LangChain & NLP Task

Task-1

Introduction

This document outlines the setup of a Python environment in Google Colab for developing a Question-Answering (QA) system using LangChain and open-source Large Language Models (LLMs). The process involves installing key libraries, managing API keys, and ensuring a smooth environment for developing and testing the QA system.

Step 1: Set Up Google Colab

Google Colab provides a ready-to-use Python environment with several pre-installed modules, eliminating the need for local setup. Simply open a new notebook on Colab by navigating to Google Colab and creating a new notebook.

Step 2: Install Required Libraries

- **LangChain:** For chaining together multiple steps in a question-answering workflow.
- **Chroma:** To handle vector-based document storage and retrieval.
- **Google Generative AI:** For embedding and conversational models.
- **PyMuPDF (fitz):** To work with PDFs for text extraction.
- **Gradio:** To create an interactive user interface for the system.

Step 3: API Key Setup

For accessing the Google Generative AI models, I need to set up your API key. This is managed using the python-dotenv library to load sensitive environment variables from a .env file.

Conclusion

This setup allows for seamless development in Google Colab, utilizing powerful libraries and tools to build a robust QA system. The flexible and cloud-based Colab environment ensures ease of use without requiring local installations or configurations, making it a great choice for development and experimentation.