LANGCHAIN TRACING: EVALUATE YOUR AGENTS & CHAINS

A COMPREHENSIVE GUIDE TO THE TRACING SERVER IN LANGCHAIN

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WHY EVALUATE?

AGENTS AND CHAINS ARE BUILDING BLOCKS OF THE APPLICATION

1) NEED A METHOD TO CHECK IF THESE BLOCKS ARE WORKING CORRECTLY

2) WHEN THESE BLOCKS INTERACTS WITH TOOLS, NEED TO CHECK

3) WHEN A MODIFICATION IS DONE ON THE CODE

4) WHEN DIFFERENT LLMS ARE USED THE ACTION NEEDS TO BE REVIEWED

5) GETTING HOLD OF TESTING DATA IS A CHALLENGE

6) BIGGER CHALLENGE IS DEVICING THE METRICS FOR GENERATIVE AI

SOLUTION OFFERED :

1) TRACING SERVER
2) LANGCHAIN DATASETS
3) EVAL CHAINS

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TRACING SERVER

LANGCHAIN PROVIDES **2 DIFFERENT** TRACING SERVER OPTION

1) CLOUD HOSTED VIA VERCEL APP

2) LOCAL HOSTED VIA LANGCHAIN-SERVER COMMAND

   - REQUIRES DOCKER ENVIRONMENT

   - ENSURE POSTGRES SERVER IS NOT RUNNING LOCALLY

3) A SCRIPT WITH AGENTS ARE CHAINS TO TEST

EVAL CHAINS

LANGCHAIN PROVIDES **3 DIFFERENT** EVAL CLASSES

1) QA GENERATION: QAGENERATIONCHAIN

2) QA EVALUATION : QAEVALCHAIN

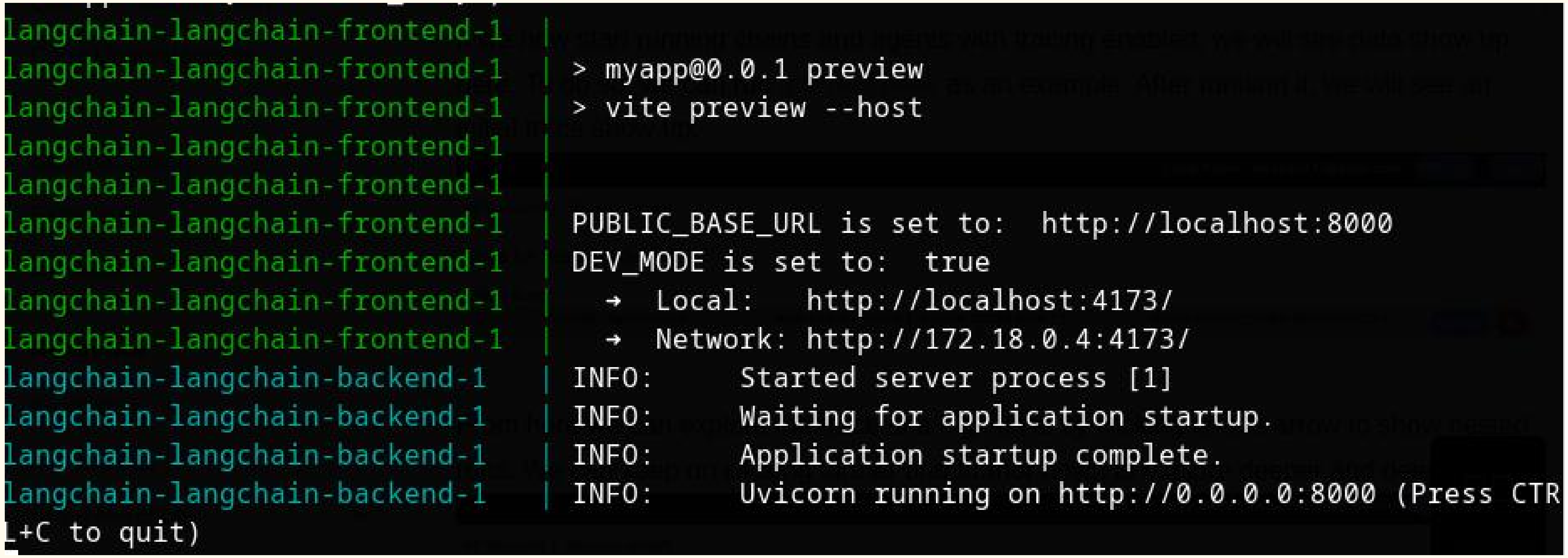
3) USING HUGGINGFACE DATASETS : LANGCHAIN.EVALUATION.LOADING IMPORT LOAD_DATASET

   - CHAIN.APPLY(DATASET)

HOW TO USE THE TRACING SERVER

1) START THE LANGCHAIN-SERVER

2) WAIT FOR THE SERVER ENDPOINT TO BE READY



```
langchain-langchain-frontend-1  |
langchain-langchain-frontend-1  | > myapp@0.0.1 preview
langchain-langchain-frontend-1  | > vite preview --host
langchain-langchain-frontend-1  |
langchain-langchain-frontend-1  |
langchain-langchain-frontend-1  | PUBLIC_BASE_URL is set to:  http://localhost:8000
langchain-langchain-frontend-1  | DEV_MODE is set to:  true
langchain-langchain-frontend-1  |   ➜  Local:   http://localhost:4173/
langchain-langchain-frontend-1  |   ➜  Network: http://172.18.0.4:4173/
langchain-langchain-backend-1   | INFO:     Started server process [1]
langchain-langchain-backend-1   | INFO:     Waiting for application startup.
langchain-langchain-backend-1   | INFO:     Application startup complete.
langchain-langchain-backend-1   | INFO:     Uvicorn running on http://0.0.0.0:8000 (Press CTR
L+C to quit)
```

3) THEN IN ANOTHER TERMINAL START THE SCRIPT THAT WILL HAVE THE AGENTS / CHAIN RUNNING.

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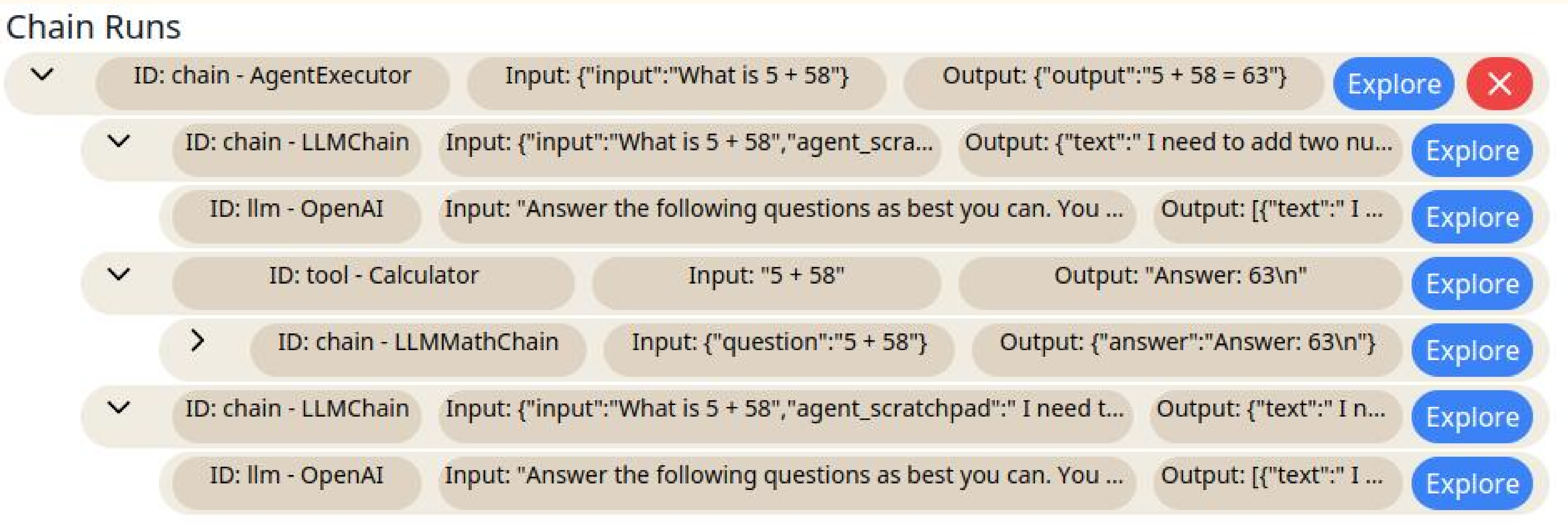
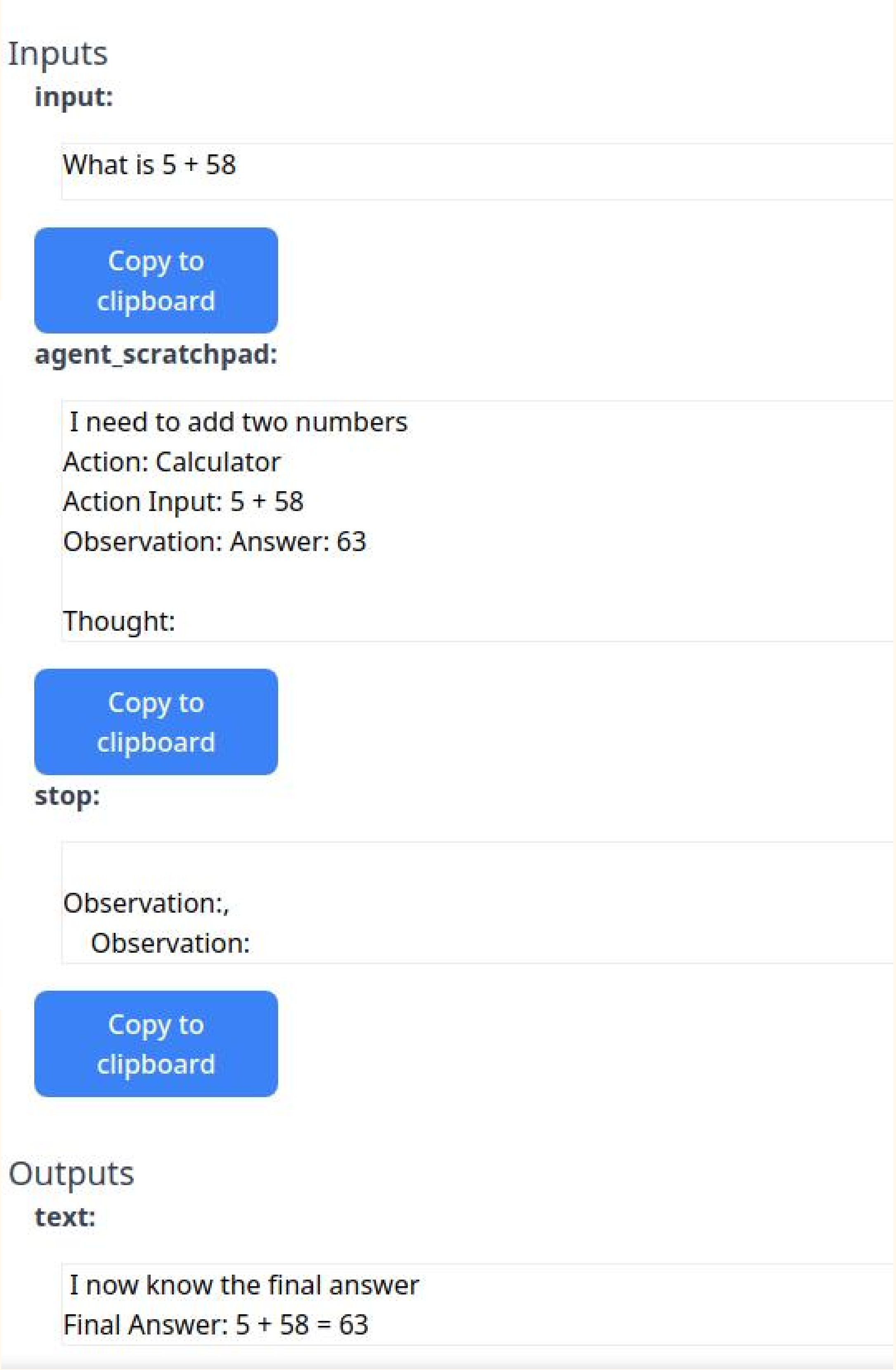
EXPLORING THE LLM CALLS



Chain Runs

ID: chain - AgentExecutor	Input: {"input":"What is 5 + 58"}	Output: {"output":"5 + 58 = 63"}
ID: chain - LLMChain	Input: {"input":"What is 5 + 58","agent_scra...	Output: {"text":" I need to add two nu...
ID: llm - OpenAI	Input: "Answer the following questions as best you can. You ...	Output: [{"text":" I ...
ID: tool - Calculator	Input: "5 + 58"	Output: "Answer: 63\n"
ID: chain - LLMMathChain	Input: {"question":"5 + 58"}	Output: {"answer":"Answer: 63\n"}
ID: chain - LLMChain	Input: {"input":"What is 5 + 58","agent_scratchpad":" I need t...	Output: {"text":" I n...
ID: llm - OpenAI	Input: "Answer the following questions as best you can. You ...	Output: [{"text":" I ...



Inputs

input:

What is 5 + 58

agent_scratchpad:

```
 I need to add two numbers
Action: Calculator
Action Input: 5 + 58
Observation: Answer: 63

Thought:
```

stop:

```

Observation:,
  Observation:
```

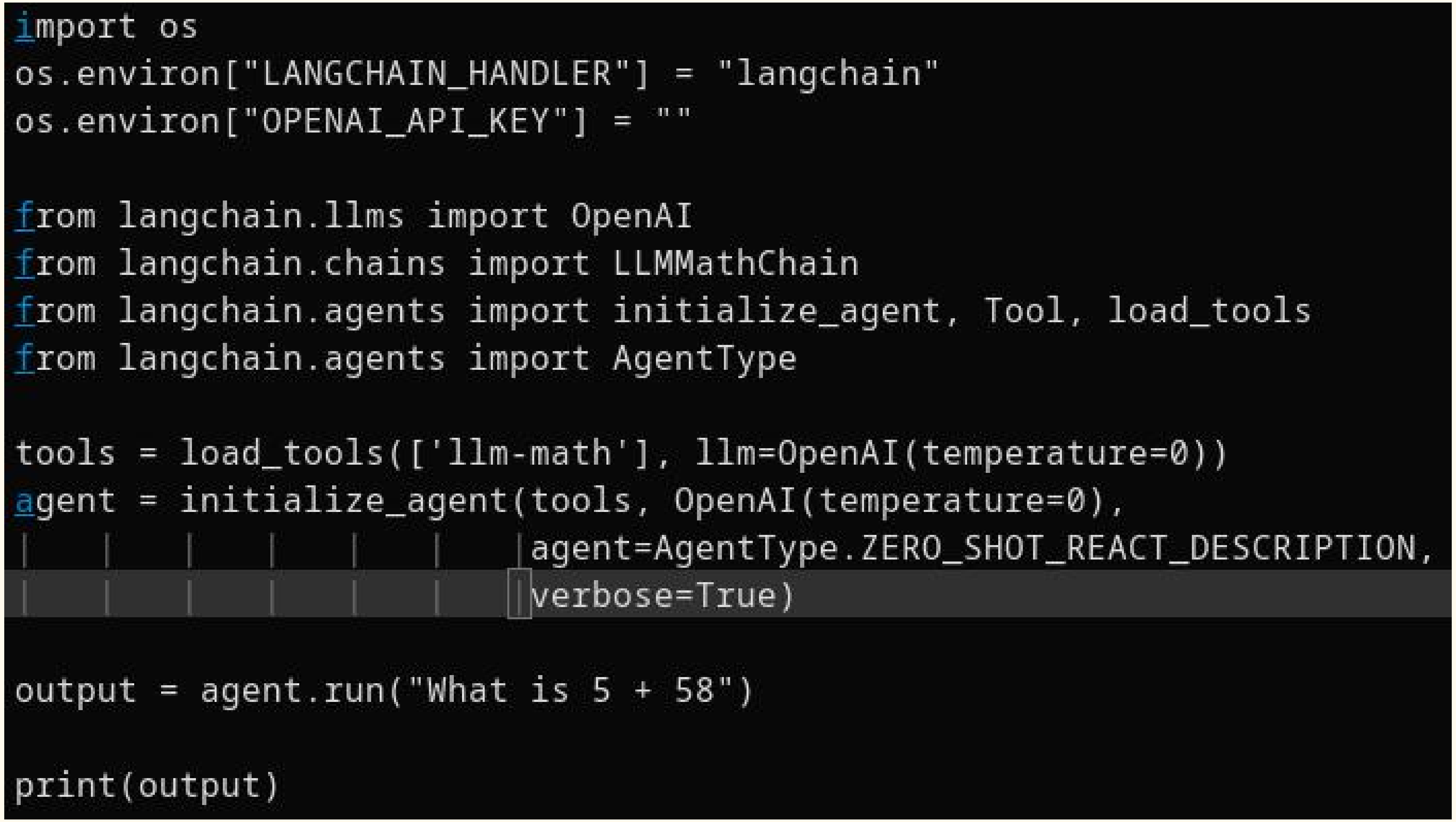
Outputs

text:

```
 I now know the final answer
Final Answer: 5 + 58 = 63
```

LETS HEAD TO TEXT EDITOR

EXECUTE THE BELOW PYTHON CODE



```python
import os
os.environ["LANGCHAIN_HANDLER"] = "langchain"
os.environ["OPENAI_API_KEY"] = ""

from langchain.llms import OpenAI
from langchain.chains import LLMMathChain
from langchain.agents import initialize_agent, Tool, load_tools
from langchain.agents import AgentType

tools = load_tools(['llm-math'], llm=OpenAI(temperature=0))
agent = initialize_agent(tools, OpenAI(temperature=0),
                         agent=AgentType.ZERO_SHOT_REACT_DESCRIPTION,
                         verbose=True)

output = agent.run("What is 5 + 58")

print(output)
```

THANKS FOR WATCHING

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