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In [2]: import os
from dotenv import load_dotenv
from langchain.chat_models import ChatOpenAI
from langchain.prompts import PromptTemplate
from langchain.chains import LLMChain
from langchain.agents import Tool, initialize_agent, AgentType
from langchain.tools import TavilySearchResults

# 🌐 Load API keys
load_dotenv(".env")
openai_api_key = os.getenv("OPENAI_API_KEY")
tavily_api_key = os.getenv("TAVILY_API_KEY")

# ✨ Initialize LLM
llm = ChatOpenAI(model="gpt-3.5-turbo", temperature=0)

# ✓ Tool 1: Simple QA Tool
qa_prompt = PromptTemplate.from_template("Answer clearly: {question}")
qa_chain = LLMChain(llm=llm, prompt=qa_prompt)
qa_tool = Tool(
    name="Simple QA",
    func=qa_chain.run,
    description="Answers factual questions clearly"
)

# ✓ Tool 2: Summarizer Tool
summary_prompt = PromptTemplate.from_template("Summarize this text:\n\n{text}")
summary_chain = LLMChain(llm=llm, prompt=summary_prompt)
summary_tool = Tool(
    name="Summarizer",
    func=summary_chain.run,
    description="Summarizes long paragraphs or text content"
)

# ✓ Tool 3: Web Search Tool (Tavily)
search_tool = Tool(
    name="Web Search",
    func=TavilySearchResults(max_results=3).run,
    description="Search the internet for current and live information"
)

# 🛡 Wrap all tools in an agent
tools = [qa_tool, summary_tool, search_tool]

agent_executor = initialize_agent(
    tools=tools,
    llm=llm,
    agent=AgentType.ZERO_SHOT_REACT_DESCRIPTION,
    verbose=True # shows reasoning process
)

# 🚀 Run user queries
queries = [
    "What is LangGraph in LangChain?"
```

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    # Summarize this: LangChain is a framework to build LLM apps using prompts
    # Latest news about OpenAI GPT-4o"
]

for query in queries:
    print("\n👤 User Query:", query)
    response = agent_executor.run(query)
    print("🤖 Agent Response:", response)
```

👤 User Query: What is LangGraph in LangChain?

> Entering new AgentExecutor chain...

I should use the Simple QA tool to answer this factual question.

Action: Simple QA

Action Input: "What is LangGraph in LangChain?"

Observation: LangGraph in LangChain is a graph database that stores and manages language data, including words, phrases, and their relationships. It is a key component of the LangChain platform, allowing for efficient storage, retrieval, and analysis of language-related information.

I now know the final answer

Final Answer: LangGraph in LangChain is a graph database that stores and manages language data.

> Finished chain.

🤖 Agent Response: LangGraph in LangChain is a graph database that stores and manages language data.

In [3]: response

Out[3]: 'OpenAI GPT-4o is a multilingual, multimodal generative pre-trained transformer developed by OpenAI and released in May 2024. It can process and generate text, images, and audio. In August 2024, OpenAI introduced a new feature allowing corporate customers to customize GPT-4o using proprietary company data through fine-tuning.'

In []: