traversaal.ai

Let's build Full Stack Agents

(a.k.a Automated Workflows with website)

Module 3

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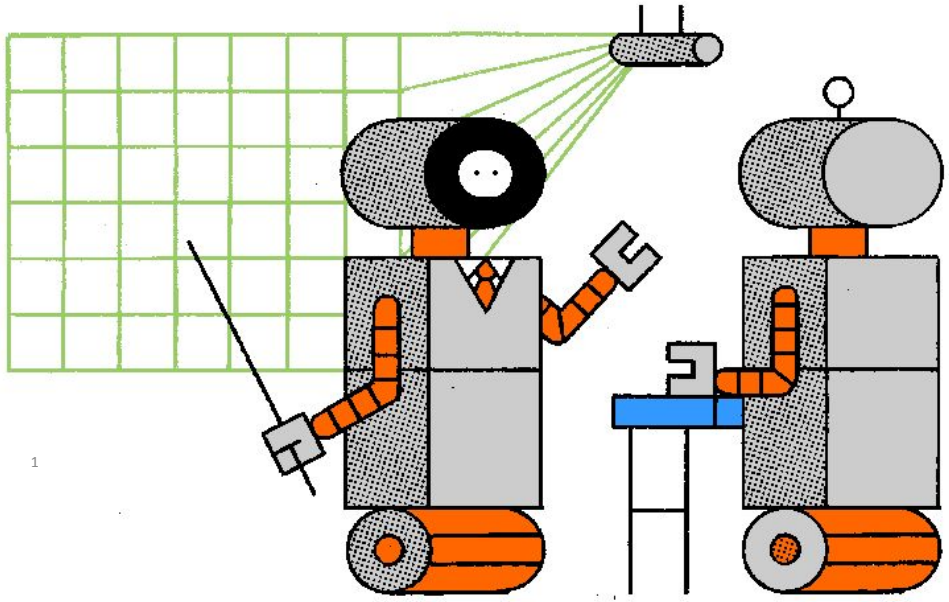
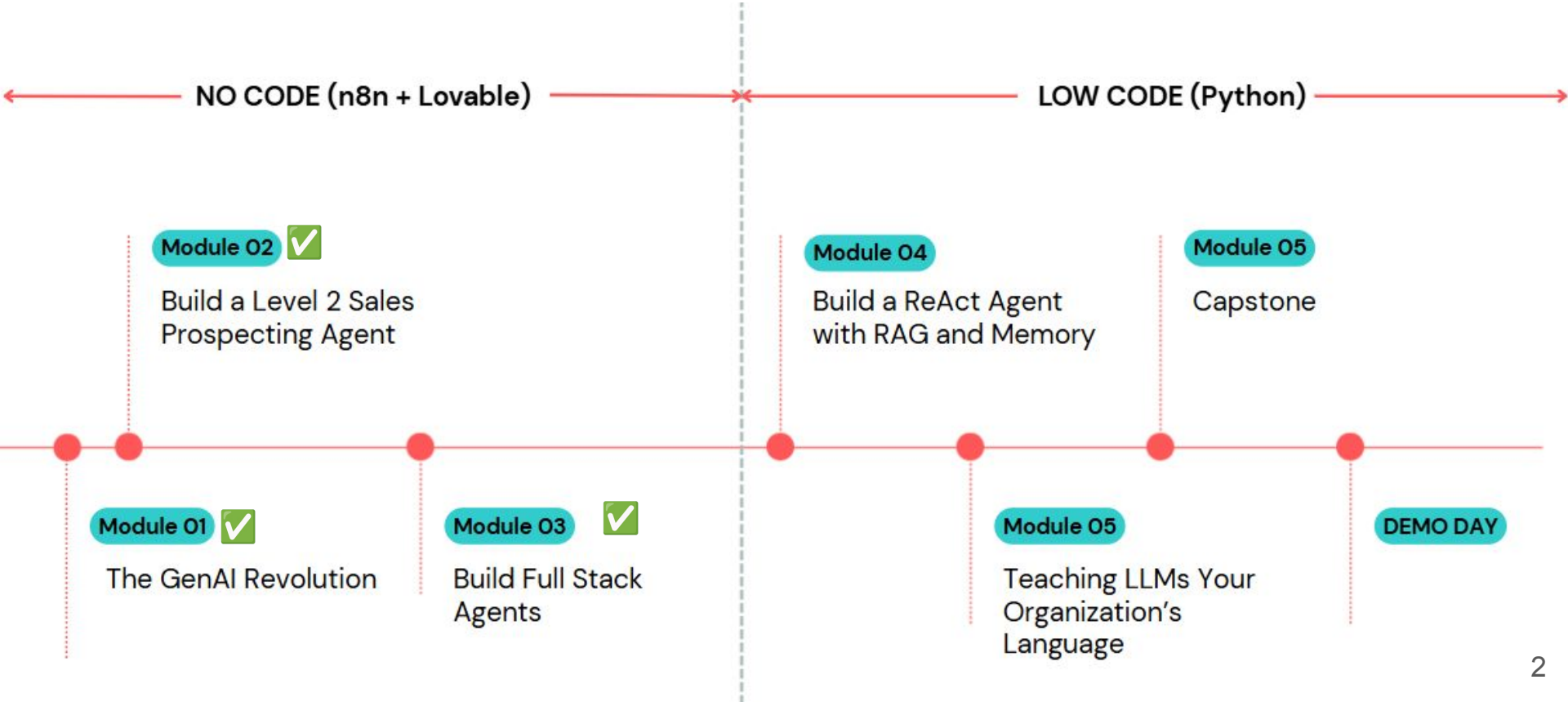
Founder & CEO



Course OverLook

Building Gen AI Agents for Enterprise: Beyond the Hype



Recap from Module 02

- **Prompt Engineering: Role, Format, Style**
  - Learn how to craft prompt stacks that guide behavior and enable better agent control.
- **Context Engineering: Chunking, Windowing, Input Design**
  - Understand how to inject relevant information into agents effectively using input design techniques.
- **Evaluating Agent Behavior in Real Time** (in lessons)
  - Explore how to test and monitor agent performance using qualitative and quantitative signals

Recap from Module 02

- **Tools Deep Dive: n8n and No-Code Workflows**
  - Get familiar with n8n as the core orchestration platform for chaining together inputs, logic, and APIs.
- **Sales Prospecting Agent Architecture**
  - Use a concrete use case to scaffold understanding of how real-world vertical agents are structured.
- **Build and Test Your Agent in n8n**
  - Assemble your first working prototype that demonstrates autonomous workflow execution.

Expected Outcomes for Capstone Project

🛠️ Design and develop an AI agent using course concepts

🔄 Work with tools like n8n, LangGraph, or custom stacks to connect memory, APIs

🚀 Define a use case, build key features, and deploy your solution

🤝 Brainstorm, build, and present together — just like in real AI teams

🎥 Share your solution through a 3–5 min demo and a short write-up

💡 Pick meaningful problems and apply agentic thinking to tackle them creatively

Did submit your idea for capstone project?

List your team and projects here if you have not done it already…

Learning Outcomes for Module 03

- Integrating Front End Interfaces with n8n
- Model Context Protocol (MCP) in n8n
- Structuring Agent Logic and User Interactions
- Designing End-to-End Agent Workflows

00: Reasoning Model Update (Kimi is here)

Recent Updates: New Model in the town

Kimi K2: The Most Powerful Open-Source Agentic Model Yet?

Alibaba-backed startup Moonshot released last Friday night (**July 11, 2025**)

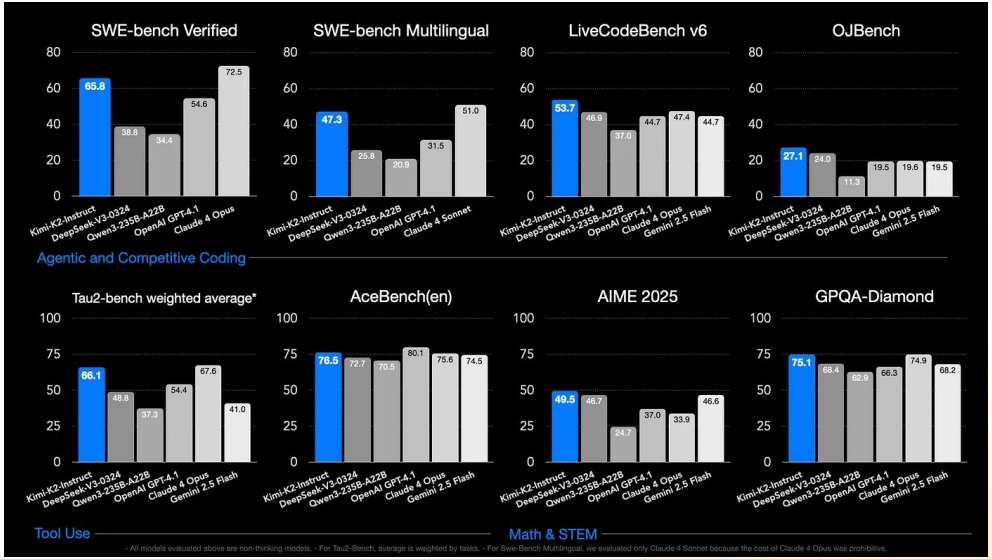
Kimi K2 model as a low-cost, open source large language model, with a focus on coding, agent workflows, tool use, and next-gen reasoning.

moonshotai/Kimi-K2

What Is Kimi K2?

Kimi K2 is a large language model developed by Moonshot AI with a focus on **agentic capabilities**, not just text generation.

- Mixture-of-Experts architecture
- 1 trillion total parameters, 32 billion active per inference
- Released in two variants:
  - **Kimi-K2-Base:** For fine-tuning
  - **Kimi-K2-Instruct:** Instruction-following for general use



moonshotai/Kimi-K2

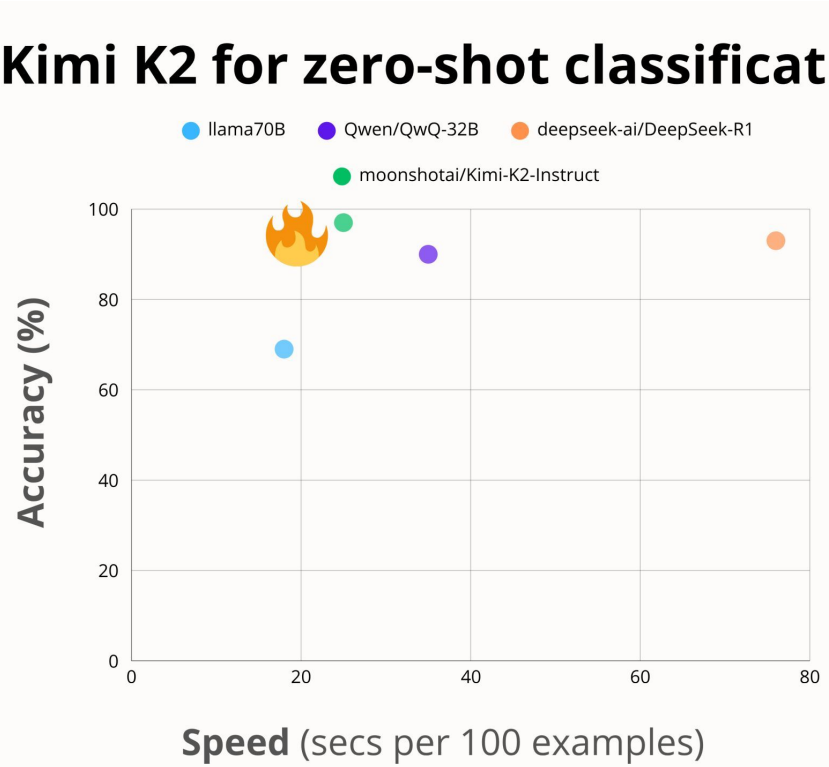
Daniel Vila Suero • 1st
Building data tools @ Hugging Face 🤗
10h •

I just tested Kimi-K2 with a benchmark I use for new models, and the results are 🔥🔥🔥🔥

The task: zero-shot binary classification of jailbreak prompts.

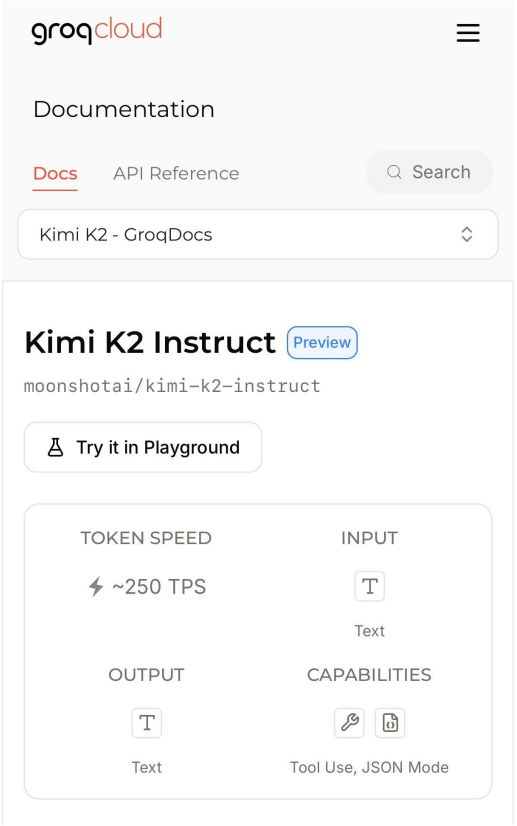
> Best score across the board (97% accuracy vs 93% of Deepseek R1)
> The second-fastest inference speed, thanks to Groq via Hugging Face, is 3x faster than R1.

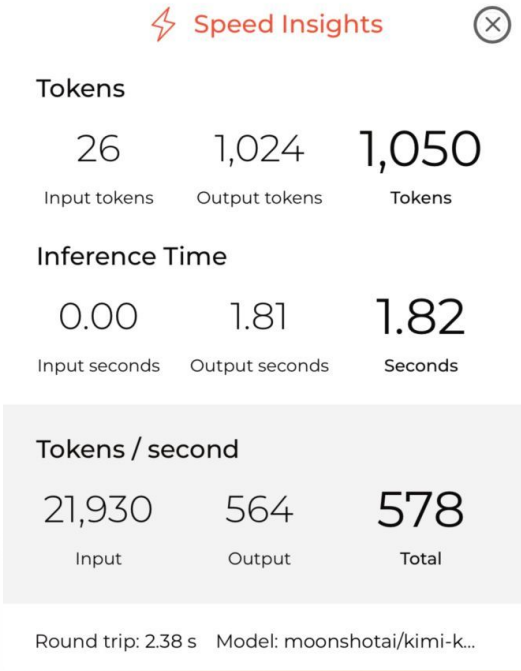
And the best thing? You can run similar experiments with no code and no install, thanks to Inference Providers and Hugging Face AISheets:



moonshotai/Kimi-K2 on Groq

Groq has just deployed **Moonshot AI's Kimi K2** few days ago.

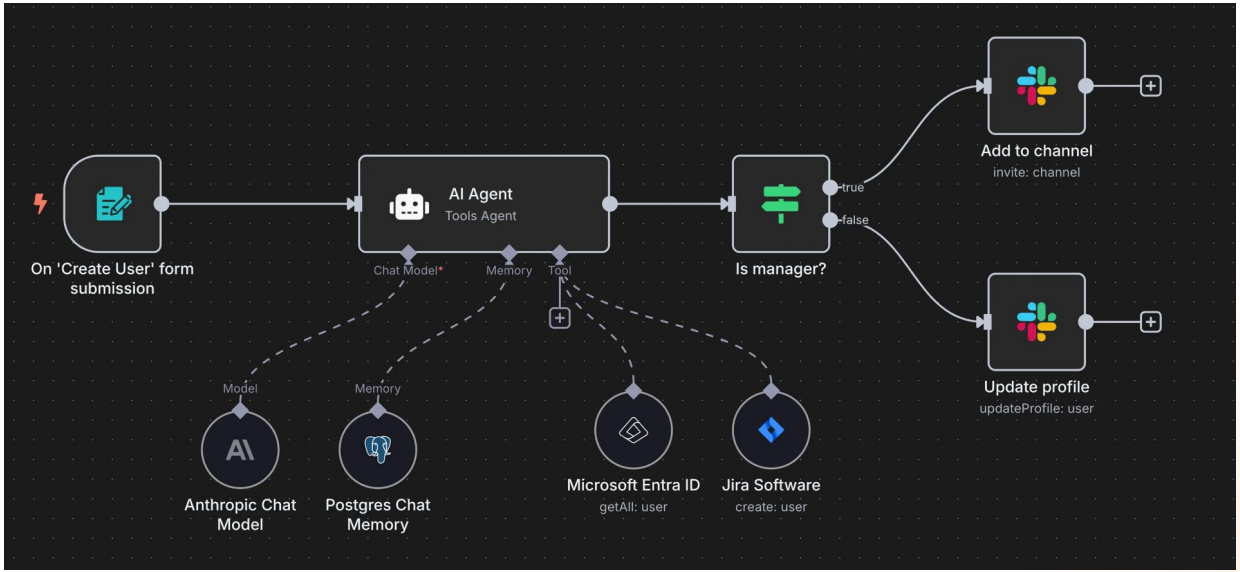




01: Integrating Front End Interfaces with n8n

Recap: What is n8n?

A workflow automation tool that lets you build automated processes without writing a ton of code. Think of a digital assistant that glues your apps together, handling tasks like data syncing, alerts, and even multi-step business processes automatically.



Source

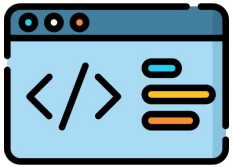
Recap: Types of Nodes

Trigger Nodes

Action Nodes

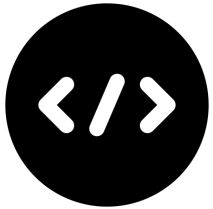
Utility Nodes

AI Nodes



Code Nodes

Types of Nodes (Advanced)



Output Parser Node

Webhook Node

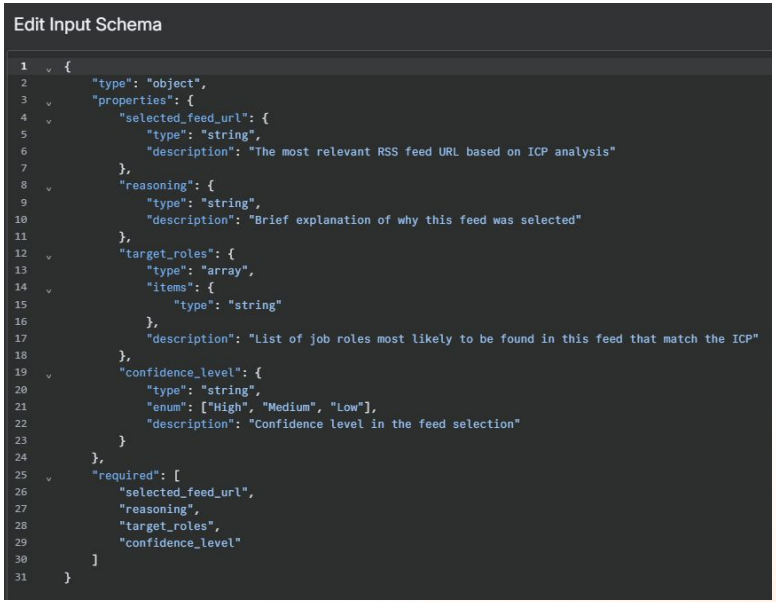
HTTP API Node

Structured Output Parser Node

This node is used within your n8n workflow to transform unstructured or semi-structured text (especially from LLM responses) into organized, machine-readable data.

How it helps:

- Prepare AI Output for Systems
- Extract Key Info
- Normalize Data

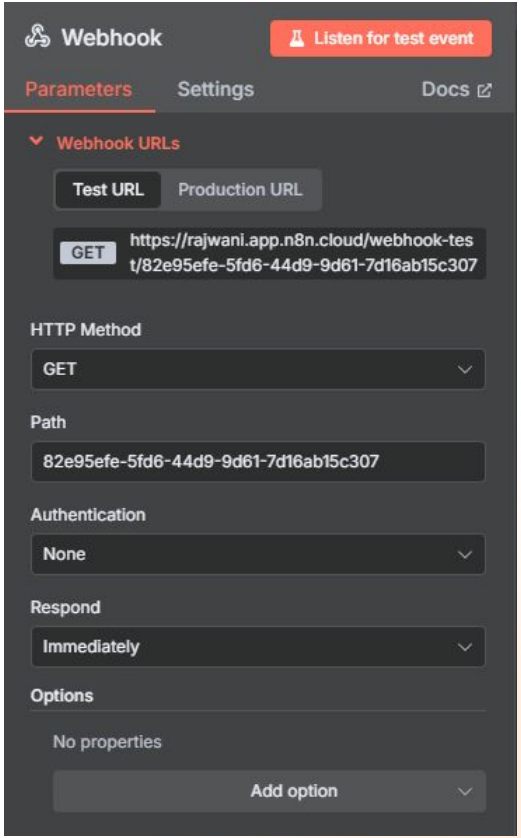


Webhook Node

A specialized Trigger Node that acts as a "listener," providing a unique URL for other services to send data to.

Key Use Cases:

- Event-Driven Automation
- Real-time Data Intake
- Integrating Custom Services: Connect n8n with any service capable of sending webhook notifications.

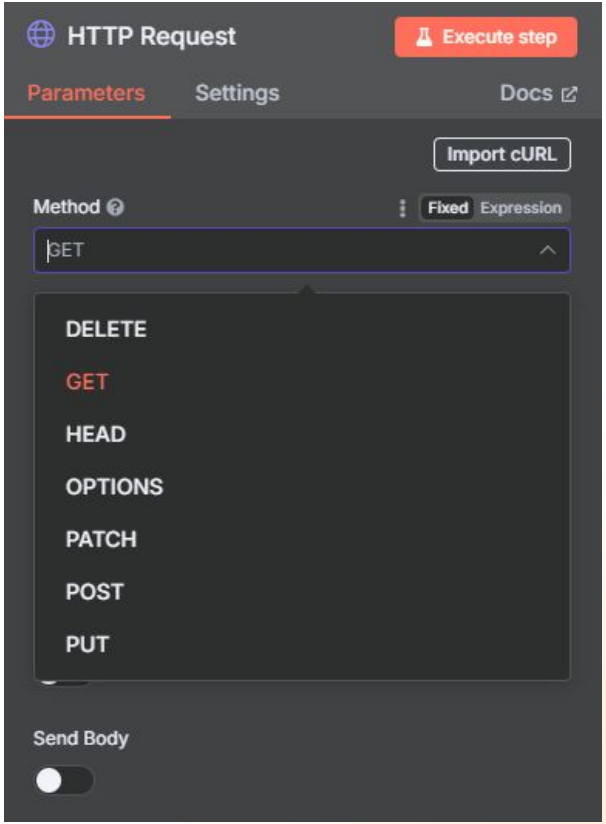


HTTP API Node

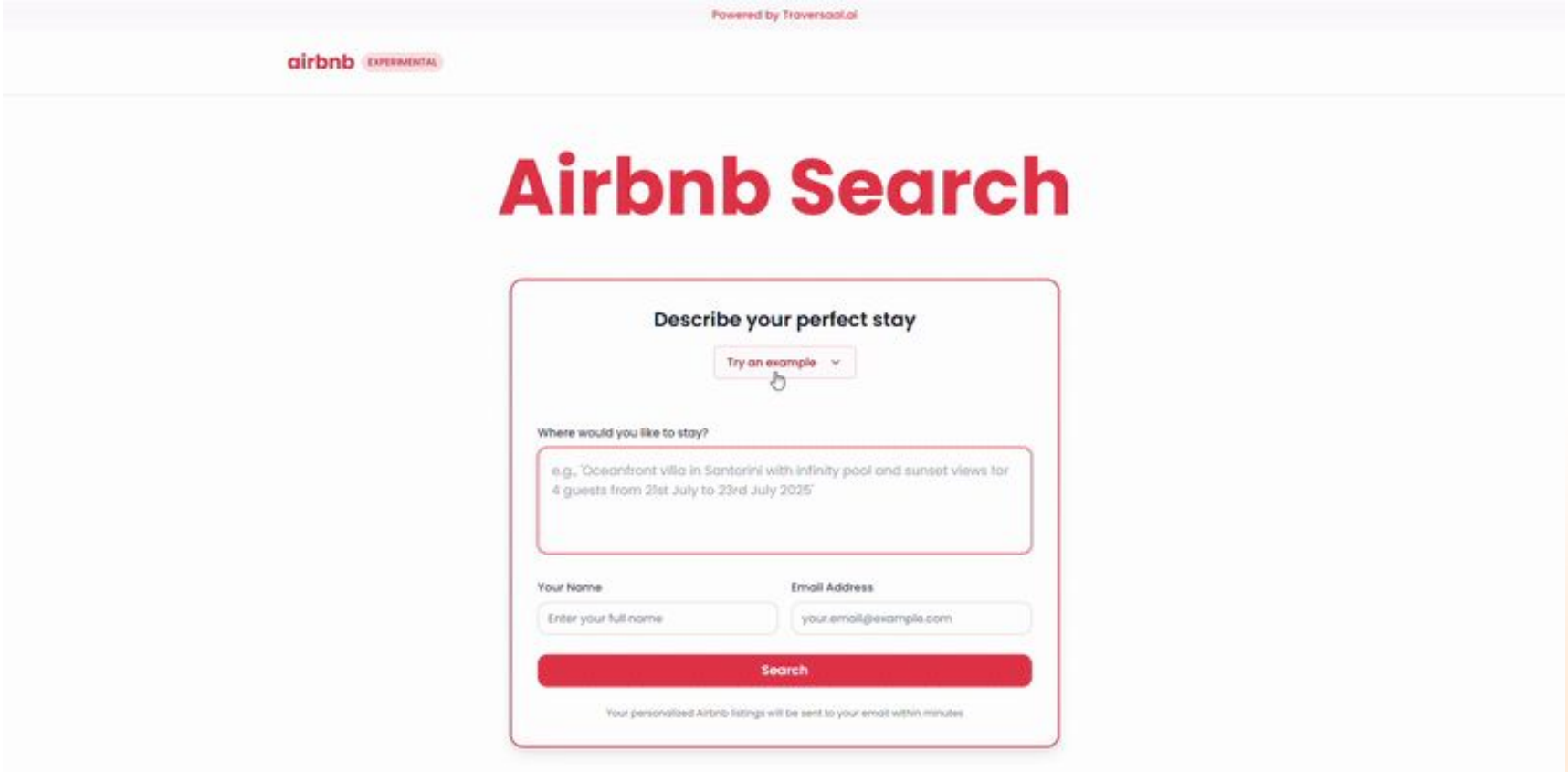
This versatile node lets your n8n workflow send and receive data from virtually any web-based API. It's your bridge to the entire internet.

Key Request Types:

- **GET**: Retrieve information (e.g., fetch product details).
- **POST**: Send new data (e.g., create a new user account).
- **PUT/PATCH**: Update existing information (e.g., modify an order status).
- **DELETE**: Remove data (e.g., delete an old record).



Integrate n8n workflow with Lovable application

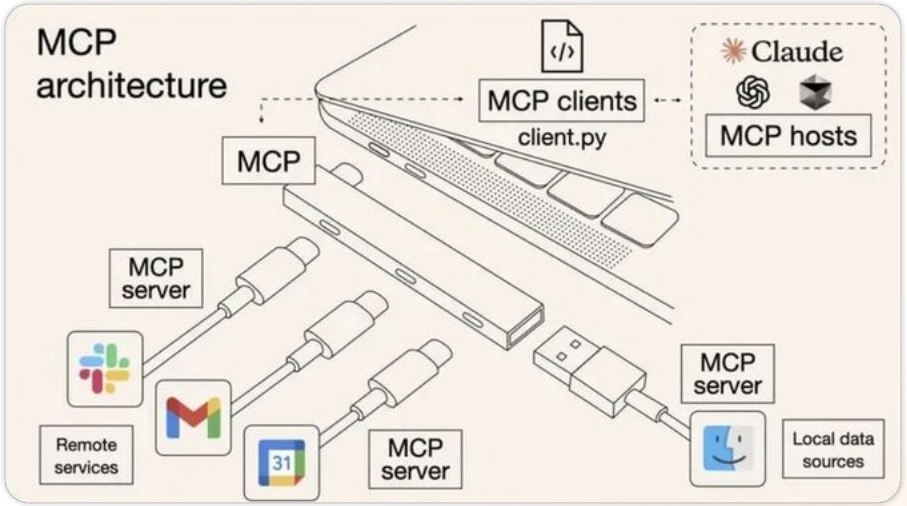


02: Model Context Protocol (MCP)

Model Context Protocol (MCP)

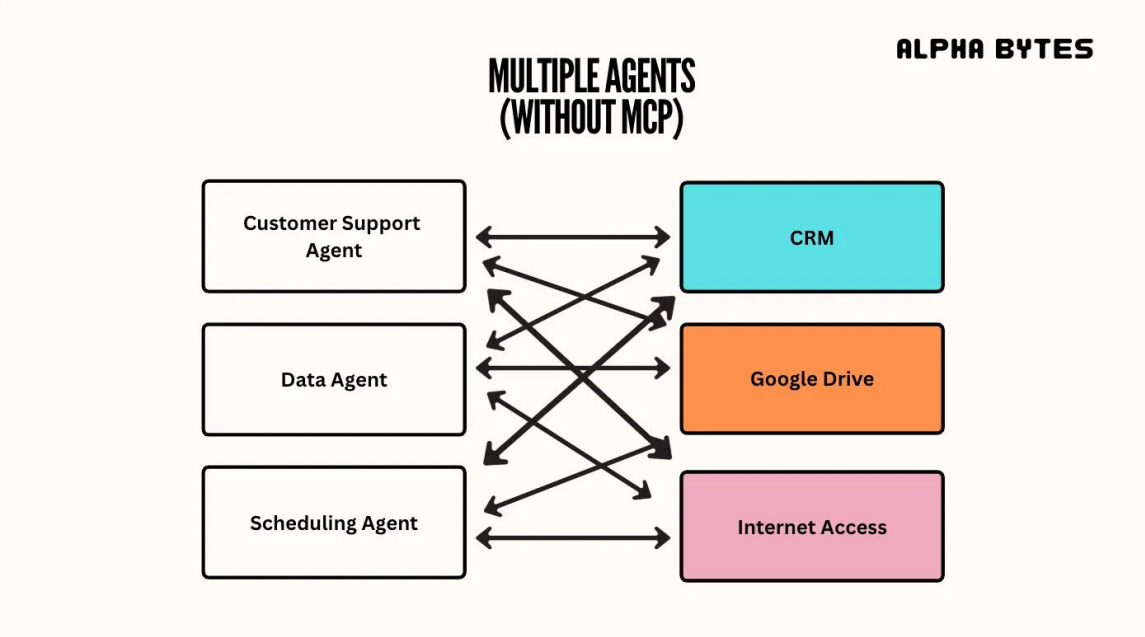
The USB-C for AI

- MCP is a set of rules that helps different AI models and systems communicate with each other in a standard way.
- Middleware that connects agents to external tools
- Think of it like a USB-C that lets multiple devices to connect to your system 💡



How Agents used tools before MCP

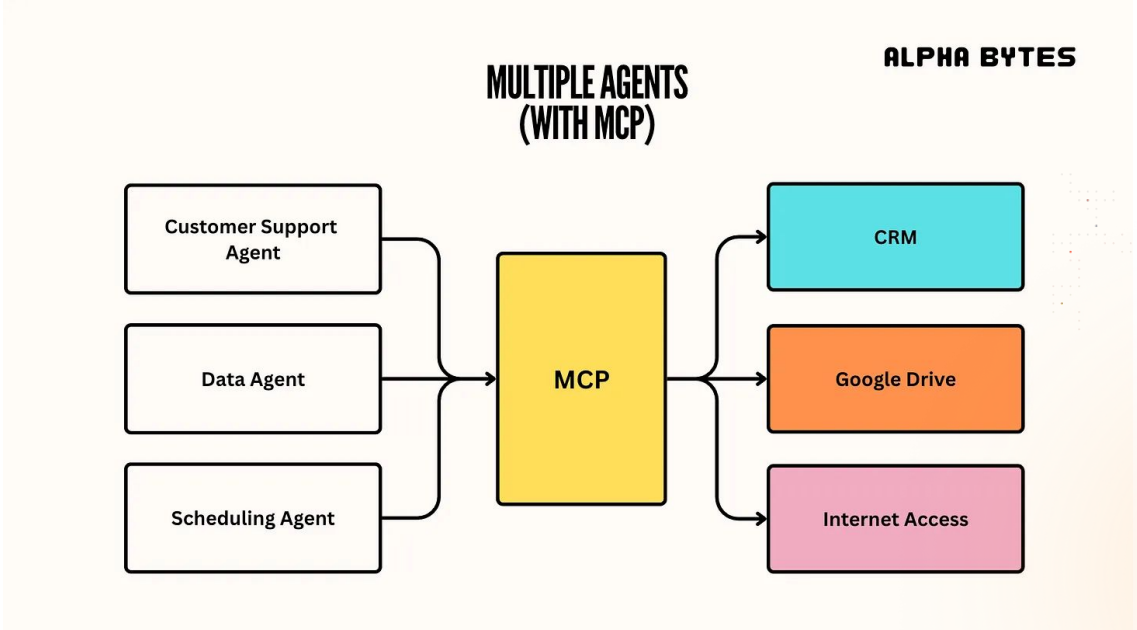
- **The Old Way:** Connecting AI to tools meant building a unique, custom "bridge" for every single link.
- **The Problem:** This created a tangled, expensive mess as AI systems grew (e.g., 3 AI helpers x 3 tools = 9 custom connections!).



Source

How Agents used tools after MCP

- With MCP, AI agents and tools learn one standard "language."
- **The Result:** This means simple, unified connections, dramatically cutting complexity and cost (e.g., 3 AI helpers + 3 tools = just 6 easy setups!).



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Significance of MCP

- **Boosts Efficiency:** Faster connections and easier swapping of AI models or tools.
- **Fuels Innovation:** Enables quick building of new, complex AI solutions.
- **Future Standard:** Aims to be as fundamental for AI as Wi-Fi is for our devices.

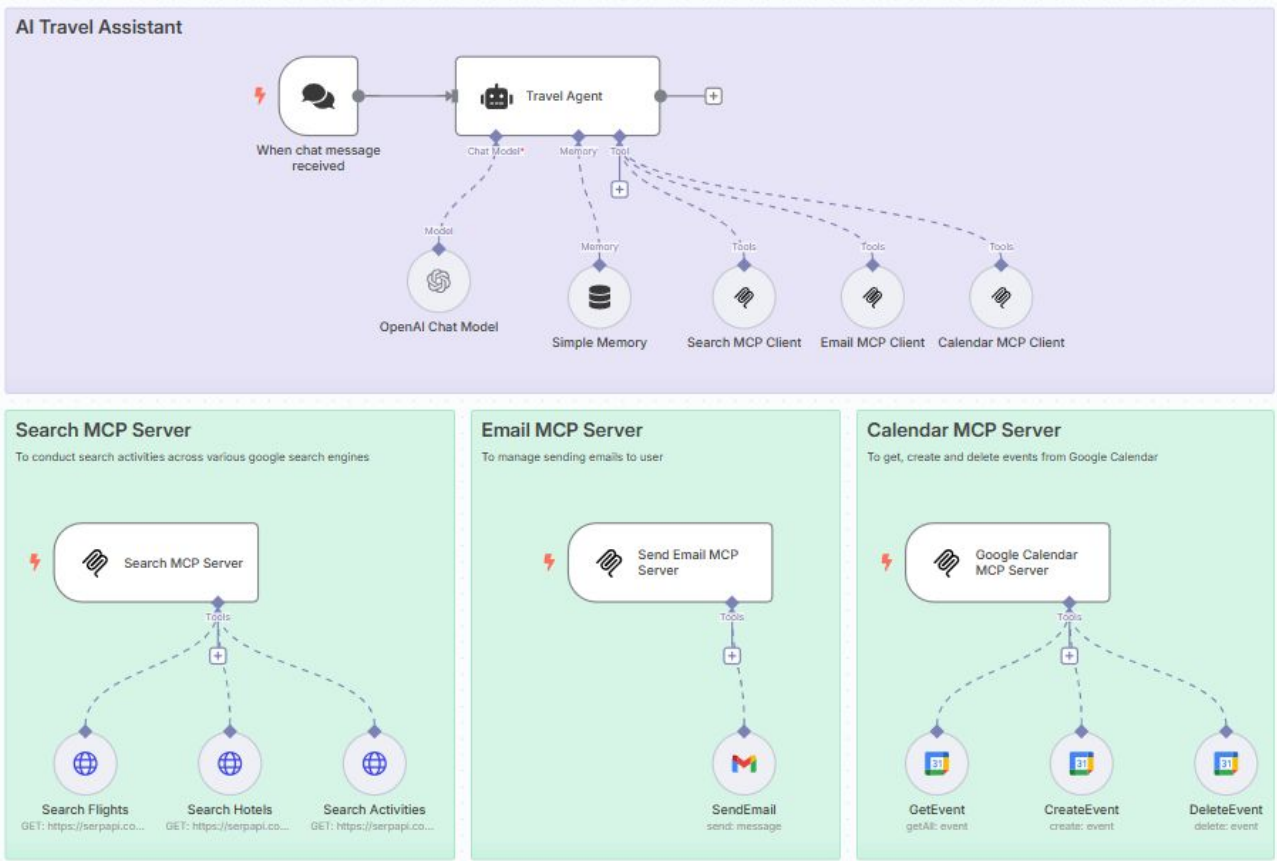
MCP in n8n

- n8n's diverse node types make it ideal for implementing the Model Context Protocol (MCP). MCP architecture consists of two types of nodes:

- **MCP Client:**
  - Part of workflow that initiates a request, acting as the "requestor" in an MCP communication.
  - n8n workflow can initiate requests from an AI Agent (e.g., via AI/LLM Nodes) to external tools.

- **MCP Server:**
  - Part of workflow that receives and responds to incoming MCP requests, acting as "responder."
  - n8n workflow can also receive MCP requests (e.g., via a Webhook Node) and perform actions for external AI Agents.

MCP in n8n: Travel Agent Example

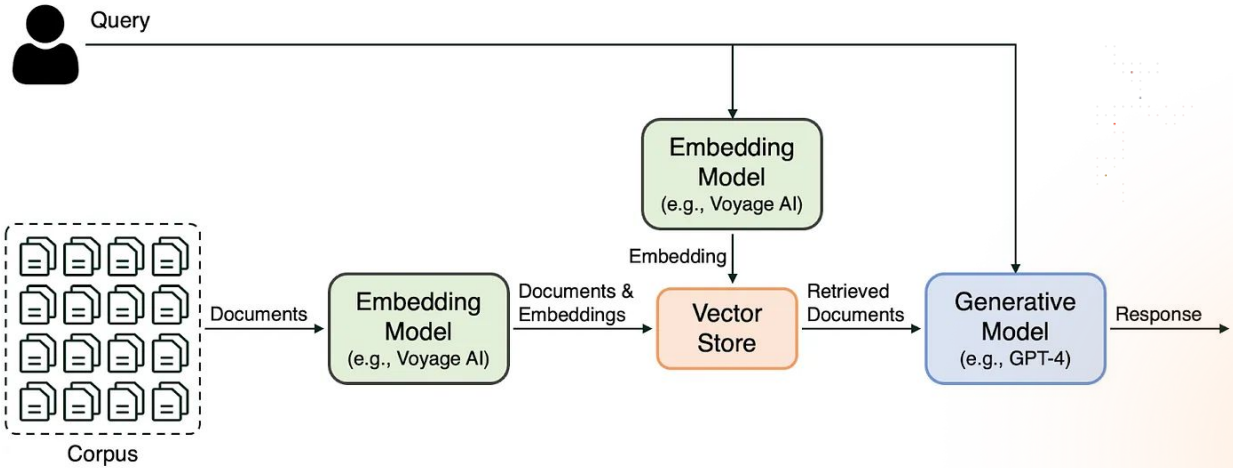


03: Retrieval Augmented Generation (RAG)

Enterprise Knowledge Management or RAG

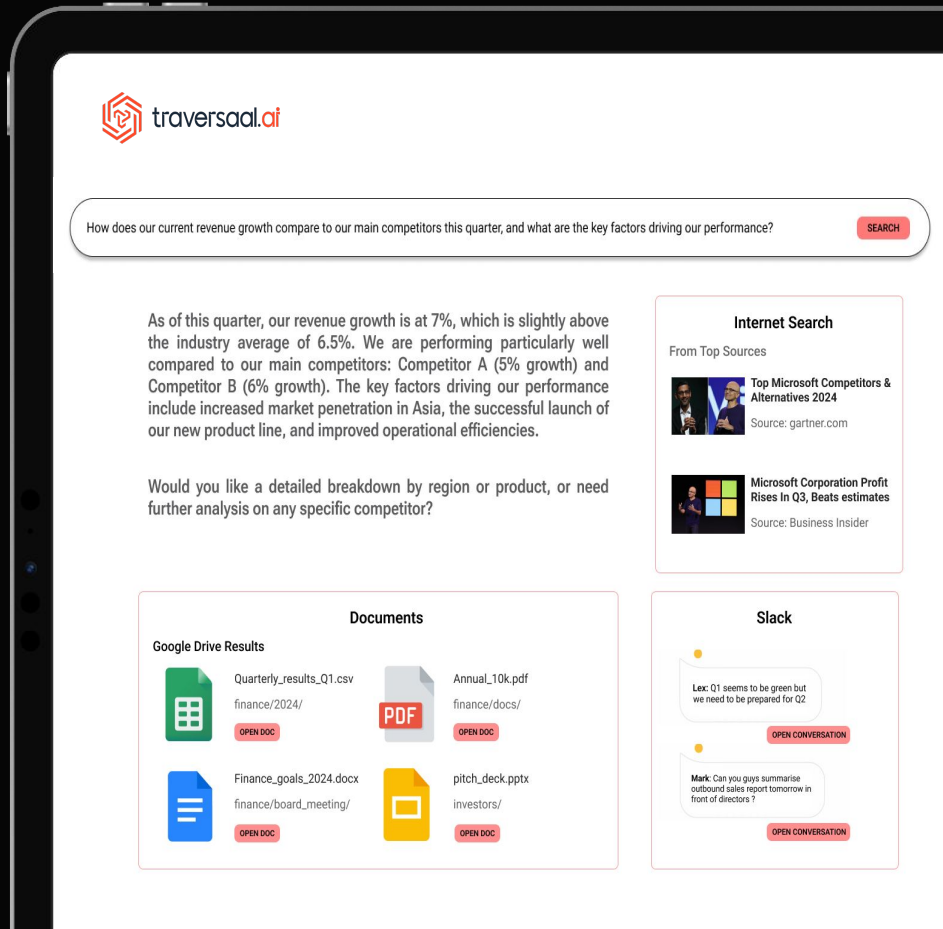
Enterprise Knowledge Management (EKM) is the systematic process by which organizations capture, store, manage, and share their collective knowledge.

In short, something what we have been calling as Retrieval Augmented Generation (RAG)

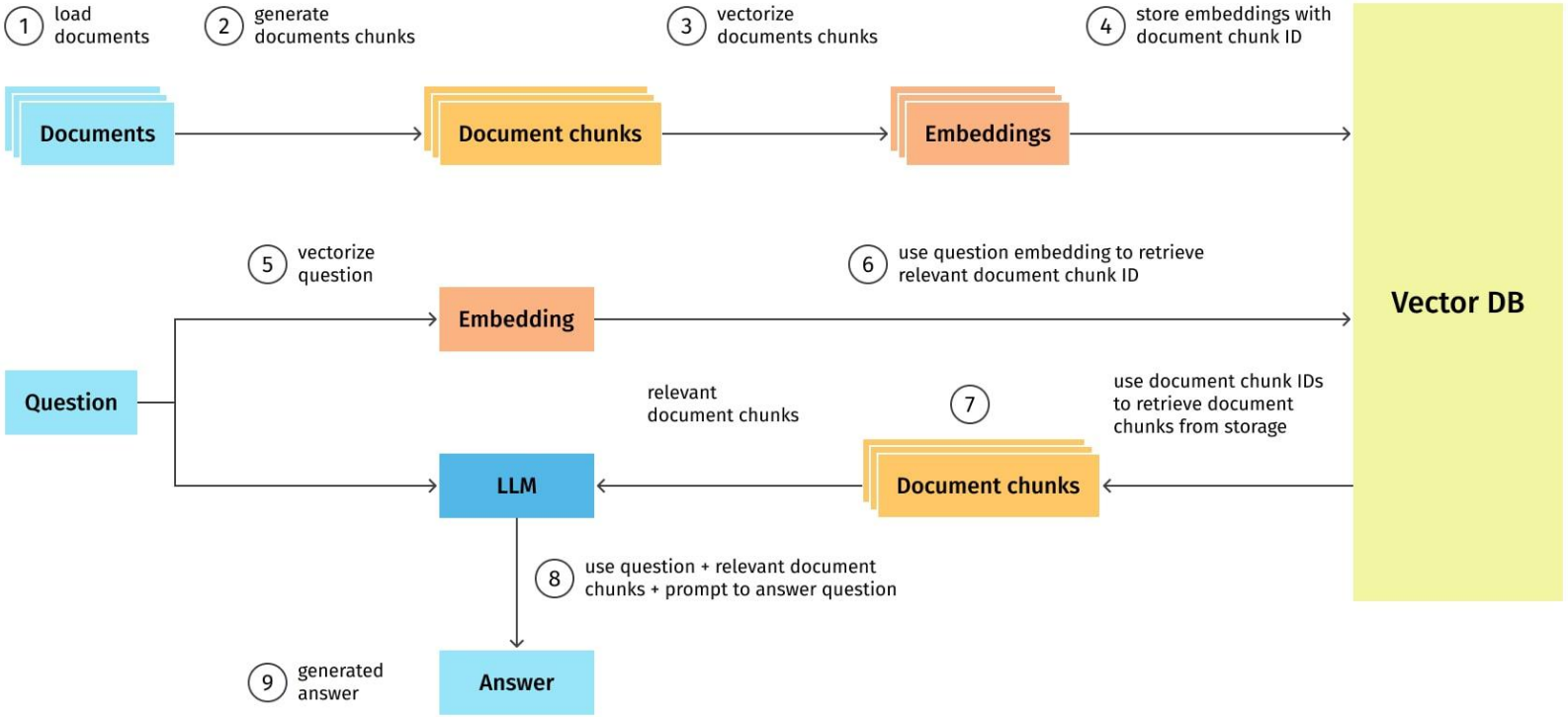


Source

RAG can ingest, understand, and respond to questions about your data confidently with sources



RAG Architecture



04: Full Stack Search Agent

Build Your first Agent

Use n8n to build an agent

Thank you!

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