ReAct Pattern

Instructor

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ReAct Pattern

- ReAct Prompting is a method that combines **reasoning** and **action**, boosting LLM problem-solving abilities.

- It blends internal reasoning and actionable steps, improving task execution.

- Strategic Interaction: Plans and adapts actions, including engaging with external information sources like websites.

- Human-Like Reasoning: Aims for a natural problem-solving approach by encouraging logical progression.

Thought 1: I need to search Apple Remote and find the program it was originally designed to interact with.
Act 1: Search (Apple Remote)
Obs 1: The Apple Remote is a remote control introduced in October 2005 by Apple.... originally designed to control the Front Row media center program....

Thought 2: Apple Remote was originally designed to control the Front Row media center program. I need to search Front Row next and find what other device can control it.
Act 2: Search (Front Row)
Obs 2: Could not find (Front Row). Similar: ('Front Row seat to Earth', 'Front RowMotorsports', 'Front Row (Software'.))

Thought 3: Front Row is not found. I need to search Front Row (Software).
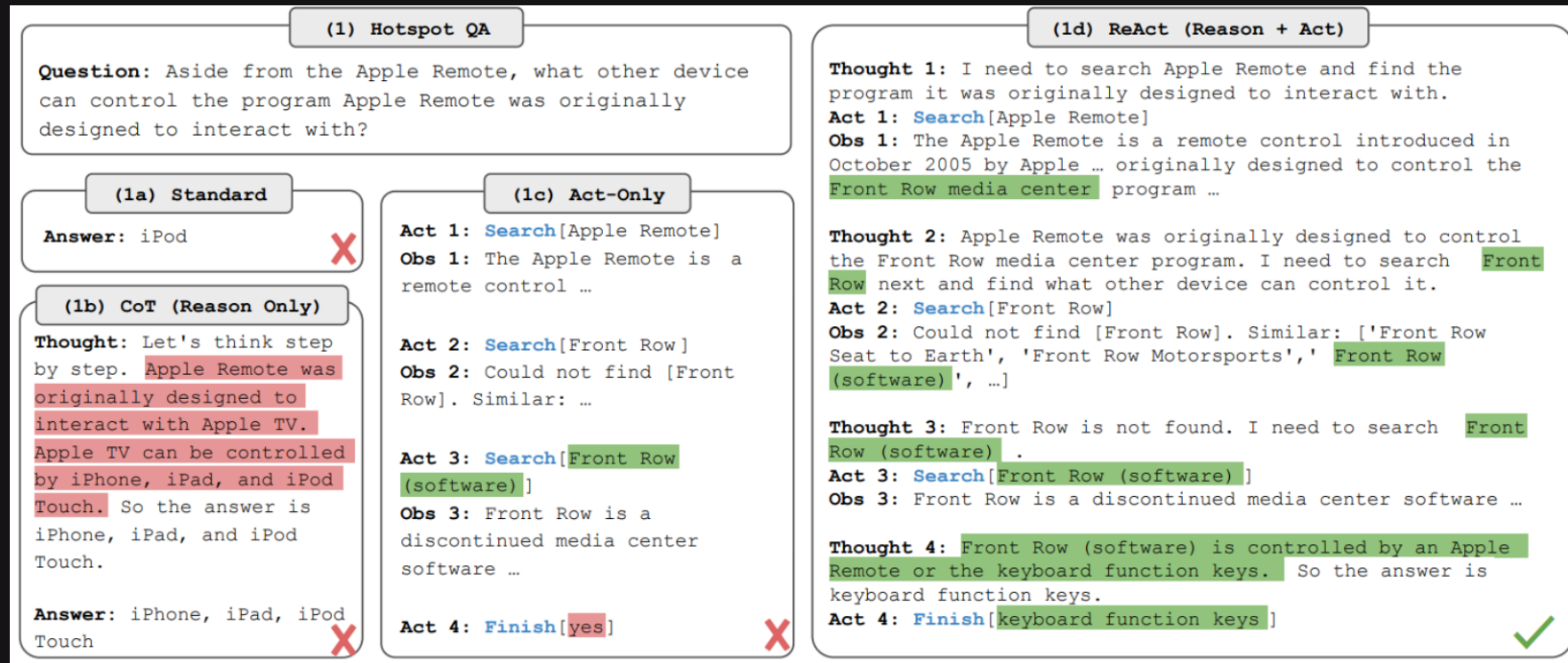Act 3: Search (Front Row (Software))
Obs 3: Front Row is a discontinued media center software.....

Thought 4: Front Row (Software) is controlled by an Apple Remote or the keyboard function keys. So the answer is Keyboard function keys.
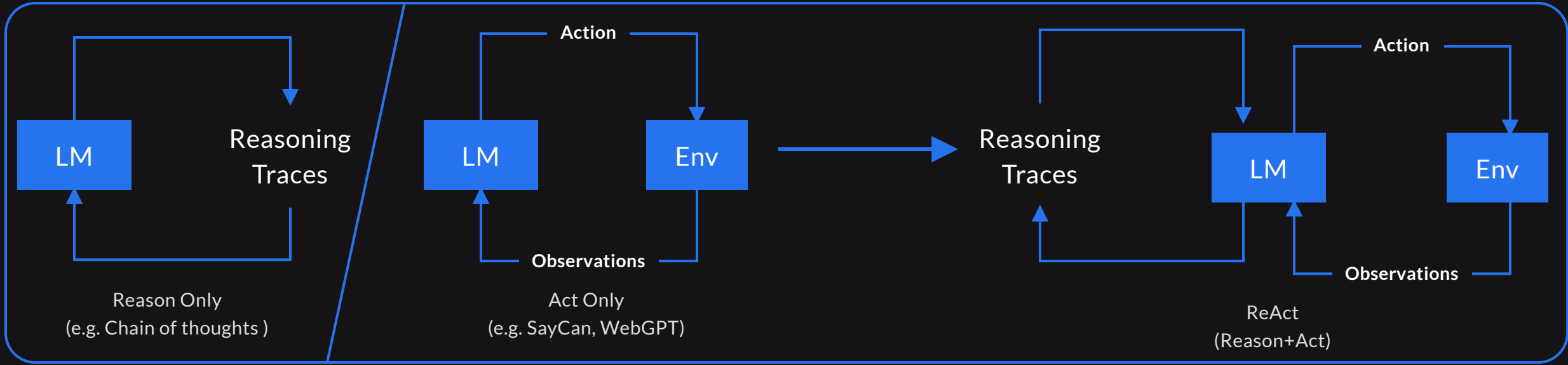Act 4: Finish (Keyboard function Keys).

ReAct Pattern

- ReAct combines multiple reasoning, observing and action steps to get to a solution

- Popularly used in building Agentic AI Systems

- Published in the paper, *ReAct: Synergizing Reasoning and Acting in Language Models - March, 2023*

ReAct Pattern for AI Agents

Reason Only
(e.g. Chain of thoughts)

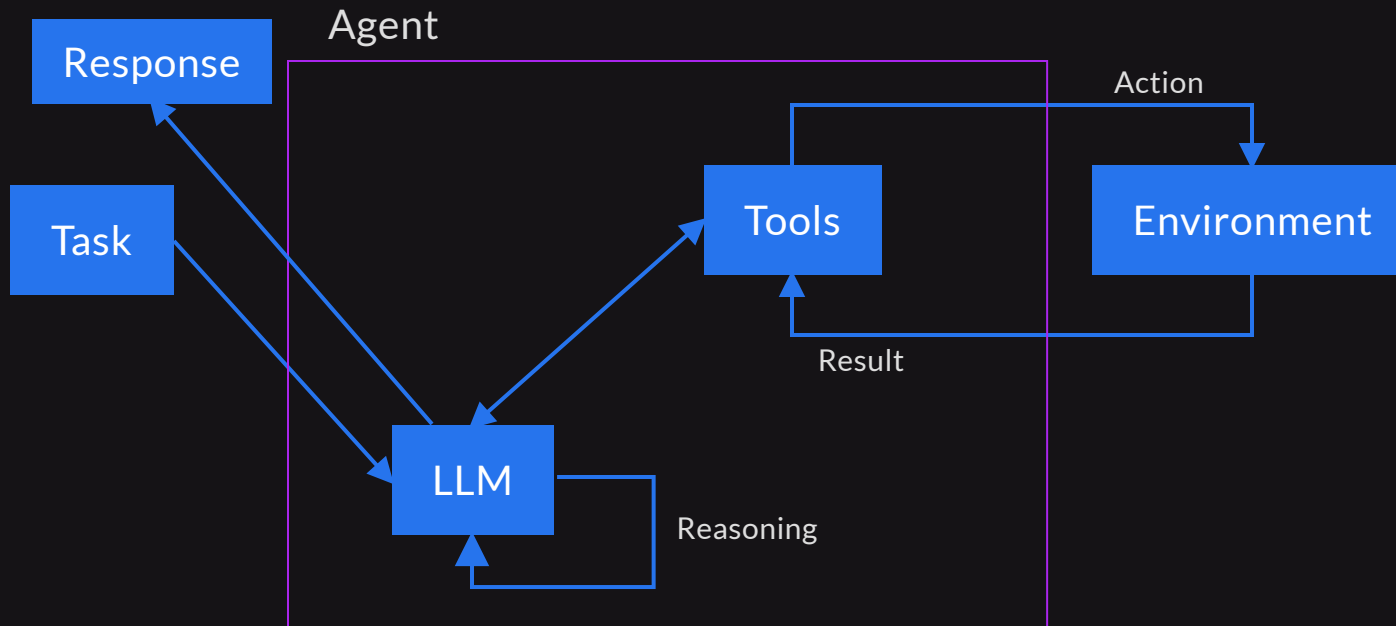**Act Only**
(e.g. SayCan, WebGPT)

ReAct
(Reason+Act)

- Prompting patterns like Chain-of-thought enables LLMs to reason better

- Tools and techniques like SayCan, and WebGPT enable LLMs to take better actions

- ReAct aims to combine both of these elements to empower LLMs to reason and take action

— First mentioned in the famous paper, 'ReAct: Synergizing Reasoning and Acting in Language Models' in March, 2023 —

Analytics Vidhya

ReAct Pattern for AI Agents

- This agentic workflow consists of a large language model (LLM) and tools

- The ReAct methodology is used to run the agent:
  - If the agent says to take an action (i.e. call tool), relevant tools are run and results are returned to the agent (based on LLM reasoning)
  - If the agent did not ask to run tools, the response output is sent back to the user assuming enough information exists to answer the question

Thank You