COMP3019J University Website Project
Design Document

October 2024

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1 Introduction

1.1 Project Goals

The primary goal of this project is to design and implement a comprehensive university website that offers a personalized and functional experience for different types of users. The website will provide students, teachers, and other university personnel with an interface to manage their profiles, interact with others, and access university resources based on their roles. The website is expected to enhance user engagement, facilitate communication, and streamline administrative processes within the university. Additionally, the project will focus on secure data handling and innovative functionalities to differentiate the website from existing solutions.

1.2 Target Users and Use Cases

The target users of the website include students, teachers, library staff, administrative staff, and security personnel and external visitors. Each user type will have specific features available to them:

- **Students**: Students will have access to their profiles, which display timetables, dormitory information, and university course. They can register for course, interact with teachers and fellow students, and access academic resources.

- **Teachers**: Teachers will have a profile showing the modules they teach, their office hours, and office location. They will be able to create and manage courses and interact with students.

- **Library staff**: Library staff will have access to features that allow them to manage book inventories, track book loans, and assist users with book reservations. They can also update the library's resources and provide access to digital resources for users.

- **Security personnel**: Security personnel will use the website to monitor campus security issues and manage car and e-bikes in campus.

- **Administrative staff**: Administrative users will have full control over managing the system, including overseeing user registration and manage the database.

- **External visitors**: Unregistered users will have limited access to certain parts of the website, such as viewing general information about the university, available library resources, and university courses, without the ability to interact with internal functions.

1.3 Technological Stack Overview

The university website will be built using a modern and robust technological stack to ensure reliability, security, and scalability. The core technologies to be used include:

- **Frontend**: The user interface will be developed using HTML, CSS, and JavaScript to create an interactive and responsive design. Libraries like Bootstrap or Material UI may be incorporated for consistent styling across the website.

- **Backend**: The server-side logic will be implemented using Flask (Python), providing a flexible framework for managing user authentication, database interactions, and session management.

- **Database**: SQLite will be used as the primary database management system to store user profiles, event data, and other relevant information. The database will include the design of tables with appropriate relationships, such as primary and foreign keys, to manage data integrity.

- **Security**: The website will ensure secure handling of sensitive data, such as passwords, using encryption mechanisms. Proper user authentication and authorization will be implemented to protect user privacy and data access.

This technology stack has been chosen for its simplicity, flexibility, and suitability for the scale of the university website project, ensuring a smooth user experience and maintainability.

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