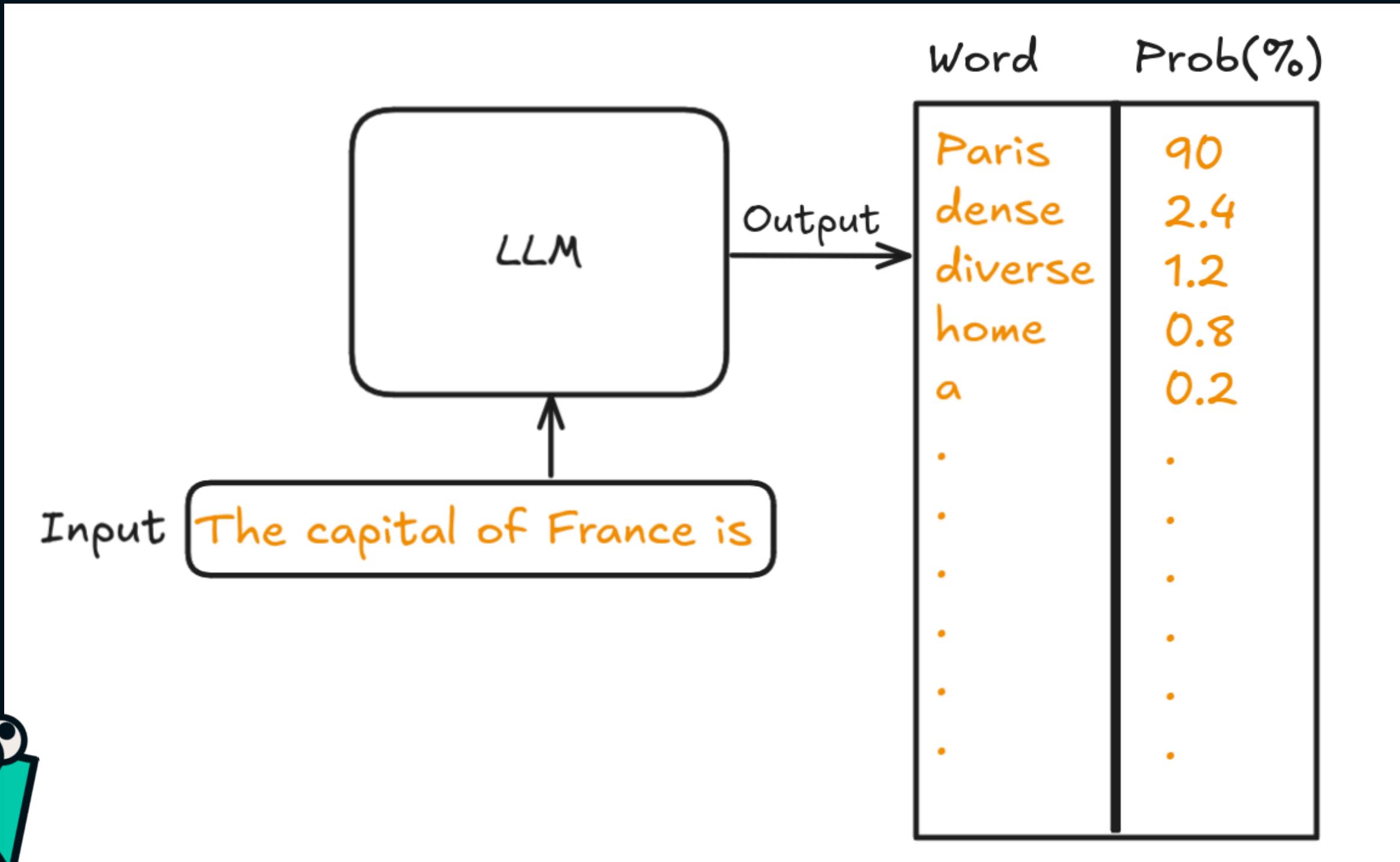


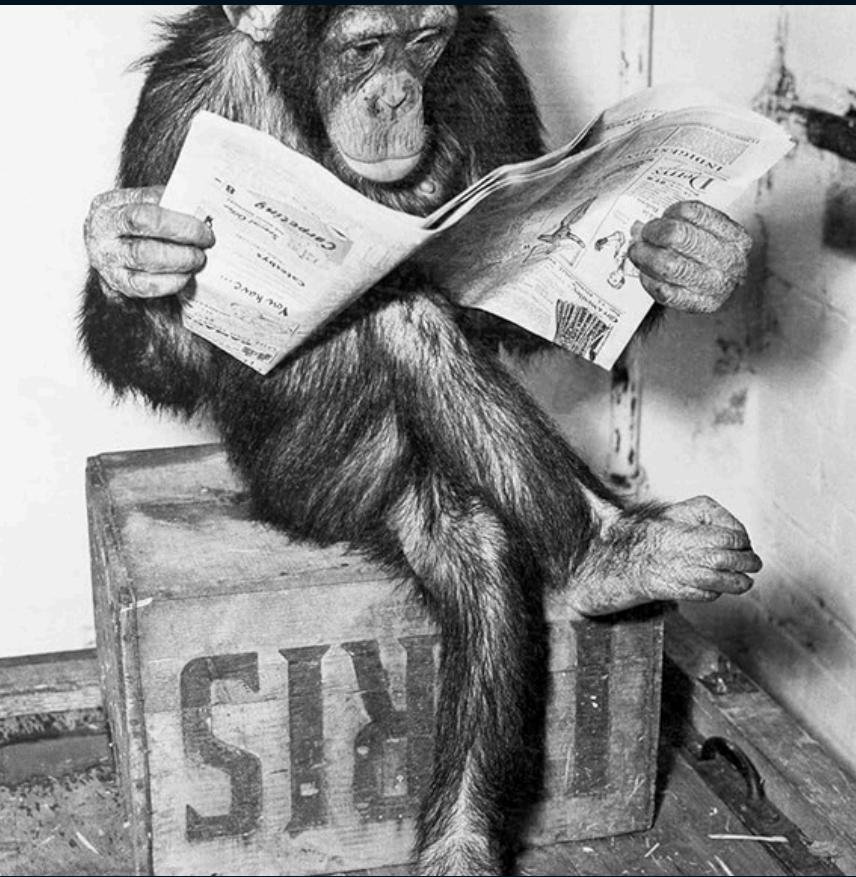
MCP

Principles and practice

Gabriele Orlandi & Fabio Lipreri



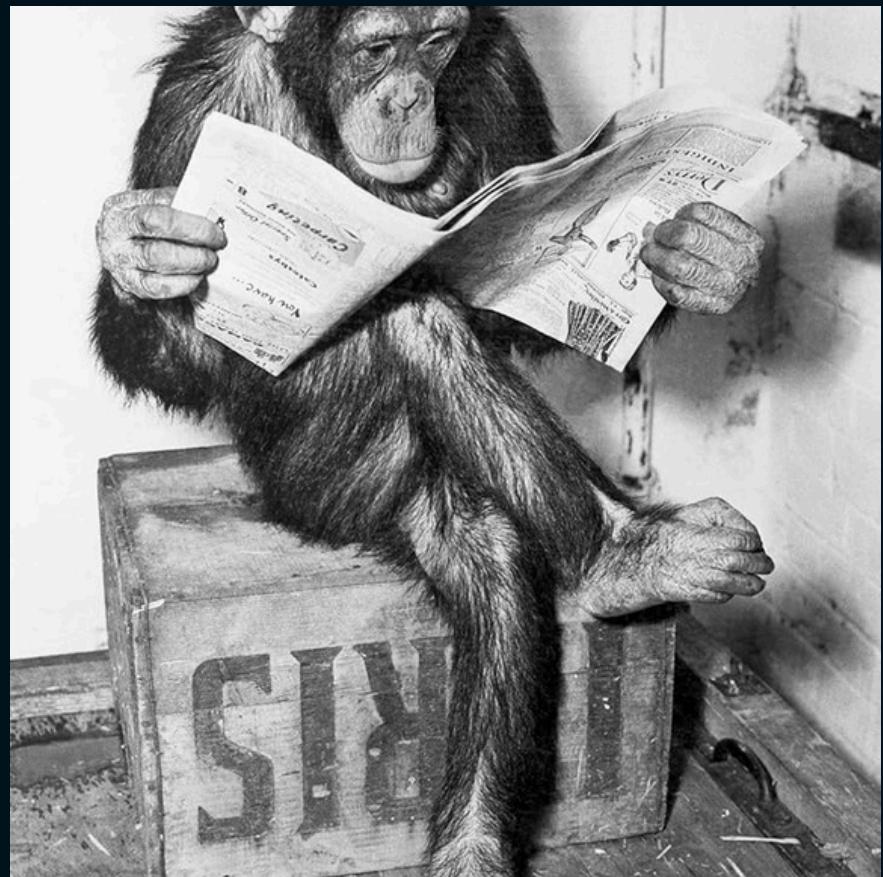




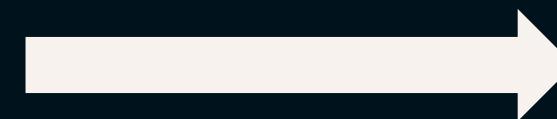
Access
Proprietary
Knowledge



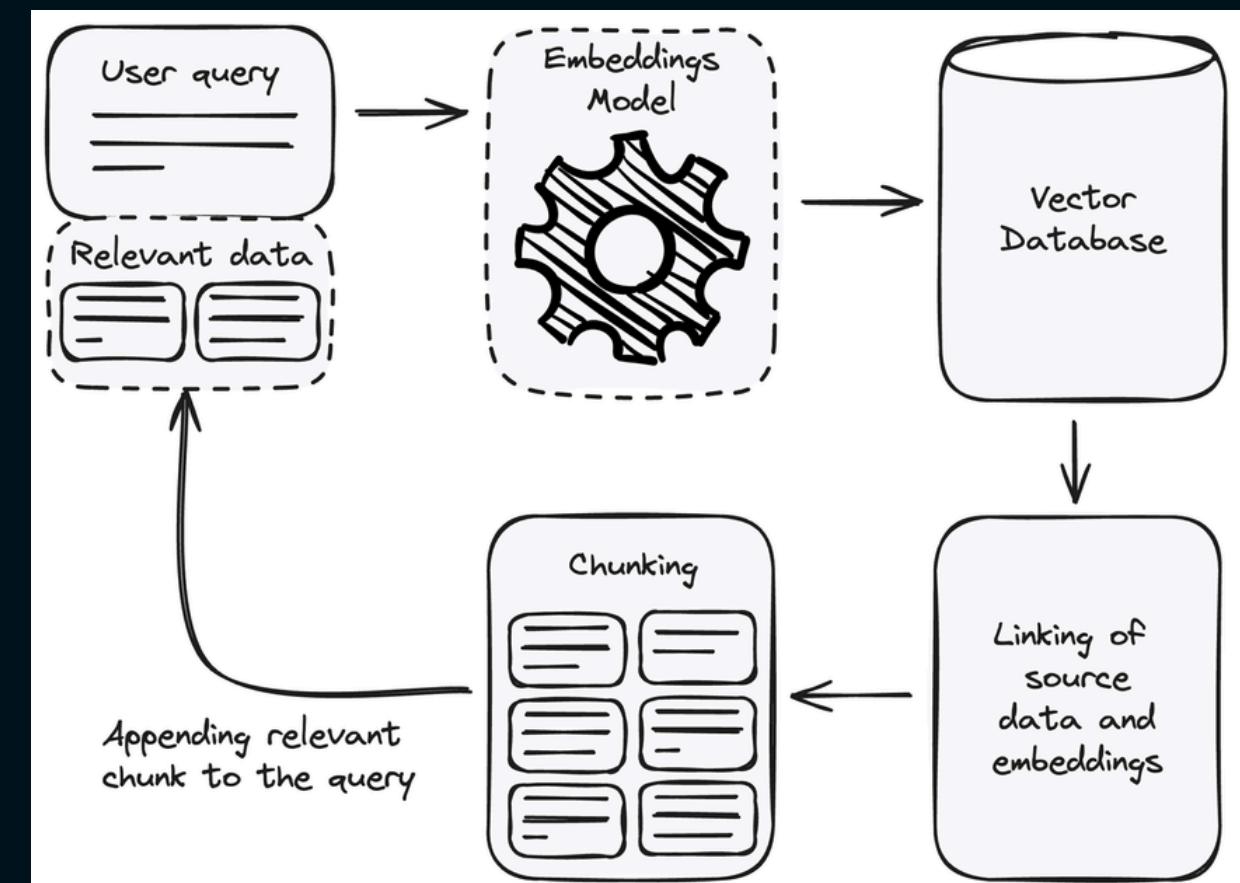
Perform
Actions

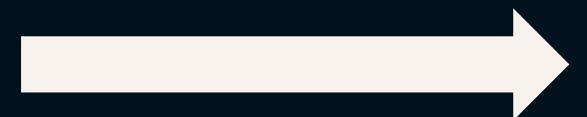


Access
Proprietary
Knowledge



RAG



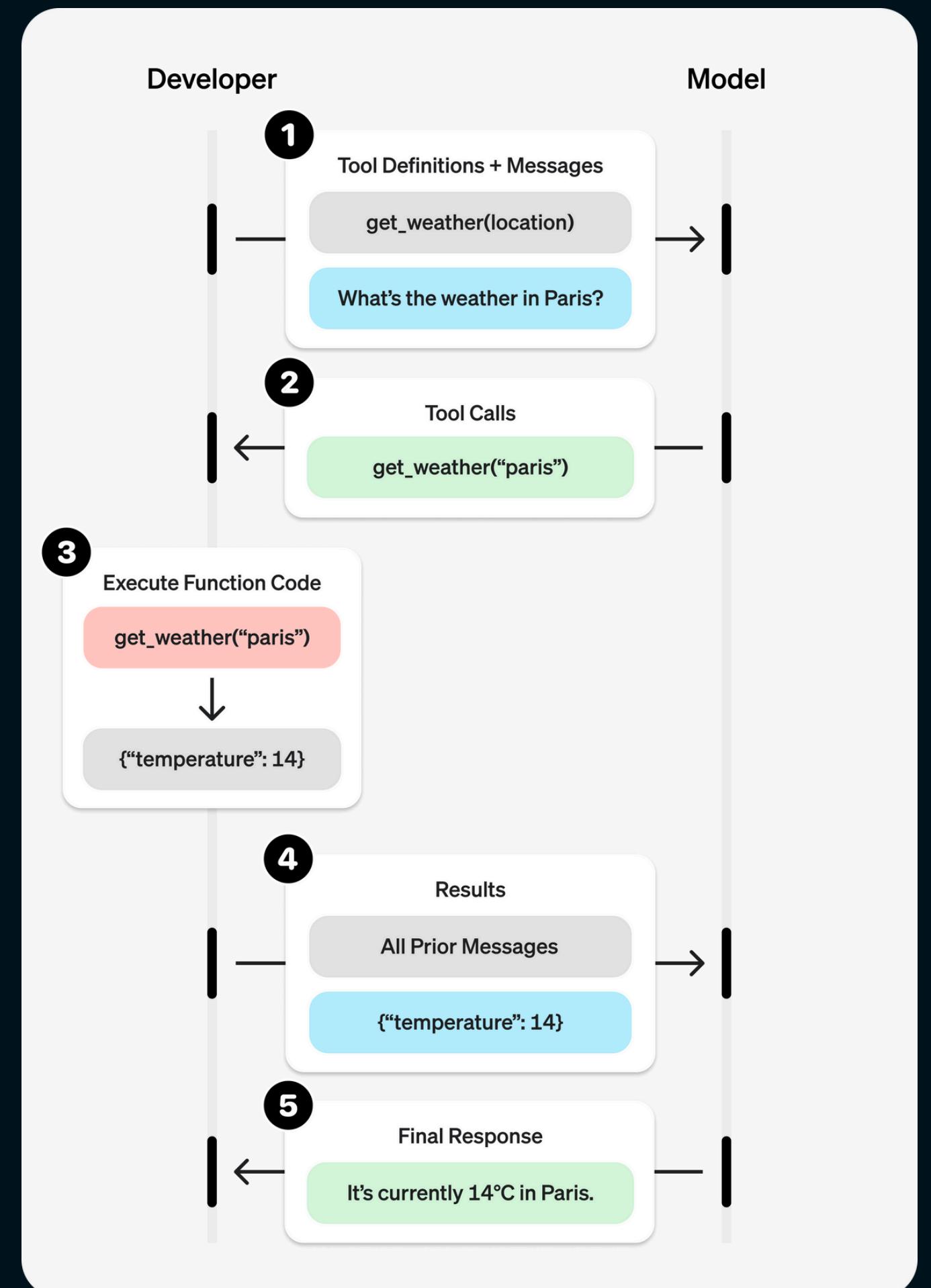


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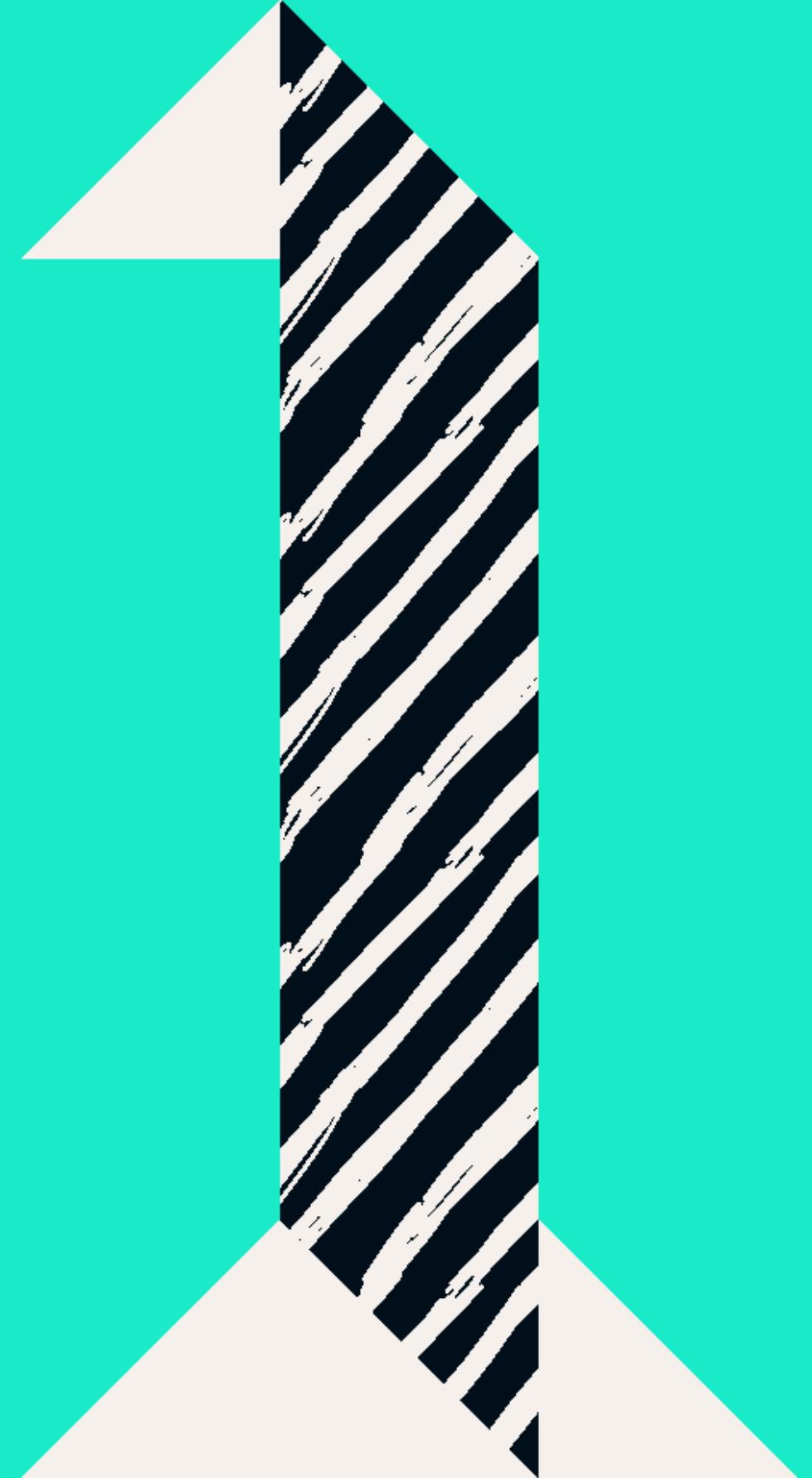
Perform
Actions

DEMO



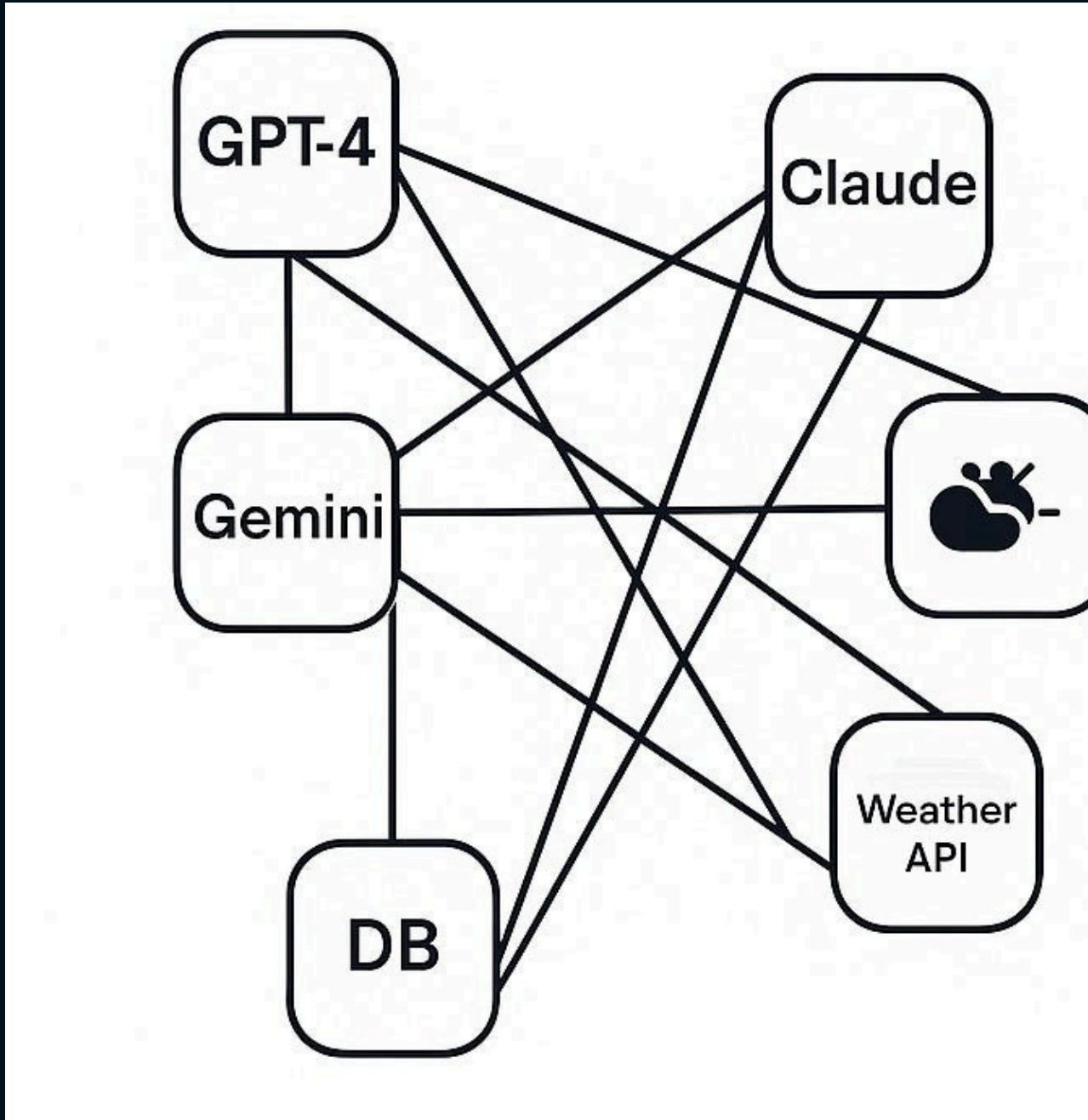


What is MCP?

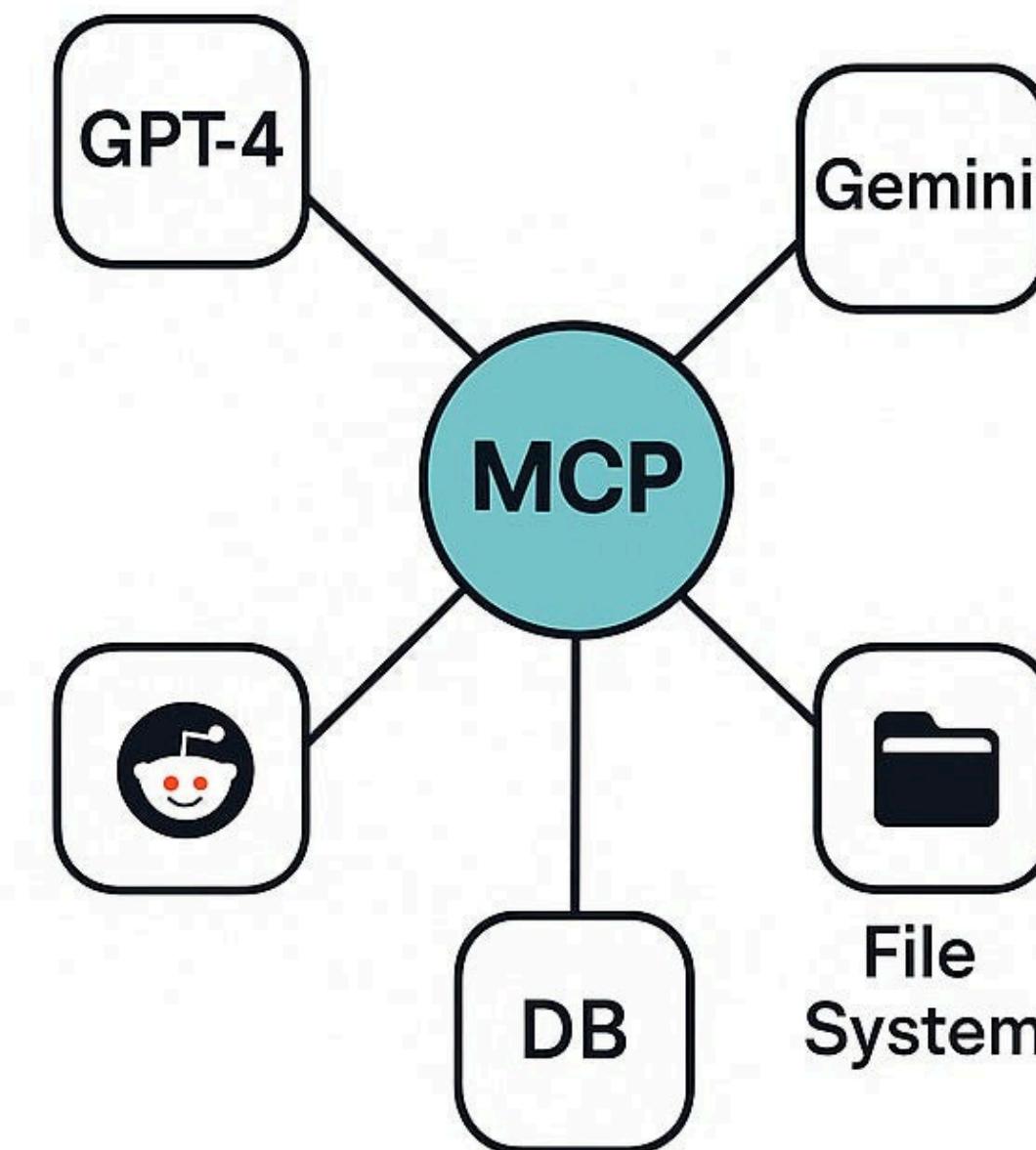




$N \times M$
Integrations



$N + M$
Integrations



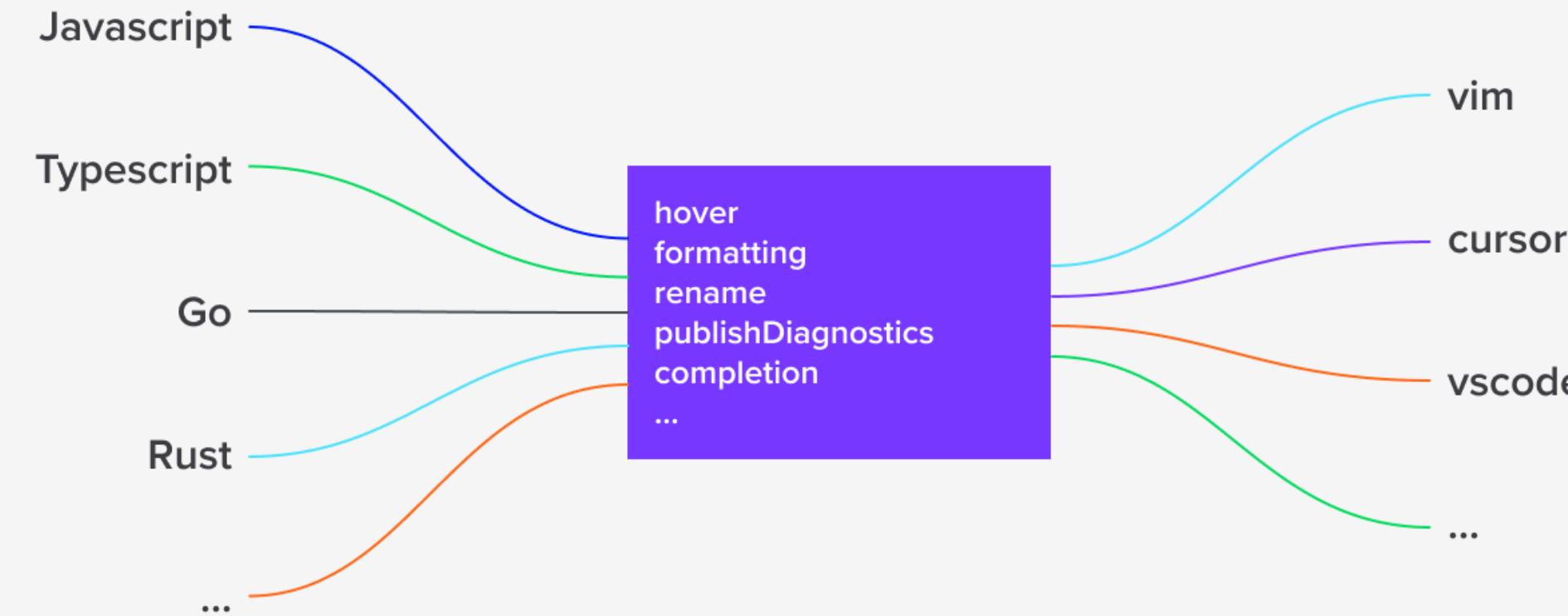


MCP is an open protocol that standardises how applications provide context to LLMs.

Think of MCP like a USB-C port for AI applications.



Language Server Protocol (LSP)



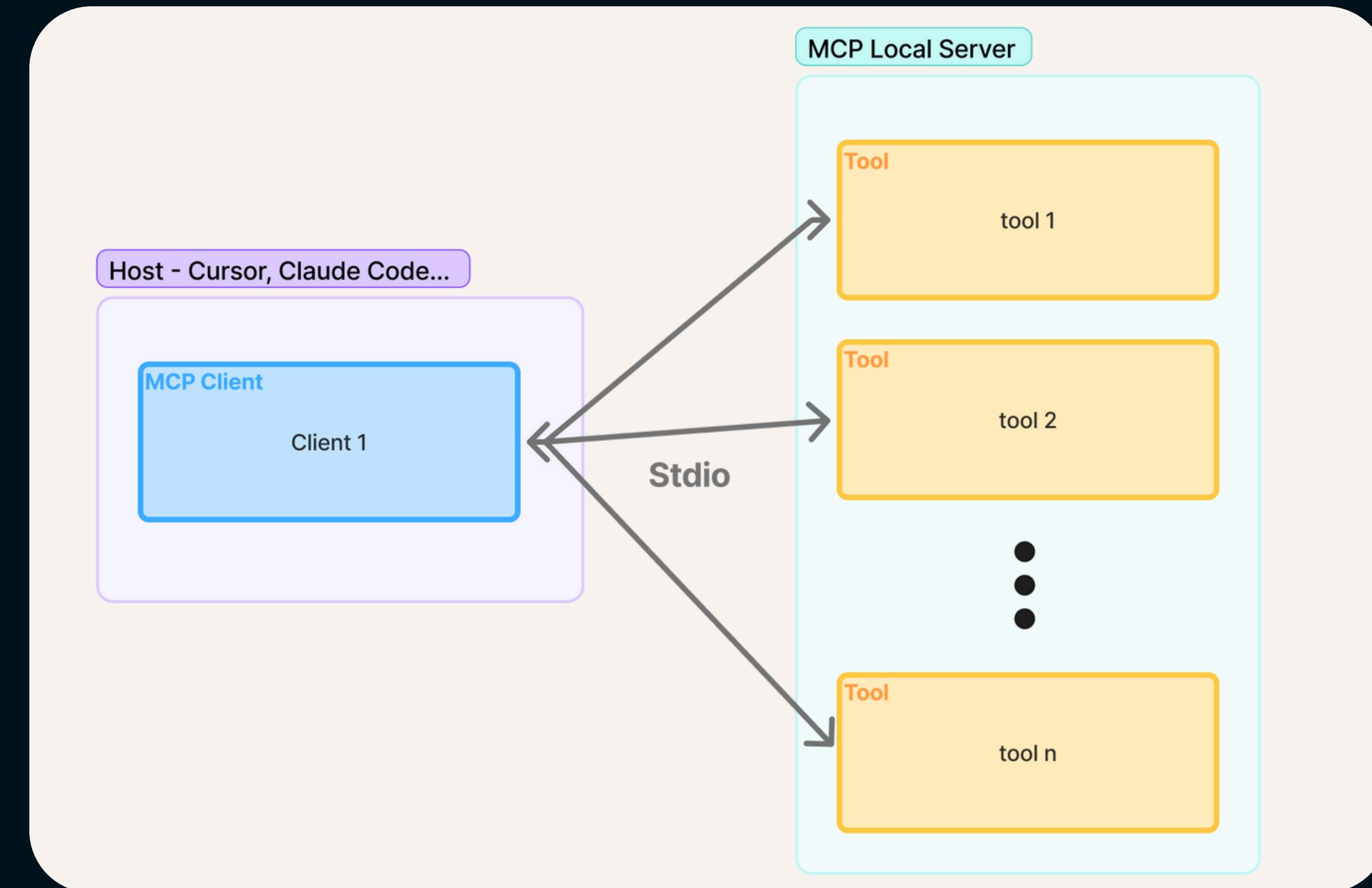


Model Context Protocol (MCP)



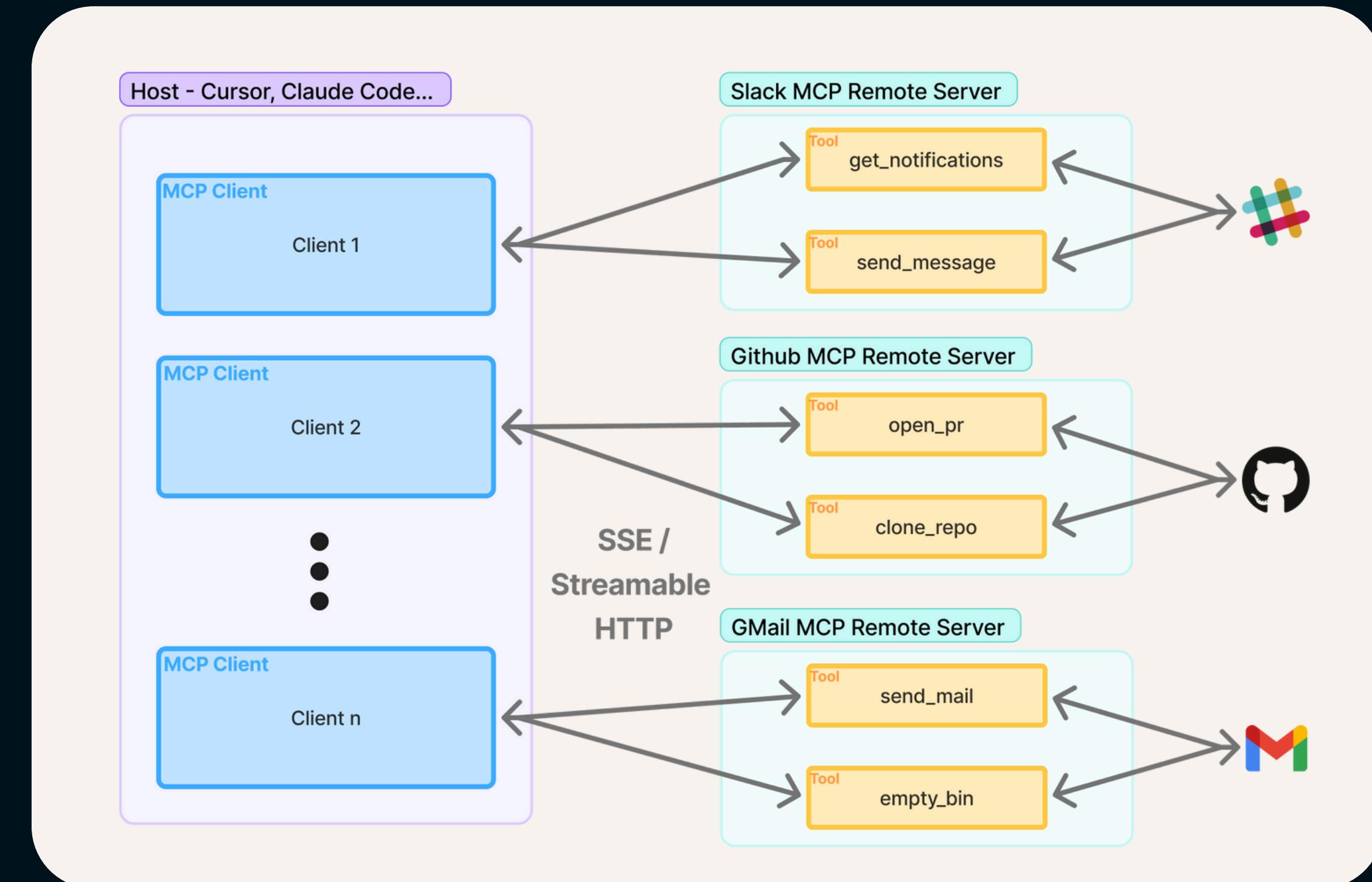


Local MCP configuration





Remote MCP configuration





Server features

MCP Client

Invokes **Tools**
Queries for **Resources**
Interpolates **Prompts**

MCP Server

Exposes **Tools**
Exposes **Resources**
Exposes **Prompts**

Tools

Model-controlled
Functions invoked
by the model

Retrieve / search

Send a message

Update DB records

Resources

Application-controlled
Data exposed
to the application

Files

Database Records

API Responses

Prompts

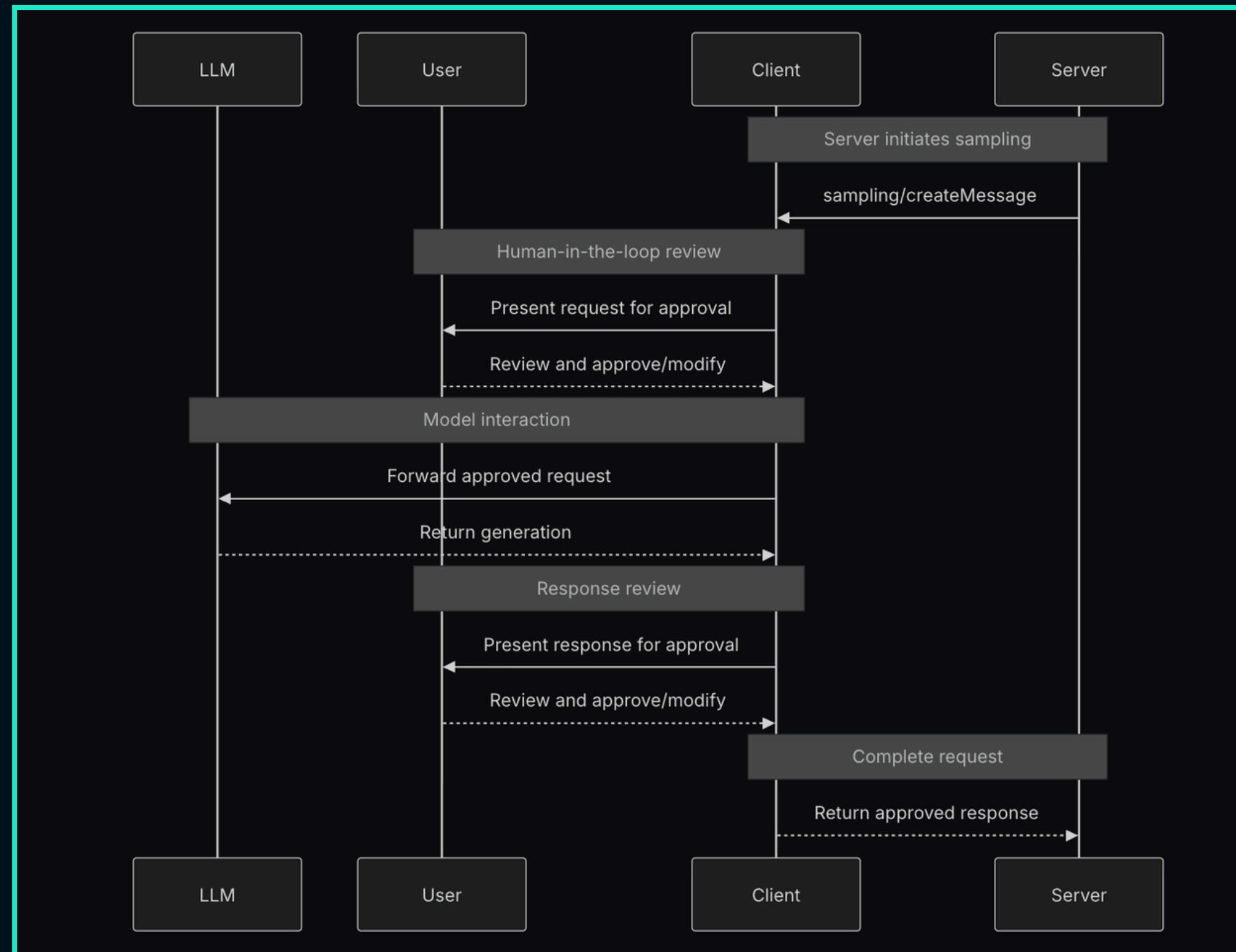
User-controlled
Pre-defined templates
for AI interactions

Document Q&A

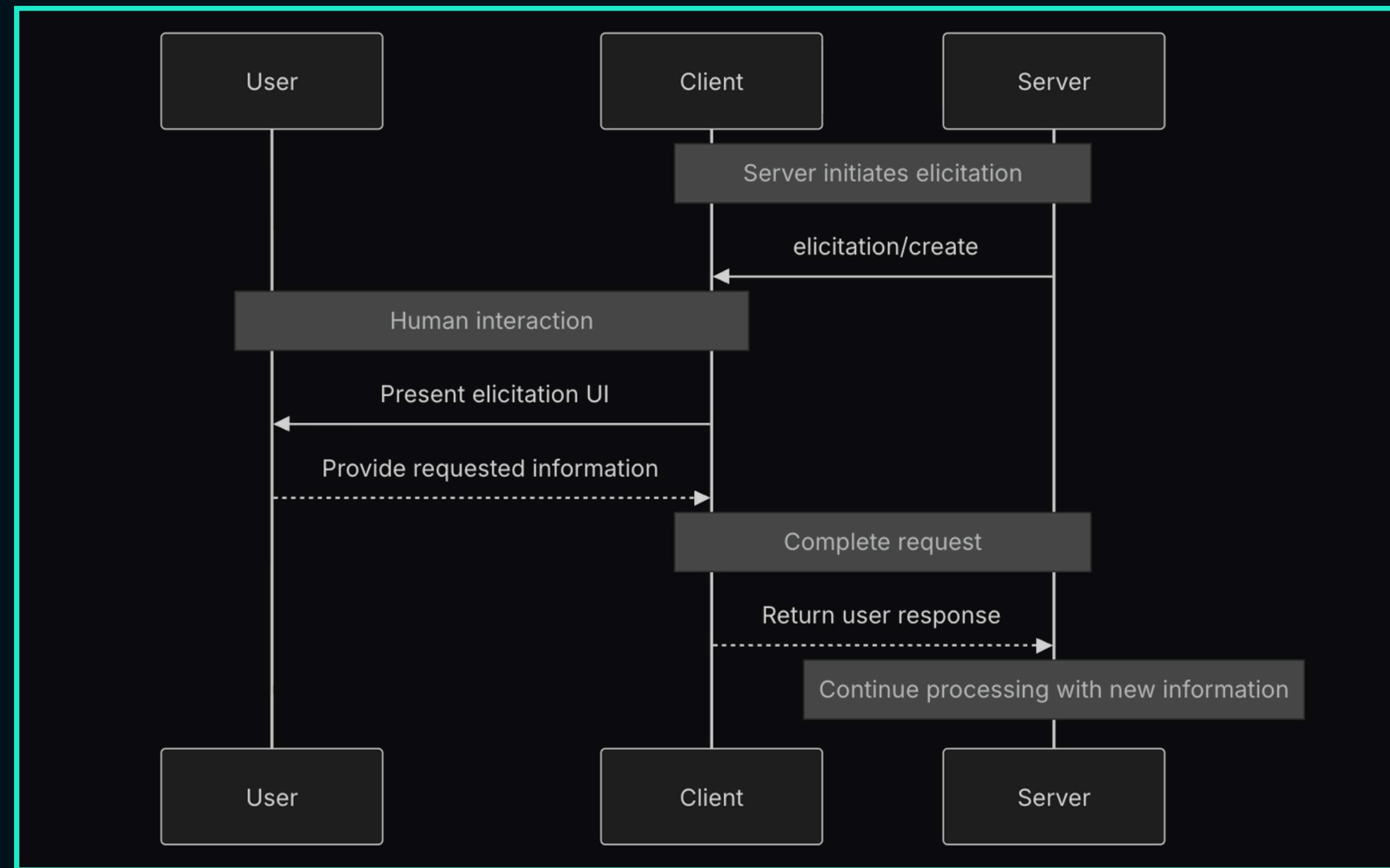
Transcript Summary

Output as JSON

Client features - sampling



Client features - elicitation

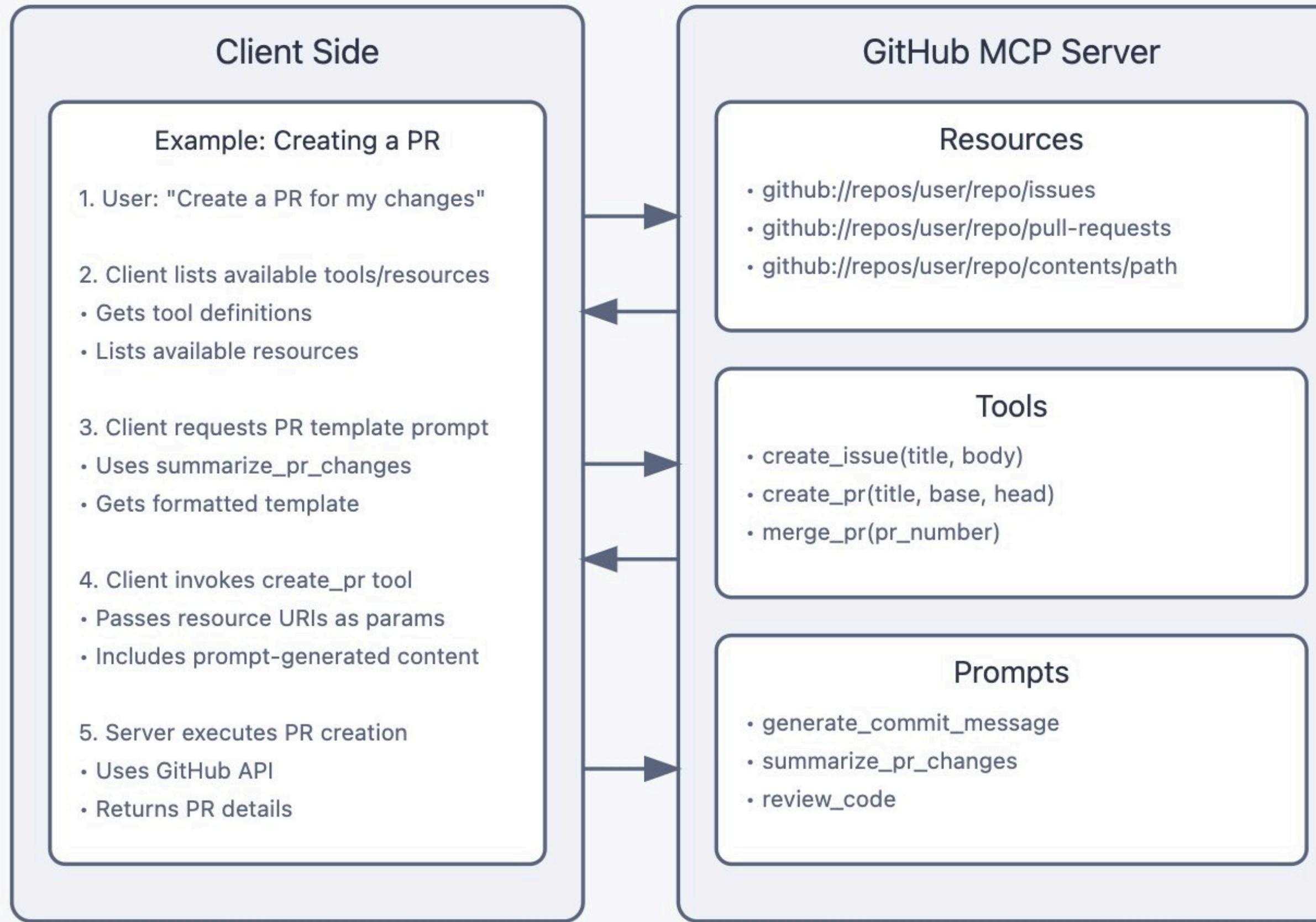


Client features - roots

```
{  
  "uri": "file:///Users/agent/travel-planning",  
  "name": "Travel Planning Workspace"  
}
```



GitHub MCP Server Example



DEMO





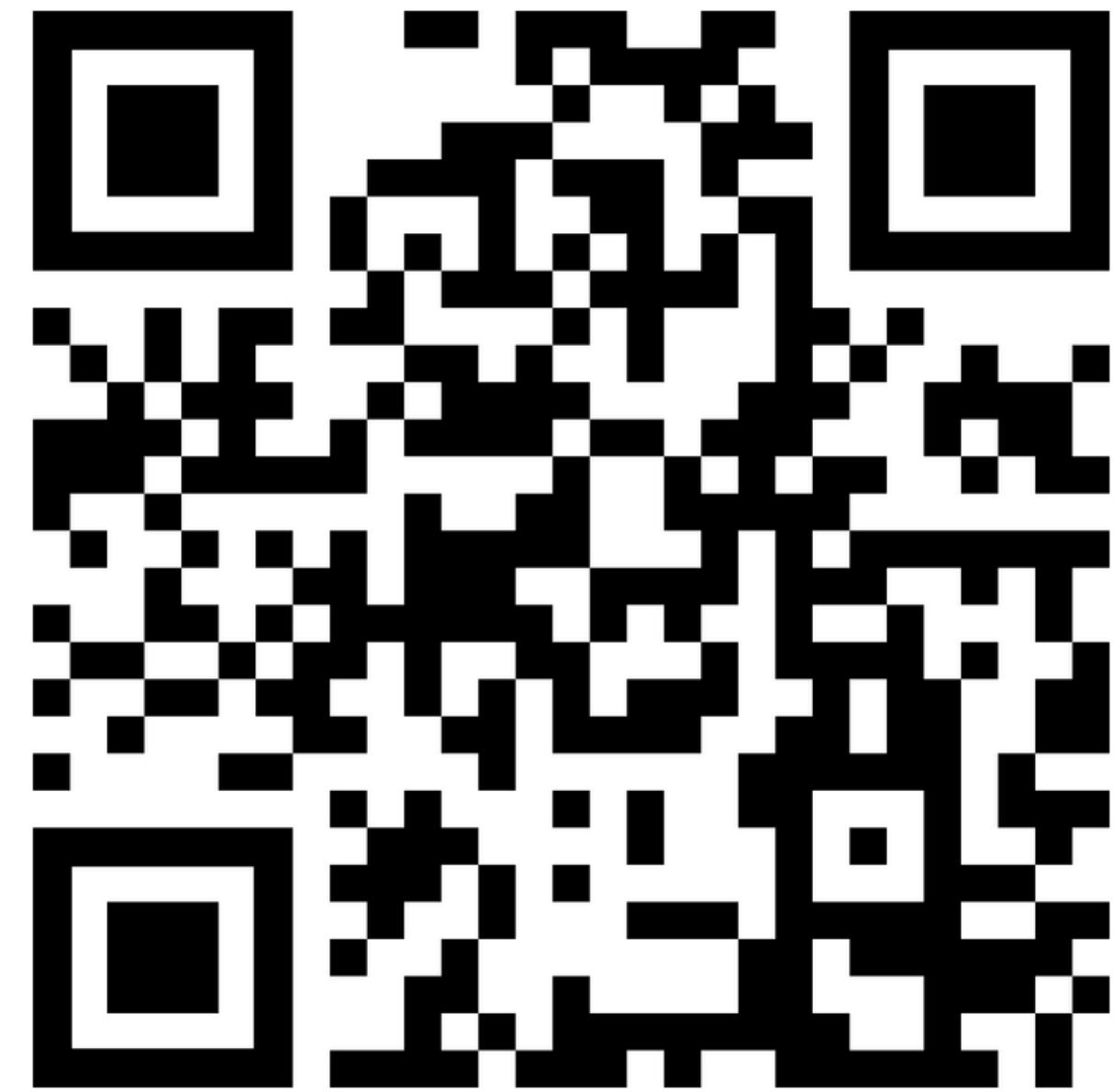
What we learned

MCP is an abstraction layer on top of APIs, shifting workflow control to API producers - an OpenAPI for LLMs

Decouple your MCP code to make sure you can adapt as standards evolve. Remote servers help you stay current.

Set realistic expectations: adopting MCP may not be a silver bullet for your agentic application. You will still probably need custom code and prompts.

MCP is here to stay, Anthropic got a head start and won the match. Making it open was the winning move.



Demo Code:

<https://github.com/xtreamsrl/mcp-talk/>



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