Multi Input Tools

This notebook shows how to use a tool that requires multiple inputs with an agent.

The difficulty in doing so comes from the fact that an agent decides it’s next step from a language model, which outputs a string. So if that step requires multiple inputs, they need to be parsed from that. Therefor, the currently supported way to do this is write a smaller wrapper function that parses that a string into multiple inputs.

For a concrete example, let’s work on giving an agent access to a multiplication function, which takes as input two integers. In order to use this, we will tell the agent to generate the “Action Input” as a comma separated list of length two. We will then write a thin wrapper that takes a string, splits it into two around a comma, and passes both parsed sides as integers to the multiplication function.

```
from langchain.llms import OpenAI
from langchain.agents import initialize_agent, Tool
```

Here is the multiplication function, as well as a wrapper to parse a string as input.

```
def multiplier(a, b):
    return a * b

def parsing_multiplier(string):
    a, b = string.split(",")
    return multiplier(int(a), int(b))
```

```
llm = OpenAI(temperature=0)
tools = [
    Tool(
        name = "Multiplier",
        func=parsing_multiplier,
        description="useful for when you need to multiply two numbers together.
The input to this tool should be a comma separated list of numbers of length two,
representing the two numbers you want to multiply together. For example, `1,2`
would be the input if you wanted to multiply 1 by 2."
    )
]
```

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```
mrkl = initialize_agent(tools, llm, agent="zero-shot-react-description",
verbose=True)
```

```
mrkl.run("What is 3 times 4")
```

```
> Entering new AgentExecutor chain...
 I need to multiply two numbers
Action: Multiplier
Action Input: 3,4
Observation: 12
Thought: I now know the final answer
Final Answer: 3 times 4 is 12

> Finished chain.
```

```
'3 times 4 is 12'
```