VECHO AI

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VECHO AI

A Context-Aware AI Learning Assistant for Students

Built using Google Gemini API, Vecho AI helps students learn faster, understand better, and stay productive through intelligent conversations.

Domain: Generative AI | Full-Stack Web Application

Vecho Ai
Your personal assistant

Hi there! I'm Vecho Ai, your helpful assistant designed to support students like you.

How can I help you today? Do you have a [illegible] an assignment, or something else? Just let [illegible]

Generative AI is a type of artificial intelligence that can **create new, original content** based on patterns it learned from vast amounts of existing data.

Instead of just analyzing or categorizing information, it generates brand-n[illegible]

*   **Text** (like stories, essays, code)
*   **Images** (like artwork, realistic photos)
*   **Audio** (like music, speech)
*   **Video**

It does this by predicting what comes next or what fits best, creating unique outputs

WHAT IS VECHO AI?

Vecho AI is an AI-powered educational chatbot designed specifically to assist students in learning, assignments, and academic problem-solving.

KEY HIGHLIGHTS:

01 Student-centric AI assistant

02 Context-aware conversations

03 Simple and easy explanations

04 Fast, accurate academic support

WHY EXISTING SOLUTIONS FAIL?

Why Existing Solutions Fail?
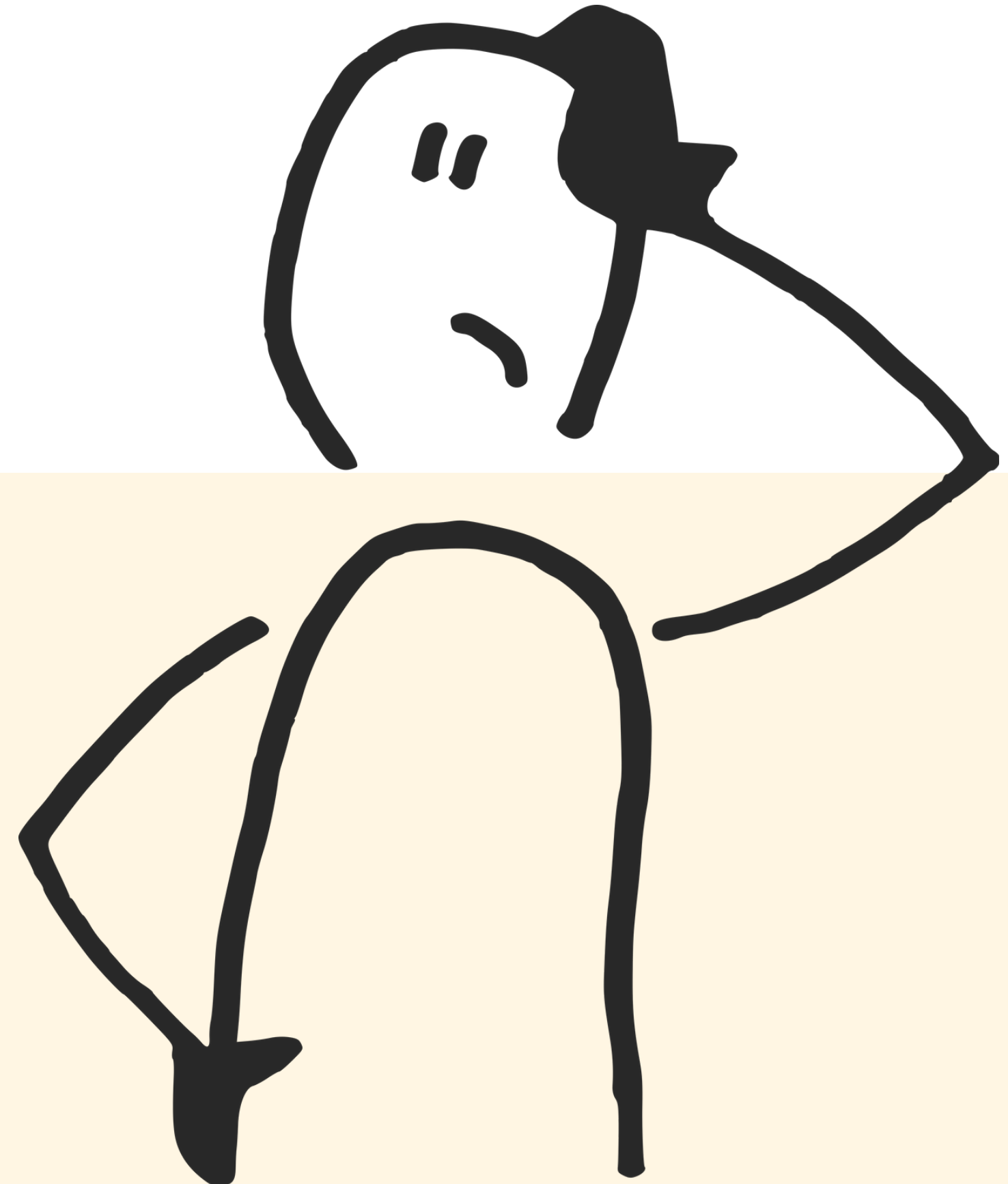Most chatbots are generic and not designed for student learning needs.

PROBLEMS FACED BY STUDENTS

01 Spending too much time searching across websites

02 Difficulty understanding complex explanations

04 Lack of personalized academic help

03 Too much information, less clarity

HOW VECHO AI SOLVES THE PROBLEM

VECHO AI USES GOOGLE GEMINI API TO PROVIDE:

01   Intelligent and context-aware answers

02   Student-friendly explanations

04   Multiple response modes for different learning needs

03   Faster learning without information overload

CORE FUNCTIONALITIES

Slide 5: Key Features
Core Functionalities
- **Smart real-time chat interface**
- **Multiple AI response modes:**
  - **Q&A Mode – direct answers**
  - **Explanation Mode – step-by-step clarity**
  - **Summary Mode – short & concise points**
- **Auto-saved chat history**
- **Modern UI with Dark & Light themes**

01 Smart real-time chat interface

02 Smart real-time chat interface

03 Multiple AI response modes:
- Q&A Mode – direct answers
- Explanation Mode – step-by-step clarity
- Summary Mode – short & concise points

04 Auto-saved chat history

TECHNOLOGY STACK

Frontend Technologies

- HTML5, CSS3
- JavaScript (ES6+)
- Tailwind CSS

Backend & AI

- Python & Flask
- Google Gemini API
- Prompt Engineering

Database

- SQLite for chat storage

SYSTEM ARCHITECTURE (MVC)
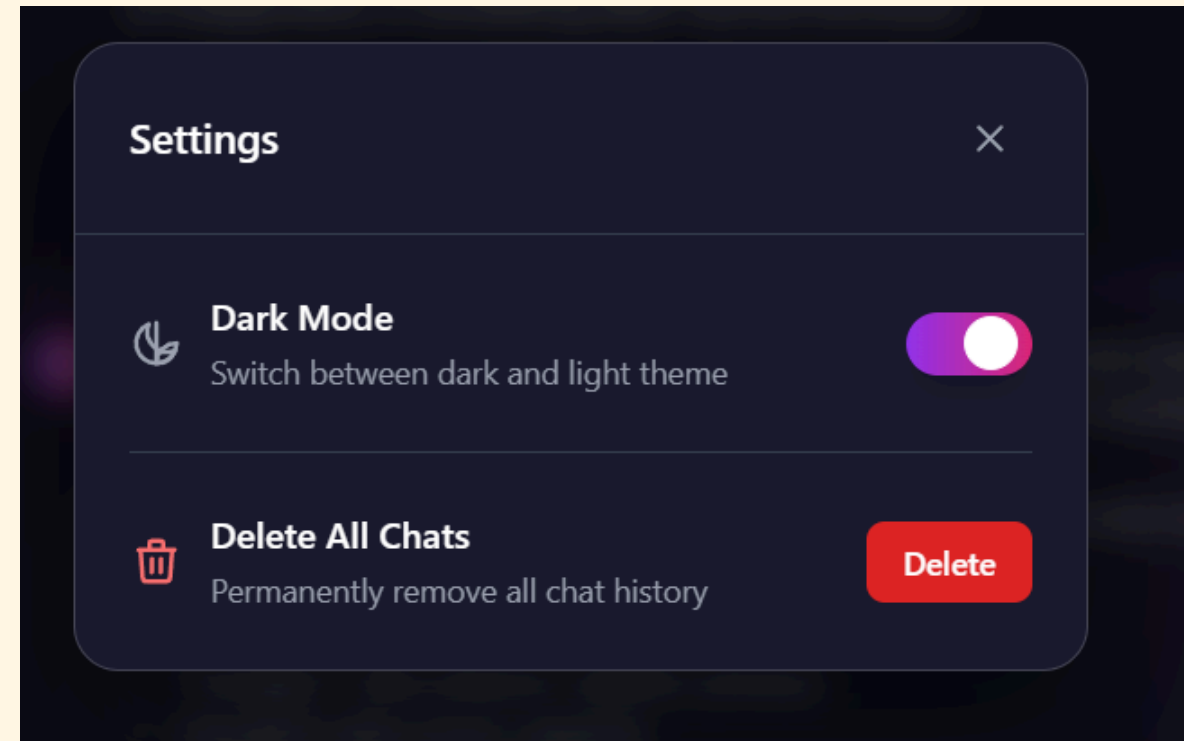
MVC Design Pattern

- **Model**
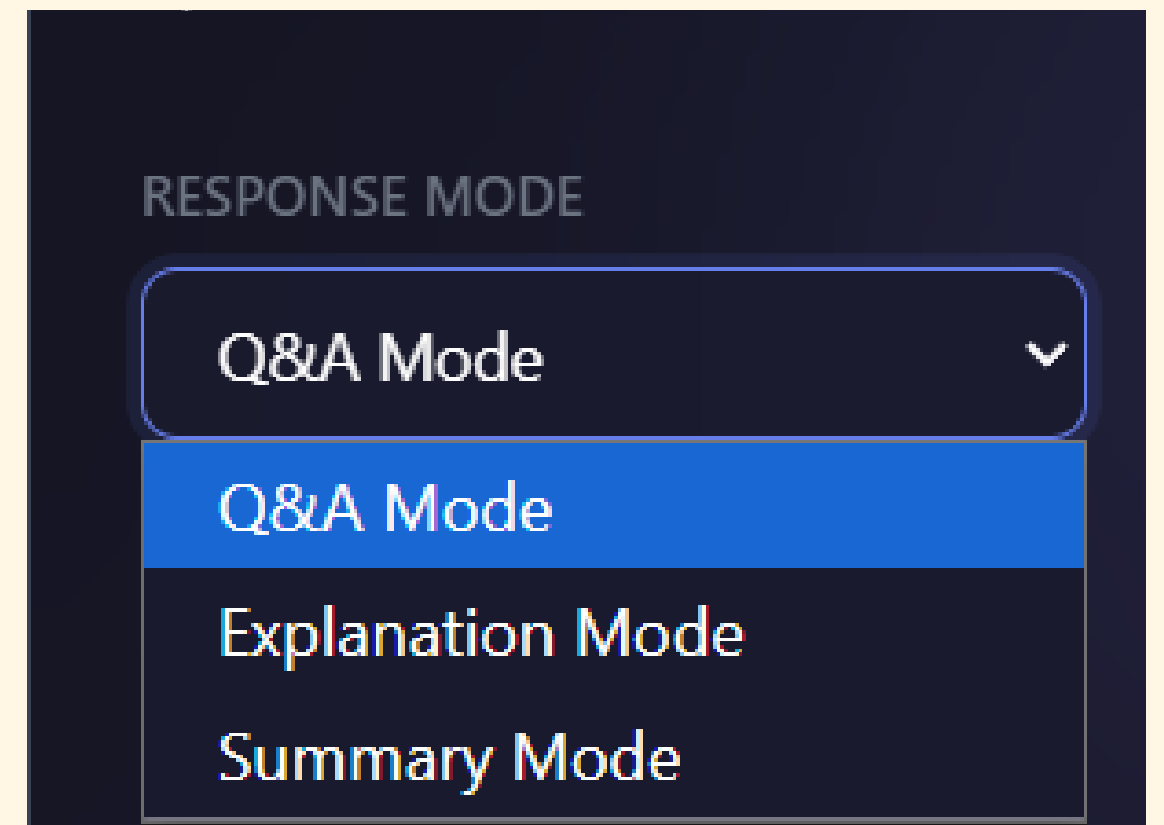 SQLite database storing users and chat history

- **View**
Web-based Chat UI using HTML, CSS, JavaScript

- **Controller**
Flask APIs handling requests and Gemini responses

settings

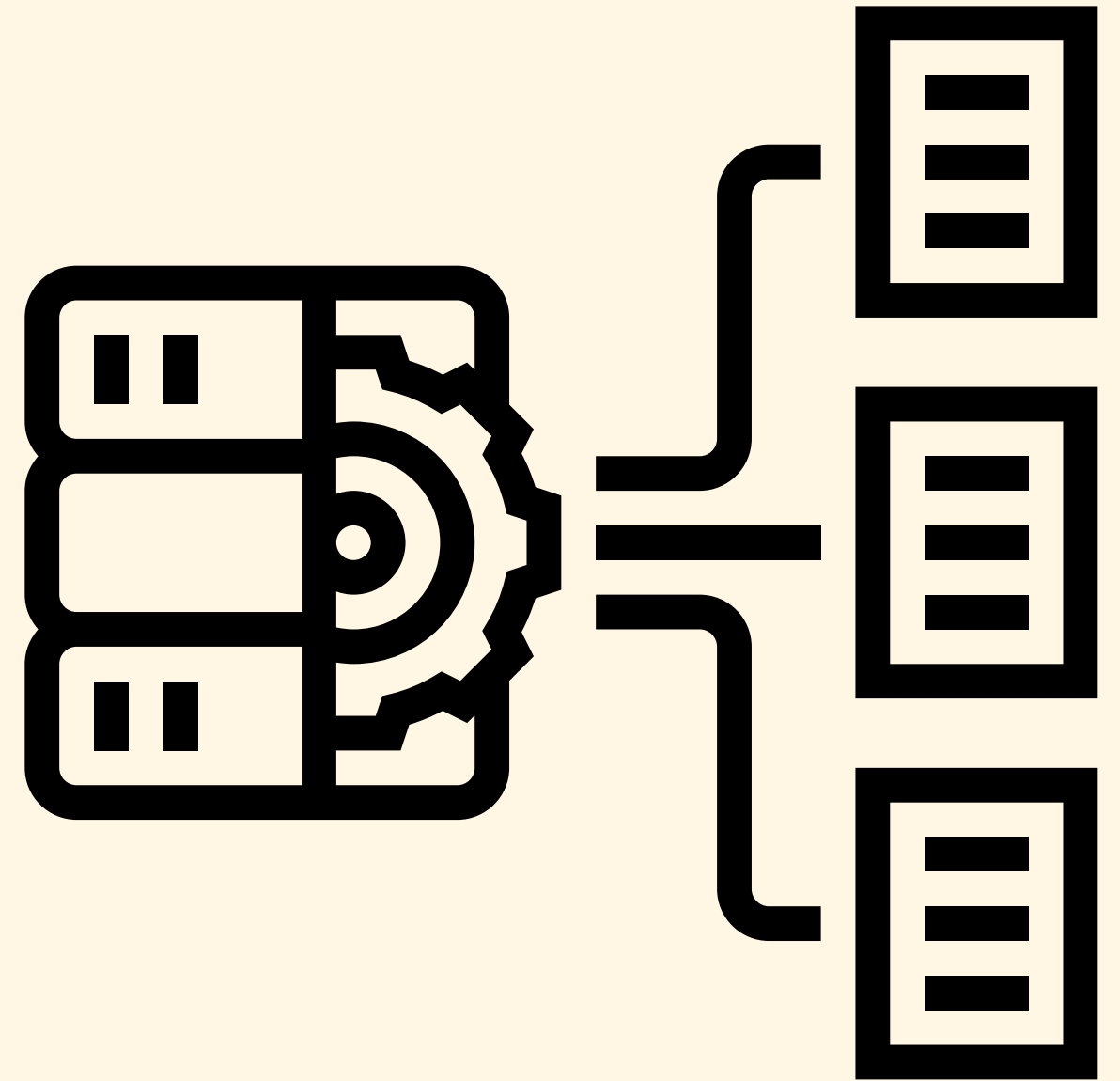Response Mode & History

DATABASE DESIGN

Database: SQLite

Purpose of Database

- Store chat history
- Maintain conversation context
- Improve response quality

Tables Used

- Users Table
- Chat History Table (messages, responses, mode, timestamp)

API ENDPOINTS

Backend APIs

- /api/chat

Handles user messages and AI responses

- /api/history

Fetches previous chat conversations

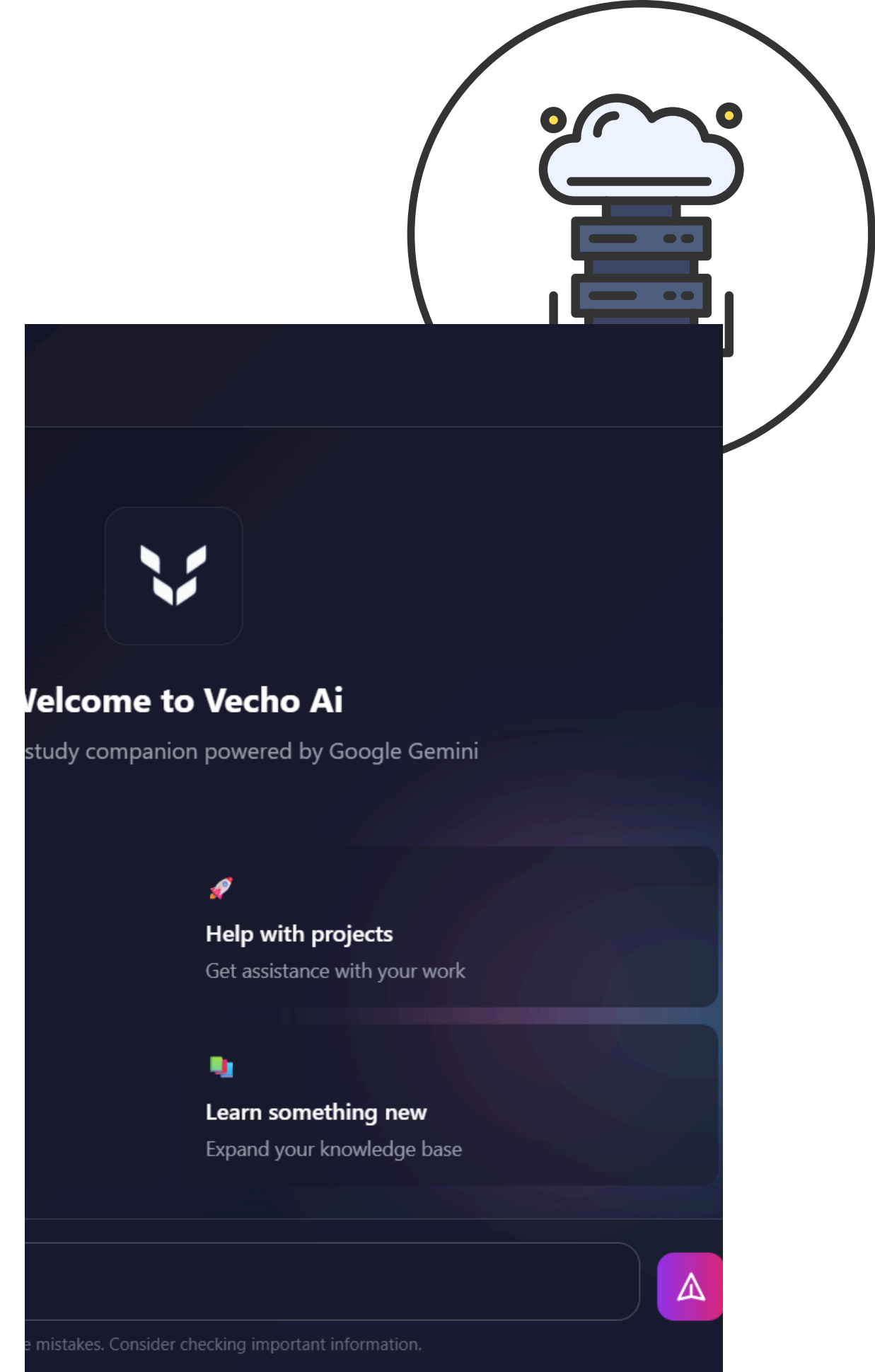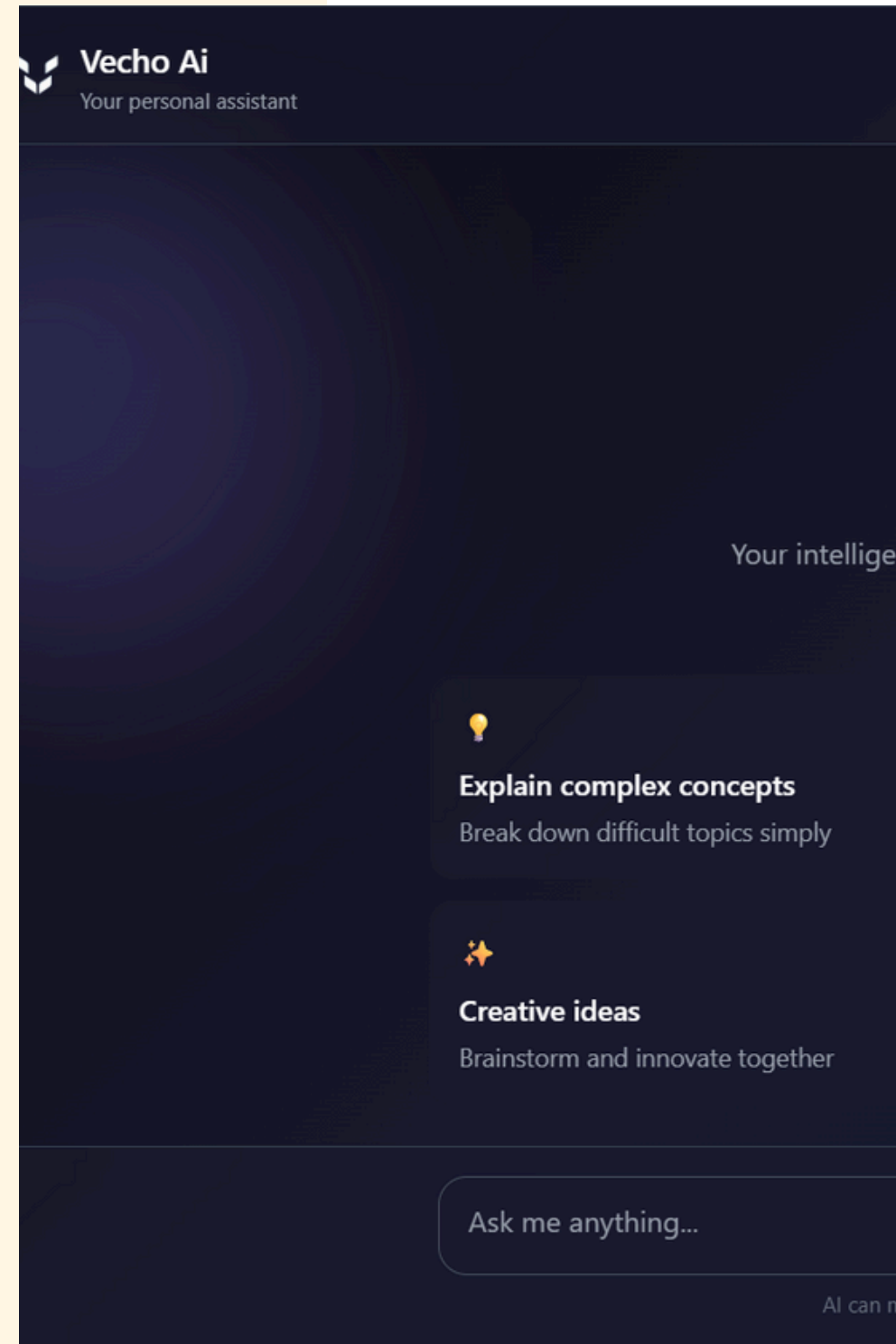- /api/new-chat

Starts a fresh conversation

DEPLOYMENT

Deployment Details

- Hosted on Render.com
- Gunicorn as production server
- Secure API keys using environment variables
- Lightweight SQLite database

FUTURE ENHANCEMENTS

- User authentication & profiles

- Voice-based interaction

- PDF / document upload

- Multi-language support

- Advanced learning analytics

CONCLUSION

Vecho AI is a student-focused AI assistant that:

- Saves time
- Improves understanding
- Delivers personalized, context-aware learning

🚀 Empowering students through Generative AI

THANK
You!