Assignment: LangChain & NLP Task

Objective:

Build a question-answering system using LangChain and an open-source LLM (such as GPT-2 or GPT-J). The system (on command prompt) should take a user's input and respond with answers based on the context provided.

Task 1: Setting up the Environment

- Set up a Python environment with the required packages: LangChain, OpenAI API (or HuggingFace Transformers), and any other relevant libraries.
- Document the steps you took to set up the environment.

Task 2: LLM Integration with LangChain

- Use an open-source LLM like GPT-2 or GPT-J.
- Integrate it with LangChain to create a question-answering (QA) system.
- The system should take a user's question and respond with an answer based on a provided context (a paragraph or short document).
- Use LangChain's document loaders or retriever chains to fetch relevant sections from the context before answering.

Task 3: Working with LangChain Prompt Templates

- Create a custom prompt template using LangChain's prompt template feature to enhance the quality of the responses from the LLM.
- Design a prompt template that:
  1. Specifies how the question and context are presented to the model.
  2. Provides instructions to the model to generate more relevant and concise answers.
- Explain how the prompt template improves the system's performance and accuracy.

Expected Deliverables:

1. A functional QA system integrated with LangChain and an open-source LLM.
2. A feature implementation of either memory or tool integration.
3. Documentation of above activities
4. upload on github