

Project Title: AI-Powered Study Assistant

Objective Create an intelligent study platform that helps students organize learning materials, generate practice questions, create summaries of study content, and schedule study sessions optimized for retention. The application will leverage AI to personalize the learning experience and maximize study efficiency.

Backend (BE) Technologies

- Node.js with Express
- MongoDB for storing user data, study materials, and learning progress
- JWT authentication for secure user sessions

Frontend (FE) Technologies

- React.js with hooks
- Tailwind CSS for responsive UI design
- Either Redux or React Query for state management

AI Component (Bonus Points)

- Question generation based on uploaded study materials
- Text summarization for condensing lecture notes and readings
- Learning pattern analysis to suggest optimal study schedules
- Concept explanation with AI-generated examples

Core Requirements

1. User Authentication
 - Signup/login functionality
 - User profile with subject preferences and goals
 - Progress tracking dashboard
2. Study Material Management
 - Upload and organize lecture notes, PDFs, and images
 - Create flashcards from uploaded content
 - Tag content by subject, topic, and difficulty
3. AI Study Tools
 - Generate practice questions from uploaded materials
 - Create concise summaries of lengthy texts
 - Explain complex concepts in simpler terms
 - Identify knowledge gaps based on practice performance
4. Study Scheduler
 - AI-optimized study sessions based on spaced repetition
 - Calendar integration with reminders

- Study analytics showing progress and retention
- 5. Collaborative Features
 - Share study materials with peers
 - Compare progress on common subjects
 - Discussion threads for difficult topics
- 6. Responsive Design
 - Clean, distraction-free interface
 - Mobile-friendly for studying on the go
 - Dark mode option for late-night sessions

Deliverables

- Working application with source code
- README with setup instructions and brief explanation of the application.

Demo Video (Mandatory)

- A screen recording demonstrating the execution of your project.
- The video should showcase the output and key functionalities.