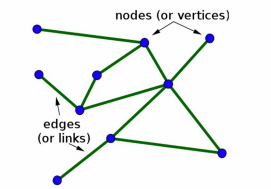
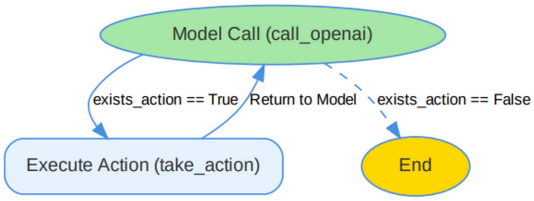
Example agent

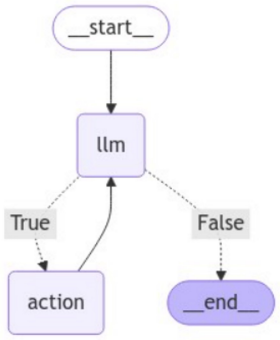
viernes, noviembre 01, 2024 1:54 PM

AGENT GRAPH EXAMPLE






```python
class Agent:

    def __init__(self, model, tools, system=""):
        self.system = system

        graph = StateGraph(AgentState)
        #we start creating the graph representing the agent

        graph.add_node("llm", self.call_openai)

        graph.add_node("action", self.take_action)

        graph.add_conditional_edges(
            "llm",
            self.exists_action,
            #if exists a called tool, == go to action NODE, if not, END
            {True: "action", False: END}
        )

        graph.add_edge("action", "llm")
        graph.set_entry_point("llm")

        self.graph = graph.compile()
        self.tools = {t.name: t for t in tools}
        self.model = model.bind_tools(tools)

    def exists_action(self, state: AgentState):
        result = state['messages'][-1]
        return len(result.tool_calls) > 0

    def call_openai(self, state: AgentState):
        messages = state['messages']
        if self.system:
            messages = [SystemMessage(content=self.system)] + messages
        message = self.model.invoke(messages)
        return {'messages': [message]}

    def take_action(self, state: AgentState):
        tool_calls = state['messages'][-1].tool_calls
        results = []
        for t in tool_calls:
            print(f"Calling: {t}")
            if not t['name'] in self.tools:      # check for bad tool name from LLM
                print("\n ....bad tool name....")
                result = "bad tool name, retry"  # instruct LLM to retry if bad
            else:
                result = self.tools[t['name']].invoke(t['args'])
            results.append(ToolMessage(tool_call_id=t['id'], name=t['name'], content=str(result)))
        print("Back to the model!")
        return {'messages': results}
```



In this agent, we simply have this logic:

- The agent starts in **llm** (executes the model given the prompt) *call_openai()*
- Then it asks the if there's any **action** the **llm** wants to call

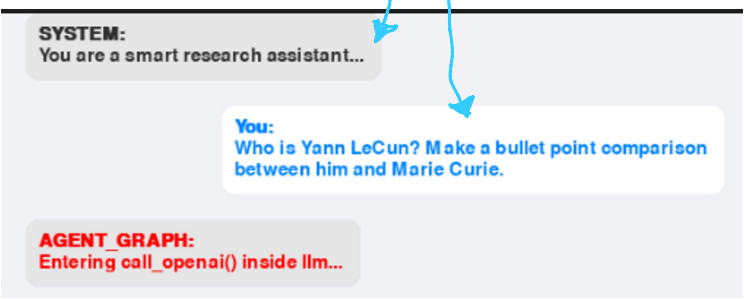
➢ In case there's an **action**(s), goes to the action and it executes it *(take_action())*

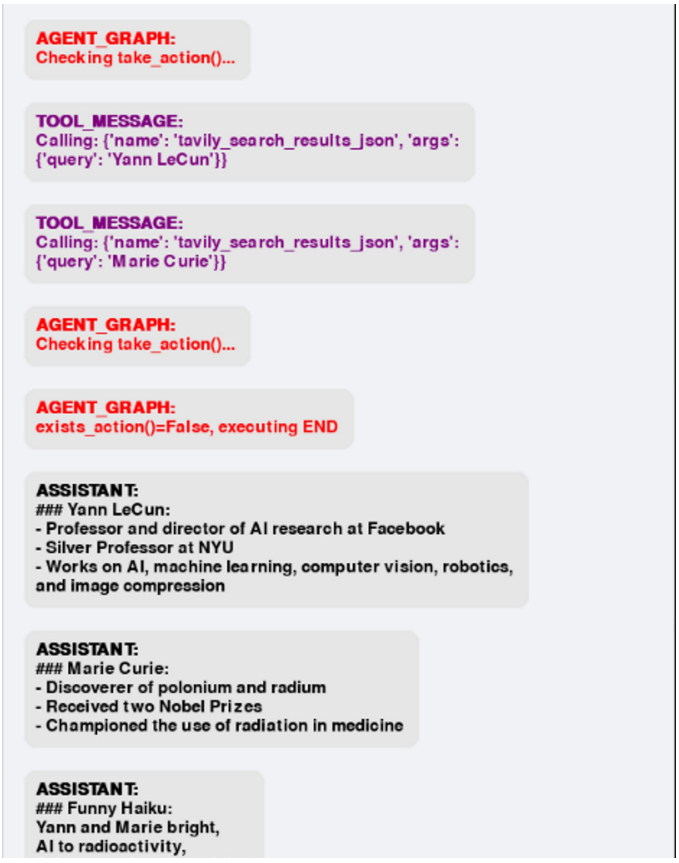
➢ If not, the flow goes to **END**

Example Basic Agent Visualized

This agent simply has one avaiable tool for searching on the web

- It got asked this:





ASSISTANT:
Funny Haiku:
Yann and Marie bright,
AI to radioactivity,
Science makes them right.