# TOOLS, EXTERNAL DATA, AND AGENTS

# WHAT CAN LLMS DO?

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1. THINK
2. GENERATE

# WHAT CANT THEY DO?

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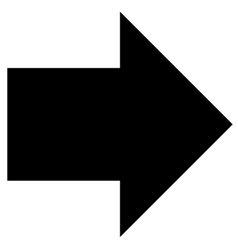
- DO
- ACCESS DATA,
- FETCH SOMETHIN

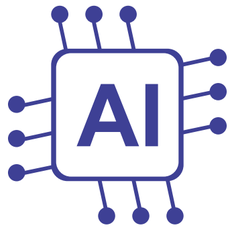
# TOOLS

what are tools?

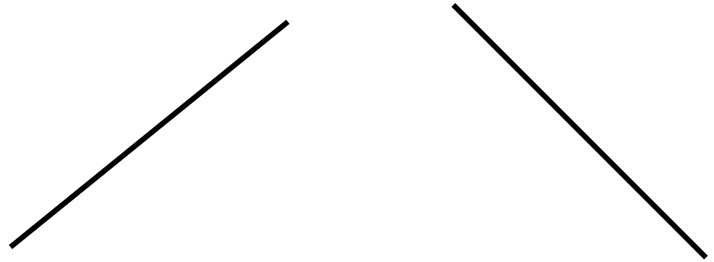
- Tools = external functions or utilities that an LLM can call to take actions.
- They let the model go beyond text generation → interact with the world.
- Think of them as skills you give to your LLM.

**function**





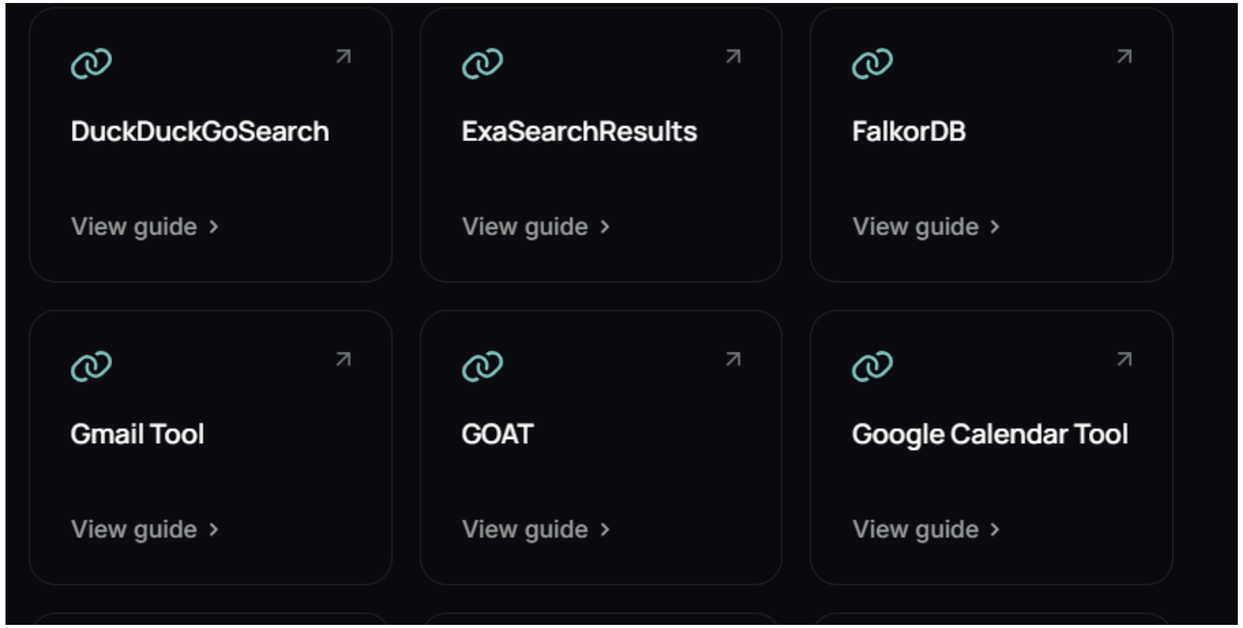
# TOOLS IN LANGCHAIN



Built in tools

custom tools

# BUILT IN TOOL




has name, description and arguments as props

# CUSTOM TOOLS?

import is:

Tool

# COMBINING LLM + TOOL

USING binding and excecuting
LLMs only suggest, they dont call the tool

**langchain**

# AGENTS

LLMS

+

TOOLS

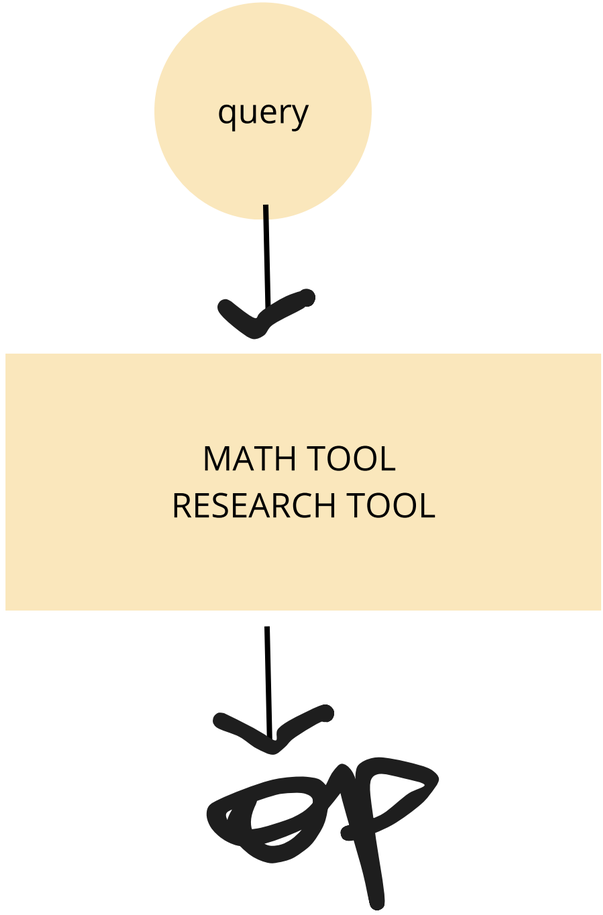
# AGENTS FORMAL DEFINITION

An Agent is a dynamic, decision-making component built on top of a Large Language Model (LLM) that can autonomously determine what actions to take in order to accomplish a goal.
Unlike static chains, which follow a fixed sequence of prompts and operations, an Agent uses reasoning to decide — at runtime — which tools, APIs, or data sources to use, what inputs to provide, and when to stop.

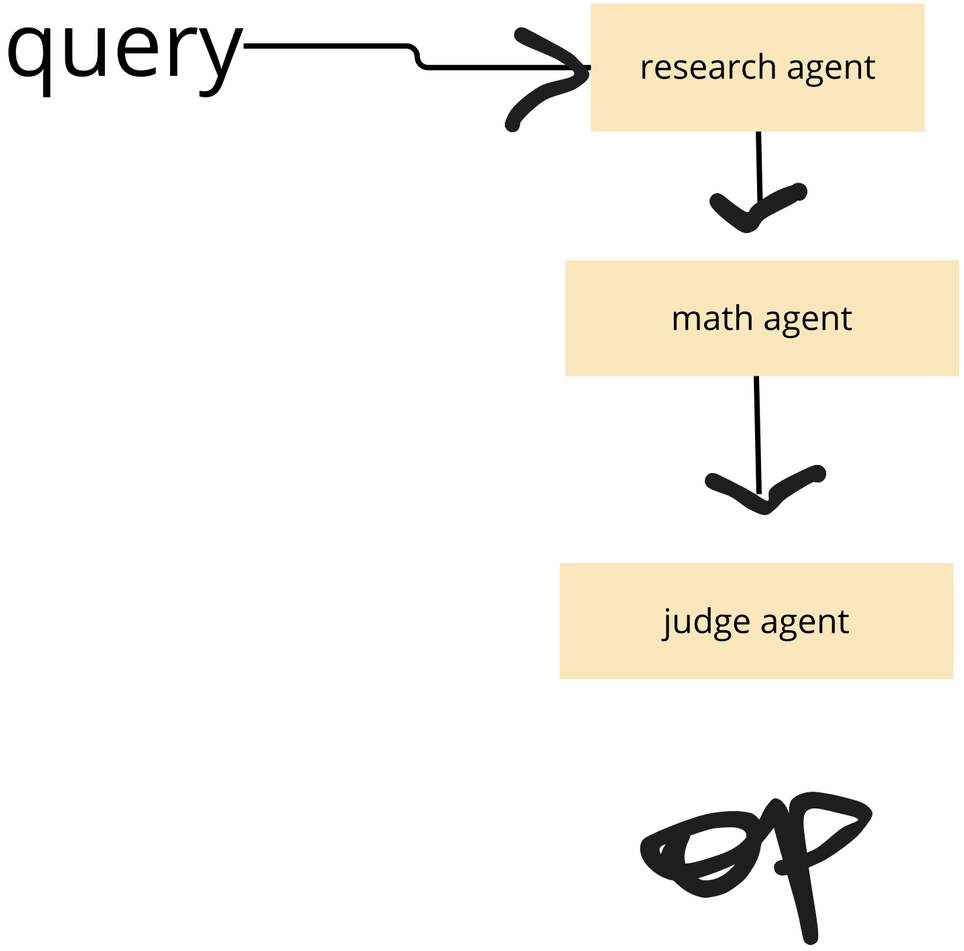
# TYPES:

- SINGLE AGENT, SINGLE TOOL
- SINGLE AGENT, MULTI-TOOL
- MULTI-AGENTS COLLAB

# SINGLE AGENTS



# MULTI AGENTS




- Each of these is a full agent with its own memory, reasoning, and tools.
- They can call each other, debate, verify, or cooperate.

Let’s say you build an AI Travel Planner, what would be the steps in it?

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- Fetch destinations, budget, # of days
- Create itinerary
- Suggest hotels
- Generates the summary

how would a single agent handle it? and how would a MAS(multi agent system) handle it?