PST 32229- Project in Computer Science and Technology (Mini Project)

Hostel Management System for Sabaragamuwa University of Sri Lanka

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DECLARATION

Declaration I declare that this is my own research proposal, and this proposal does not incorporate without acknowledgement any material previously published submitted for a Degree or Diploma in any other university or institute of higher learning, and to the best of my knowledge and belief, it does not contain any material previously published or written by another person except where the acknowledgement is made in the text.

Signature of the Student : 

Date: 04.09.2024

I have read the proposal and it is in accordance with the approved university proposal outline. I am willing to supervise the research work of the above candidate on the proposed area.

Signature of the Supervisor : 

Date: 05.09.2024

1. Title of the Research/Project

Hostel Management System for Sabaragamuwa University of Sri Lanka

2. Background of the Study

2.1 Introduction

This project aims to develop Hostel Management System for Sabaragamuwa University to modernize and streamline hostel administration. The system will replace outdated paper-based processes with a web based platform, enhancing functionality and user experience.

Students will access real-time notices, submit and track complaints, and view warden contact details through an intuitive online user-friendly interface. Wardens will benefit from tools for managing student records, tracking and resolving complaints, and efficiently distributing notices, all supported by analytical features for data-driven decisions.

By implementing the Hostel Management System, the project seeks to improve administrative efficiency, enhance student satisfaction, and modernize university hostel management related tasks.

2.2 Problem Statement

Currently, hostel operations at Sabaragamuwa university are managed entirely through a manual, paper-based system. Student details, such as room assignments and personal details, are recorded on physical paper forms and stored in individual files. Each hostel maintains its own complaint book, where students write down any issues they encounter. Notices and updates are posted on physical boards within the hostels, with information being manually added and updated by staff. This setup relies entirely on physical documentation and communication methods.

Hostel operations, including student registrations, complaints, and notices, are managed manually, leading to inefficiencies and increased chances of errors.

The absence of a centralized system causes inconvenience for both students and wardens, resulting in delays and difficulties in accessing and managing essential information.

Real-time updates and streamlined processes are crucial for effective hostel management. The current manual approach hinders timely communication and decision-making, negatively impacting the overall quality of hostel services and student satisfaction.

2.3. Review of Key Literature

Existing Systems

The system focuses on reducing the paperwork and also the efforts made by the hostel manager for managing the hostel resident details. [1]

System allows to check room availability, student registration and handle payments and billing details. [2]

System focuses on hostel registration and booking. [3]

System designed for student registration and manage noticeboard. [4]

Identify Gap

Existing systems primarily streamline paperwork, manage room availability, and handle student registration and payments. However, they often lack integrated complaint management and real-time communication features, which can hinder efficient issue resolution and responsive interaction between students and hostel managers.

Proposed System Approach

Proposed Hostel Management System will address these gaps by providing a real-time platform for centralizing students and wardens details, submit, track, and receive updates on complaints, enhancing overall communication.

2.4 Technologies

- JavaScript
- React Js
- Node Js
- Express Js
- MongoDB
- VSCode

JavaScript is used for both frontend and backend development, enabling dynamic interactions. React JS is used for building the user interface, while Node Js powers the server-side logic. Express Js facilitates the creation of the backend API, and MongoDB serves as the database for storing data. VSCode is the development environment where all coding and debugging take place.

3. Objectives of the Research

Main Objective - Develop a comprehensive Hostel Management System that streamlines and centralizes hostel operations by providing a user-friendly platform for students and wardens to manage and access hostel-related information efficiently.

Sub Objectives

1. Streamline and speed up hostel management processes, reducing manual effort and time delays.

2. Efficiently handle and update details for both residents and staff, ensuring accurate and accessible information.

3. Provide an efficient communication platform to facilitate clear information dissemination and interaction between students, wardens, and administrators.

4. Allow students to easily submit and track their complaints through the system, minimizing the need for manual follow-ups.

4. Methodology

Waterfall methodology is used to develop Hostel Management System.

- Requirements Analysis: Gather and document detailed requirements from stakeholders, including students and wardens, for the new digital hostel management system.
- System Design: Create architectural and design specifications based on the requirements, detailing the system's structure, user interfaces, and database schema.
- Implementation: Develop the system according to the design specifications, including both frontend and backend components using the selected technologies.
- Integration and Testing: Integrate all components of the system and conduct thorough testing to identify and fix any issues, ensuring the system meets all requirements and functions correctly.
- Deployment: Deploy the completed system to the university's environment, making it available for students and wardens to use.
- Maintenance: Provide ongoing support and maintenance, addressing any issues that arise and making necessary updates based on user feedback and changing requirements.

5. Expected Outcomes

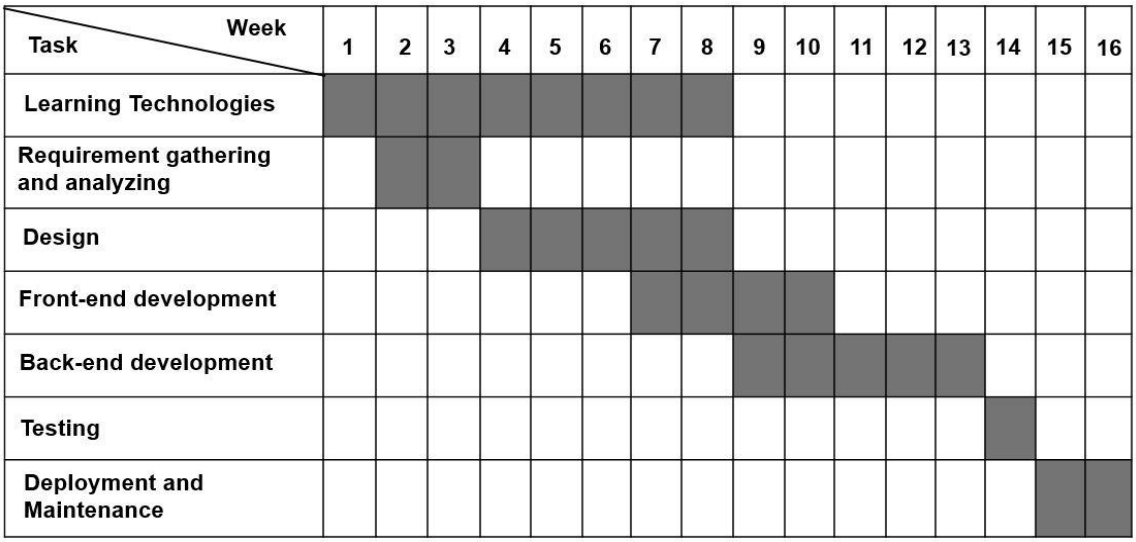
1. Simplify the student registration process and facilitate effective management of student profiles and accommodation details.

2. The system will improve communication by enabling timely distribution of notices and updates, as well as providing easy access to emergency contact information.

3. It will enhance the handling of complaints and transfer requests by providing a structured approach to submission, tracking, and resolution.

4. The system will centralize contact management for hostel representatives and personnel, improving coordination and communication within the hostel environment.

6. Work Plan



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