

PROBLEM STATEMENT

Introduction to GenAI and Simple LLM Inference on CPU and finetuning of LLM Model to create a Custom Chatbot

Idea Brief (Solution) :

- Problem:** The need for a quick and easy-to-use chatbot for basic information and queries.
- Solution:** A chatbot application built using Streamlit, Langchain, and Hugging Face Hub.

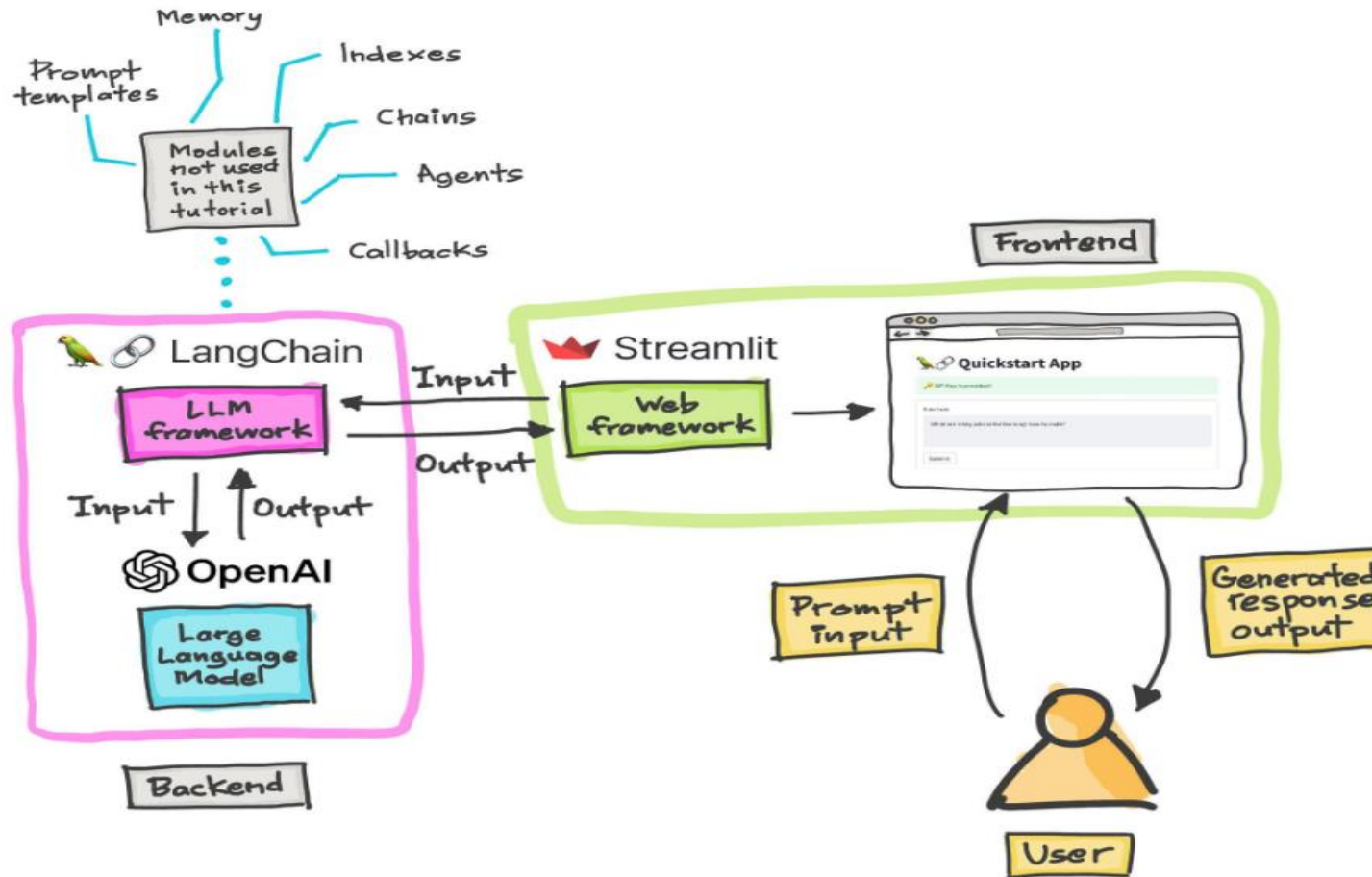
Features Offered:

- Real-time interaction:** Instantaneous responses to user queries.
- Customizable system prompts:** Users can tailor the chatbot's behavior.
- Natural language understanding:** Ability to process and understand human language.
- Leverage of pre-trained models:** Utilizes advanced language models from Hugging Face Hub.

Process Flow:

- User enters a query in the Streamlit interface.
- Query is processed by Langchain.
- Prompt is constructed using the system prompt and user query.
- Prompt is sent to the Hugging Face model.
- Model generates a response.
- Response is displayed in the Streamlit interface.

Architecture Diagram:



In the above diagram :

- 1 Streamlit: handles user interface and input/output
- 2 Langchain: manages prompt engineering and LLM interaction
- 3 Hugging face hub : provides access to pre trained language models

Technology Stack:

- Streamlit:** For building the user interface and handling user interactions.
- Langchain:** For managing the prompt engineering and LLM interaction.
- Hugging Face Hub:** For accessing pre-trained language models.
- Python:** As the primary programming language.

Demo:

Your AI Mate!

System Prompt

You are a knowledgeable and informative AI assistant capable of providing summaries of factual topics or creating stories. Respond in a comprehensive and informative manner, using clear and concise language.



How may I help you today?

Your message here

What is the capital of Australia?



You are a knowledgeable and informative AI assistant capable of providing summaries of factual topics or creating stories. Respond in a comprehensive and informative manner, using clear and concise language. What is the capital of Australia?

The capital of Australia is Canberra. It is located in the Australian Capital Territory (ACT) and was officially established as the capital on May 9, 1927. Canberra was chosen as the capital because of its central location between Sydney and Melbourne, the two largest cities in Australia. The city was designed by American architects Walter Burley Griffin and Marion Mahony Griffin, and it features a unique blend of natural beauty and modern urban design.

Conclusion:

- In conclusion, we have developed a chatbot application that leverages the power of Streamlit, Langchain, and Hugging Face Hub to provide users with quick and informative responses. By effectively combining these technologies, we have created a chatbot capable of understanding and responding to user queries in a natural and engaging manner.
- This chatbot offers a promising foundation for future development, with potential enhancements such as expanded knowledge bases, more complex conversation flows, and advanced features like sentiment analysis. We believe this chatbot has the potential to revolutionize the way users interact with information and services.