◼ AI Study Companion

Personalized Learning Agent for Local Education

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Student Project – Education Category

■ Problem Statement

Students face multiple challenges during their study routine: • Difficulty understanding topics before exams • Wasting time creating notes manually • Struggling to make effective study or revision plans • Disorganized and overwhelming online resources • Lack of study guidance in local languages

■ Proposed Solution

AI Study Companion is a Personalized AI Tutor that adapts to each student's learning style. The platform supports both English and Urdu and focuses on the Pakistani education curriculum. It even includes an Offline Mode to help students with limited internet access.

■■ Core Features

• Smart Notes Generator – Automatically summarizes uploaded lectures or PDFs • Ask-AI Tutor – Answers questions in simple English or Urdu • Study Planner – Creates smart schedules based on exam dates • Quiz Builder – Generates MCQs and Short Questions from study material • Progress Tracker – Monitors daily study activity • Motivation Alerts – Encouraging notifications to keep students motivated

■ Tech Stack / Tools

• Frontend: Next.js + TailwindCSS • Backend: Node.js / FastAPI • Database: Firebase / Supabase • AI Tools: gemini-cli, spec-kit-plus • APIs: Google Gemini API, OpenAI API

■ Comparison with NotebookLM

Aspect	NotebookLM	AI Study Companion
Language	English only	English + Urdu
Curriculum	Global / Generic	Local (Pakistan-based)
Offline Mode	■ No	■ Yes
AI Autonomy	Command-based	Agentic (Self-Deciding)
User Focus	General Users	Students & Teachers

■ Vision

This project is not a replication but an innovation platform. The goal is to build a localized learning agent that genuinely solves students' problems while helping developers learn AI orchestration, prompt design, and agent autonomy concepts.

■ Future Scope

• Teacher Dashboard – To monitor student progress • Peer Learning Chatrooms – For collaborative learning • Voice Learning Mode – AI reads and explains study content • Gamification – Learning badges and reward system • LMS Integration – To connect with schools or university systems

■ Learning Outcomes

Through this project, students will learn: • AI API integration • Agent orchestration and decision-making logic • Prompt engineering and summarization techniques • Deployment and project management skills

■ Educational & Social Impact

AI Study Companion can enhance education quality, especially in underdeveloped regions. It empowers students with personalized, accessible, and engaging self-learning tools.

■ Thank You!

Let's make learning meaningful with AI ■

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