

MASTERING LLM  
PRESENTS:  
COFFEE BREAK  
CONCEPTS



**Mastering LLM**  
Learning at the Speed of Thought



# What is ReAct Prompting? Most important piece in agentic frameworks



@MASTERING-LLM-  
LARGE-LANGUAGE-  
MODEL

# Limitations of LLM

LLMs lack:

① Reasoning Traces

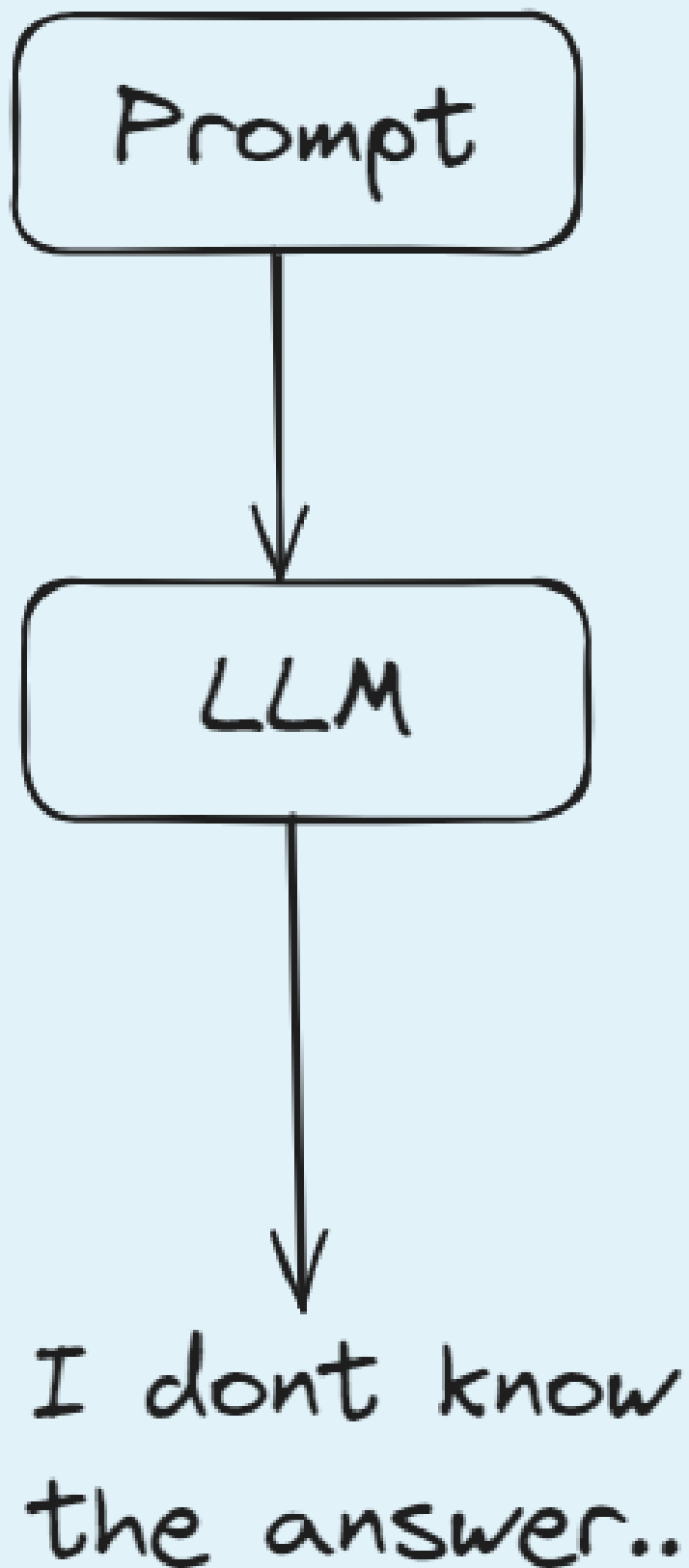
② Task Specific  
Actions

③ Limited Internal  
Knowledge

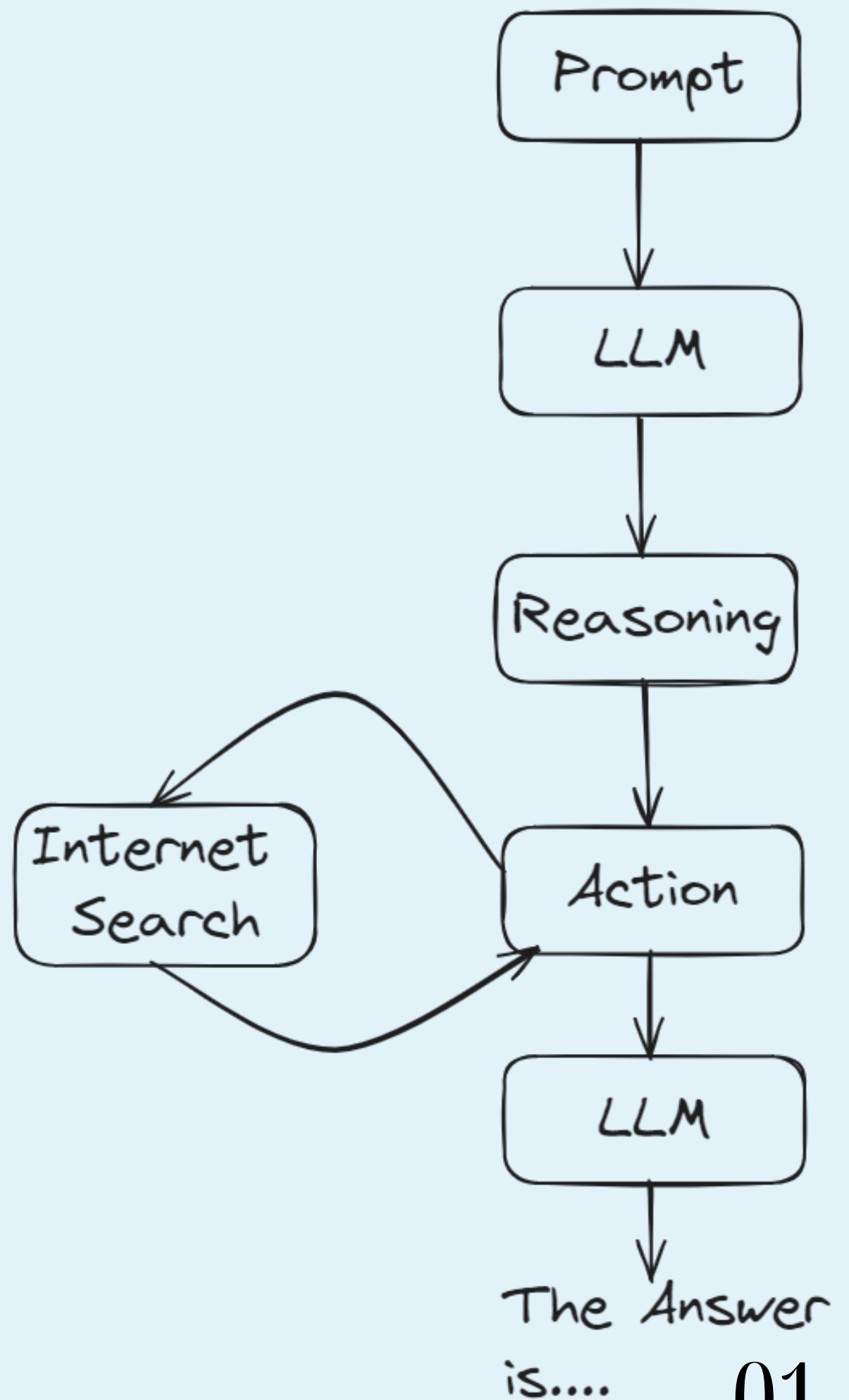


# Why it matters?

## Without ReAct



## With ReAct



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OTHER SIDE

# How ReAct Works?

ReAct agent works similar to how human solves a problem via **thought-act-observation model**

- **Thought**: I want to make a Sandwich, so I need to check if I have the recipe.
- **Act**: **[Search]** for the recipe for Sandwich.
- **Observation**: To prepare the Sandwich, I need onion and tomato. Therefore, I realize that I need to order onion and tomato online.
- **Thought**: I can order onion and tomato online.
- **Act**: **[Search]** for onion and tomato ordering online.
- **Observation**: I have successfully obtained onion and tomato through online ordering.
- **Thought**: Now, I have everything I need to prepare a Sandwich.
- **Act**: **[Finish]** I can start preparing for the Sandwich.



# LangChain Implementation

```
Langchain.py

from langchain import OpenAI, Wikipedia
from langchain.agents import initialize_agent, Tool
from langchain.agents import AgentType
from langchain.agents.react.base import DocstoreExplorer
docstore=DocstoreExplorer(Wikipedia())
tools = [
    Tool(
        name="Search",
        func=docstore.search,
        description="useful for when you need to ask with search"
    ),
    Tool(
        name="Lookup",
        func=docstore.lookup,
        description="useful for when you need to ask with lookup"
    )
]

llm = OpenAI(temperature=0, model_name="gpt-3.5-turbo")
react = initialize_agent(tools, llm, agent=AgentType.REACT_DOCSTORE, verbose=True)

react.run("""Author David Chanoff has collaborated with a U.S. Navy admiral who served
as the ambassador to the United Kingdom under which President?""")
```

 CodeImage

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01

@MASTERING-LLM-LARGE-LANGUAGE-MODEL

# Why Prompt Matters?

All the frameworks use **general purpose prompt** for ReAct framework but you should based on the use case.

```
sample_prompt.py

Question: Were Pavel Urysohn and Leonid Levin known for
the same type of work?
Thought: I need to search Pavel Urysohn and Leonid Levin,
find their types of work, then find if they are the same.
Action: Search[Pavel Urysohn]
Observation: Pavel Samuilovich Urysohn (February 3, 1898 - August 17, 1924) was
a Soviet mathematician who is best known for
his contributions in dimension theory.
Thought: Pavel Urysohn is a mathematician. I need to search Leonid
Levin next and find its type of work.
Action: Search[Leonid Levin]
Observation: Leonid Anatolievich Levin is a Soviet-American
mathematician and computer scientist.
Thought: Leonid Levin is a mathematician and computer scientist.
So Pavel Urysohn and Leonid Levin have the same type of work.
Action: Finish[yes]

Question: {input}
{agent_scratchpad}
```

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01



# Summary

- ✓ ☒ LLM on its own doesn't have reasoning and acting capability
- ✓ ☒ LLMs have limited knowledge on its own, tools can help provided latest and complex data to the model.
- ✓ ☒ ReAct prompting works on thought-act-observation model framework.
- ✓ ☒ Different agents like CrewAI, LangGraph, AutoGen etc. have implimentation of ReAct prompting as one of the option.
- ✓ ☒ Its important to modify the prompt used by this frameworks on your own task for high accuracy.



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Coupon is valid till 30th June 2024