**PG8:** Install langchain, cohere (for key), langchaincommunity. Get the api key( By logging into Cohere and obtaining the cohere key). Load a text document from your google drive . Create a prompt template to display the output in a particular manner.

Soln:

#!pip install langchain langchain-cohere langchain-community

#!pip install gdown

import getpass

import os

if not os.environ.get("COHERE\_API\_KEY"):

    os.environ["COHERE\_API\_KEY"] = getpass.getpass("Enter API key for Cohere: ")

from langchain\_cohere import ChatCohere

model = ChatCohere(model="command-r7b-12-2024")

from langchain\_core.prompts import ChatPromptTemplate

prompt = ChatPromptTemplate.from\_template("Tell me a quote on the {topic}")

chain = prompt | model

chain.invoke({"topic": "AI"}).content

import gdown

# Google Drive file ID (Extract from the URL)

file\_id = "1BPgmF8od-gvK0GeDyaeAwCrSGpgvwXFN"

file\_path = "ai\_agents\_info.txt"

# Download the file

gdown.download(f"https://drive.google.com/uc?export=download&id={file\_id}", file\_path, quiet=False)

# Read the file

with open(file\_path, "r", encoding="utf-8") as file:

    document\_text = file.read()

print(document\_text)

**Output :**

1. Reactive Agents: These agents do not store past experiences and make decisions solely based on the current situation.

Examples include chess-playing programs that evaluate only the present board state.

2. Deliberative Agents: These agents build models of the world and use planning to achieve their goals.

They use reasoning mechanisms to determine the best course of action.

3. Learning Agents: These agents improve their performance over time using machine learning techniques.

Reinforcement learning-based robots are an example of learning agents.

4. Multi-Agent Systems (MAS): A system where multiple AI agents interact, collaborate, or compete to complete tasks.

Applications include swarm robotics and distributed AI.

5. Utility-Based Agents: These agents maximize a utility function, ensuring optimal decision-making.

They are widely used in economics and game theory.

AI agents are applied in various domains, including healthcare, finance, robotics, and natural language processing.

Their ability to adapt and learn from data makes them crucial in modern AI applications.

from langchain\_core.prompts import ChatPromptTemplate

prompt = ChatPromptTemplate.from\_template("Extract and list the types of AI agents as bullet points from the following text:{document\_text}")

chain = prompt | model

print(chain.invoke({"document\_text": document\_text}).content)

Output:

Here are the types of AI agents listed from the text:

- Reactive Agents

- Deliberative Agents

- Learning Agents

- Multi-Agent Systems (MAS)

- Utility-Based Agents