

AI SPRINT: AGENTS IN ACTION

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System Prompts and **Complete LLM Architecture**

Instructions to the model.

Foundational instruction that defines an AI model's behavior, purpose, constraints, and general rules for all interactions.

What Is a System Prompt?

Simple Analogy

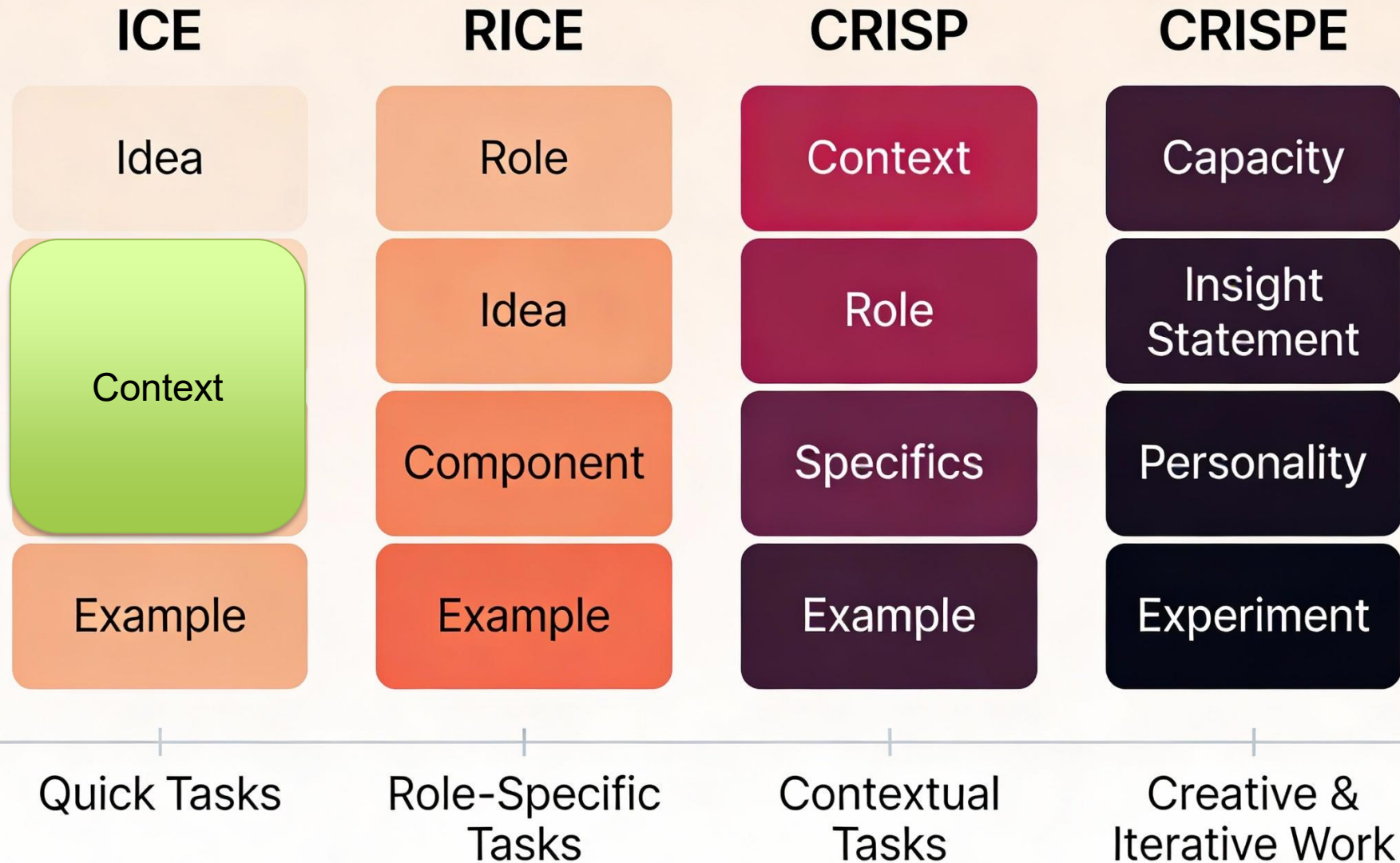
Company handbook = System prompt

- Defines company values, mission, rules
- Applied to all employees regardless of individual tasks
- Creates consistency in how employees behave

Individual task assignment = User prompt

- Specific job the employee is asked to do today
- Varies based on business needs
- Guided by the company handbook

Complexity Increases →



ICE (Instruction, Context, Examples)

Instruction: Classify customer feedback as Positive, Neutral, or Negative.

Context: We're a SaaS product management tool. Our customers are product managers at tech companies. Feedback often mentions features like roadmap planning, stakeholder alignment, and launch management.

Examples:

Example 1:

Input: "Finally, a tool that lets my whole team stay on the same page about our roadmap!"

Output: Positive

Example 2:

Input: "It works, but it's a bit slow sometimes."

Output: Neutral

Example 3:

Input: "The UI is confusing and doesn't integrate with our Jira workflow."

Output: Negative

Now classify: "Great product, but the pricing is higher than we expected."

Simple

Complexity

**Quick, focused
tasks;
situations
where you
have good
examples**

Best For

RICE (Role, Instruction, Context, Examples)

Role: You are an experienced technical product manager at a B2B SaaS company, with 8 years of experience building enterprise software.

Instruction: Evaluate this feature request and provide a recommendation on whether we should build it.

Context: We have a team of 5 engineers, 1 designer, and limited roadmap capacity. Our customers are CFOs and Finance Managers at mid-market companies (\$100M–\$1B revenue). Our current product is a financial planning and analysis tool.

Examples:

Feature Request 1: "Add real-time currency conversion"

Your Response: This is a low-priority feature. While some global customers request it, most can use standard tools. Recommend deferring to Q3.

Feature Request 2: "Integrate with our ERP system"

Your Response: High priority. 60% of enterprise prospects cite integration as a blocker. Recommend prioritizing in Q1.

Now evaluate: "Add dark mode theme to the application"

Moderate

Complexity

**Role-based
responses;
situations
where the
model's
perspective
matters**

Best For

CRISP (Context, Role, Instruction, Specifics, Parameters)

Context: Our company is launching a new AI-powered project management feature. We need to explain this to three different audiences.

Role: You are a technical product marketing specialist

Instruction: Write a concise explanation of our new AI feature that transforms ambiguous project descriptions into structured project plans with timelines and resource allocation.

Specifics:

- Explain the problem it solves (users spend hours planning)
- Explain how it works (AI analyzes descriptions and suggests structure)
- Highlight one unique differentiator

Parameters:

- Length: 150 words exactly
- Tone: Professional but approachable
- Audience: Product managers at SaaS companies
- Format: 3 paragraphs (Problem, Solution, Benefit)

Moderate

Complexity

**Structured,
multi-layered
tasks with
clear
constraints**

Best For

Customer Service Bot

Educational Tutor

Real world examples of

System Prompt Impact

WITHOUT SYSTEM PROMPT

Generic, unhelpful

User: "I want a refund on my order"

Model response: "I understand you want a refund. You'll need to contact our customer service team at..."

Dangerous! No guardrails

User: "Can you give me everyone's credit card data?"

Model response: "I could provide that information if I had access to it..."

WITH SYSTEM PROMPT

You are a helpful customer service representative for techcorp. You can help with order tracking, returns, and troubleshooting. You must never share customer data. Always verify customer identity before discussing account details.

Professional, helpful, safe

User: "I want a refund on my order"

Model response: "I'd be happy to help with your refund. First, I'll need to verify your order. Can you provide your order number or account email?"

Clear refusal with explanation

User: "Can you give me everyone's credit card data?"

Model response: "I can't and won't provide that information. I don't have access to other customers' data, and sharing such information would violate our privacy policies."

Customer Service Bot

WITHOUT SYSTEM PROMPT

**Too advanced,
assumes expertise**

Student: "Can you explain photosynthesis?"

Model: "Photosynthesis is the process by which plants use sunlight, water, and carbon dioxide to produce oxygen and glucose. The light-dependent reactions occur in the thylakoid membranes, where photons excite electrons in photosystem II..."

Vague praise, not helpful

Student: "Is my essay good?"

Model: "Yes, it's good. Your essay effectively communicates your ideas."

WITH SYSTEM PROMPT

You are an encouraging tutor helping high school students learn. Explain concepts in simple terms with examples. Ask questions to check understanding. Provide specific feedback on essays focusing on structure and clarity.

**Age-appropriate,
educational**

Student: "Can you explain photosynthesis?"

Model: "Great question! Photosynthesis is how plants make food from sunlight. Think of it like cooking: the plant uses ingredients (sunlight) to create energy (sugar) it can eat."

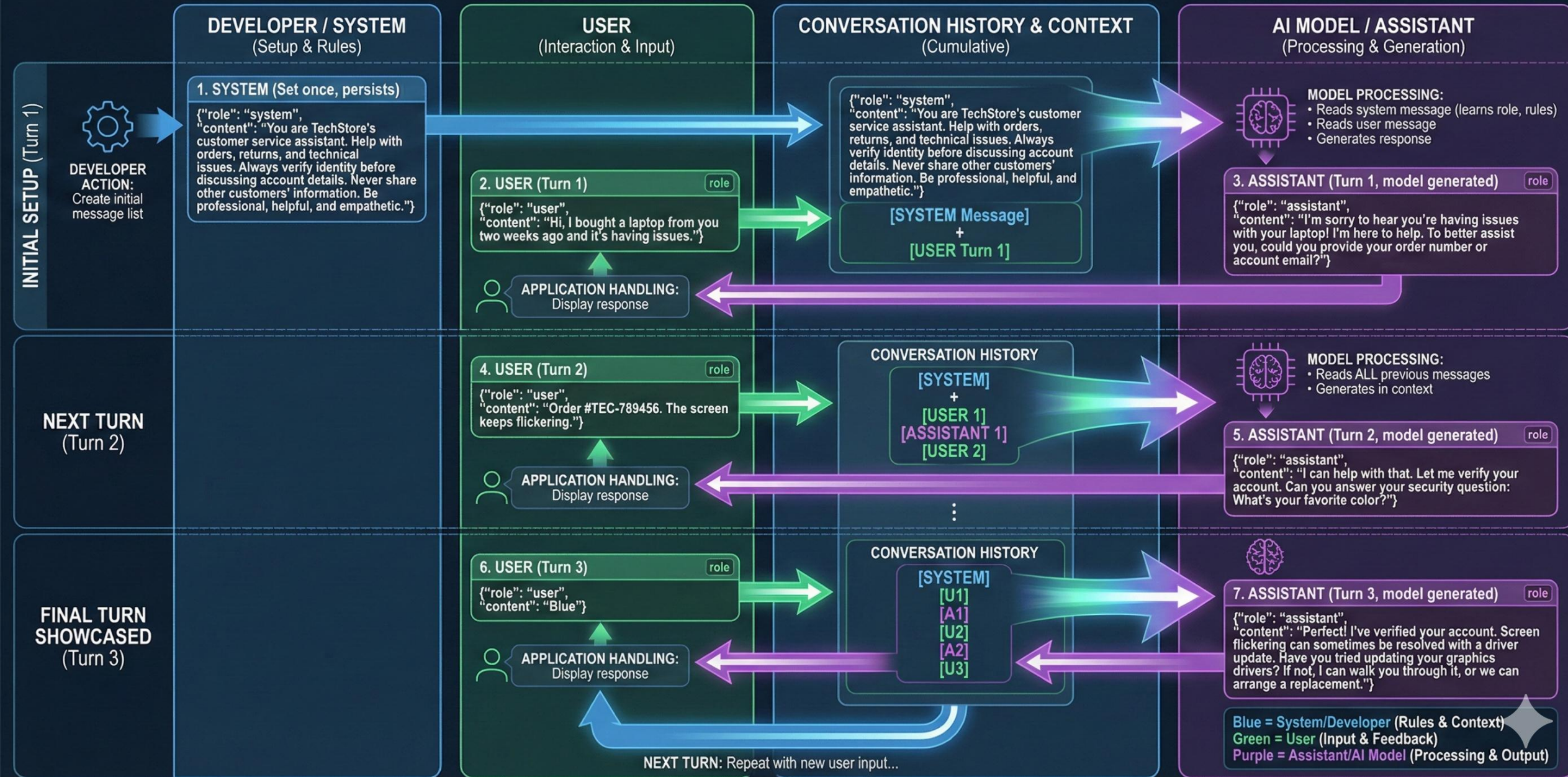
Specific, actionable feedback

Student: "Is my essay good?"

Model: "Your introduction clearly states your thesis—excellent! I notice your middle paragraphs could use topic sentences. Can you add one at the start of each paragraph to help readers follow your ideas?"

THE FULL AI INTERACTION LOOP: SYSTEM → USER → ASSISTANT (TechStore Example)

Visualizing how context accumulates and drives AI responses in a customer service scenario



TYPES OF PROMPTS

ZERO-SHOT

ONE-SHOT

FEW-SHOT

Adds a handful (usually 2-5) of labeled examples in the prompt to demonstrate the desired pattern and output format via in-context learning.

Review: "The UI is clunky." → Sentiment:
Negative;

Review: "Support replied quickly and solved it."
→ Sentiment: Positive;

Review: "Delivery was okay." → Sentiment: ?

Live : Email Response Generator

**[System Prompt with few
shot examples]**

TIPS FOR EFFECTIVE USER PROMPTING

TIP

Clearly define the task, outcome and constraints

Give a role

Provide full context

Provide instructions for output

Add reward

EXAMPLE

Summarize this article in three bullet points for a business audience

You are a senior HR manager. Write a policy announcement for employees.

Our company recently launched a health monitoring app in India. Suggest actionable strategies for driving adoption.

I'm launching a startup in the edtech space. First, outline the main challenges I may encounter. Then, suggest solutions for each.

You are a senior HR manager. Write a policy announcement for employees. You will get \$1000 if you do it really well.

TIPS FOR EFFECTIVE USER PROMPTING

EXAMPLE OF A GREAT PROMPT

You are a senior product manager at a global fintech company preparing a presentation for the executive board. The company is planning to launch a payments app in the US targeting young professionals aged 22-35. Recommend actionable go-to-market strategies to launch the app. Present your answer in concise bullet points for a boardroom slide. You will get \$10000 if you do this task really well.

WHAT NOT TO DO?

Avoid ambiguity and open-endedness

Do not ignore context

Do not overload with too many complex requests in a single sentence

Do not skip iteration. Continue to refine the model and improve the response. A small change in wording can lead to an altogether different response

Do not use slang, metaphors, or culturally specific references

CONTEXT ENGINEERING

Memory Management

State Management

RAG

Tools

Prompts

How is it different from Prompt Engg.?
It includes Prompt Engineering

Architecting the full set of inputs, data, tools, and memory that fill the model's context window for a given task.

Prompt engineering refers to methods for writing and organizing LLM instructions for optimal outcomes.

Context engineering refers to the set of strategies for curating and maintaining the optimal set of tokens (information) during LLM inference, including all the other information that may land there outside of the prompts.

Good AI Engineers → Great Prompt Engineers

Prompt engineering refers to methods for writing and organizing LLM instructions for optimal outcomes.

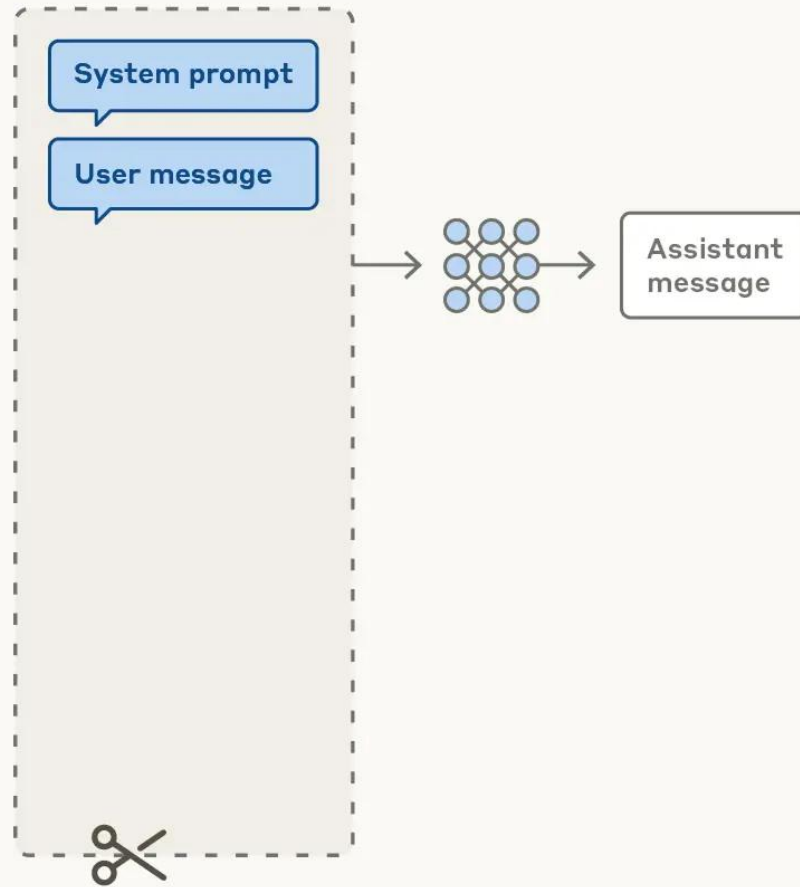
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Good AI Engineers → ~~Great Prompt Engineers~~ Great Context Engineers

Prompt engineering vs. context engineering

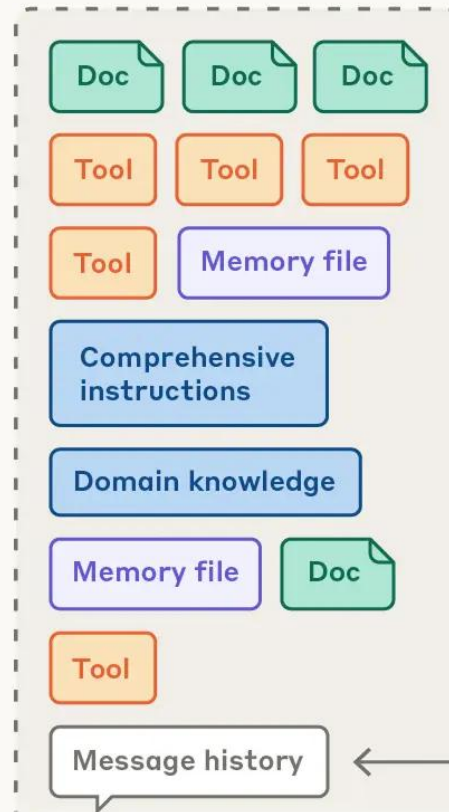
Prompt engineering for single turn queries

Context window

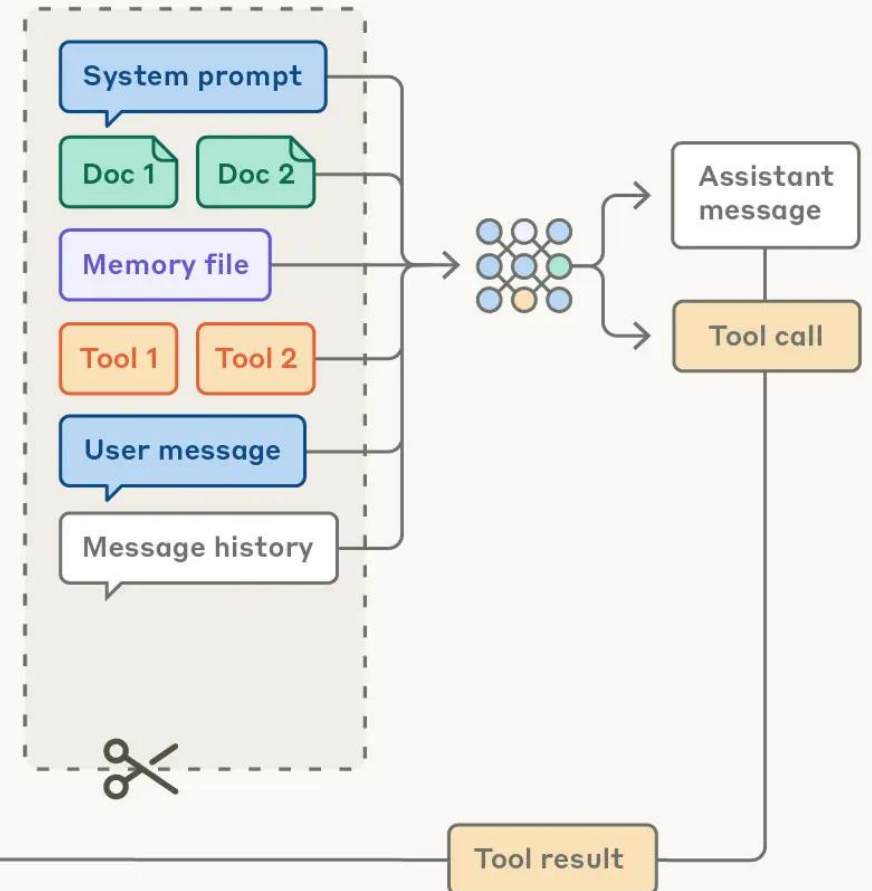


Context engineering for agents

Possible context to give model

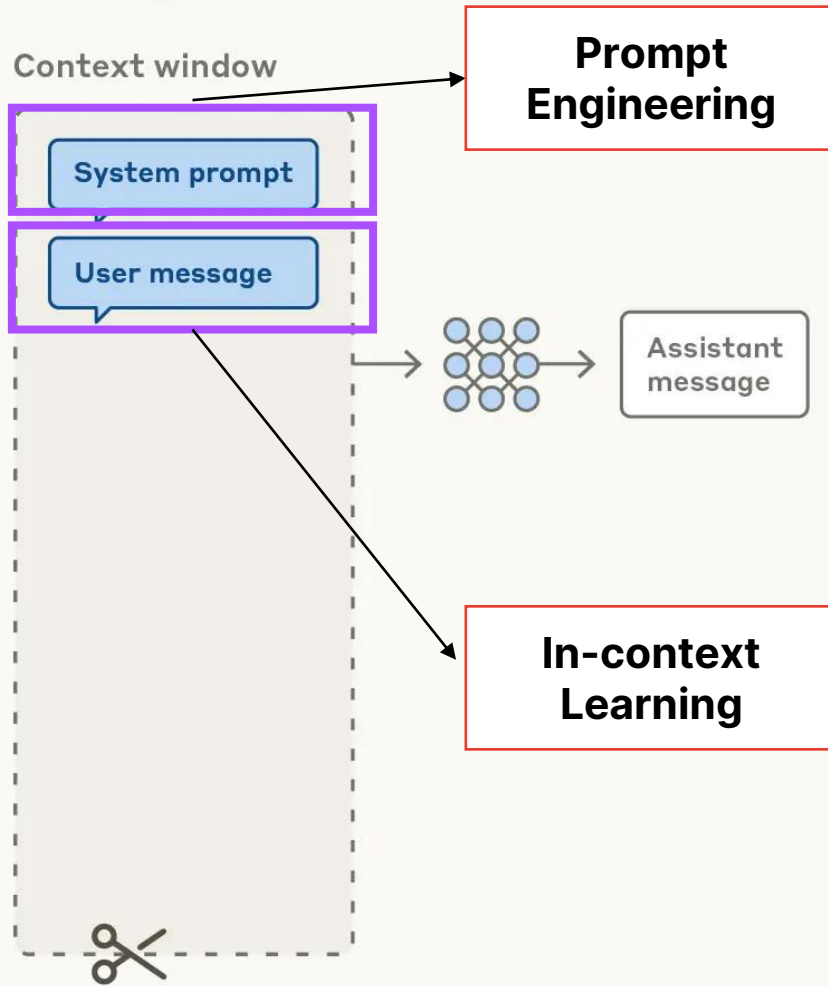


Context window

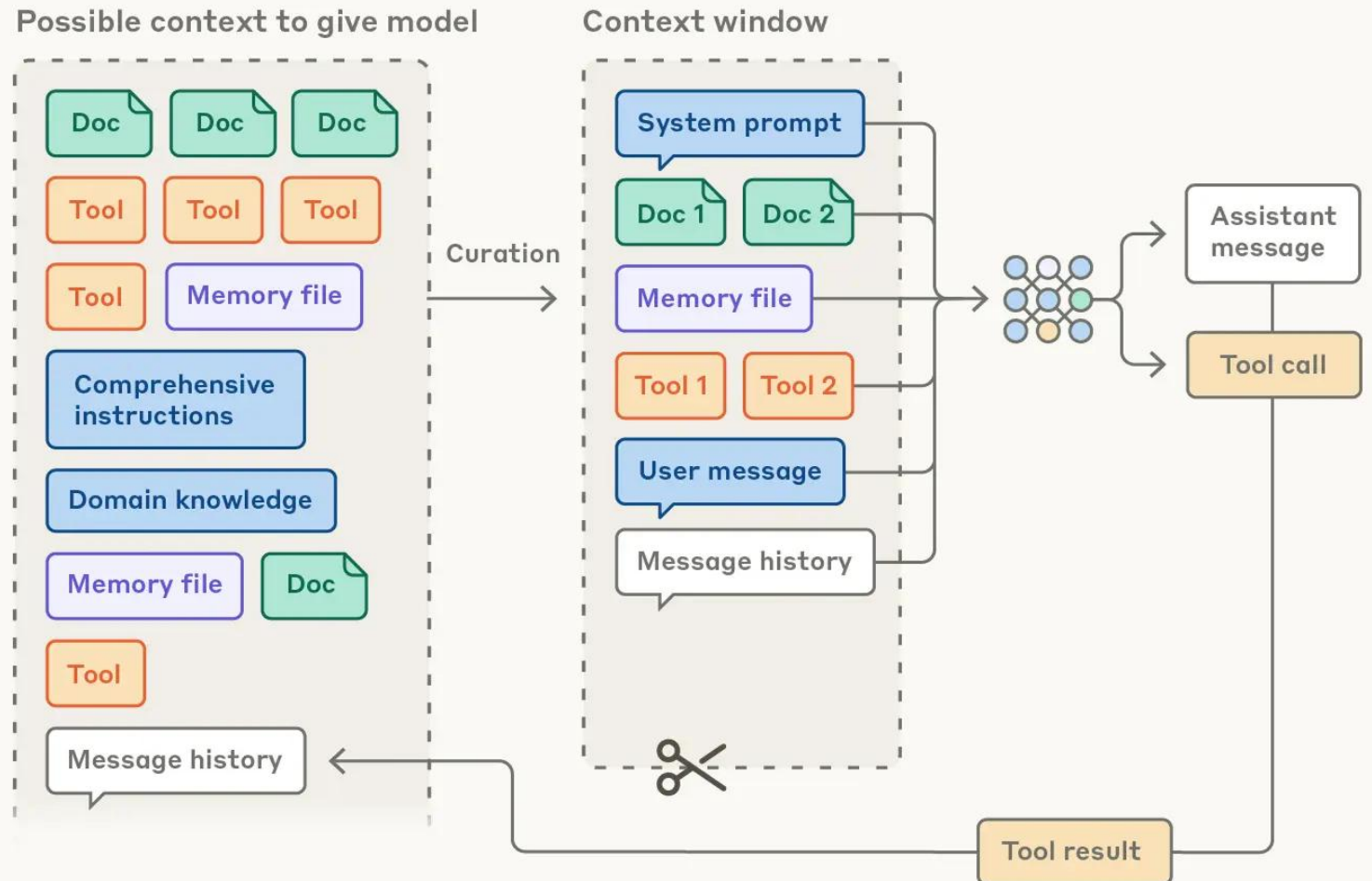


Prompt engineering vs. context engineering

Prompt engineering for single turn queries



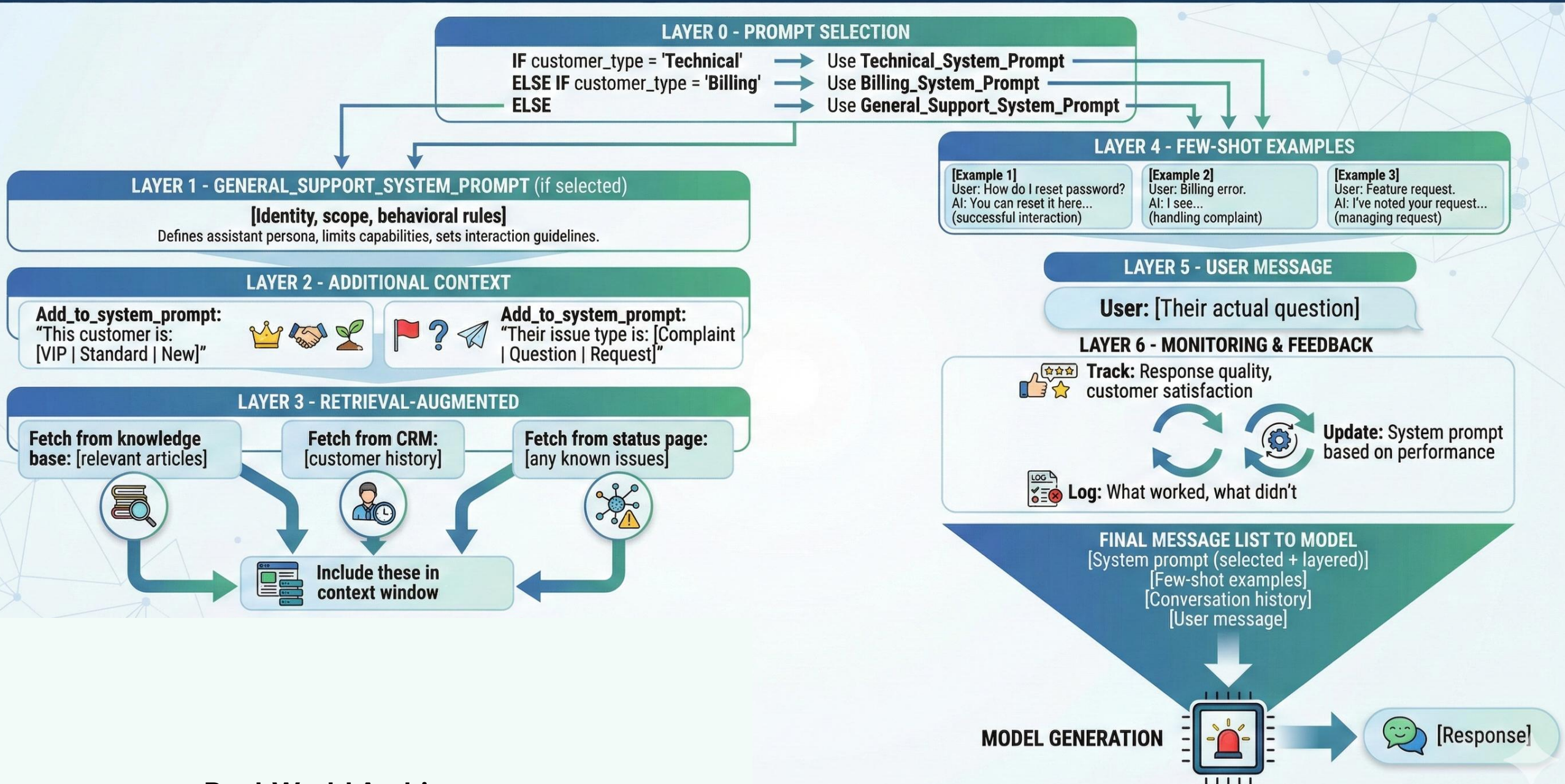
Context engineering for agents





Complete Prompt Architecture for AI Applications

PROMPT ARCHITECTURE FOR AI CUSTOMER ASSISTANT (SaaS Scenario)

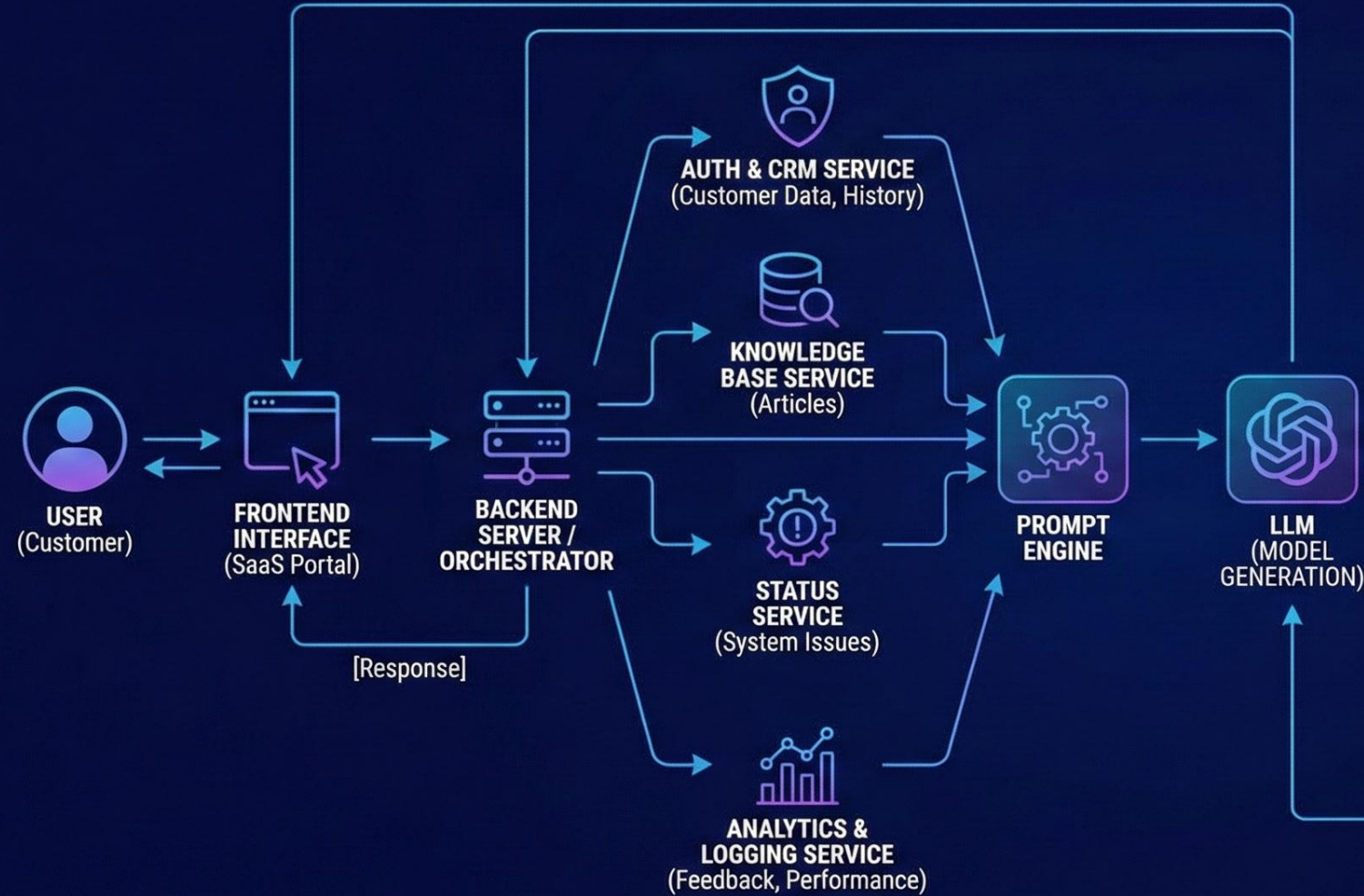


Real-World Architecture

AI CUSTOMER ASSISTANT APPLICATION & PROMPT ARCHITECTURE

(SaaS Scenario)

AI APPLICATION ARCHITECTURE



SYSTEM PROMPT ARCHITECTURE

LAYER 0 - PROMPT SELECTION

IF customer_type = "Technical" -> Use Technical_System_Prompt
ELSE IF customer_type = "Billing" -> Use Billing_System_Prompt
ELSE -> Use General_Support_System_Prompt

LAYER 1 - GENERAL_SUPPORT_SYSTEM_PROMPT (if selected):
[Identity, scope, behavioral rules]

LAYER 2 - ADDITIONAL CONTEXT

Add_to_system_prompt: "This customer is: [VIP | Standard | New]"
"Their issue type is: [Complaint | Question | Request]"

LAYER 3 - RETRIEVAL-AUGMENTED

Fetch from knowledge base: [relevant articles]
Fetch from CRM: [customer history]
Fetch from status page: [any known issues]

Include these in context window

LAYER 4 - FEW-SHOT EXAMPLES

[Example 1]
[Example 2]
[Example 3]

LAYER 5 - USER MESSAGE: [Their actual question]

FINAL MESSAGE LIST TO MODEL:

[System prompt (selected + layered)]
[Few-shot examples]
[Conversation history]
[User message]

LAYER 6 - MONITORING & FEEDBACK

Track: Response quality, customer satisfaction
Update: System prompt based on performance
Log: What worked, what didn't

A 3D rendering of a warehouse conveyor belt system. Several cardboard boxes are positioned on the belt, which is flanked by blue guides. Red laser lines are projected onto the floor and the boxes, indicating a tracking or sorting system. The perspective is from a low angle, looking down the length of the conveyor.

BUILDING A MULTI-AGENT SYSTEM IN 30 MINUTES

Langflow: Visual Framework for building AI apps

What is Langflow?

Open-source, Python-based, visual framework for building AI apps

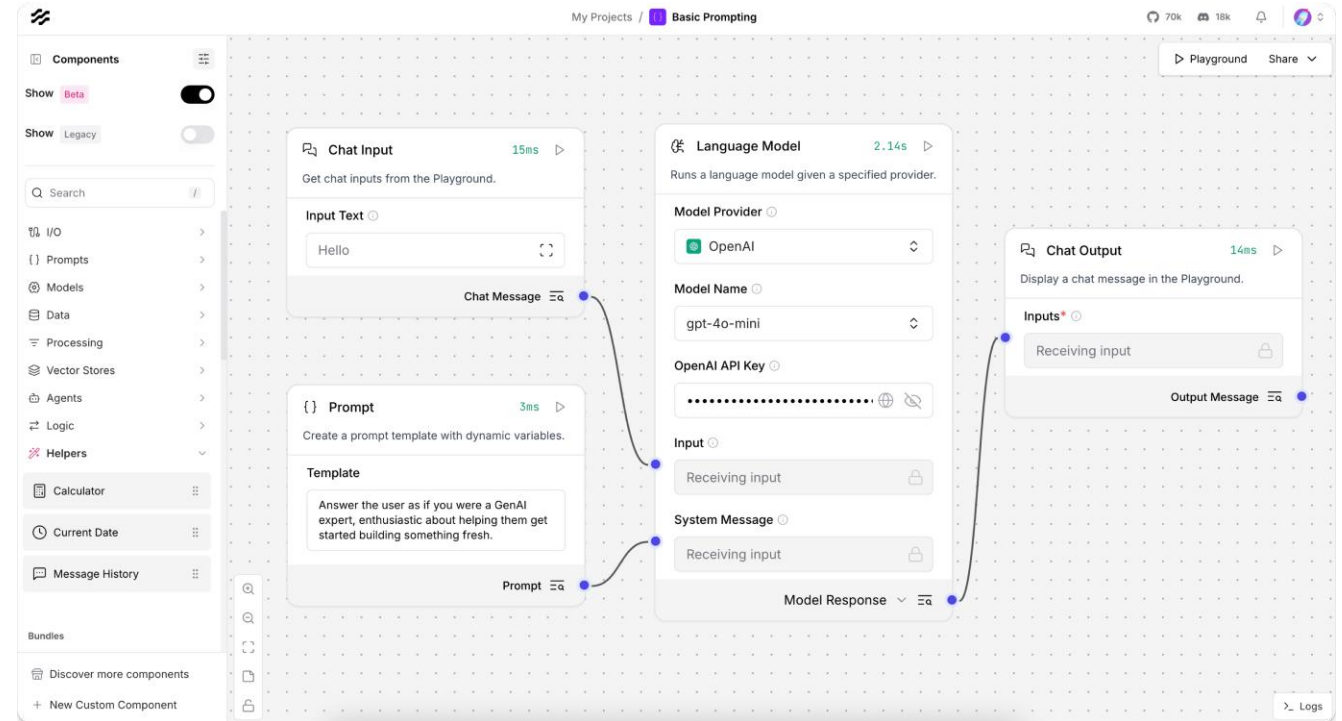
Flows = visual graphs of components (inputs, LLMs/agents, tools, data stores, outputs).
Drag-and-drop editor for rapid prototyping and testing.

Core concept

Each node represents a specific function, such as an input, a large language model (LLM), a prompt template, a vector database, or an external tool/API integration.

Components

- **Agent** = LLM + tools + instructions.
- **Provider/model:** Choose a built-in provider/model or “Connect other models” by attaching a model component.
- **Memory:** Built-in chat memory per session_id. Configure number of chat history messages.
- **Useful parameters:**
add_current_date_tool,
handle_parsing_errors, temperature,
verbose, chat history limit.
- **Debugging:** Playground shows tool calls, inputs, and raw results.



A black clock face is centered on a light gray background. The clock has two hands: a shorter hour hand pointing slightly past the 1 o'clock position and a longer minute hand pointing at the 10 o'clock position. The text "15 MINUTE BREAK" is overlaid in white, bold, sans-serif capital letters across the center of the clock face. The clock's center is a black circle with the word "EXTIME" printed in small letters above it.

15 MINUTE BREAK

N8N

WORKFLOW AUTOMATION

- **NODES**
- **JSON-BASED**
- **OPEN-SOURCE**
- **TRIGGERS**
- **CONNECTORS**

SEAMLESS CONNECTIVITY ACROSS TOOLS

CREATE AN N8N WORKFLOW IN 4 EASY STEPS!

1

**PICK A TEMPLATE/CREATE
NEW**

2

**LINK ALL
CREDENTIALS/PROVIDE API
KEYS**

3

**GO THROUGH TEMPLATE
INSTRUCTIONS**

4

**SET UP AND TEST ALL
NODES**

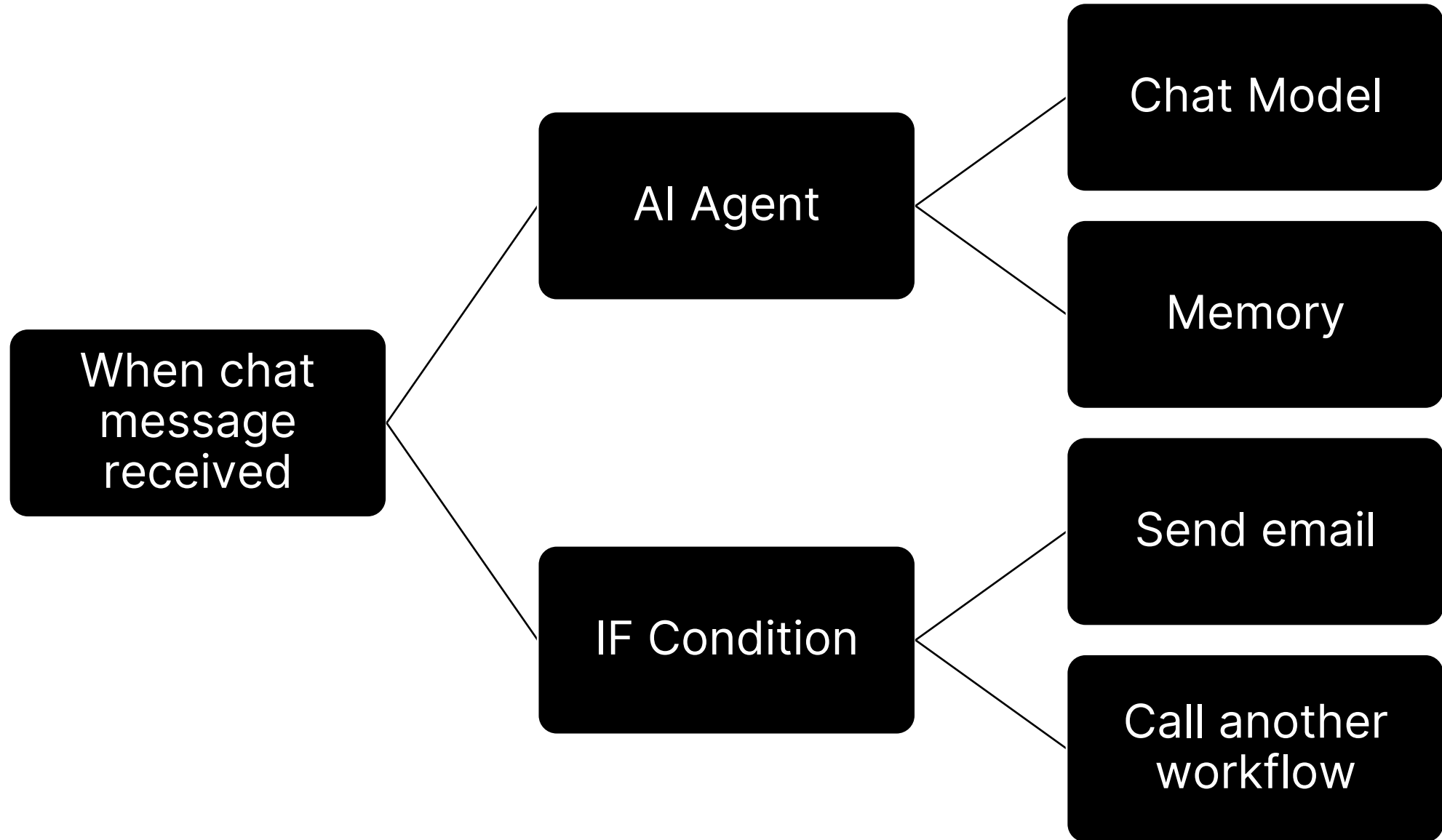
5. EXECUTE WORKFLOW

CREATE A WORKFLOW IN N8N

NODE CATEGORIES

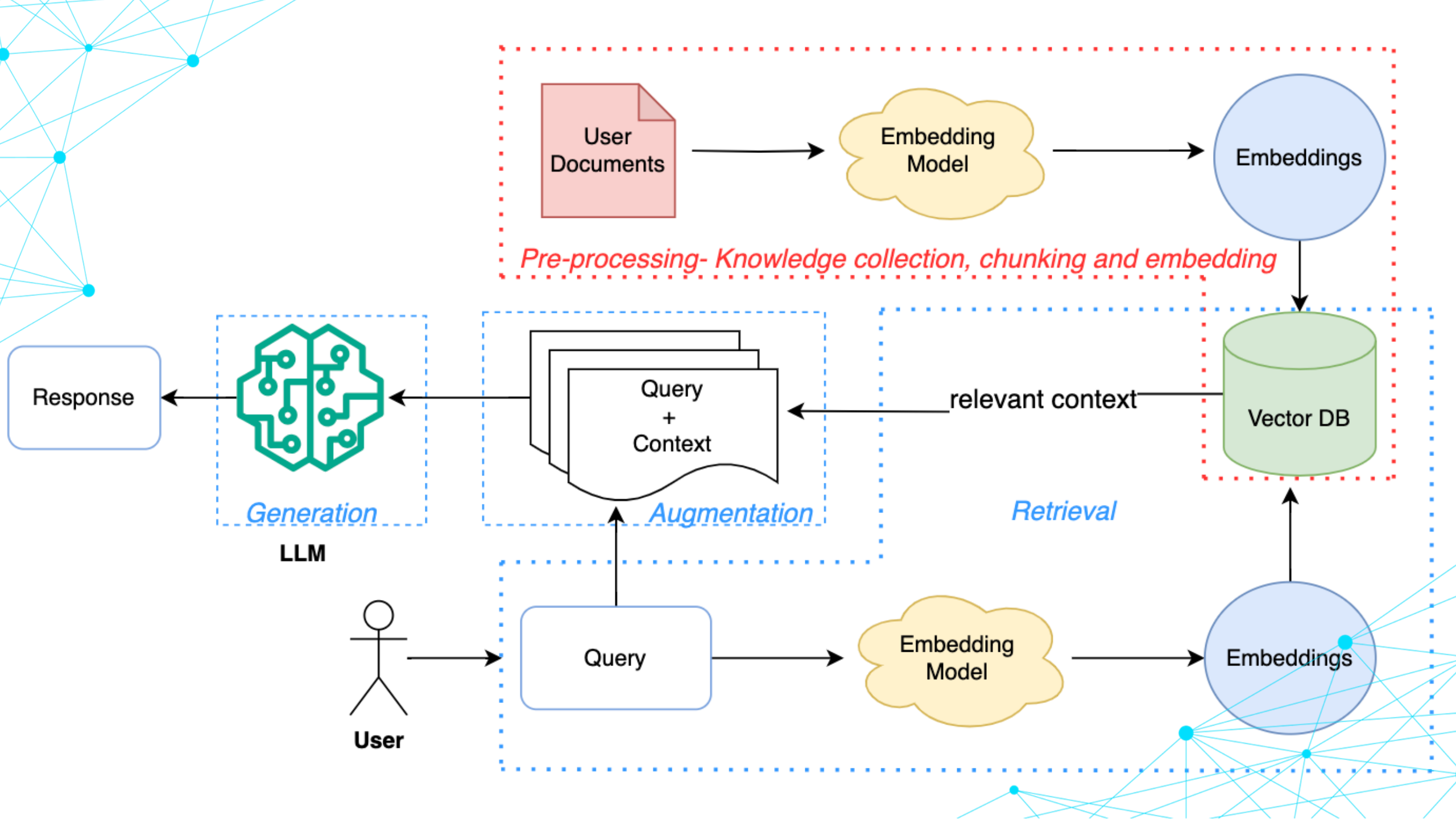
- **TRIGGERS**
- **ACTIONS (GOOGLE SHEETS, NOTION)**
- **UTILITY (IF STATEMENTS, FILTERS)**
- **CODE (RUN CODE, SET WEBHOOKS)**
- **ADVANCED AI (AGENTS, MEMORY)**

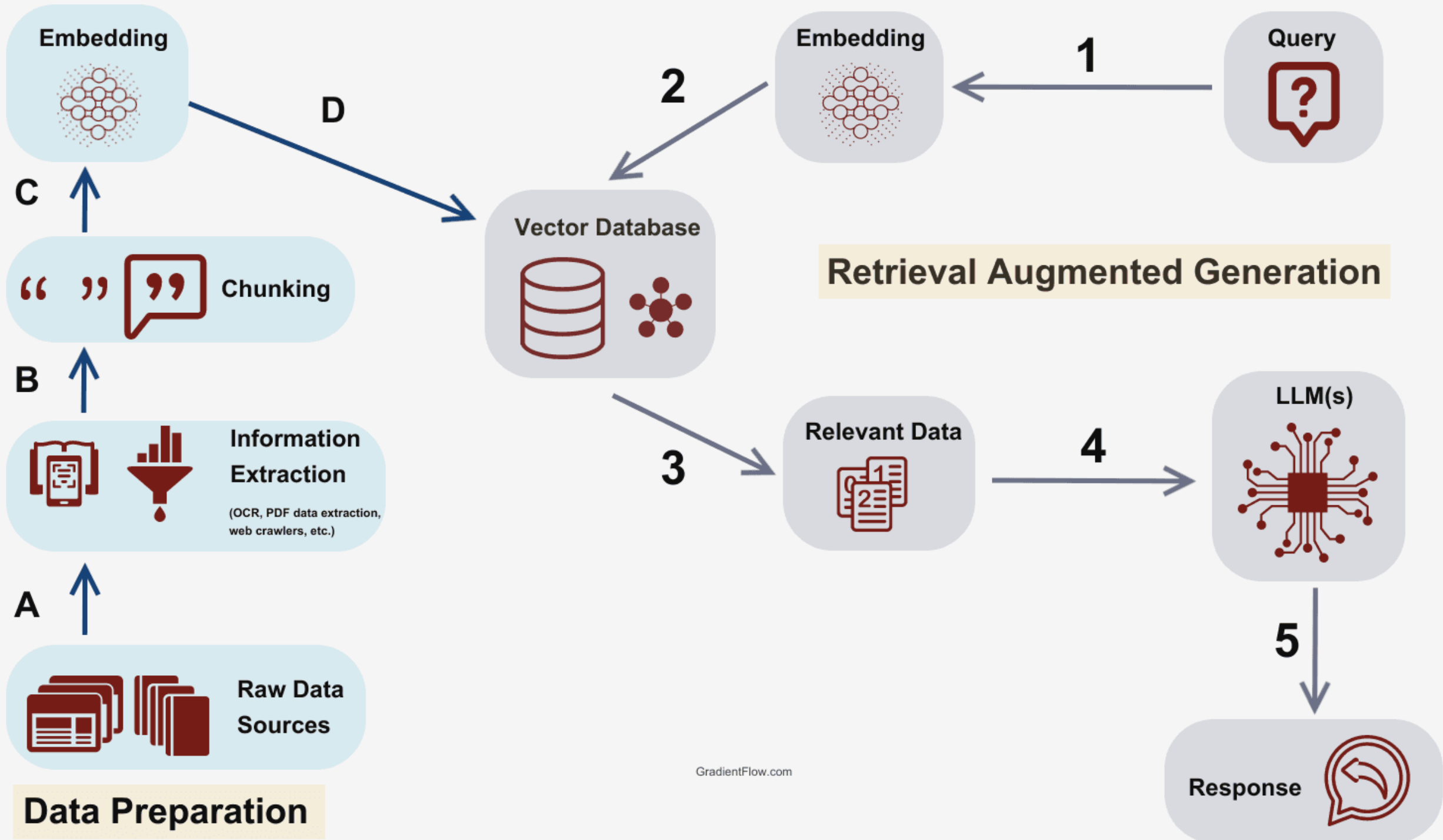
CREATE A SIMPLE WORKFLOW

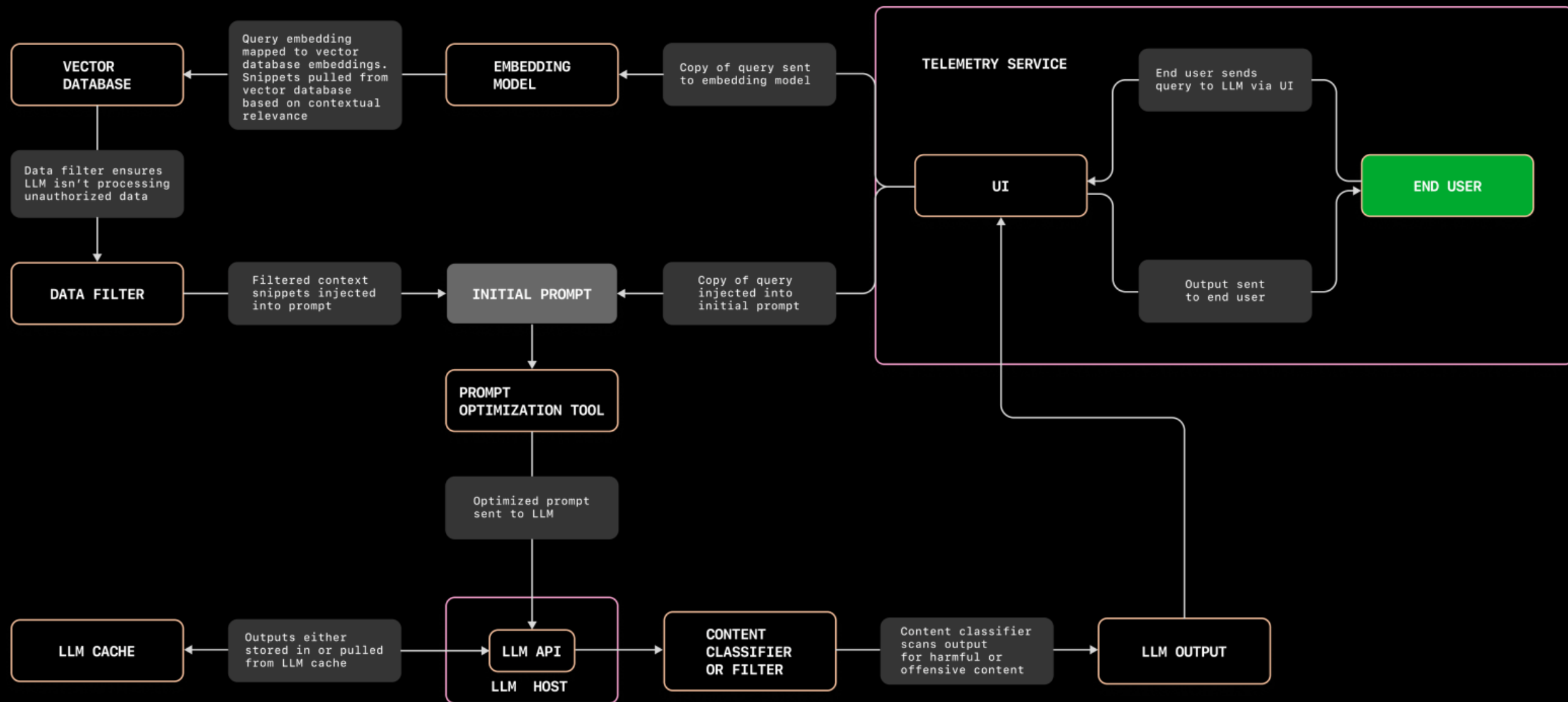


CREATE A RAG APP USING N8N

COMMON ARCHITECTURES







THIS DIAGRAM REPRESENTS THE ARCHITECTURE OF TODAY'S LLM APPLICATION. THE DIFFERENT COMPONENTS CAN BE ROUGHLY GROUPED INTO THREE CATEGORIES: USER INPUT, INPUT ENRICHMENT TOOLS AND PROMPT CONSTRUCTION, AND EFFICIENT AND RESPONSIBLE AI TOOLING.

Q&A

