UNIVERSITI TEKNOLOGI MARA

LABORATORY MANAGEMENT SYSTEM FOR SMK SUNGAI PUSU

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ABSTRACT

The SMK Sungai Pusu Laboratory Management System (LMS) is an online platform designed to make the administration and operation of the school's science labs more efficient. It provides an integrated digital solution for teachers, lab staff, and administrators to address issues like manual equipment tracking, ineffective request handling, and postponed maintenance. Maintenance scheduling, request and approval workflows, accident reporting, and equipment inventory management are important features. Based on lab schedules that are confirmed by lab staff, science teacher can submit requests for equipment. In order to reduce administrative workload and minimise conflicts, the system groups requests by date and lab location. Lab safety and functionality are improved through maintenance and accident tracking, which help guarantee prompt issue resolution. The system was developed using the System Development Life Cycle (SDLC) with an adapted Waterfall Model, following structured phases including requirement analysis, system design, development, testing, and deployment. Usability was evaluated using the System Usability Scale (SUS), which resulted in an average score of 75.6, indicating that the system is well-received and falls within the "good" usability range. The LMS facilitates effective communication, minimises mistakes, and reduces paperwork with its user-friendly interface and role-based access control. Additionally, it produces reports to help with decision-making on maintenance patterns and lab resources. Future enhancements to the system are anticipated to include offline entry capabilities, mobile responsiveness, real-time alerting features, and a centralised image gallery for accident reports. The goal of these improvements is to significantly increase the system's usability, responsiveness, and accessibility in an actual learning environment.

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