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ReAct

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

```python
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.

```python
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.

```python
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.

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

Now let's test it out!

```python
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.

```python
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?")
```