# 代理实现ReAct

由于ReAct策略的特性，目前它已经成为首选的代理实现方式。代理的基本理念是将语言模型当作推理的引擎。ReAct策略实际上是把推理和动作有机地结合在一起。当代理接收到用户的请求后，语言模型就会帮助选择使用哪个工具。接着，代理会执行该工具的操作，观察其结果，并把这些结果反馈给语言模型。

下面用代码演示了如何使用代理实现ReAct策略。

首先，让我们加载将用于控制代理的语言模型。

from langchain.agents import load\_tools  
from langchain.agents import initialize\_agent  
from langchain.agents import AgentType  
from langchain.llms import OpenAI  
llm = OpenAI(temperature=0)

接着，我们需要加载一些工具。

tools = load\_tools(["serpapi", "llm-math"], llm=llm)

请注意，llm-math工具使用了LLM，因此我们需要输入这个模型。

最后，我们需要使用工具、语言模型和我们想要使用的代理类型来初始化一个代理。

agent = initialize\_agent(tools, llm, agent=AgentType.ZERO\_SHOT\_REACT\_DESCRIPTION, verbose=True)

现在让我们来测试一下！

agent.run("Who is Leo DiCaprio's girlfriend? What is her current age raised to the 0.43 power?")

> Entering new AgentExecutor chain...  
 I need to find out who Leo DiCaprio's girlfriend is and then calculate her age raised to the 0.43 power.  
 Action: Search  
 Action Input: "Leo DiCaprio girlfriend"  
 Observation: Camila Morrone  
 Thought: I need to find out Camila Morrone's age  
 Action: Search  
 Action Input: "Camila Morrone age"  
 Observation: 25 years  
 Thought: I need to calculate 25 raised to the 0.43 power  
 Action: Calculator  
 Action Input: 25^0.43  
 Observation: Answer: 3.991298452658078  
   
 Thought: I now know the final answer  
 Final Answer: Camila Morrone is Leo DiCaprio's girlfriend and her current age raised to the 0.43 power is 3.991298452658078.  
   
 > Finished chain.  
  
  
 "Camila Morrone is Leo DiCaprio's girlfriend and her current age raised to the 0.43 power is 3.991298452658078."

除此之外，你还可以创建使用聊天模型作为代理驱动器的ReAct代理，而不是使用LLM。

from langchain.chat\_models import ChatOpenAI  
  
chat\_model = ChatOpenAI(temperature=0)  
agent = initialize\_agent(tools, chat\_model, agent=AgentType.CHAT\_ZERO\_SHOT\_REACT\_DESCRIPTION, verbose=True)  
agent.run("Who is Leo DiCaprio's girlfriend? What is her current age raised to the 0.43 power?")