**Project-1: RAG Based Chatbot With Streamlit GUI**

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**Project-1:** **Develop a RAG based Chatbot for the given document and create a streamlit GUI**

**Chatbot:** Artificial intelligence is used to construct a computer program known as "a chatbot" that simulates human chats with users. It employs a technique known as NLP to comprehend the user's inquiries and offer pertinent information. Chatbots have various functions in customer service, information retrieval, and personal support.

**Limitations of Chatbot:** Chatbot have some limitations to be aware of:

* Lack of semantic understanding: Chatbots may require assistance comprehending the discourse, which could result in misinterpretation or incorrect responses.
* Dependency on training [data:](https://www.simplilearn.com/what-is-data-article) The calibre and volume of training data greatly impact the chatbot performance. There may be a need for more accurate or biased training data, which can result in incorrect responses.
* Handling complicated queries: Chatbots could encounter questions beyond simple pattern matching and call for greater comprehension or deductive reasoning.

**Setting-up environment:**

1. Go to Anaconda and create the environment.

2. Open the terminal

3. Type the command to install streamlit - ***pip install streamlit***

4. Test is the installation worked - ***streamlit hello***

5. Below page opens up:

A screenshot of a computer

Description automatically generated

Similarly, we have to install langchain and langchain\_community as well.

***pip install langchain\_community***

***pip install langchain***

***Alternatively,*** if we want the installations to do in one shot, we can prepare a text file: requirements.txt with the below contents:

Streamlt

Langchain

Langchain\_community

Run the below command for the installation:

***pip install -r requirements.txt***

Before we run the chatbot code, we have to make sure that we have downloaded the llama model on your local machine and its running.

Open the terminal and run the following command

***ollama run llama2***

**Running the streamlt code:**

***streamlit run file\_name.py***

**Code Link:** <https://github.com/rajeshksharmasls/GenAI/tree/master/GenAI/Chatbot%20RAG%20Streamlit>

Requirements.txt

streamlit

PyPDF2

langchain

langchain-huggingface

huggingface\_hub

langchain-huggingface

langchain\_community

langchain\_core

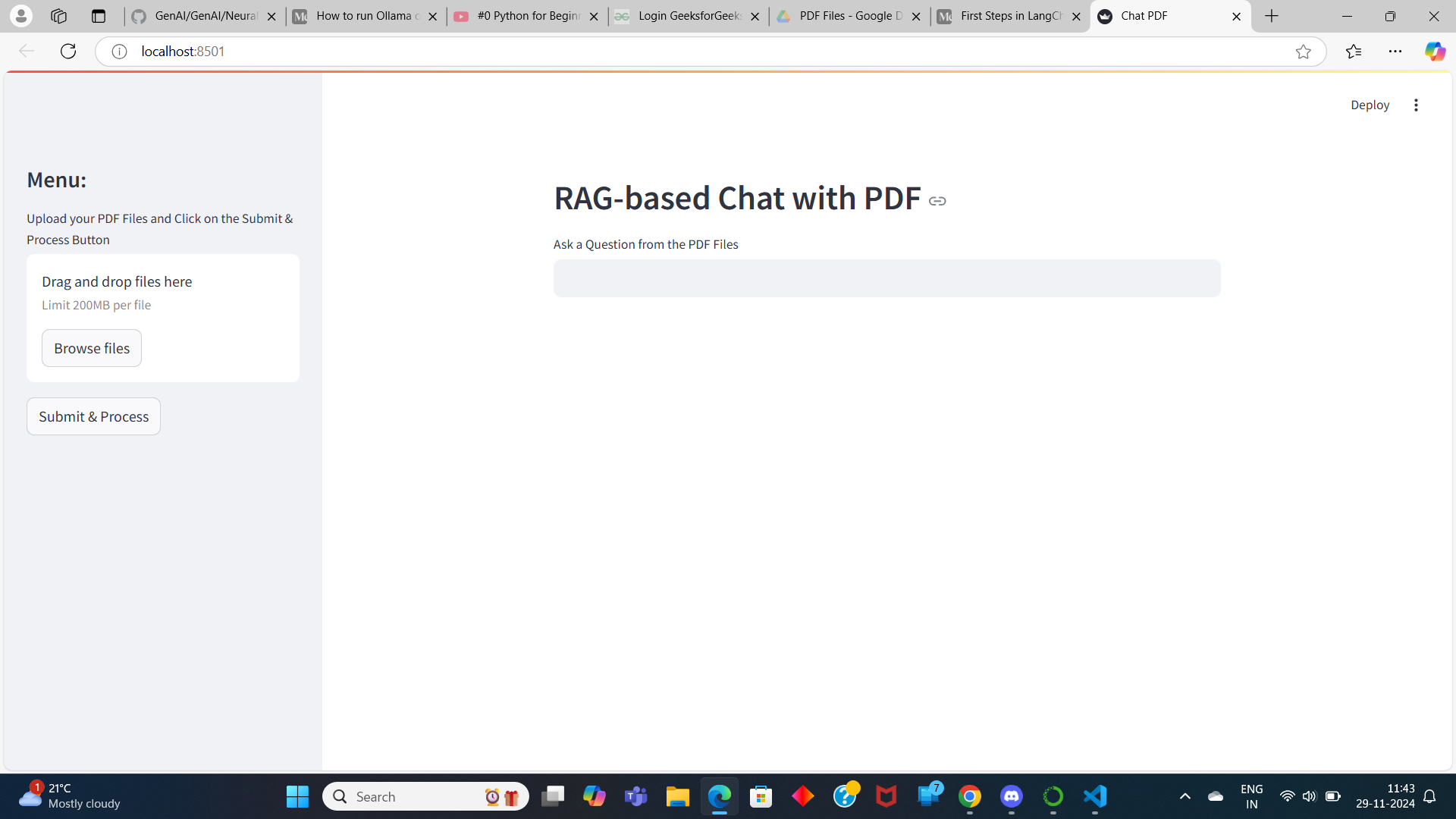
transformers

torch

faiss-cpu

**Dataset:** <https://drive.google.com/drive/folders/1VrQ0ZTDjY6E5QhmMteA7fD0FtBOwVMe9>

**Snapshots of the Chatbot:**

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