

ABSTRACT

The Software Laboratory Logbook System project aims to develop a comprehensive system for managing laboratory activities and records within a software laboratory environment. The system provides a platform for students to record and retrieve logs of activities. Through the implementation of various features and functionalities, the system aims to streamline the process of managing laboratory activities, enhance documentation practices, and improve overall efficiency within the software laboratory setting.

The project follows an agile methodology, allowing for iterative development and continuous improvement based on user feedback. Requirements for the system were elicited through consultation with laboratory staff, analysis of existing logbook practices, and discussions with stakeholders to ensure alignment with user needs and laboratory requirements.

Use case diagrams were utilized for requirement analysis, providing a visual representation of the system's functionalities and user interactions. The system's implementation utilizes a combination of web-based technologies, leveraging HTML, CSS, JavaScript, and Python programming language. The Django framework is adopted to provide a robust architecture for building scalable and maintainable web applications. Visual Studio code serves as the primary integrated development environment (IDE), offering a comprehensive set of tools for efficient development and debugging.

The system's data management is handled using the Sqlite3 database, enabling efficient storage and retrieval of laboratory records. To ensure the quality and reliability of the system, a comprehensive testing strategy is employed. Unit testing is conducted to validate the functionality of individual components, while integration testing focuses on evaluating the interactions between different modules. System testing is performed to validate the overall behavior and performance of the system, and usability testing is conducted to assess the system's user-friendliness and effectiveness in a laboratory environment.