**AI-Powered Study Assistant**

An AI-powered tool that helps students study their courses efficiently. They can upload their study materials, and they will be able to chat with it in the context of the uploaded materials. They will also be able to ask questions, it can generate quizzes for them, and many more features.

**Core Features**

**Document Upload and Parsing:**

Functionality: Allow students to upload various types of study materials (PDFs, Word documents, PowerPoint presentations, etc.). Use Optical Character Recognition (OCR) to extract text from images or scanned documents.

Example: A student uploads a textbook chapter in PDF format. The system extracts the text and prepares it for further interaction.

**Contextual Q&A:**

Functionality: Students can ask questions about the uploaded documents, and the AI provides answers based on the content.

Example: A student asks, "What are the main causes of the French Revolution?" The AI extracts relevant sections from the history textbook to provide a concise answer.

**Quiz Generation:**

Functionality: Automatically generate quizzes from the study materials, including multiple-choice questions, true/false questions, and short-answer questions.

Example: The AI generates a quiz from a biology chapter with questions like, "What is the powerhouse of the cell?" with multiple-choice answers.

**Summarization:**

Functionality: Summarize long documents or sections into concise summaries to help students quickly grasp the main points.

Example: A student uploads a research paper, and the AI provides a summary highlighting the key findings and conclusions.

**Flashcards:**

Functionality: Create flashcards from key concepts in the documents for effective memorization and review.

Example: The AI identifies important terms and definitions from a chemistry textbook and creates digital flashcards for study sessions.

**Interactive Study Guides:**

Functionality: Produce personalized study guides based on the uploaded materials and the student’s interactions (e.g., frequently asked questions or areas where the student needs improvement based on quiz results).

Example: After multiple interactions about the American Civil War, the AI creates a study guide focusing on battles, key figures, and political implications.

**Natural Language Search:**

Functionality: Allow students to perform natural language searches within their documents to quickly find relevant information.

Example: A student searches, "Explain Newton’s laws of motion," and the AI locates and highlights the relevant sections in the physics textbook.

**Citation Assistance:**

Functionality: Help students generate citations for their study materials and any additional research they perform.

Example: A student asks how to cite a particular book in APA format, and the AI provides the correct citation format.

**Voice Interaction:**

Functionality: Enable voice-based interaction with the AI for hands-free operation.

Example: While reviewing notes, a student verbally asks the AI to explain a concept, and the AI responds with a detailed explanation.

**Learning Analytics:**

Functionality: Track student interactions, performance on quizzes, and study habits to provide insights and personalized recommendations.

Example: The AI analyzes a student’s quiz results and suggests focusing on particular topics where they scored lower.