Tracking token usage

This notebook goes over how to track your token usage for specific calls. It is currently only implemented for the OpenAI API.

Let's first look at an extremely simple example of tracking token usage for a single LLM call.

```python
from langchain.llms import OpenAI
from langchain.callbacks import get_openai_callback
```

API Reference:

- OpenAI from `langchain.llms`
- get_openai_callback from `langchain.callbacks`

```python
llm = OpenAI(model_name="text-davinci-002", n=2, best_of=2)
```

```python
with get_openai_callback() as cb:
    result = llm("Tell me a joke")
    print(cb)
```

```
Tokens Used: 42
    Prompt Tokens: 4
    Completion Tokens: 38
Successful Requests: 1
Total Cost (USD): $0.00084
```

Anything inside the context manager will get tracked. Here's an example of using it to track multiple calls in sequence.

```python
with get_openai_callback() as cb:
    result = llm("Tell me a joke")
```

```python
    result2 = llm("Tell me a joke")
    print(cb.total_tokens)
```

```
    91
```

If a chain or agent with multiple steps in it is used, it will track all those steps.

```python
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)
tools = load_tools(["serpapi", "llm-math"], llm=llm)
agent = initialize_agent(
    tools, llm, agent=AgentType.ZERO_SHOT_REACT_DESCRIPTION, verbose=True
)
```

API Reference:

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

```python
with get_openai_callback() as cb:
    response = agent.run(
        "Who is Olivia Wilde's boyfriend? What is his current age raised
to the 0.23 power?"
    )
    print(f"Total Tokens: {cb.total_tokens}")
    print(f"Prompt Tokens: {cb.prompt_tokens}")
    print(f"Completion Tokens: {cb.completion_tokens}")
    print(f"Total Cost (USD): ${cb.total_cost}")
```

```
> Entering new AgentExecutor chain...
 I need to find out who Olivia Wilde's boyfriend is and then calculate
his age raised to the 0.23 power.
Action: Search
Action Input: "Olivia Wilde boyfriend"
Observation: Sudeikis and Wilde's relationship ended in November 2020.
Wilde was publicly served with court documents regarding child custody
while she was presenting Don't Worry Darling at CinemaCon 2022. In January
2021, Wilde began dating singer Harry Styles after meeting during the
filming of Don't Worry Darling.
Thought: I need to find out Harry Styles' age.
Action: Search
Action Input: "Harry Styles age"
Observation: 29 years
Thought: I need to calculate 29 raised to the 0.23 power.
Action: Calculator
Action Input: 29^0.23
Observation: Answer: 2.169459462491557

Thought: I now know the final answer.
Final Answer: Harry Styles, Olivia Wilde's boyfriend, is 29 years old
and his age raised to the 0.23 power is 2.169459462491557.

> Finished chain.
Total Tokens: 1506
Prompt Tokens: 1350
Completion Tokens: 156
Total Cost (USD): $0.03012
```