

Smart Study Assistant for Competitive Exams

Smart Study Assistant (Smart Study Buddy) is a MERN-based AI-powered web application designed to help students prepare for competitive exams.

It integrates AI features like summarization, flashcard generation, quiz creation, and progress tracking with modern DevOps deployment practices.

Core Features

1. Upload notes (PDF, DOCX, TXT) or paste raw content.
2. Summarize content using AI (OpenAI or HuggingFace).
3. Generate flashcards from notes.
4. Auto-generate MCQ quizzes.
5. Organize content by subjects/topics.
6. Progress tracking per topic.
7. AI-based study reminders and suggestions.
8. Smart search across flashcards.
9. Dockerized backend + CI/CD with GitHub Actions.
10. Fully deployed using Railway or Render.

Inputs and Outputs

Inputs:

- PDF, DOCX, or TXT files containing study material
- Manually pasted notes
- User profile info for study suggestions

Outputs:

- Summarized content
- Flashcards (Q&A pairs)
- Multiple-choice quizzes

- Weekly study goals and progress metrics
- Study reminders and alerts

6-Week Detailed Roadmap

Week 1: Project Setup

MERN setup, user authentication, file upload (PDF/Docx/TXT), basic UI layout

Week 2: AI Summarization

Integrate OpenAI/HuggingFace summarizer API, backend route for summarization, display results

Week 3: Flashcards & Quizzes

NLP to generate flashcards and quizzes from notes, add interactive UI for practice

Week 4: Progress Tracker & Reminders

Track topics completed, visualize progress, add reminder scheduler

Week 5: Docker & CI/CD

Dockerize backend/frontend, write GitHub Actions workflows, test in local containers

Week 6: Deploy & Polish

Deploy app on Railway/Render, improve UI/UX, write docs, collect feedback