Software Engineering Design Capstone Project

DIU Lab Portal-A Web Based Lab Management System

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Project Proposal

Course Information

Course Code: SE331
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Project Overview
DIU Lab Portal is a web-based application designed to monitor and report computer issues in university lab rooms. Users can report problems related to specific PCs, such as display, keyboard, or network issues. Admins can view reported problems, update the status of PCs, and track the history of all reported issues.

Technology Stack

- Frontend: `HTML, CSS, JavaScript`

- Backend: `PHP`

- Database: `MySQL`

Key Features

Core Features

- User Login & Registration
- PC Problem Reporting Form
- Lab-wise PC Status Display
- Problem Type with Description Field
- Select and Show Specific Labs
- Update Status of Individual PCs or Entire Lab
- Store Reporter Name/ID and Timestamp

Advanced Features

- Admin
- Complete History of Reported Problems
- Avoid Duplicate Reports (Smart Update System)
- Count of Working vs. Problematic PCs
- View Problem Reports
- Visual Status Indicators (e.g., Red = Problem)

Project Description

DIU Lab Portal is a web-based system designed to streamline the process of reporting and managing computer issues in university or institutional lab environments. The system allows users (students, lab assistants, or faculty) to easily report problems related to lab PCs by selecting the lab number, PC number, problem type, and optionally adding a description.

The admin or technical staff can then view all reported issues, track the history of each PC, and update the working status of individual PCs or entire labs. The system also visually displays each PC's status using color indicators and helps maintain transparency and efficiency in lab maintenance operations.

Challenges

- Authentication System: Implementing secure login and registration with proper session handling.
- Dynamic Status Updates: Real-time PC status management across multiple labs.
- Duplicate Handling: Avoiding duplicate reports while preserving full problem history.
- Database Structure: Designing flexible schemas to support multiple labs and PCs.
- Search & Filtering: Enabling efficient lab-wise PC search and filtering.
- Timestamping Reports: Logging accurate submission times for each report automatically.

Expected Outcomes

- A centralized web-based system for managing lab PC issues.

- Easy reporting of hardware/software problems by users.

- Visual display of PC status (working/problematic) lab-wise.

- Full problem history with timestamps for each PC.

- Admin ability to update PC statuses and track lab-wide performance.

- Enhanced lab maintenance efficiency and reduced downtime.

Conclusion

The DIU Lab Portal aims to streamline the process of reporting, tracking, and resolving computer-related issues within university lab environments. By providing a user-friendly platform for students and staff to report problems and enabling administrators to efficiently manage and monitor PC statuses, this system will significantly enhance lab maintenance operations. Ultimately, the portal will contribute to a more reliable and productive learning environment by minimizing downtime and ensuring timely resolutions of technical issues.