MAL2020

COMPUTING GROUP PROJECT

Proposal Room
Booking System TSC

by,

Team 1
MAL2020 CGP (September 2024)

Contents

1. Executive Summary

The Room Booking System for TSC is a proposed solution to streamline and digitize the room reservation process at the IT Department of Peninsula College Georgetown. Currently, the manual booking process leads to inefficiencies, scheduling conflicts, and a lack of real-time information. Our solution is a secure, user-friendly system that will simplify booking for staff while providing administrators with tools for efficient management. The project is expected to be completed between December 2024 and April 2025.

2. Introduction

Managing room bookings is essential for maintaining smooth operations in any academic environment. Nowadays, the college booking process has been recorded manually, which has caused various issues. Users often face difficulties when checking room availability, scheduling conflicts are common, and administrators struggle to track and manage reservations.

To address these issues, we propose collaborating with the ICT Team to develop a dedicated room booking system tailored to our college's needs. This system will allow users to check room availability in real time, schedule bookings for specific times and dates, and receive immediate confirmations. For administrators, it will provide tools such as notifications for new bookings, a user-friendly dashboard for managing reservations, and automated reports to improve oversight.

The system will run on the college's local network, ensuring maximum security and restricting access to authorized users only. By streamlining the booking process, this system will save valuable time, reduce errors, and significantly enhance the user experience.

This project is an excellent opportunity for our team to apply the skills we've gained in the MAL2020 course to a real-world challenge. We are excited to partner with the ICT Team to create a solution that will have a meaningful and lasting impact on our college community.
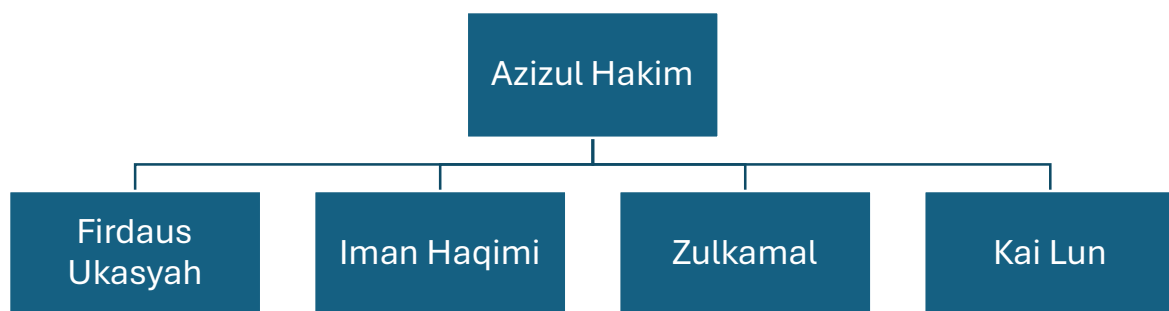
3. Problem Statement

Currently, the college's room booking process uses a manual record. This process makes it hard for users to check room availability in real time, resulting in scheduling conflicts and delays. Furthermore, administrators face challenges in tracking and managing reservations as there is no centralized system to monitor bookings and send notifications. This lack of process creates operational bottlenecks, increases workload, and affects user satisfaction.

A room booking system is essential to address these challenges by streamlining the process, improving accessibility, and ensuring proper communication between users and administrators.

4. Objectives

I. To help users check room availability and make reservations seamlessly.

II. To provide administrators with real-time notifications of bookings for efficient management.

III. To Ensure secure, local access to the system within the college network for better data security and network reliability.

5. Team Members

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Ukasyah
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6. User Requirement

6.1 General User Requirements

    I.   Real-time room availability checker.
    II.   Room booking functionality with instant confirmation.
    III.   Access to booking history for personal reference.
    IV.   Secure login using college credentials.

6.2 Administrator Requirements

    I.   Notifications for new bookings.
    II.   Centralized dashboard for booking management.
    III.   Reporting tools for tracking room utilization.
    IV.   User management features to control access and permissions.

6.3 Technical Requirements

    I.   Install in Local network.
    II.   Users can make a room booking from the system.
    III.   Provide email notification to administrators and users.
    IV.   User-friendly interface for both users and administrators.

7. System Features

7.1 User Features

    I.   Check room availability in real-time.
    II.   Book rooms with specific date and time details.
    III.   Receive notifications booking confirmations immediately.

7.2 Admin Features

    I.   Notifications for every new booking.
    II.   Manage bookings via a centralized dashboard.
    III.   Generate automated reports on room usage.

7.3 Security and Accessibility

    I.   Authentication system requiring user credentials.
    II.   Encrypt the data.
    III.   Role-Based Access Control (RBAC)

8. System Security

To ensure the security and reliability of the Room Booking System, the following measures will be implemented:

1. **User Authentication**:
   - Password hashing and secure sessions.

2. **Input Validation**:
   - Sanitize and validate all user inputs to prevent malicious data entry.

3. **Role-Based Access Control (RBAC)**:
   - Implement roles and permissions for authorized access.

4. **Encryption**:
   - Encrypt sensitive data before storage.

5. **Secure File Handling**:
   - Validate uploaded files and sanitize filenames to prevent vulnerabilities.

6. **Cross-Site Request Forgery (CSRF) Protection**:
   - Use secure tokens to safeguard forms.

9. Scope of the Project

9.1 In-Scope Activities

I.   Requirements gathering and confirmation with the ICT team.
II.   Designing and developing core functionalities, including booking and notification systems.
III. Deploying the system on the local network.
IV.   Training administrators and providing post-deployment support.

9.1 Out-of-Scope Activities

I.   Integration with external third-party systems.
II.   Development of a mobile application (web-based system only).

10. Benefits

I.   Reduces manual effort and scheduling conflicts.
II.   Provides a seamless booking experience for users.
III. Centralizes management for administrators.
IV.   Enhances overall operational efficiency.

11. Gant Chart

Task	November	December				January				Febuary				March				April	
	1	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2
Propose	█																		
Planning		█	█	█	█														
Design			█	█	█	█	█	█	█										
Develoment			█	█	█	█	█	█	█	█	█	█	█	█	█	█			
Testing																█	█	█	
Implimentation																	█	█	
Trainning																			█