

Student-Mentor Learning Platform - System Overview

Final Website Prompt Student-Mentor Learning Platform

This is a full-featured educational platform designed for students to learn through structured resources, quizzes, and interaction, and for mentors to share knowledge efficiently. The platform has two dashboards (Student and Mentor), each with complementary features and interactions.

All routes are protected by JWT-based authentication, and all passwords are hashed using bcrypt. Users can reset their passwords securely via email OTPs or reset links.

System Overview

- Users: Students, Mentors (Admins optional)
- Security: JWT, bcrypt, role-based middleware, validation
- Database Choices: MySQL for relational/transactional data; MongoDB for flexible and document-based features

All Features with Details & Matching Database

Features are divided into student and mentor views, with their purpose, working mechanism, and best-suited database:

Learning Materials - Upload and browse PDFs - MySQL

Program Playlists - Add and view YouTube playlists - MongoDB

Doubts - Ask and answer questions - MongoDB

Quizzes - Create and attempt quizzes - MySQL

Announcements - Share and receive updates - MongoDB

Roadmaps - Follow and create learning paths - MongoDB

Bookmarks - Save content for later - MySQL

Mentor Profiles - View and edit profiles - MongoDB

Forums - Discuss topics - MongoDB

Progress Tracker - Track scores - MySQL

Leaderboard - Earn points - MySQL

Smart Suggestions - Recommend resources - MongoDB

To-Do Planner - Plan study schedule - MongoDB

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Security & Auth Flow

- Login/Register with role-based access
- JWT Authentication for secure sessions
- Bcrypt Password Hashing
- Forgot Password flow with email OTP or reset link
- Role Middleware for student/mentor separation

Database Design Summary

- Authentication, Users, Bookmarks, Quizzes MySQL
- Playlists, Roadmaps, Forums, Announcements, Profiles MongoDB

Tech Stack Summary

- Backend: Node.js + Express
- Frontend: React (or your choice)
- Databases: MySQL (Sequelize) + MongoDB (Mongoose)
- Email: NodeMailer
- File Uploads: Multer
- Security: Helmet, CORS, Rate Limiting

Suggested Route Structure

/auth/login, /auth/register Authentication

/materials/upload File upload

/quizzes/create Quiz system

/doubts/ask Q&A system

/playlists/upload Playlist system

/announcements Platform updates

/profile/edit Mentor bios

/forum/post Forum system

/roadmap/create Guided learning

/leaderboard Gamification

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/suggestions/personal AI suggestions

Final Notes

This platform is ideal for student-mentor collaboration, using MySQL for structured data and MongoDB for content-heavy features.

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