Campus Event Management System - Project Report

1. Project Overview

This application is a complete solution designed to manage events, student registrations, and participation on a university campus. It features a robust Spring Boot backend to handle all business logic and data persistence, paired with a modern, single-page web frontend for user interaction. The project was developed following a layered architecture (Controller, Service, Repository) to ensure a clear separation of concerns. This approach makes the system scalable, maintainable, and easy to debug.

Technical Stack

Backend	Spring Boot, Java, Spring Data JPA, Hibernate, MySQL
Frontend	HTML5, JavaScript (ES6+), Tailwind CSS
Tools	Maven, Postman for API Testing

2. Development Journey

Key challenges and how they were solved:

The 404 Whitelabel Error Page

Initial requests to localhost:8080/ resulted in a 404 error. The root URL had no controller. Navigating to a defined API endpoint like /api/students solved the issue.

The Mystery of the Empty Array []

GET requests to /api/students returned []. This confirmed the API endpoint was working and the database connection was active, but no data existed yet.

The Case of the Failed College Creation

Frontend reported 'Failed to create college'. Missing CollegeController caused this. Implementing the controller resolved it.

3. Conclusion & Future Scope

Key Achievements: - Successfully implemented a layered architecture for a scalable and maintainable system. - Demonstrated ability to analyze server logs and HTTP responses to resolve complex issues. - Built seamless API integration between Spring Boot backend and JS frontend. Future Enhancements: - User Authentication & Authorization - Advanced Reporting with Date Filters - Email Notifications for Event Registrations - Deployment to a Cloud Platform