

Project Proposal:

Learning Management System (LMS)

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1. Introduction:

The **Learning Management System (LMS)** is a web-based platform designed to facilitate online education and training. It will allow **students** to enroll in courses, access course materials, submit assignments, and track their progress. **Instructors** can create and manage courses, upload materials, and evaluate student performance. The system will also include an **admin dashboard** for managing users, courses, and system analytics.

2. Objectives:

- Provide a platform for online learning and course management.
- Enable students to enroll in courses, access materials, and track progress.
- Allow instructors to create and manage courses, assignments, and quizzes.
- Facilitate interaction between students and instructors through discussion forums.
- Generate certificates upon course completion.
- Provide an admin dashboard for system management and analytics.

3. Features:

User Role Based Features:

1. Student:

- Register, log in, and update profile.
- Enroll in courses.
- Access course materials (videos, documents) of a course.
- Submit assignments and take quizzes of course.
- Track progress and view grades.
- Participate in discussion forums.
- Receive notifications and certificates.

2. Instructor:

- Register, log in, and update profile.
- Create, update, and delete courses.
- Upload course materials (videos, PDFs).
- Create assignments and quizzes in a course.
- Grade assignments and evaluate quizzes.
- Interact with students via discussion forums.

3. Admin:

- Manage users (students, instructors).
- Manage courses and categories.
- View system analytics (e.g., number of users, courses, enrollments).
- Generate reports.

Core Features:

- **User Authentication:** Secure login, registration, and password reset.
- **Course Management:** Create, update, and manage courses.
- **Enrollment & Progress Tracking:** Students can enroll in courses and track progress.
- **Assignments & Quizzes:** Instructors can create assignments and quizzes; students can submit them.
- **Discussion Forums:** Real-time interaction between students and instructors.
- **Notifications:** Alerts for new assignments, grades, and updates.
- **Certification:** Generate certificates upon course completion.
- **Admin Dashboard:** Manage users, courses, and system analytics.

4. Technology Stack:

- **Backend:** Java Spring Boot
- **Frontend:** HTML, CSS, Thymeleaf or React
- **Database:** MySQL or PostgreSQL
- **Authentication:** Spring Security + JWT
- **File Storage:** AWS S3 or local storage
- **Real-Time Updates:** WebSocket or Server-Sent Events (SSE)
- **Deployment:** Docker, Kubernetes, AWS/Render

5. Timeline (Approximate):

Phase	Duration	Deliverables
Project Setup	1 week	Requirement Analysis, database design, Spring Boot project setup.

User Authentication	2 week	User registration, login, profile update, password reset.
Course Management	2 weeks	Create, update, delete courses; upload course materials.
Enrollment & Progress	1 week	Student enrollment, progress tracking.
Assignments & Quizzes	2 weeks	Create assignments and quizzes; automatic grading.
Discussion Forums	1 week	Real-time discussion forums.
Notifications	1 week	Notifications for assignments, grades, and updates.
Certification	1 week	Generate certificates upon course completion.
Admin Dashboard	1 week	Manage users, courses, and system analytics.
Testing & Deployment	2 weeks	Unit testing, integration testing, deployment.

At least Total **14 Weeks (3/4 Months)** will be needed for **MVP** (Minimum Viable Product).

6. Expected Outcomes:

- A fully functional LMS(Learning Management System) platform with user authentication, course management, assignments, quizzes, discussion forums, notifications, and certification.
- A scalable and secure system that can handle multiple users and courses.
- A user-friendly admin dashboard for managing the system.