

Build with AI

& GDG Cloud Bydgoszcz

June 18, 2025

Deeper dive into Agentic build

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Google Developer Expert



Levels of Abstraction

Agent framework
(Agent Development Kit)



Low-level orchestration framework
(LangGraph)



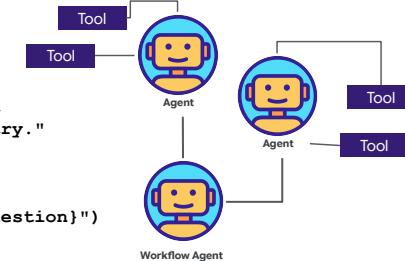
Low-level LLM framework
(Langchain)



DIY

```
capital_finder_agent = LlmAgent(  
    name="capital_finder_agent",  
    model="gemini-1.5-flash-latest",  
    instruction="You are a helpful assistant  
that provides the capital city for a given country."  
)
```

```
question = "What is the capital of France?"  
print(f"Calling ADK Agent with question: {question}")
```



```
workflow = StateGraph(GraphState)  
workflow.add_node("llm_call", call_llm)  
workflow.add_edge(START, "llm_call")  
workflow.add_edge("llm_call", END)
```



```
prompt = ChatPromptTemplate.from_messages([  
    {"role": "user", "content": "What is the capital of France?"}  
<...>  
])  
chain = prompt | llm  
question = "What is the capital of France?"  
capital = chain.invoke({"question": question})
```



```
client = OpenAI()  
  
response = client.chat.completions.create(  
    model="gpt-3.5-turbo",  
    messages=[  
        {"role": "user",  
         "content": "What is the capital of France?"}  
    ]  
)
```

Vendor Specific

Restful

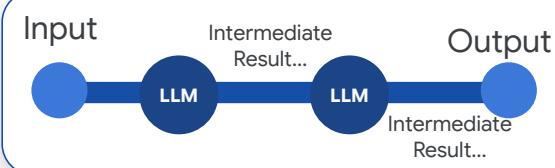
Architectural Patterns

Single Model Architecture



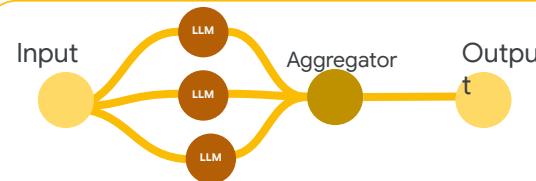
One LLM for all tasks

Sequential Models



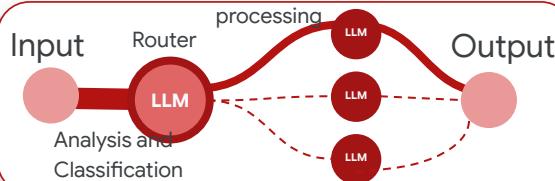
Chains multiple specialized LLMs in a pipeline.

Parallel Models



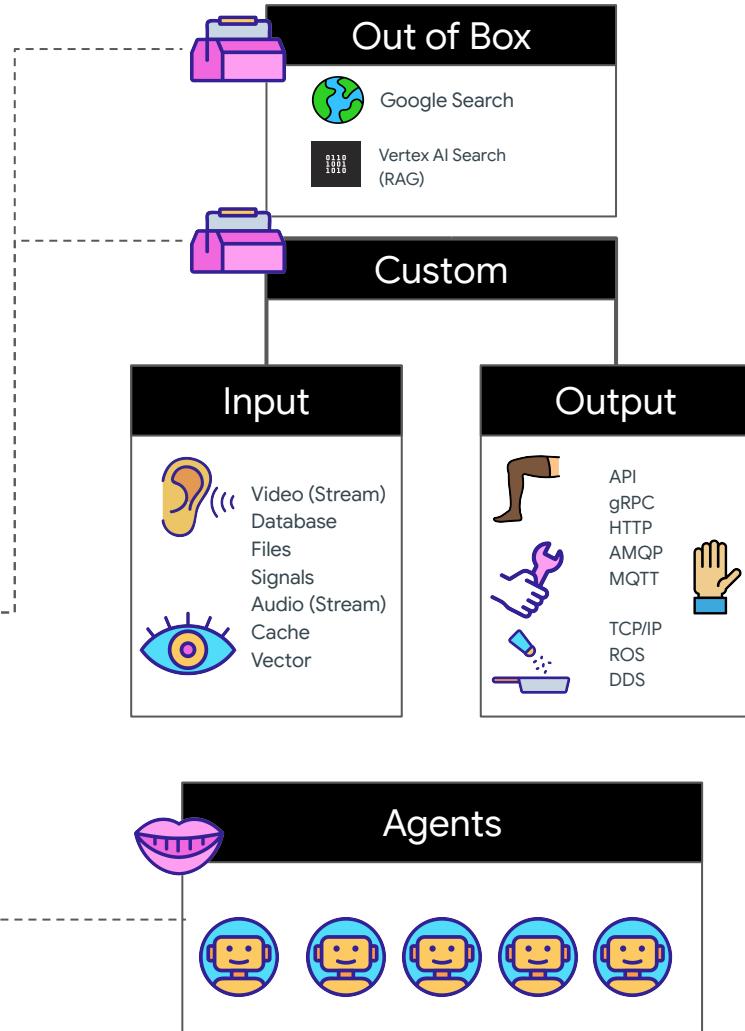
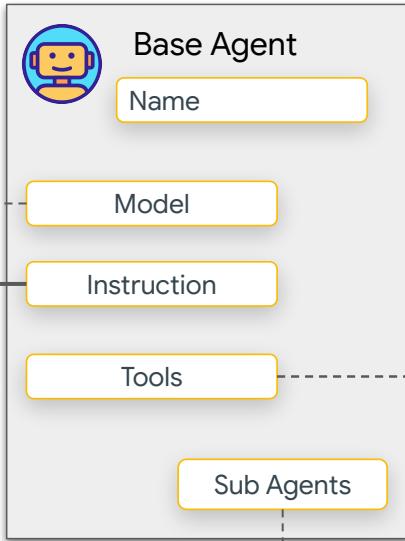
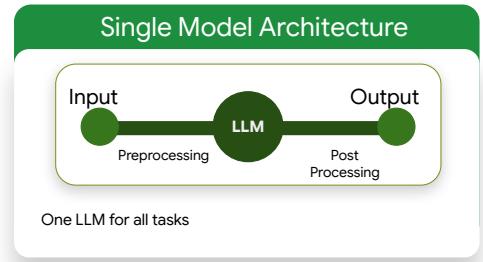
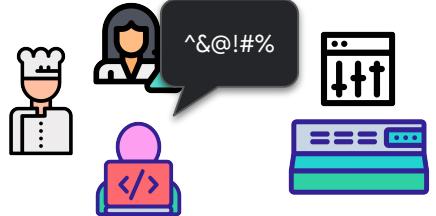
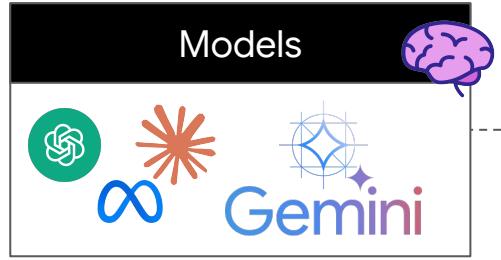
Multiple LLMs concurrently and aggregate outputs

Hierarchical Routing

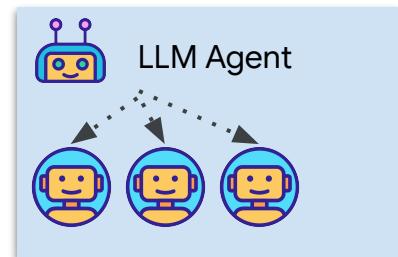
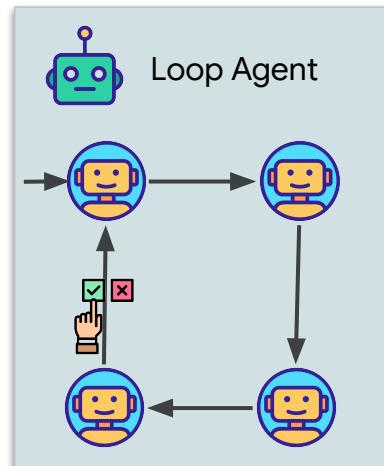
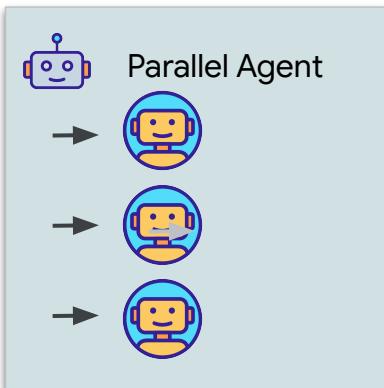
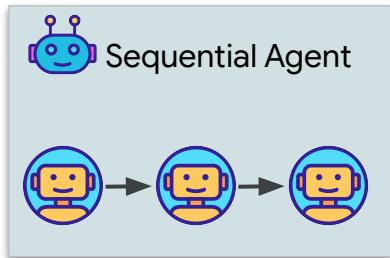
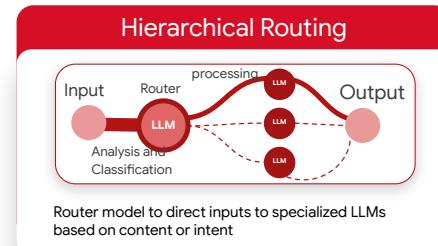
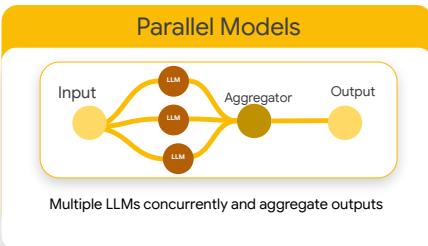
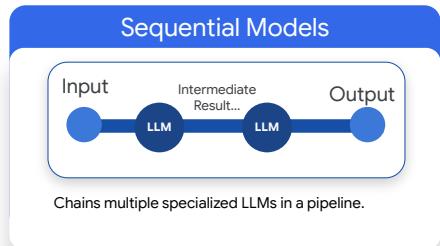


Router model to direct inputs to specialized LLMs based on content or intent

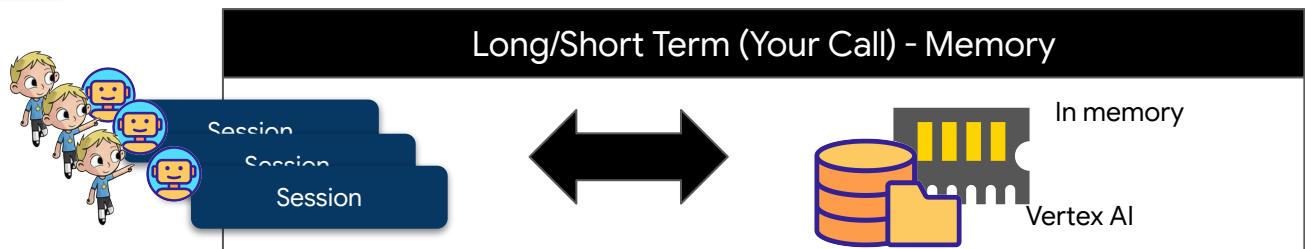
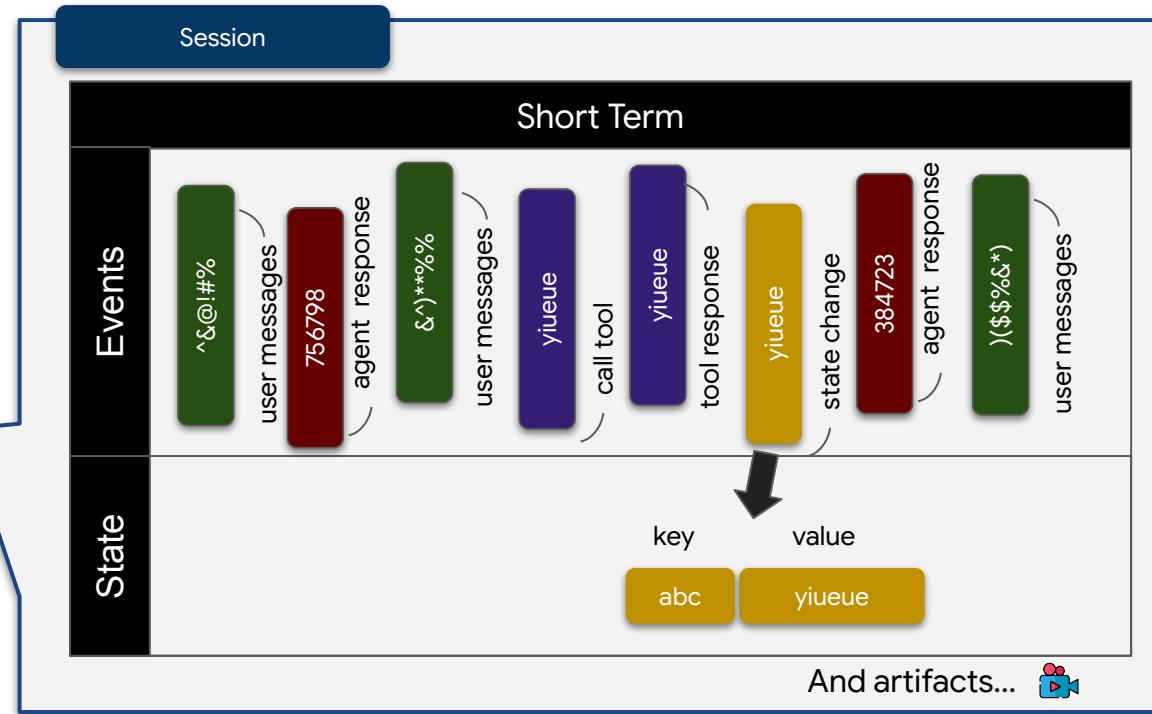
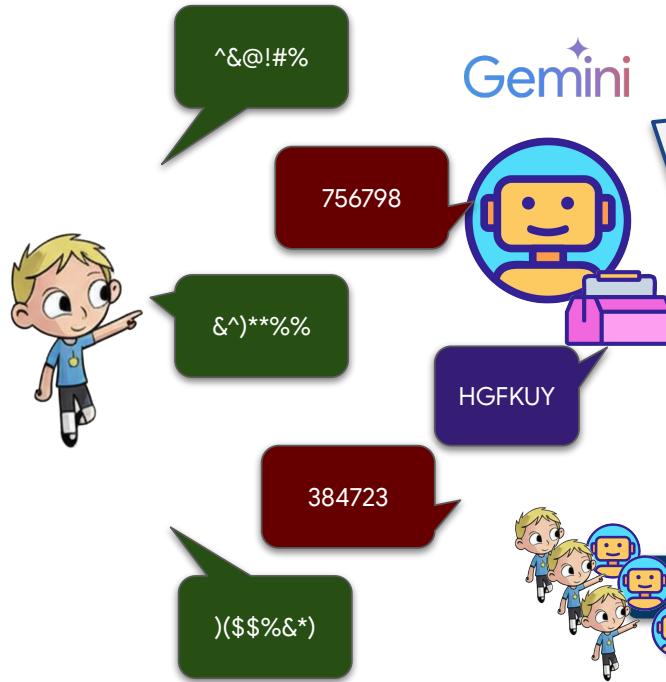
ADK Agent - Base



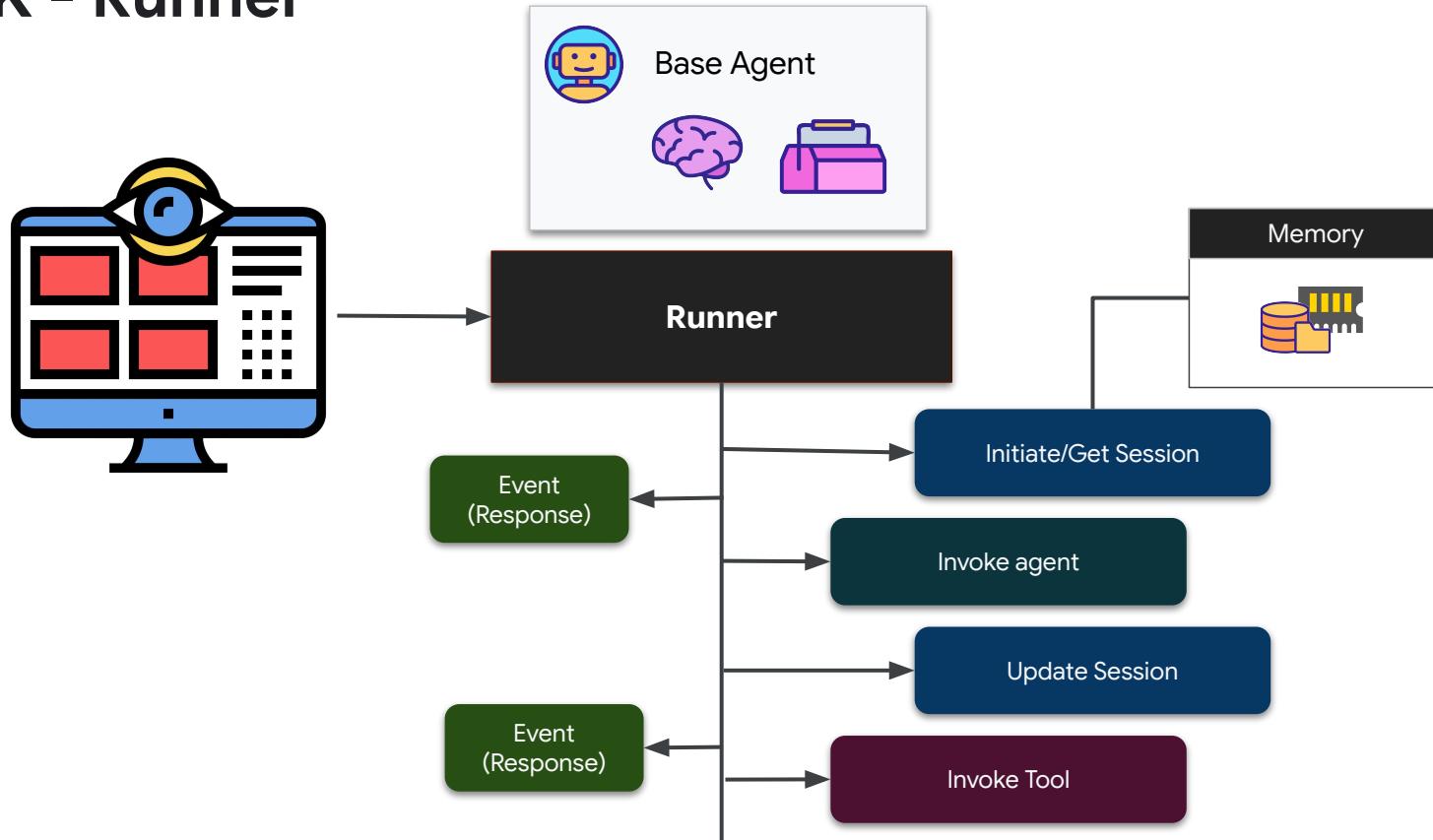
ADK Agent - Workflow



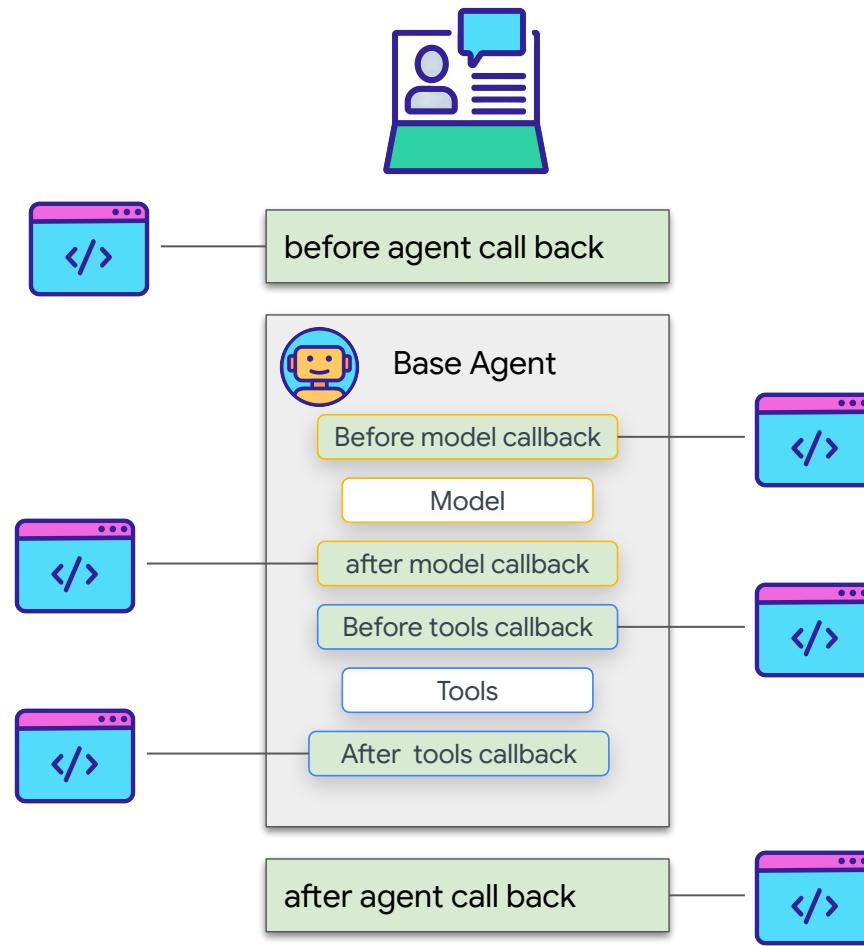
ADK - Memories



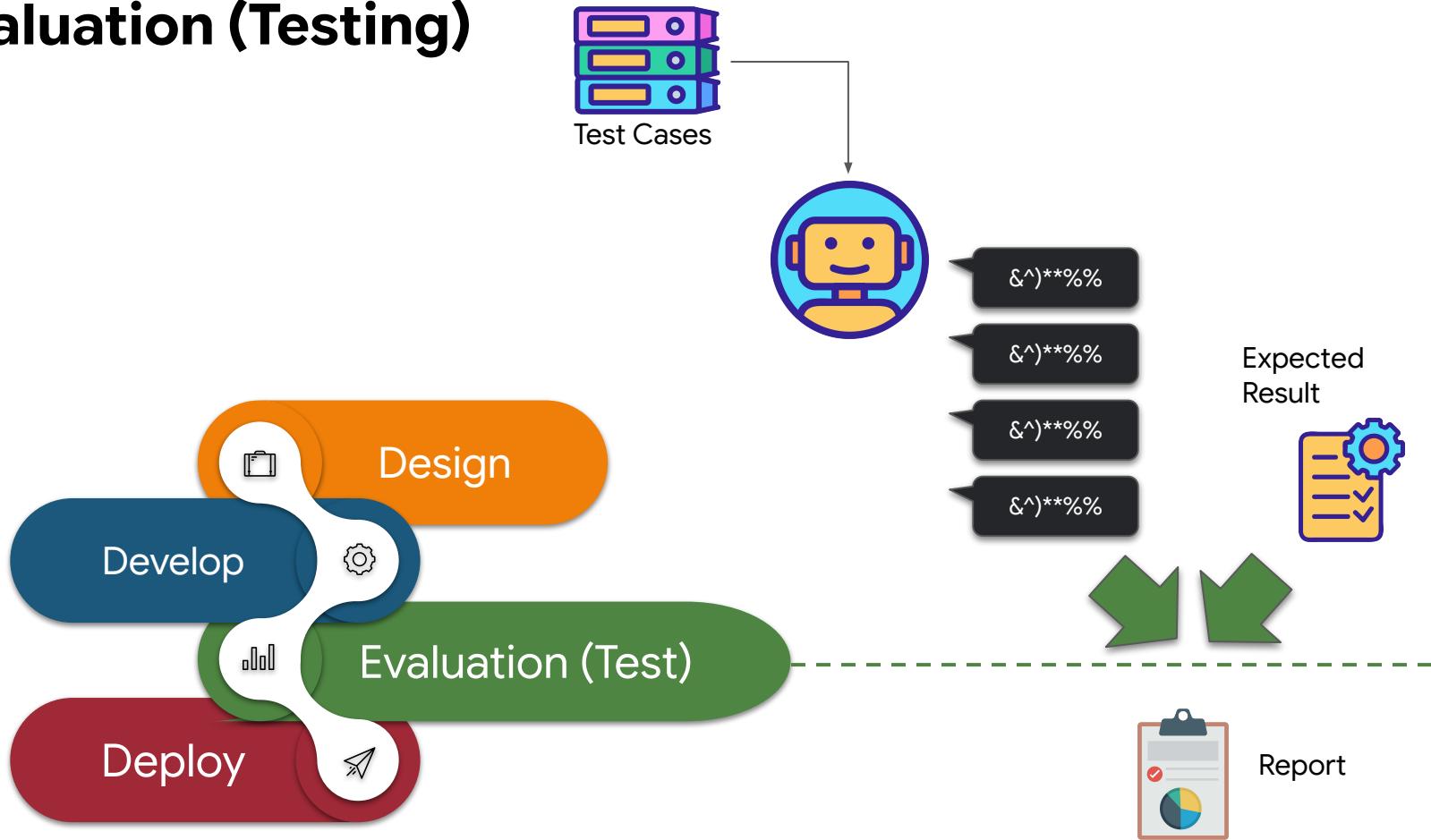
ADK - Runner



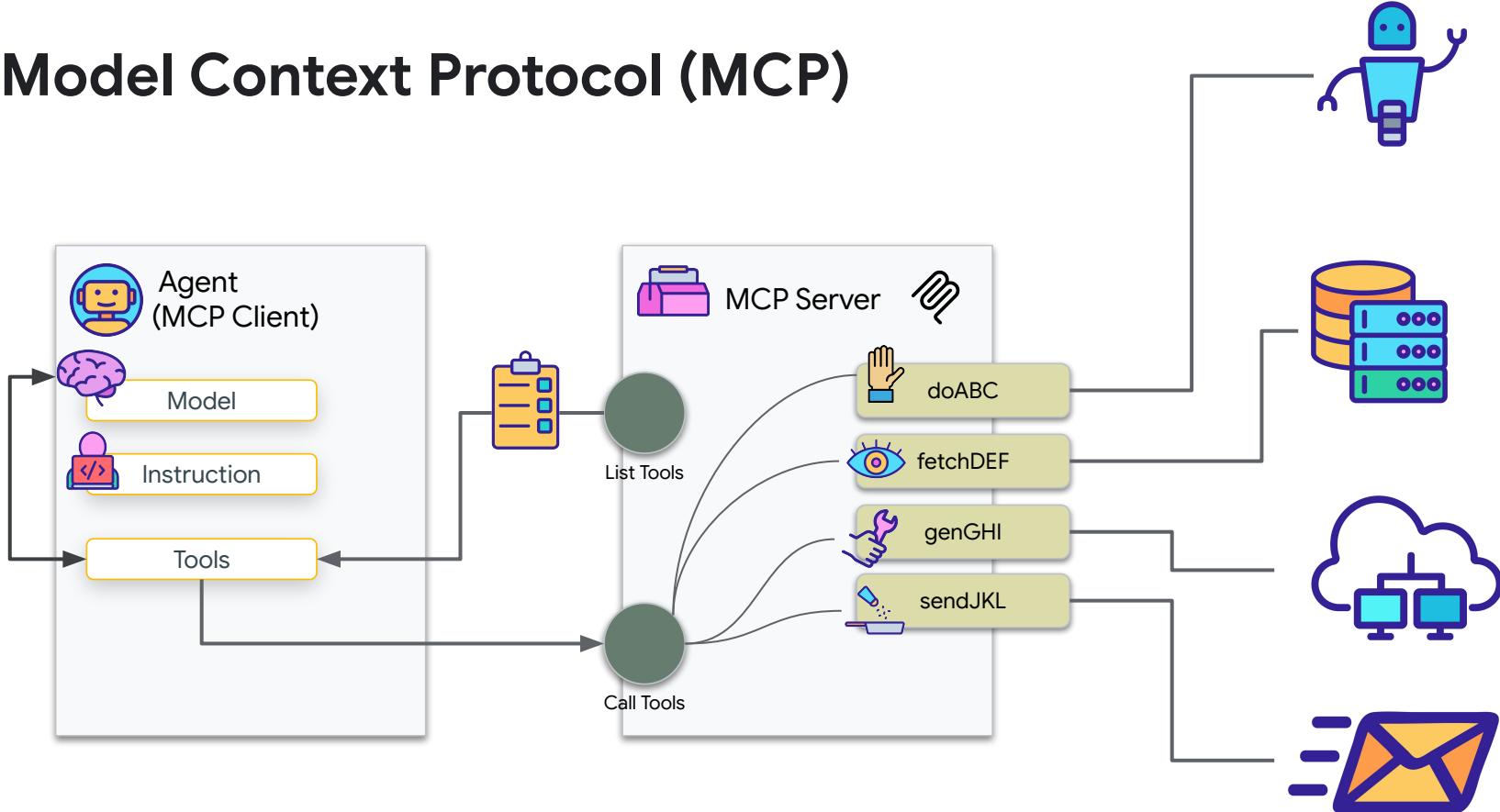
Call backs



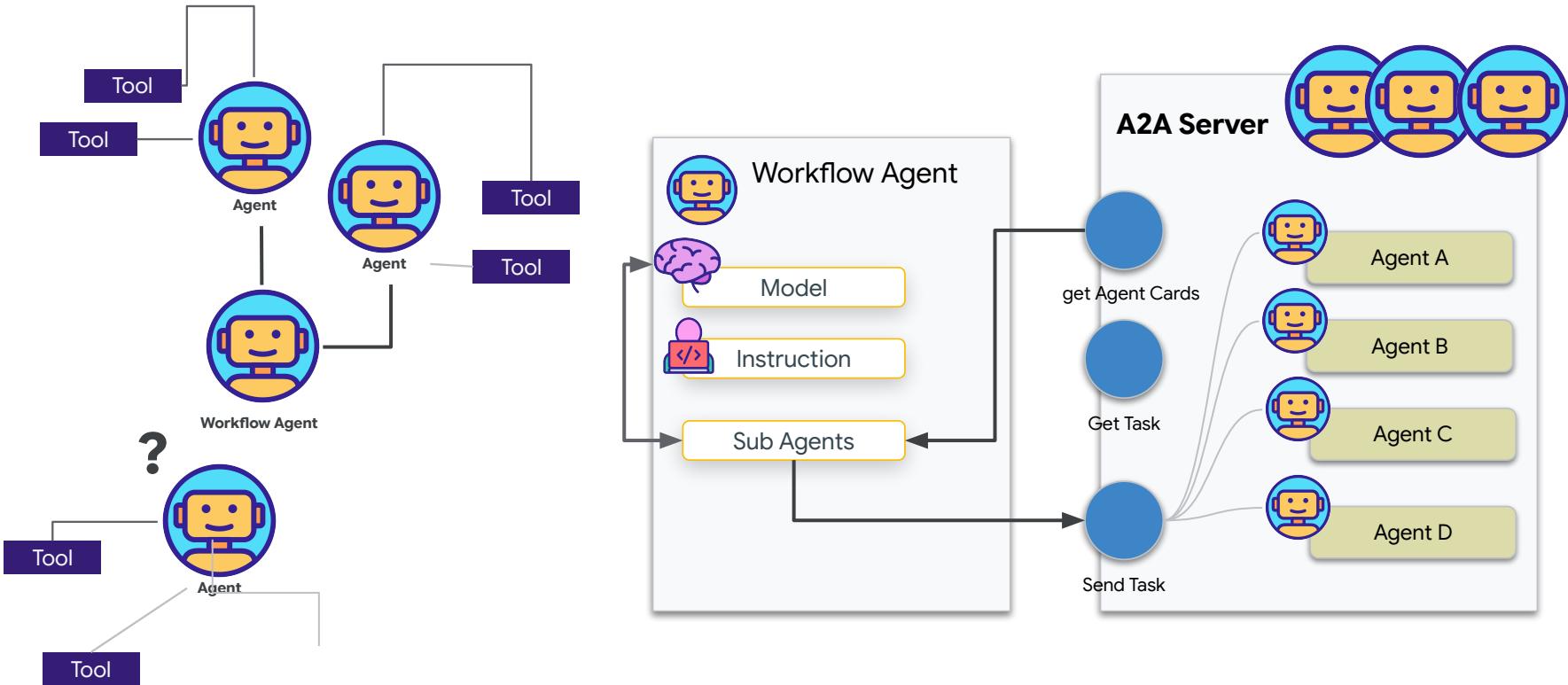
Evaluation (Testing)



Model Context Protocol (MCP)



Agent2Agent (A2A) Protocol



A2A - Agent Card

- A digital profile or manifest for an agent. It's a standardized metadata file (JSON)
- To orchestrating systems
- For discovery



Name: Agent ABC

Provider: Google (URL)

Preferred input/output: text

Capabilities:

- I can do streaming
- I can do Push Notifications

Skills:

- Skill A
 - Description
 - Input
 - Output
- Skill B
 - Description
 - Input
 - Output

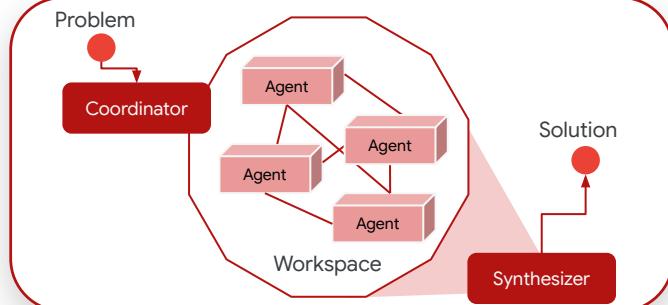
Authentication:

Scheme: Bearer

Key: xxx

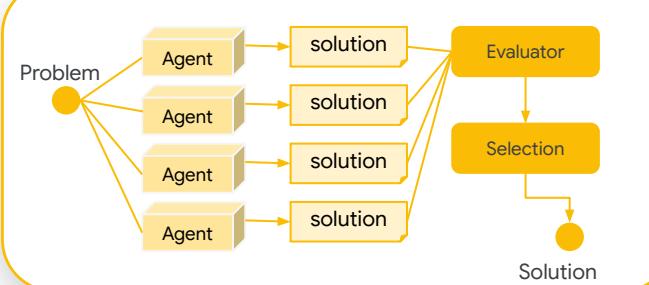
Multi-Agent Interaction

Cooperative Multi-Agent System



Multiple LLM-based agents collaborating to solve problems

Competitive Multi-Agent System



Independent LLM agents to propose competing solutions, with evaluator model selecting best or integrating elements

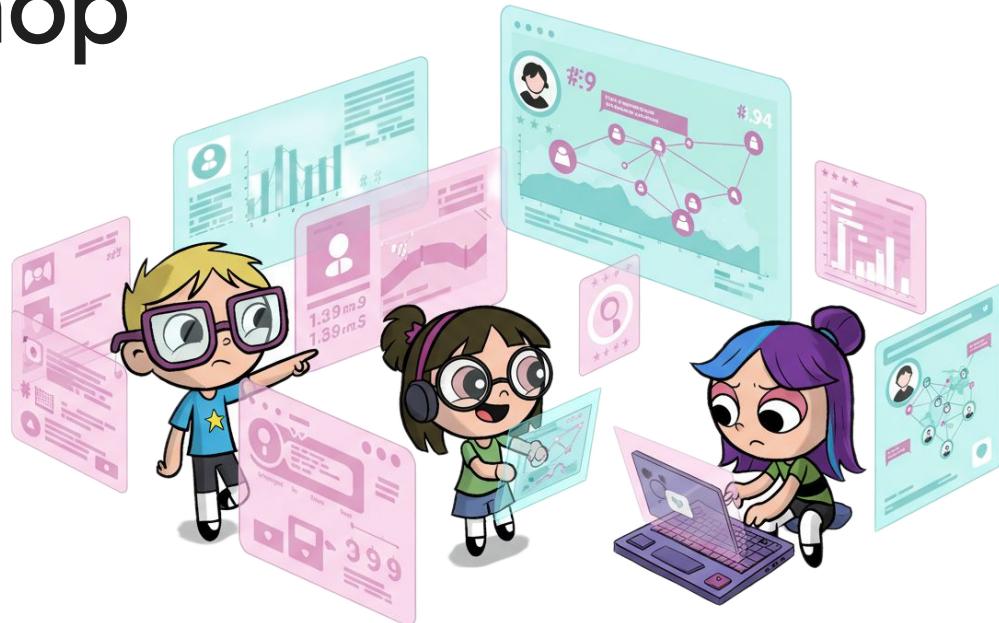
InstaVibe



Agentic Workshop with



Advanced AI powered social listening and multi-agent system to provide hyper-personalized social experiences





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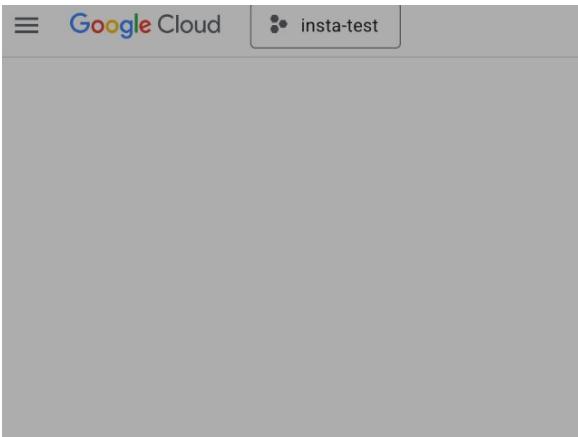
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Billing management

New Project

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Project name *

GDG-Cloud-Bydgoszcz-workshop



Project ID: gdg-cloud-bydgoszcz-workshop. It cannot be changed later. [Edit](#)

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Any charges for this project will be billed to the account that you select here.

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Home Introvert Ally

Alice

Hey guys! Get ready for a futuristic night out in Miami on May 22nd! We're hitting up ARTECHHOUSE for some mind-bending digital art, then Putsnack for high-tech mini-golf. Prepare for awesome!

Comment

, very pretty, white with blue eye!

Laura

A night out in Boston at the Boston Public Market, Isabella Stewart Gardner Museum, and VERSUS Arcade Bar. Sadly, I left my phone in the station, and I can't find it.

Like Comment

Julia

Y'all I just got the cutest lil void baby 😍. Naming him Abyss bc he's deep, mysterious, and lowkey chaotic 🌊 #VoidCat #NewRoomie

Like Comment

Kevin

And what's going on around town? I have no idea



I want to organize a plan for my friends, but I don't know what they like..

Alice

Events

Vienna Concert & Castles Day

a month from now

Attendees:

Charlie

Laura

Alice

Ethan

Mike

Mia

Music in the Park Festival

5 days from now

Attendees:

George

Hannah

Julia

Indie Film Screening

4 days ago

Attendees:

Diana

Hannah

Kevin

George

Ian

Laura

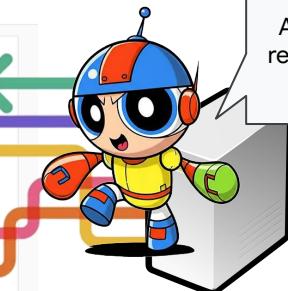


Event plan

Social Profiling

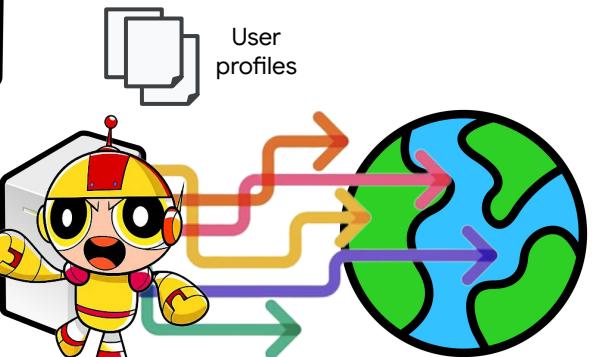
Analyze friends post, events and relationships for hyper-customized interest.

User profiles



Event Planner

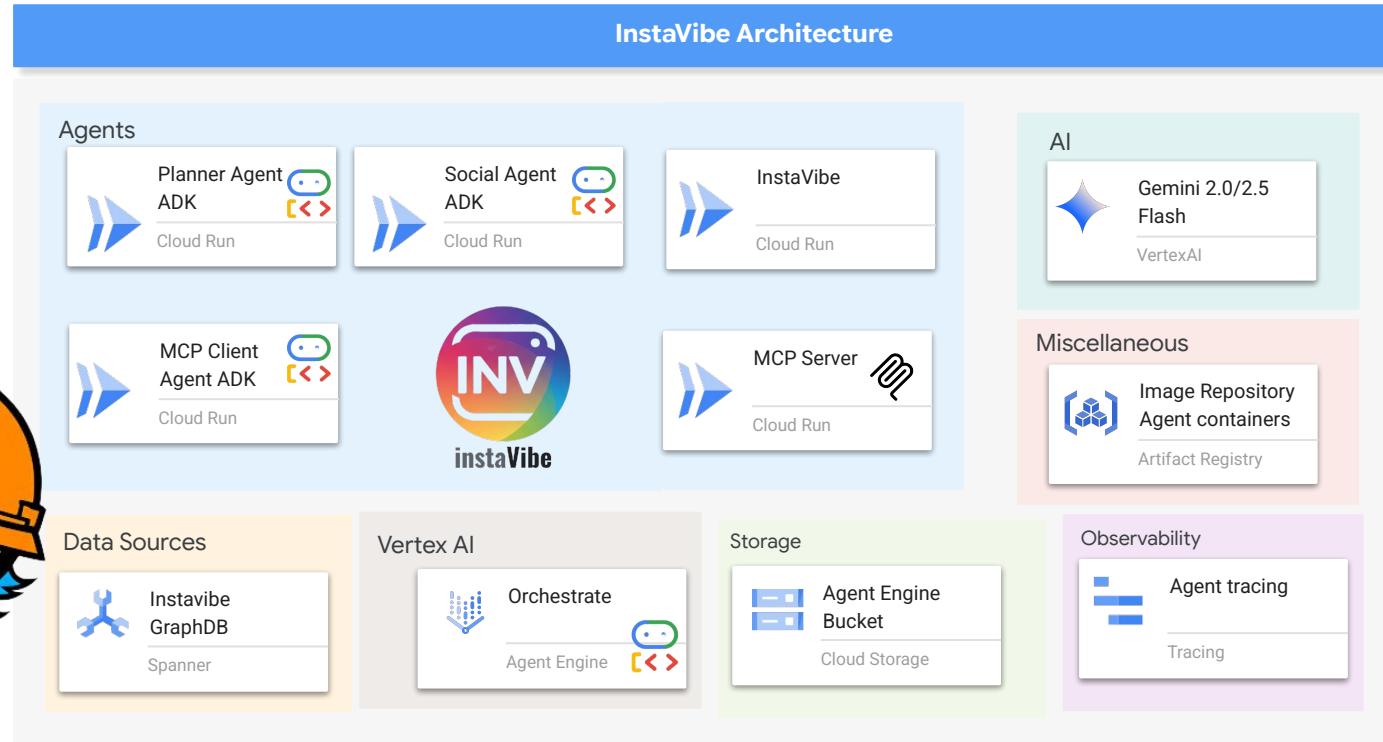
Get the most updated events from internet and provides actual locations on the map



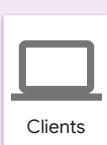
Platform Integration

Automatically create post and event invites on the platform

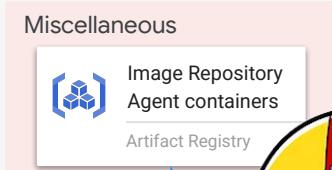
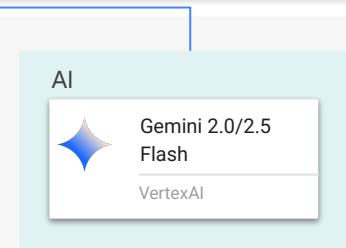
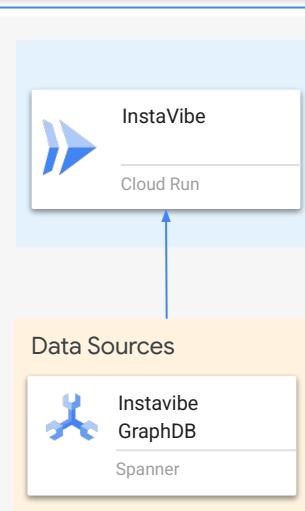
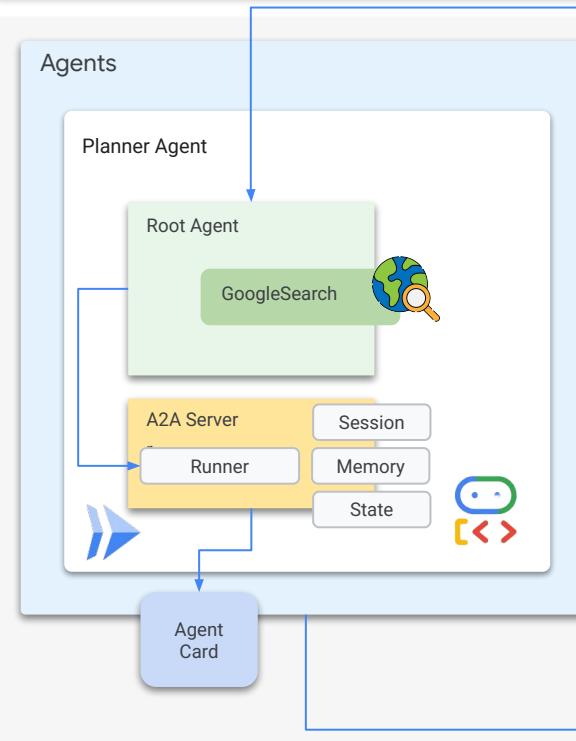




Event Planning Agent - The Basic Agent

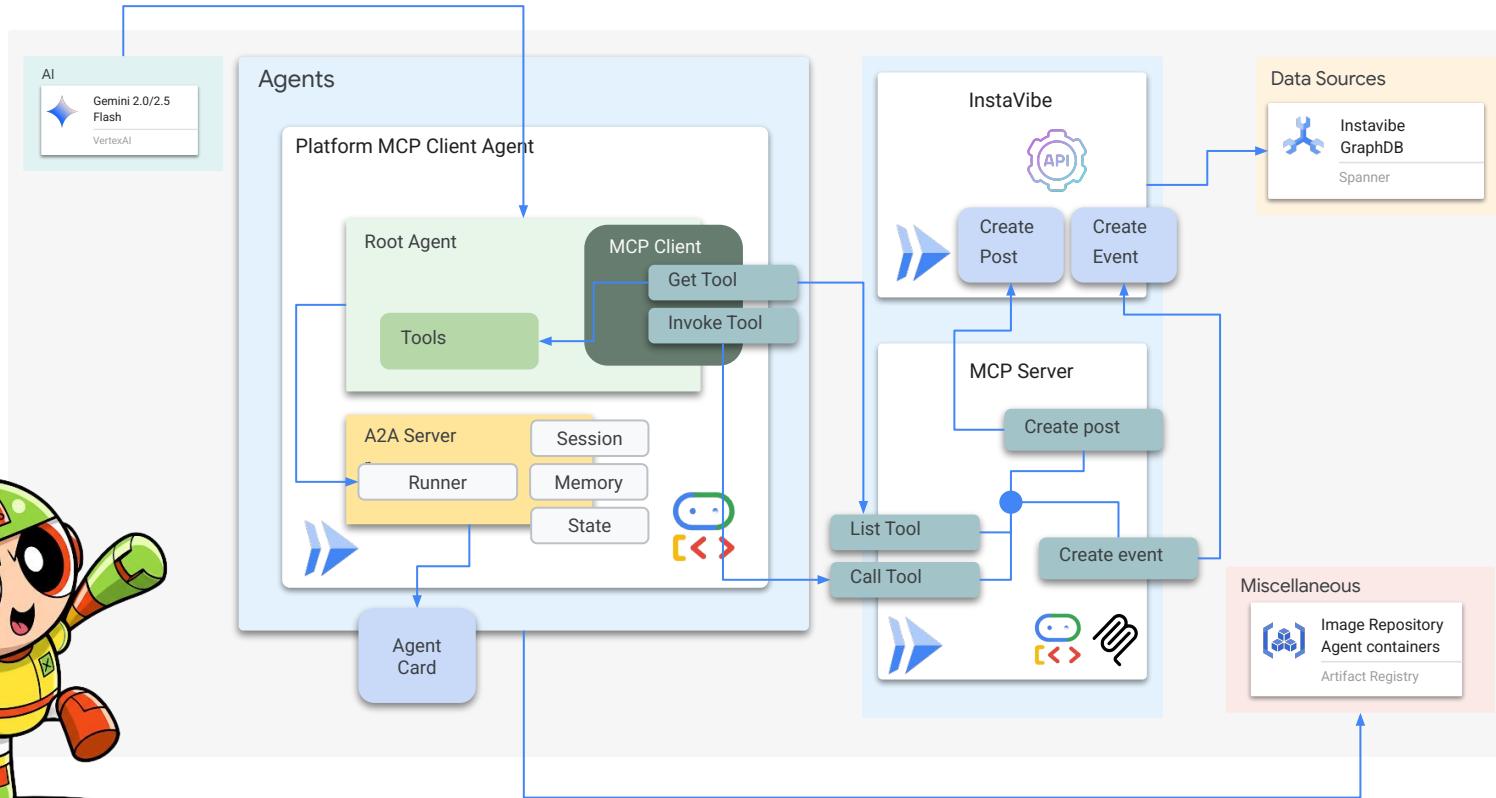


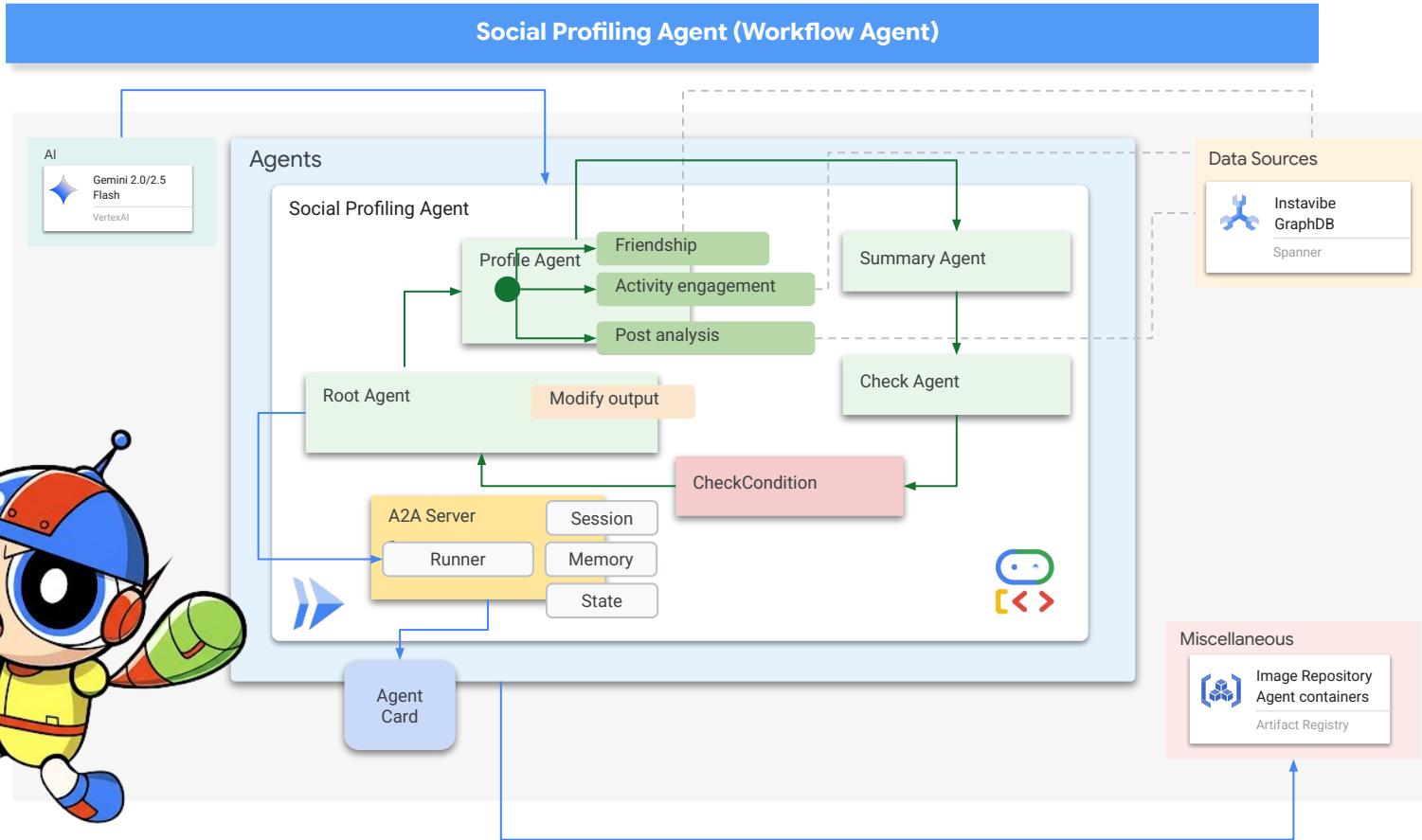
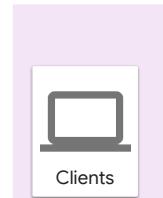
Clients

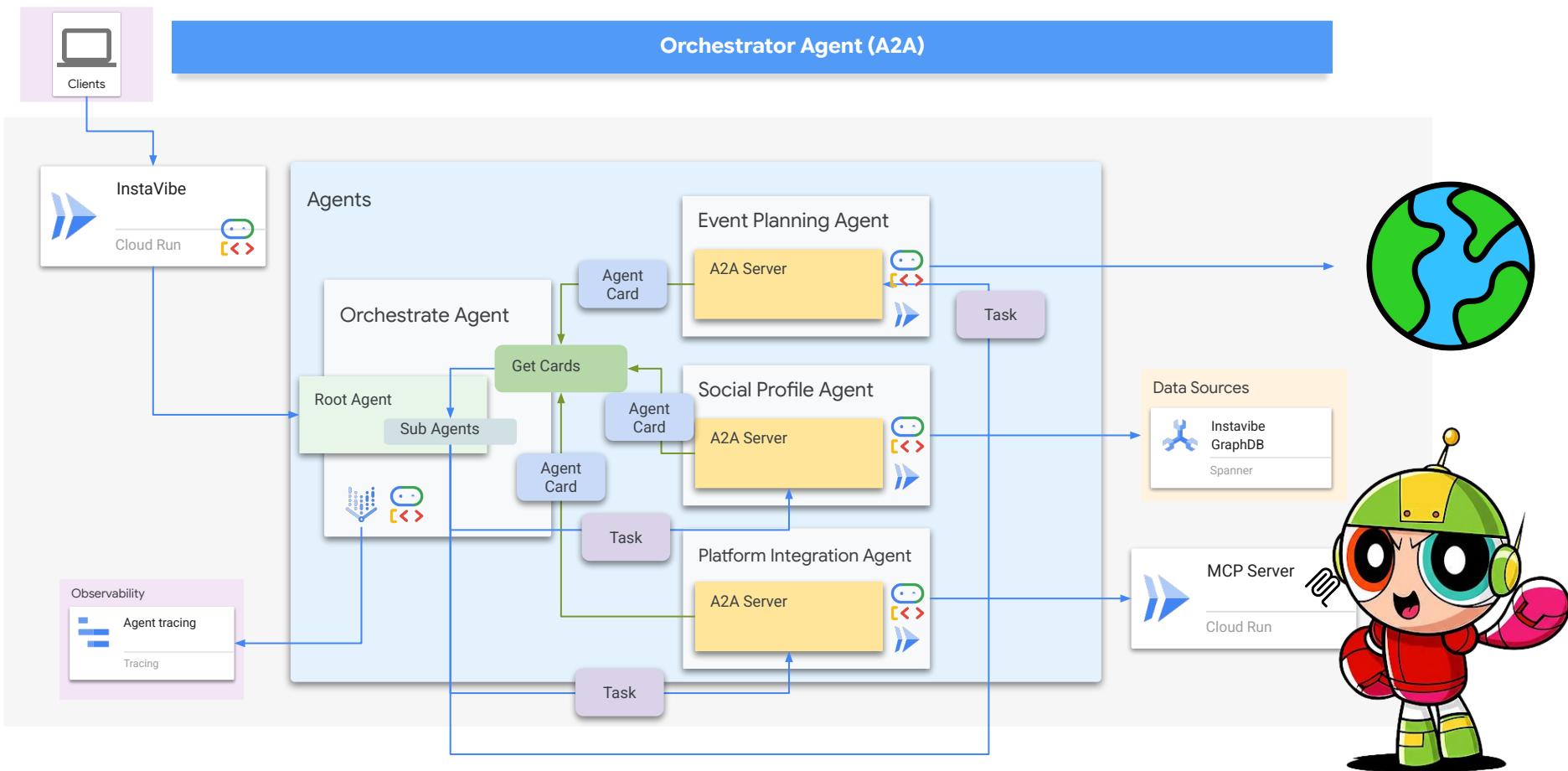




Platform Interaction Agent - Using MCP

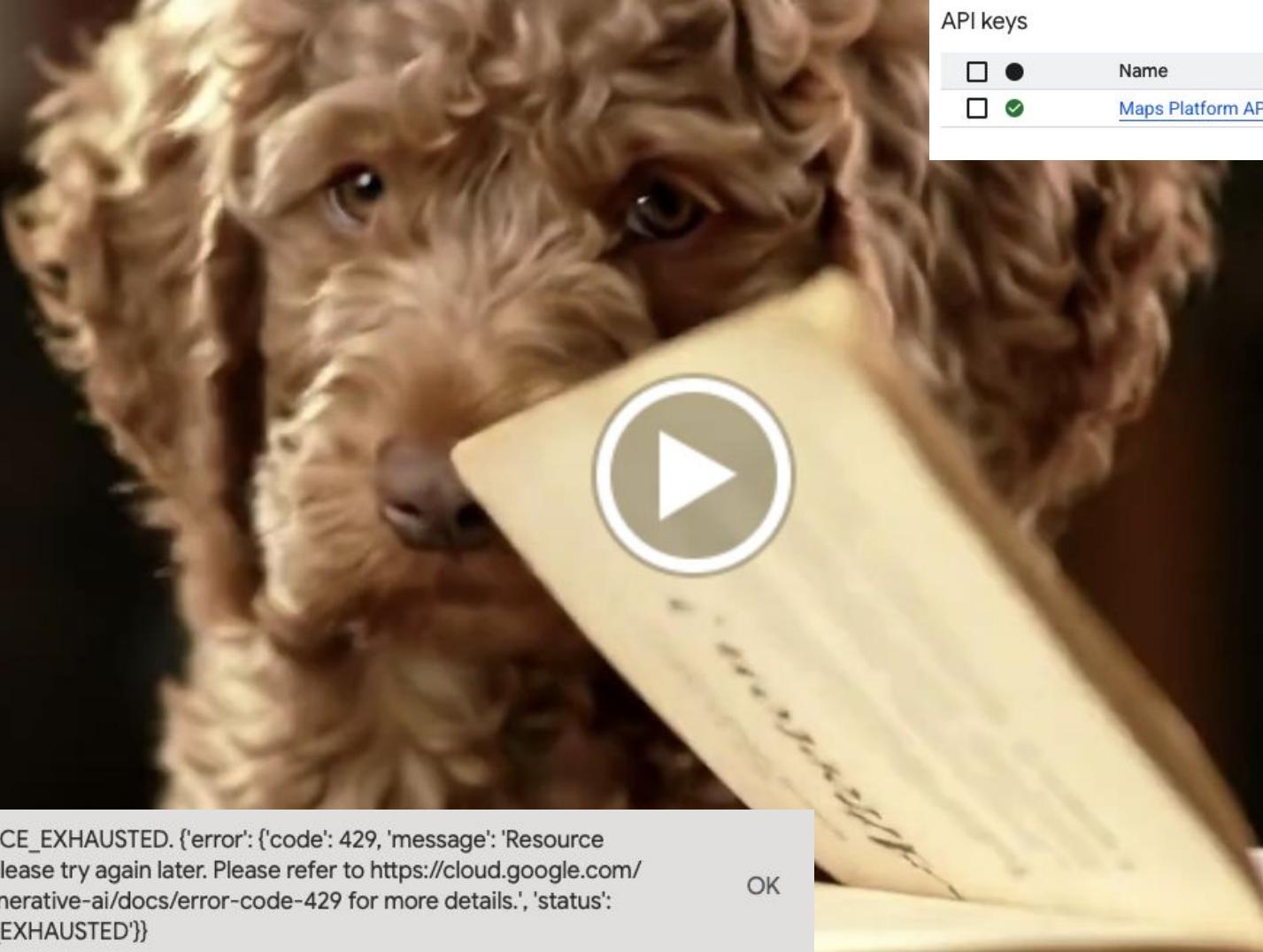








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429 RESOURCE_EXHAUSTED. {'error': {'code': 429, 'message': 'Resource exhausted. Please try again later. Please refer to https://cloud.google.com/vertex-ai/generative-ai/docs/error-code-429 for more details.', 'status': 'RESOURCE_EXHAUSTED'}}

OK

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Q&A