



ReAct

This walkthrough showcases using an agent to implement the **ReAct** logic.

```
from langchain.agents import load_tools
from langchain.agents import initialize_agent
from langchain.agents import AgentType
from langchain.llms import OpenAI
```

First, let's load the language model we're going to use to control the agent.

```
llm = OpenAI(temperature=0)
```

Next, let's load some tools to use. Note that the `llm-math` tool uses an LLM, so we need to pass that in.

```
tools = load_tools(["serpapi", "llm-math"], llm=llm)
```

Finally, let's initialize an agent with the tools, the language model, and the type of agent we want to use.

```
agent = initialize_agent(tools, llm,
                        agent=AgentType.ZERO_SHOT_REACT_DESCRIPTION, verbose=True)
```

Now let's test it out!

```
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."

Using chat models

You can also create ReAct agents that use chat models instead of LLMs as the agent driver.

```
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?")
```