Project Title: Academic feedback system

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Deployment and Operations

Introduction

This section details the final steps of my capstone project: deploying the system to a live environment, setting up monitoring, and planning for its long-term maintenance. As my project is built using PHP and MySQL, and due to the constraints of the project scope, I will be deploying and demonstrating the system in a controlled, live environment on a local machine that is accessible to the evaluators. This approach allows me to showcase a fully functional and operational system that meets all the core requirements of a live deployment.

Deployment Process

The deployment process is designed to be simple and repeatable.

- **Platform:** My system will be deployed on a local server using a tool like **XAMPP**. These tools provide an integrated environment with an Apache web server, PHP, and MySQL. This setup simulates a production environment locally, allowing me to demonstrate the full functionality without needing a public cloud server.
- Configuration: The deployment will involve a few key steps:
 - 1. Installing XAMPP/WAMP on the demonstration machine.
 - 2. Placing the project's PHP and HTML files in the web server's root directory.
 - 3. Setting up the MySQL database using phpMyAdmin, including creating the necessary tables and importing any initial data.
 - 4. Configuring the database connection settings in the PHP files to point to the local MySQL server.
- Evidence of Live Deployment: During the presentation, I will provide a clear URL <u>Academic Feedback System</u> and demonstrate the system's full functionality. I will also have screenshots of the system running successfully to serve as a backup in case of any issues.

Monitoring Strategy

Even in a local environment, it is important to monitor the system's performance and health. I will use a simple but effective monitoring strategy.

- **Key Performance Indicators (KPIs):** I will monitor three key indicators:
 - 1. **Response Time:** I will use browser developer tools to track the time it takes for pages to load and for data to be submitted. My goal is to keep all response times under 2 seconds.
 - 2. **Error Rates:** I will monitor the PHP error log file for any bugs or issues that might occur. This helps in quick identification and fixing of problems.
 - 3. **Database Connection:** I will periodically check the MySQL database connection to ensure it is stable and performing as expected.
- Evidence of Monitoring: I will provide screenshots of the browser's developer console showing network request times and will present examples from the PHP error log file to demonstrate that monitoring is in place.

Maintenance Plan

A proper maintenance plan is crucial for the long-term sustainability of any software system. While my project is a prototype, this plan shows how it could be managed in a real-world setting.

- **Bug Fixes and Updates:** I will maintain a clear log of any bugs found during testing and a plan for fixing them. I will also outline how new features or updates could be added to the system in the future.
- **Security Patches:** Although the system is not publicly accessible, I will mention the importance of keeping all software dependencies (PHP, MySQL, Apache) up-to-date to patch any security vulnerabilities that may arise.
- **Backup Schedule:** I will implement a plan for regular backups of the MySQL database. In a live environment, this would involve automated daily or weekly backups to prevent data loss.

Challenges

One of the main challenges of deploying on a local server is showing that the system is truly operational for others. While a public URL would be ideal, using a well-configured local server with a detailed walkthrough is the next best thing. This approach allows me to demonstrate all the required functionalities, from the database and back-end to the front-end interface, in a stable and controlled environment.