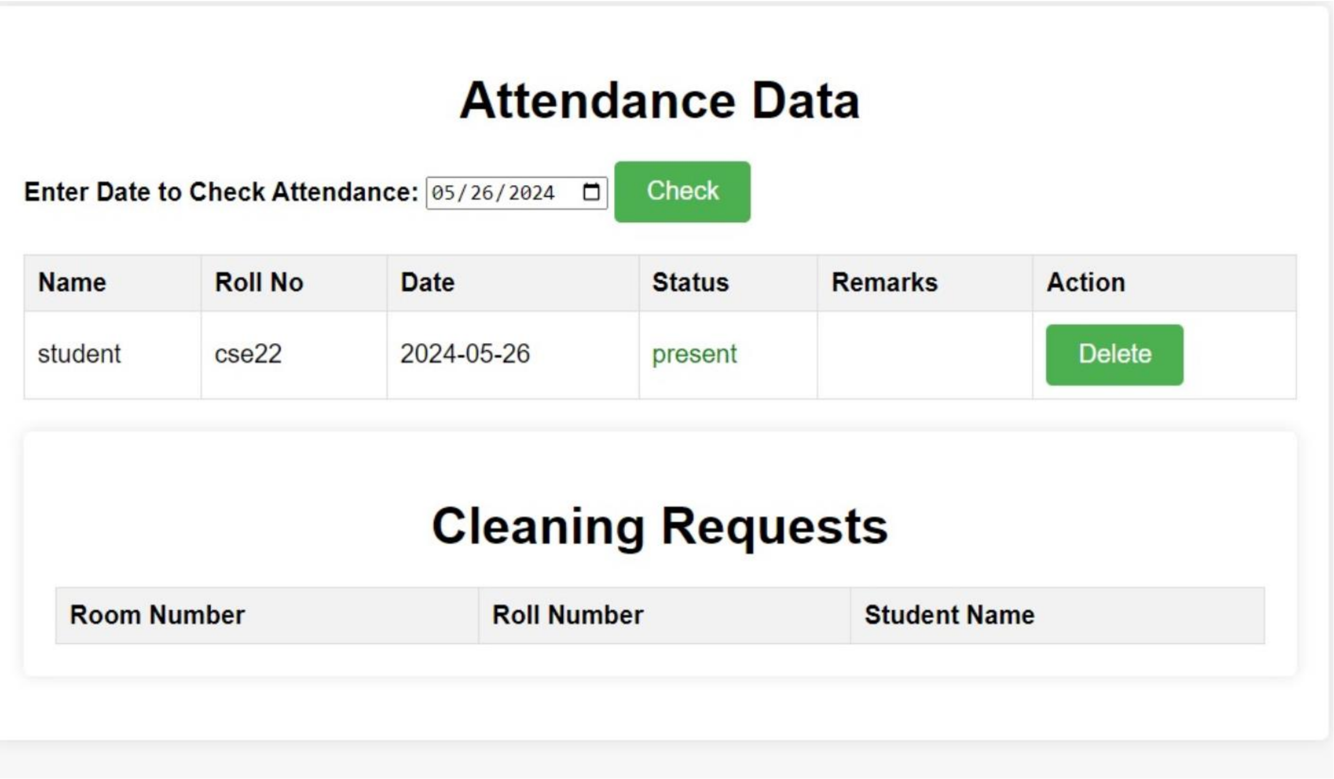


Submit Room Cleaning Request

Room Number:

Roll Number:

Student Name:



Attendance Data

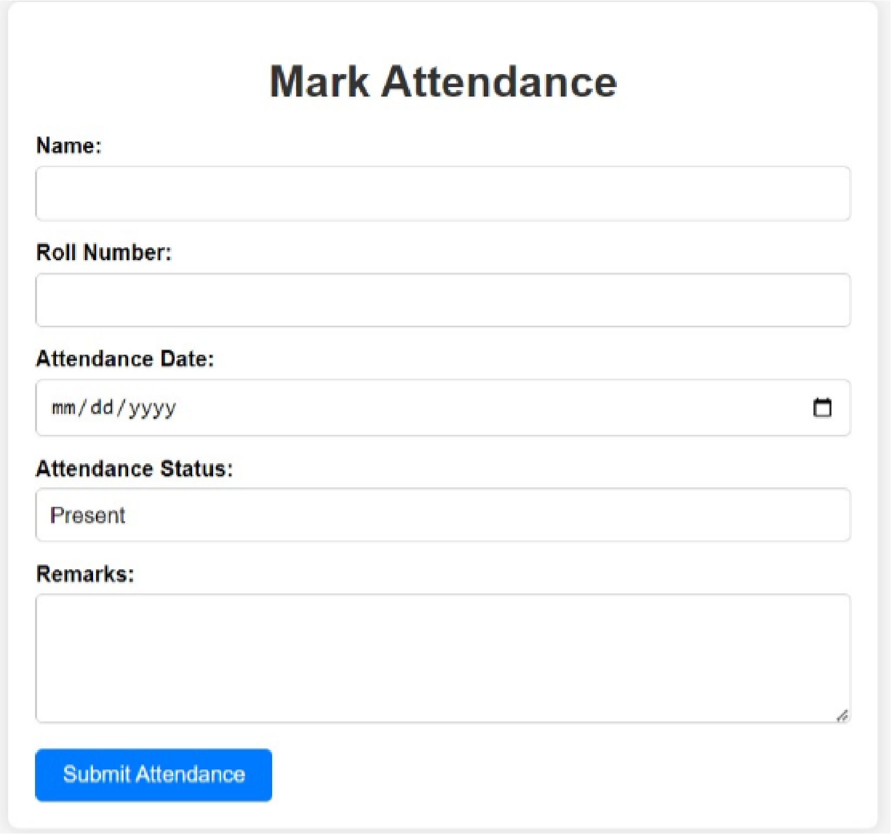
Enter Date to Check Attendance: 05/26/2024

Name	Roll No	Date	Status	Remarks	Action
student	cse22	2024-05-26	present		Delete

Cleaning Requests

Room Number	Roll Number	Student Name

ATTENDANCE PAGE



Mark Attendance

Name:

Roll Number:

Attendance Date:

mm/dd/yyyy

Attendance Status:

Present

Remarks:

APPENDIX B

SOURCE CODE:

Create_database.php:

```
<?php
$servername = "your_actual_servername";
$username = "your_actual_db_username";
$password = "your_actual_db_password";

$conn = new mysqli($servername, $username, $password);


if ($conn->connect_error) {
    die("Connection failed: " . $conn->connect_error);
}


$sql = "CREATE DATABASE IF NOT EXISTS your_actual_db_name";
if ($conn->query($sql) === TRUE) {
    echo "Database created successfully";
} else {
    echo "Error creating database: " . $conn->error;
}

$conn->close();
?>
```

Log.php:

```
<?php
if ($_SERVER["REQUEST_METHOD"] == "POST") {

    $username = $_POST["username"];
    $password = $_POST["password"];

    $validUsername = 'your_username';
    $validPassword = 'your_password';
if ($username === $validUsername && $password === $validPassword) {

        header("Location: user-page.html");
        exit();
    } else {

        echo '<script>alert("Login failed. Check your username and
password.");</script>';
    }
}
?>

<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Hostel Management App</title>

    <style>
        /* Your existing CSS styles here */
    </style>
</head>
<body>
    <div class="image-container">
        <img src="krct lo.png" alt="Centered Image" class="centered-image">

        <div class="container">
            <h1>STUDENTS HOSTEL</h1>
            <h1>LOGIN PORTAL</h1>
            <form id="loginForm" method="post" action="
<?php
echo html special chars($_SERVER["PHP_SELF"]); ?>">
                <label for="username">Username:</label>
                <input type="text" id="username" name="username" required>

                <label for="password">Password:</label>
                <input type="password" id="password" name="password" required>

                <button type="submit">Login</button>
            </form>
            <h3><a href="forgot-password.html">Forgot Password?</a></h3>
            <h2><a href="new.html">Create New Account</a></h2>
        </div>
    </div>

    <script>
        function login() {
            var username = document.getElementById('username').value;
            var password = document.getElementById('password').value;

            // Basic authentication check (replace with server-side validation)
            if (username === 'your_username' && password === 'your_password') {
                alert('Login successful!');
                window.location.href = 'user-page.html';
            } else {
                alert('Login failed. Check your username and password.');
            }
        }
    </script>
</body>
</html>
```

Logo.xml:

```
<?xml version="1.0" encoding="UTF-8"?>
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8"/>
    <meta name="viewport" content="width=device-width, initial-scale=1.0"/>
    <title>Hostel Management App</title>

    <style>
        <![CDATA[
        body {
            font-family: Arial, sans-serif;
            background-color: #f4f2f9;
            margin: 0;
            padding: 0;
            display: flex;
            justify-content: center;
            align-items: center;
            height: 100vh;}
        h1 {
            text-align: center;
            color: #0c0c0c;
            margin: 0;
        }

        h2 {
            text-align: center;
            color: #333;
        }

        .container {
            background-color: #03f63c;
            padding: 20px;
            border-radius: 8px;
            box-shadow: 0 0 10px rgba(0, 0, 0, 0.1);
            width: 300px;
        }

        .centered-image {
            max-width: 100%;
            height: auto;
            display: block;
            margin: 0 auto;
        }

        label {
            display: block;
            margin: 10px 0 5px;
            color: #555;
        }

        input {
            width: 100%;
            padding: 8px;
            margin-bottom: 10px;
            box-sizing: border-box;
        }
button {
            background-color: #f80404;
            color: rgb(5, 0, 0);
            padding: 10px;
            border: none;
            border-radius: 4px;
            cursor: pointer;
            width: 10 }
        button:hover {
            background-color: #3ff906;
        }
        ]]>
    </style>
</head>
<body>
    <div class="image-container">
        <img src="krct lo.png" alt="Centered Image" class="centered-image"/>

        <div class="container">
            <h1>STUDENTS HOSTEL</h1>
            <h1>LOGIN PORTAL</h1>
            <form id="loginForm">
                <label for="username">Username:</label>
                <input type="text" id="username" name="username" required/>

                <label for="password">Password:</label>
                <input type="password" id="password" name="password" required/>

                <button type="button" onclick="login()">Login</button>
            </form>
            <h3><a href="forgot-password.html">Forgot Password?</a></h3>

            <h2><a href="new.html">Create New Account</a></h2>
        </div>
    </div>

    <script>
        <![CDATA[
        function login() {
            var username = document.getElementById('username').value;
            var password = document.getElementById('password').value;


            if (username === 'your_username' && password === 'your_password') {
                alert('Login successful!');
                window.location.href = 'user-page.html';
            } else {
                alert('Login failed. Check your username and password.');
            }
        }
        ]]>
    </script>
</body>
</html>
```

LoginServlet.java:

```
import java.io.*;
import javax.servlet.ServletException;
import javax.servlet.http.*;
import javax.servlet.annotation.*;

@WebServlet(name = "LoginServlet", value = "/login")
public class LoginServlet extends HttpServlet {
    private static final long serialVersionUID = 1L;

    protected void doPost(HttpServletRequest request, HttpServletResponse response)
throws ServletException, IOException {
        String username = request.getParameter("username");
        String password = request.getParameter("password");

        // Hardcoded values for demonstration, replace with your database logic
        String validUsername = "your_username";
        String validPassword = "your_password";

        if (username != null && password != null && username.equals(validUsername) &&
password.equals(validPassword)) {
            response.sendRedirect("user-page.html"); // Redirect to user page
        } else {
            response.setContentType("text/html");
            PrintWriter out = response.getWriter();
            out.println("<html><body>");
            out.println("<h3>Login failed. Check your username and password.</h3>");
            out.println("</body></html>");
        }
    }
}
```

Style.css:

```
body {
    font-family: Arial, sans-serif;
    background-color: #f5f5f5;
    margin: 0;
    padding: 0;
}
```

```css
.container {
    max-width: 600px;
    margin: 50px auto;
    background-color: #fff;
    padding: 20px;
    border-radius: 8px;
    box-shadow: 0 0 10px rgba(0, 0, 0, 0.1);
}

h1 {
    color: #333;
    text-align: center;
    margin-bottom: 20px;
}

.form-group {
    margin-bottom: 15px;
}

label {
    display: block;
    margin-bottom: 5px;
    font-weight: bold;
}

input[type="text"],
input[type="date"],
select,
textarea {
    width: 100%;
    padding: 10px;
    border: 1px solid #ccc;
    border-radius: 5px;
    box-sizing: border-box;
    font-size: 16px;
}


select {
    appearance: none;
    -webkit-appearance: none;
    -moz-appearance: none;
    background: url('arrow.png') no-repeat right #fff;
    background-position-x: calc(100% - 10px);
}
```

```css
textarea {
    resize: vertical;
}

button[type="submit"] {
    background-color: #007bff;
    color: #fff;
    border: none;
    padding: 10px 20px;
    border-radius: 5px;
    cursor: pointer;
    font-size: 16px;
}

button[type="submit"]:hover {
    background-color: #0056b3;
}

button[type="submit"]:focus {
    outline: none;
}
```

REFERENCE

[1] The Cornell School of Hotel Administration on Hospitality: Cutting Edge Thinking and Practice" by Michael C. Sturman, Jack B. Corgel, and Rohit Verma, published in 2011. This book provides insights from experts at Cornell University, covering modern hospitality practices and strategies.

[2] Check-In Check-Out: Managing Hotel Operations" by Gary K. Vallen and Jerome J. Vallen, published in 2012. It focuses on the intricacies of hotel operations, providing practical management techniques.

[3] Without Reservations: How a Family Root Beer Stand Grew into a Global Hotel Company by J.W. “Bill” Marriott Jr., published in 2012. This book narrates the growth of Marriott International and offers leadership insights from Bill Marriott's experiences.

[4] Hospitality Strategic Management: Concepts and Cases by Cathy A. Enz, published in 2010. Enz explores strategic planning in hospitality, enriched with real-world cases and scenarios.

[5] Professional Management of Housekeeping Operations by Thomas J. A. Jones (2007) - Focused on the critical role of housekeeping in hospitality, this book covers advanced management techniques to enhance efficiency and customer satisfaction in hotel housekeeping operations.

[6] Hotel Operations Management" by David K. Hayes, Jack D. Ninemeier, and Allisha Miller (2009) - This book is a comprehensive guide on managing various hotel departments, focusing on maintaining smooth operations and improving efficiency. It's widely used in hospitality education and by industry professionals for its practical insights and management tools.

[7] Principles of Hotel Front Office Operations by Sue Baker, Pam Bradley, and Jeremy Huyton (1994) - This work focuses on the principles and practices essential for efficient front office management, highlighting the crucial role of the front office in shaping guest experiences.

[8] Revenue Management for the Hospitality Industry by David K. Hayes and Allisha A. Miller (2000) - The book explores strategies to maximize profitability through effective revenue management, balancing pricing strategies with guest satisfaction.

[9] Cases in Hospitality Management: A Critical Incident Approach by Timothy R. Hinkin (1998) - This book uses real-world case studies to provide insights into the management challenges and decision-making processes in the hospitality industry.

[10] Managing Hospitality Human Resources" by Robert H. Woods, Jack D. Ninemeier, and David K. Hayes (1996). This book provides comprehensive coverage on managing human resources in the hospitality industry, with practical insights and strategies tailored for hostel and hotel management.