**Final Year Project Proposal**

**Project title: CUI Learning Management System**

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## 1. Introduction & Problem Statement

## The current Learning Management System (LMS) at [Your University Name] provides essential academic functionalities like course registration, quizzes, assignments, and attendance tracking. However, students and faculty face several challenges due to the system’s limitations. Some of the key problems include:

## Course registration without prerequisite validation, allowing students to enroll in courses they are not eligible for, leading to academic struggles.

## Lack of a GPA projection tool, making it difficult for students to estimate their semester and cumulative GPA.

## No automated timetable management, forcing students to manually check schedules, which can lead to conflicts or missed classes.

## Glitches and security loopholes in the quiz system, allowing students to exploit timer issues, refresh loopholes, and access quiz answers improperly.

## Scattered academic tools, with teachers using Zoom, Google Meet, and Google Classroom separately, making it harder for students to track assignments, quizzes, and live sessions in one place.

## This project aims to address these challenges by creating a modernized Smart University LMS, integrating all essential academic functions into a single, unified platform.

## 2. Issues in the Current System

## Course Registration Without Prerequisite Validation

## No automated system checks if students meet eligibility criteria before enrollment.

## Students can unknowingly enroll in courses they are not prepared for, leading to poor performance.

## Lack of GPA Projection Tool

## Students cannot estimate their GPA based on expected grades.

## No insights on how retaking or dropping courses impacts their academic progress.

## No Automated Timetable Management

## Students rely on manually checking static schedules (PDFs, announcements, etc.).

## No real-time updates or conflict detection.

## No integration with digital calendars for reminders.

## Quiz System Glitches & Security Exploits

## Timer manipulation: Students bypass time limits using browser hacks.

## Page refresh loopholes: Some quizzes reset upon refreshing, allowing multiple attempts.

## Weak session handling: Quizzes can be restarted due to session mismanagement.

## Unprotected API endpoints: Quiz answers can be accessed through browser developer tools.

## Lack of a Unified Online Learning Platform

## Teachers use multiple platforms (Zoom, Google Meet, Google Classroom) for live sessions and assignments.

## Students have to switch between various tools to track assignments, exams, and announcements.

## No centralized system for notifications and lecture recordings.

## 3. Proposed Solution

## The Smart University LMS will enhance academic management with the following key features:

## Smart Course Registration with Prerequisite Validation

## Prevents students from enrolling in courses they are not eligible for.

## Displays a visual course dependency map to help students understand course progression.

## Suggests alternative courses if prerequisites are unmet.

## GPA Projection & Academic Insights

## Allows students to predict their GPA based on expected grades.

## Provides a What-if analysis tool to show how dropping or retaking courses impacts their GPA.

## Considers credit hours, grading policies, and cumulative performance for accurate predictions.

## Automated Timetable Management System

## Dynamic class schedule that updates in real time.

## Conflict detection alerts to notify students of overlapping courses.

## Real-time notifications for schedule changes, exam dates, and class reminders.

## Integration with Google Calendar & mobile apps for easy tracking.

## Secure & Glitch-Free Quiz System

## Server-side time tracking to prevent timer manipulations.

## Session handling improvements to avoid duplicate quiz attempts.

## Stronger API security to prevent unauthorized access to quiz data.

## Encrypted answer storage & anti-cheating measures to ensure fair exams.

## Unified Online Learning Platform

## Built-in Zoom & Google Meet integration: Students can join live sessions directly from the LMS.

## Assignment & quiz management in one place: Eliminates the need for Google Classroom.

## Lecture recordings stored automatically, allowing students to revisit past sessions.

## Centralized notifications for all academic updates.

**4.Comparison: Existing vs Proposed System**

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| --- | --- |
| Current issues in Existing System | Proposed solution |
| Course registration without prerequisite validation | Smart course registration with prerequisite checks and course suggestions |
| Lack of GPA Projection tool | GPA prediction and What-if analysis for academic planning |
| No automated timetable management | Real-time dynamic scheduling with conflict detection & calendar integration |
| Quiz system glitches and security exploits | Secure quiz system with server-side tracking improved session handling & encrypted answer |
| Lack of a unified learning platform | Centralized LMS with built-in live session tools, lecture storage & unified notifications |

**5. Technology Stack**

## Frontend Development:

## Bootstrap and Tailwind (for web)

## Flutter (for mobile)

## Backend Development:

## Laravel

## Database Management:

## MySQL / PostgreSQL / Firebase

## Third-Party Integrations:

## Zoom & Google Meet API for live sessions

## Google Calendar API for scheduling

## Google Classroom API for assignments & quizzes

## Authentication & Security:

## OAuth 2.0 / Firebase Authentication

## JWT for session security

## Rate-limiting & API security enhancements

## Hosting & Deployment:

## AWS / Heroku / Firebase Hosting

## 5.Conclusion

This project aims to revolutionize the university’s LMS by combining essential academic features into a single, efficient platform. By improving course registration, enhancing GPA tracking, securing the quiz system, automating timetable management, and integrating live sessions and assignments, students and faculty will enjoy a more seamless and structured learning experience

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