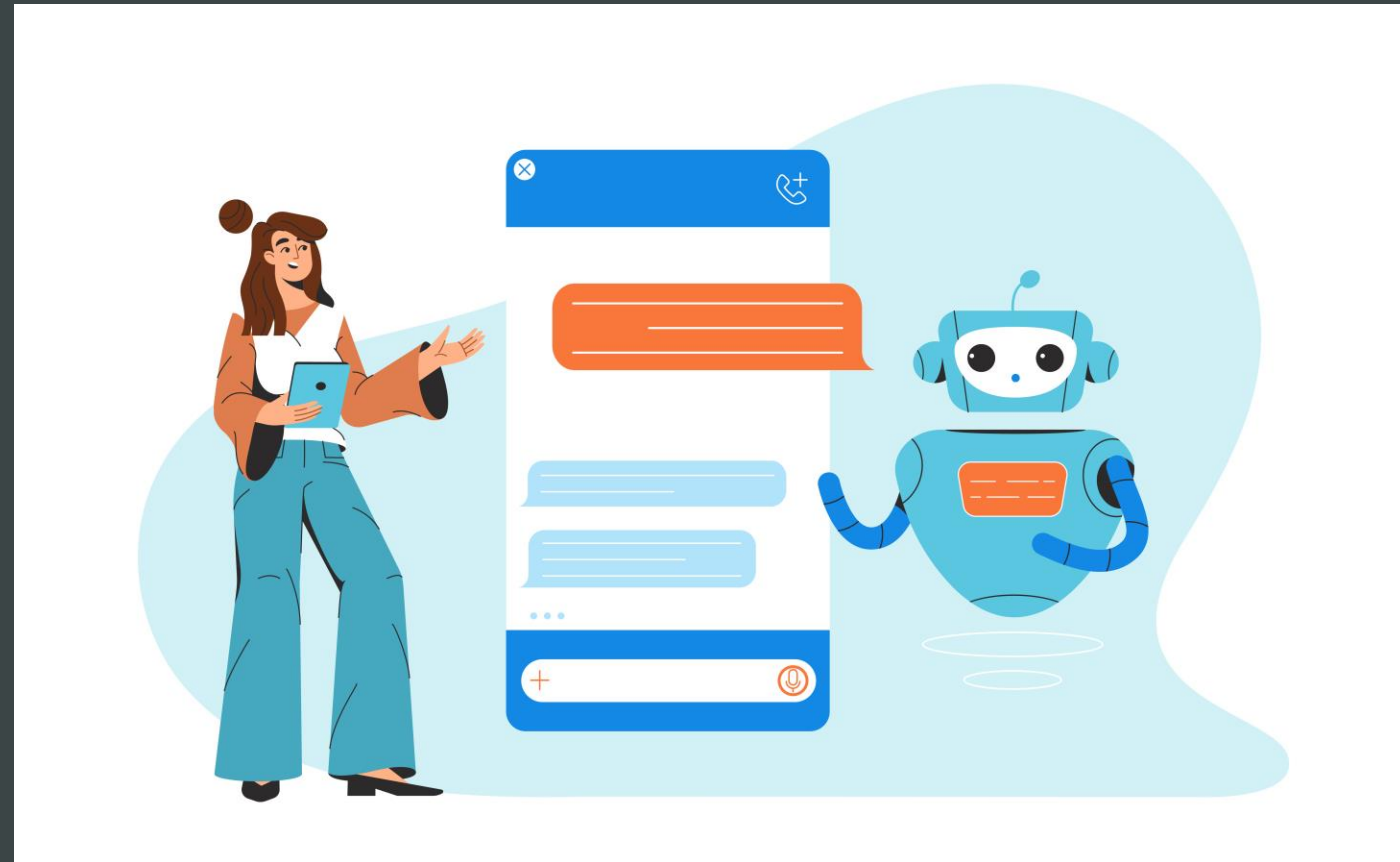


AI MENTAL HEALTH CHATBOT.

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INTRODUCTION:

- Mental health issues like anxiety and depression affect millions worldwide.
- Access to professional help is often limited.
- Our chatbot provides support using **voice & text inputs**.
- Uses **AI, ChromaDB, LangChain, and a mental health dataset**.

TECHNICAL APPROACH:

- **LangChain:** Manages chatbot conversations.
- **ChromaDB:** Stores & retrieves mental health-related embeddings.
- **Groq API & LLMs:** Generates accurate responses.
- **Speech Recognition:** Converts voice input to text.
- **Google Colab:** Used for development & testing.
- **HuggingFace Embeddings:** Converts text into vector form for retrieval.

DEVELOPMENT PROCESS:

- **Setup Environment:** Installed dependencies & prepared dataset.
- **Data Processing:** Split text into chunks, generated embeddings.
- **Vector Storage:** Stored embeddings in ChromaDB for fast search.
- **Chatbot Integration:** Combined LangChain, LLMs, and retrieval models.
- **Voice Processing:** Implemented speech-to-text pipeline.
- **Testing & Optimization:** Improved response accuracy and reduced latency.

CHALLENGES & SOLUTIONS

Challenge	Solution
Syntax errors in LangChain	Debugged & fixed API calls
Inaccurate voice recognition	Used advanced speech models
Slow response time	Optimized database queries & API calls
Handling sensitive topics	Designed empathetic response structures
Irrelevant chatbot answers	Improved prompt engineering & dataset quality

FUTURE IMPROVEMENTS:

- Expand chatbot knowledge with **more mental health topics**.
- Implement **real-time sentiment analysis** for personalized responses.
- Improve **speech synthesis** for a more natural conversation.
- Develop a **mobile app** for better accessibility.
- Add **multilingual support** to help a diverse audience.

THANK YOU!
