LLM Dictionary

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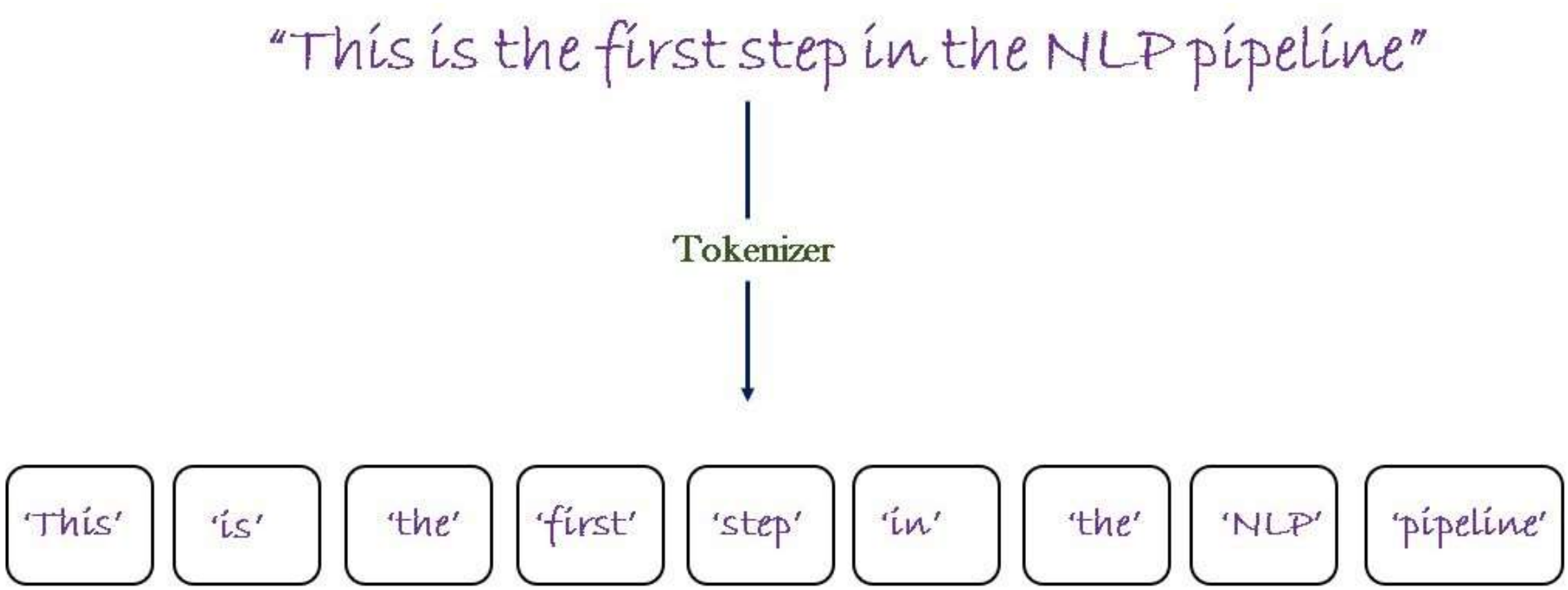
1. Tokenization

Breaking text into smaller chunks (tokens).

- Splits words into pieces for processing.
- Essential for LLM input handling.
- Example: "Hello, AI!" → [Hello] [,] [AI] [!]



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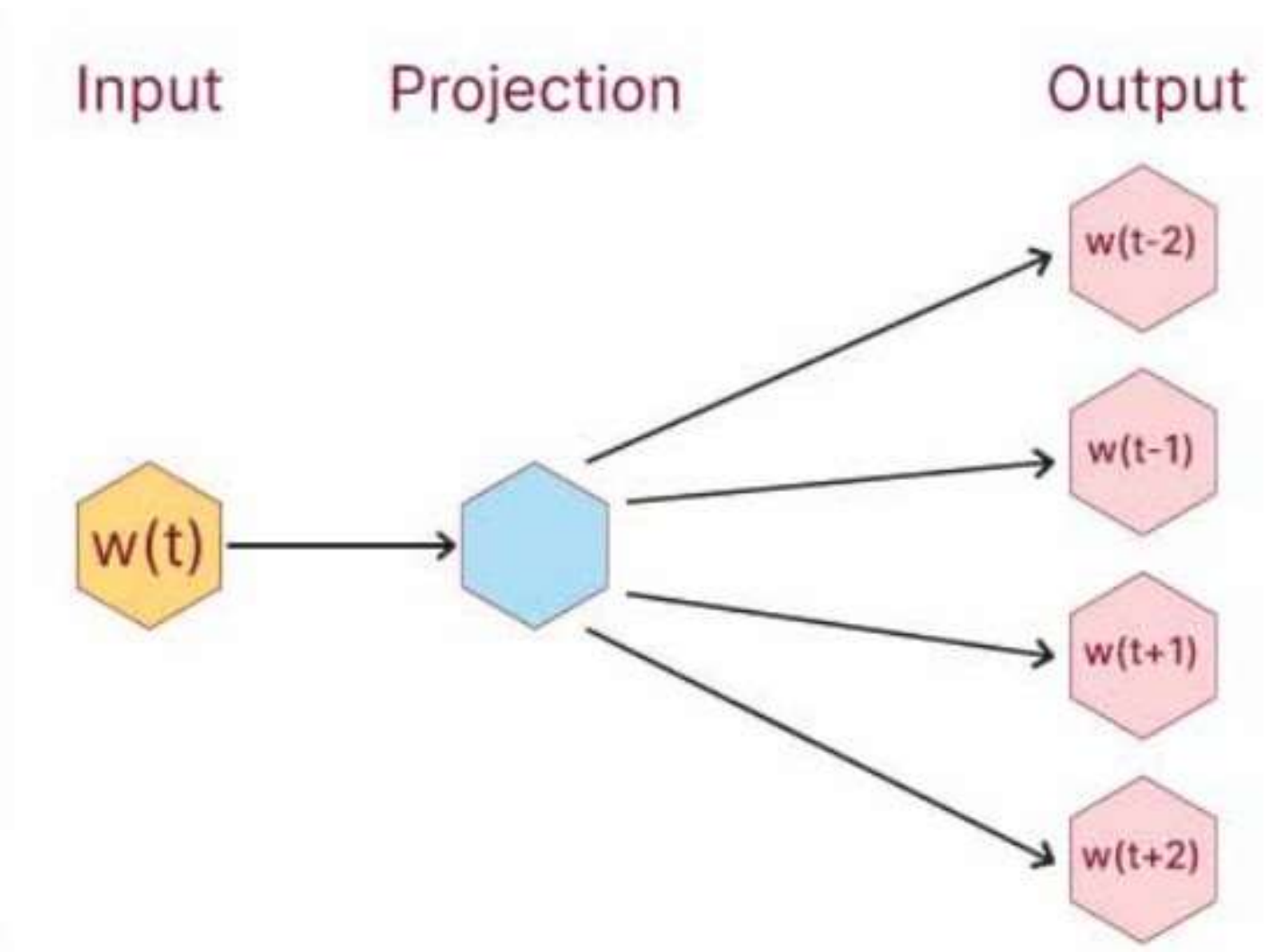
2. Embeddings

Converting words into numerical representations.

- Transforms text into vectors.
- Helps models understand meaning.
- Used in search, RAG, and NLP.



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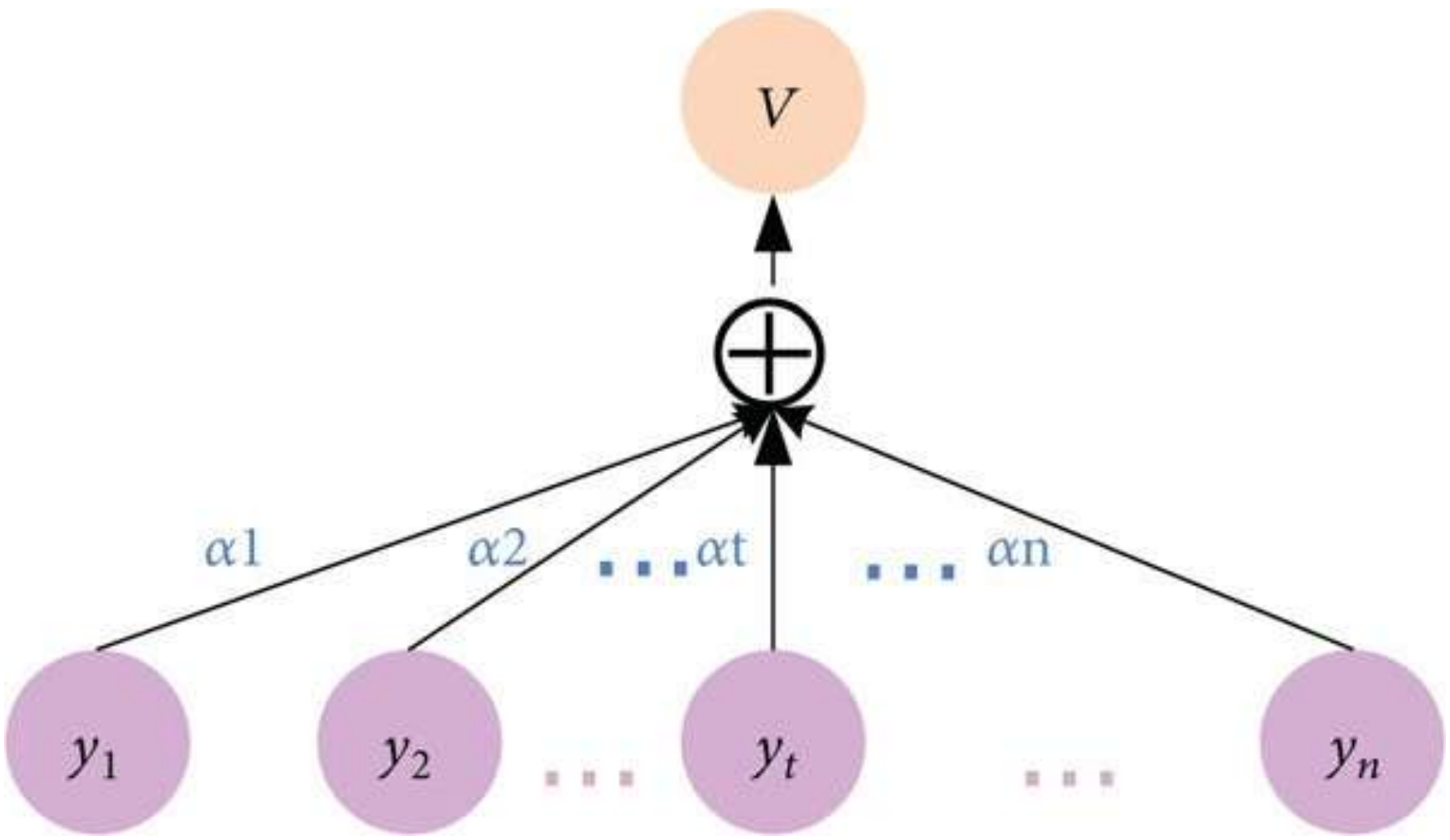
3. Attention Mechanism

How LLMs focus on important parts of input.

- Key feature of Transformers.
- Determines word relevance.
- Example: Self-Attention in GPT.



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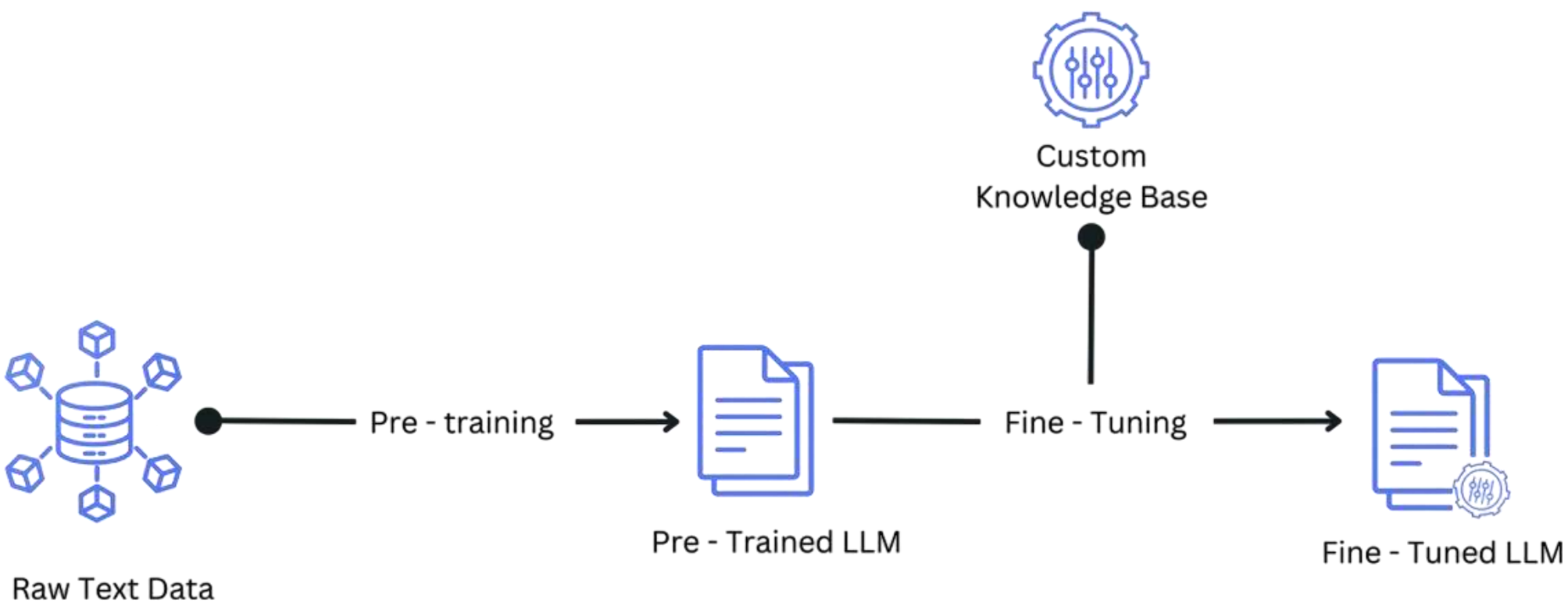
4. Fine-Tuning

Adapting a pre-trained model for specific tasks.

- Customizes LLMs for industries.
- Uses labeled datasets.
- Improves accuracy in niche areas.



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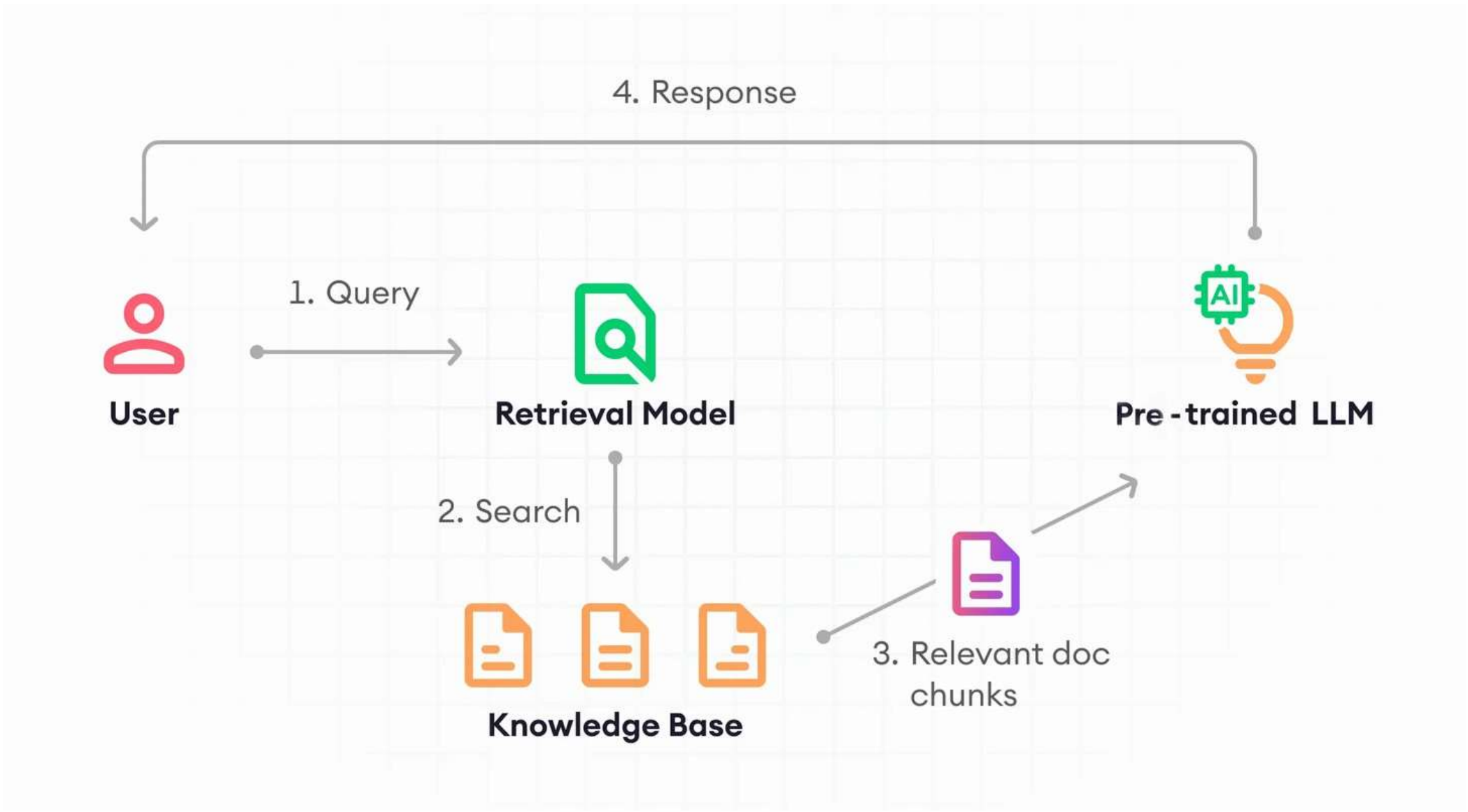
5. RAG (Retrieval-Augmented Generation)

Enhancing LLMs with external knowledge.

- Combines retrieval + generation.
- Accesses real-time or proprietary data.
- Used in chatbots & enterprise AI.



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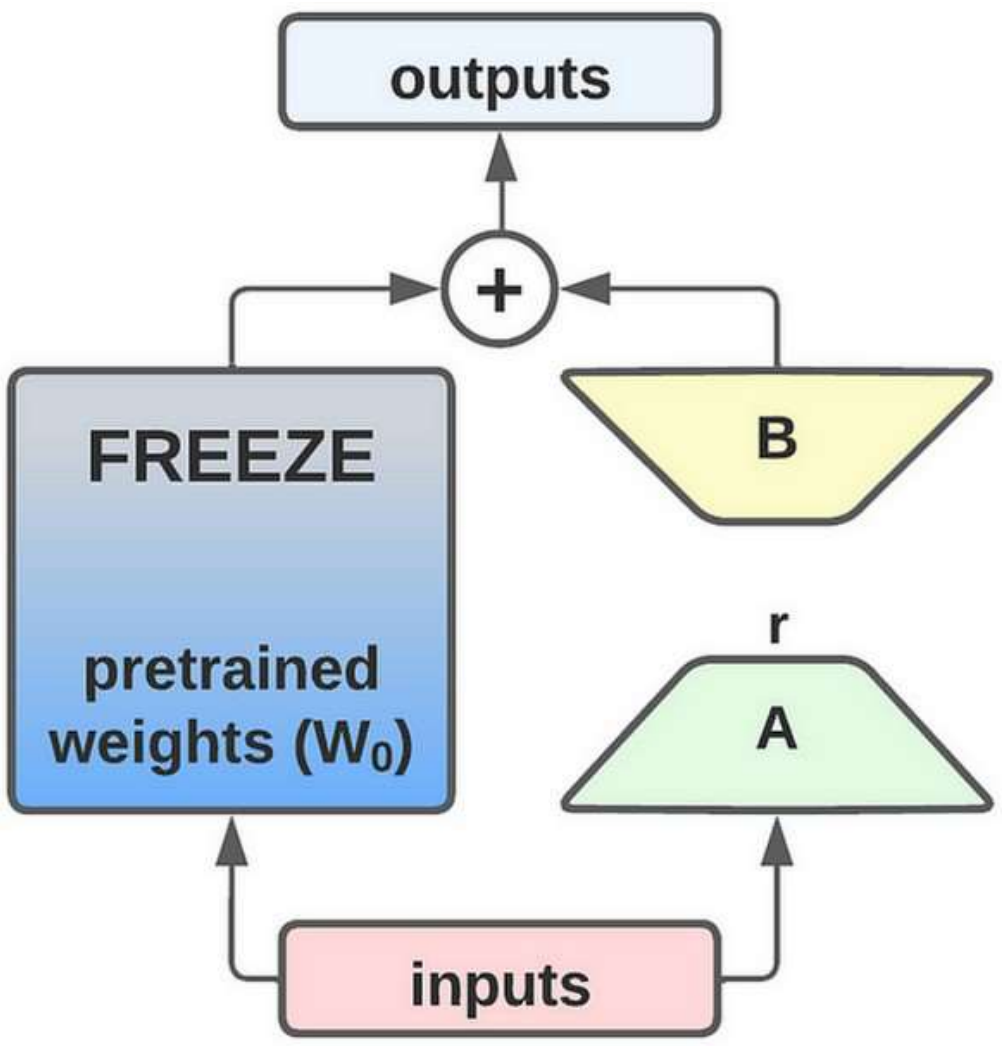
6. LoRA (Low-Rank Adaptation)

Efficient fine-tuning method for LLMs.

- Reduces computational cost.
- Adds small adapters to models.
- Used in lightweight model customization.



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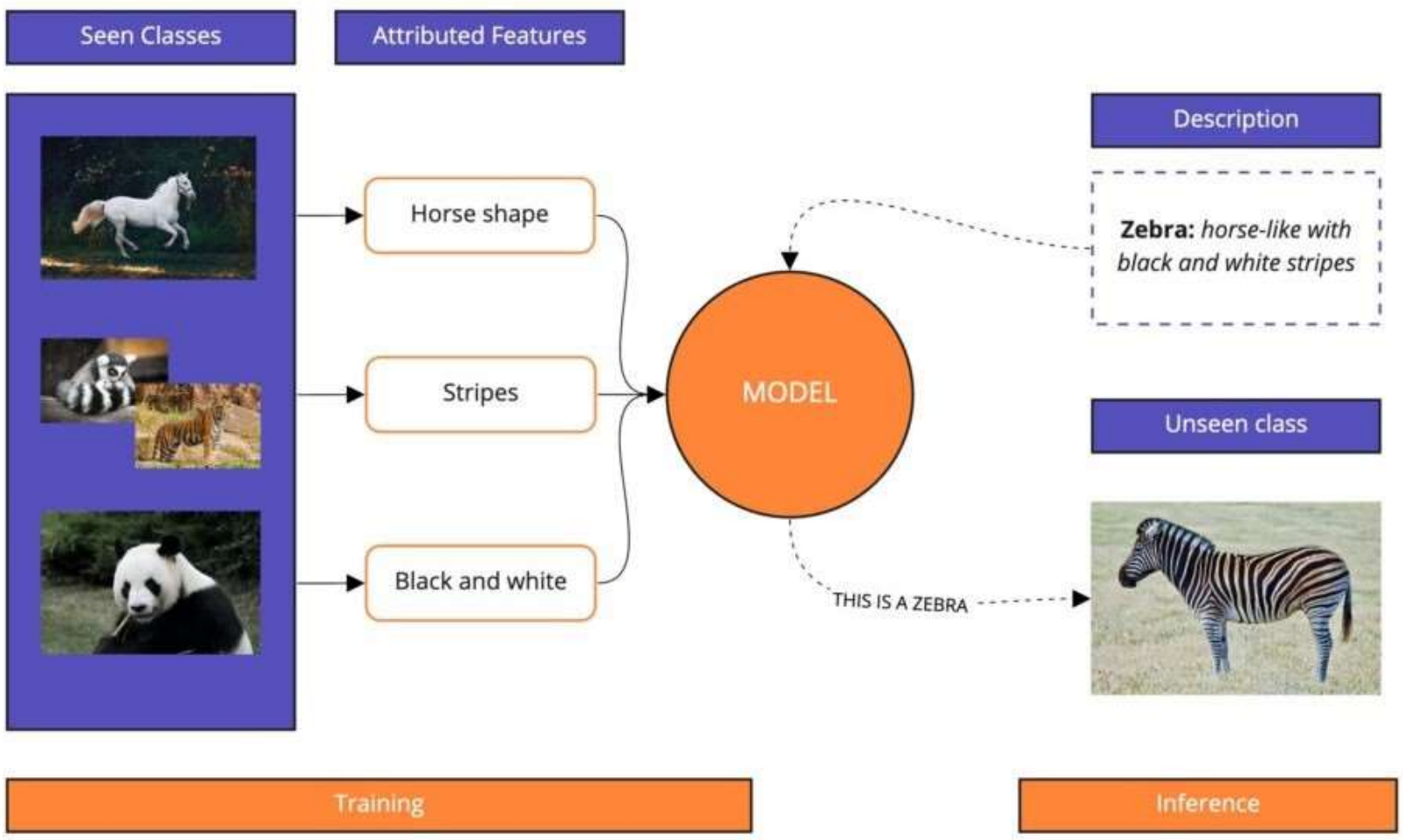
7. Zero-Shot & Few-Shot Learning

How AI learns with minimal examples.

- Zero-shot: No prior examples.
- Few-shot: Learns from few samples.
- Used in LLM inference & NLP tasks.



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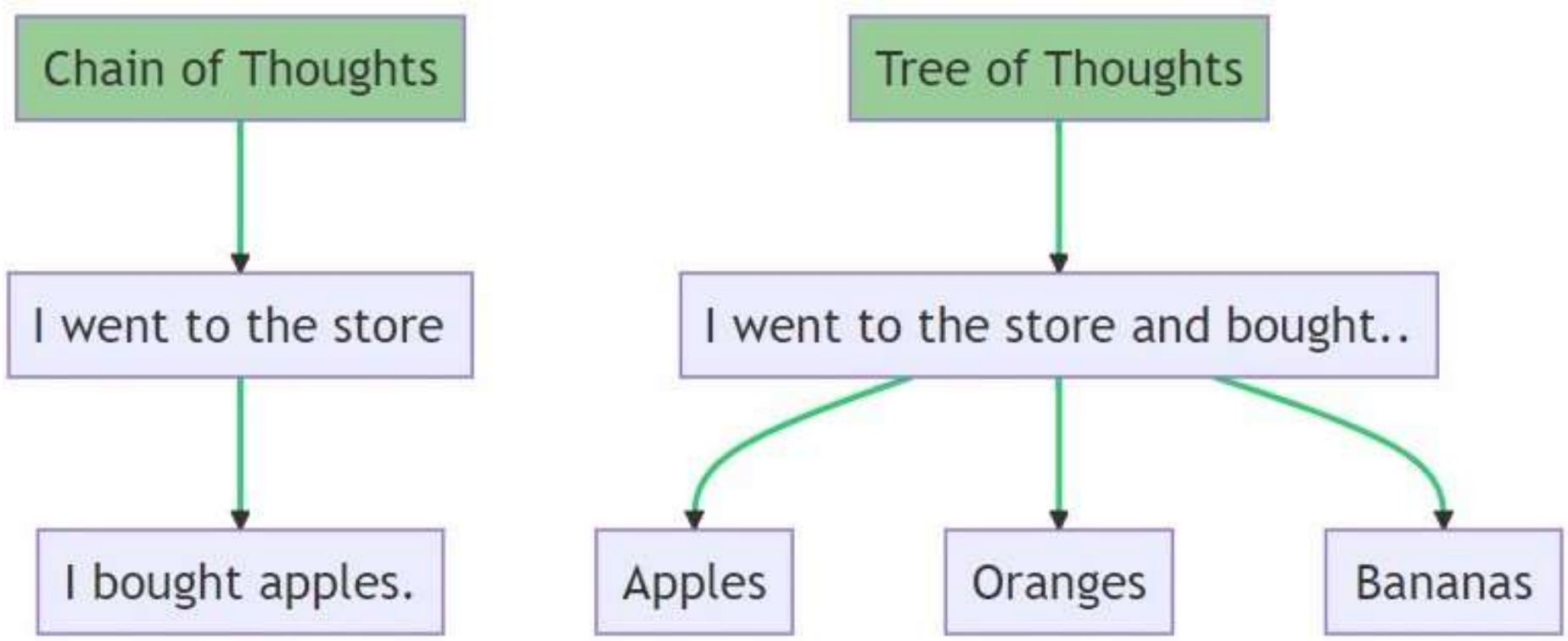
8. Chain-of-Thought (CoT) Prompting

Guiding AI through step-by-step reasoning.

- Helps LLMs think logically.
- Improves accuracy in complex tasks.
- Used in math, coding, and problem-solving.



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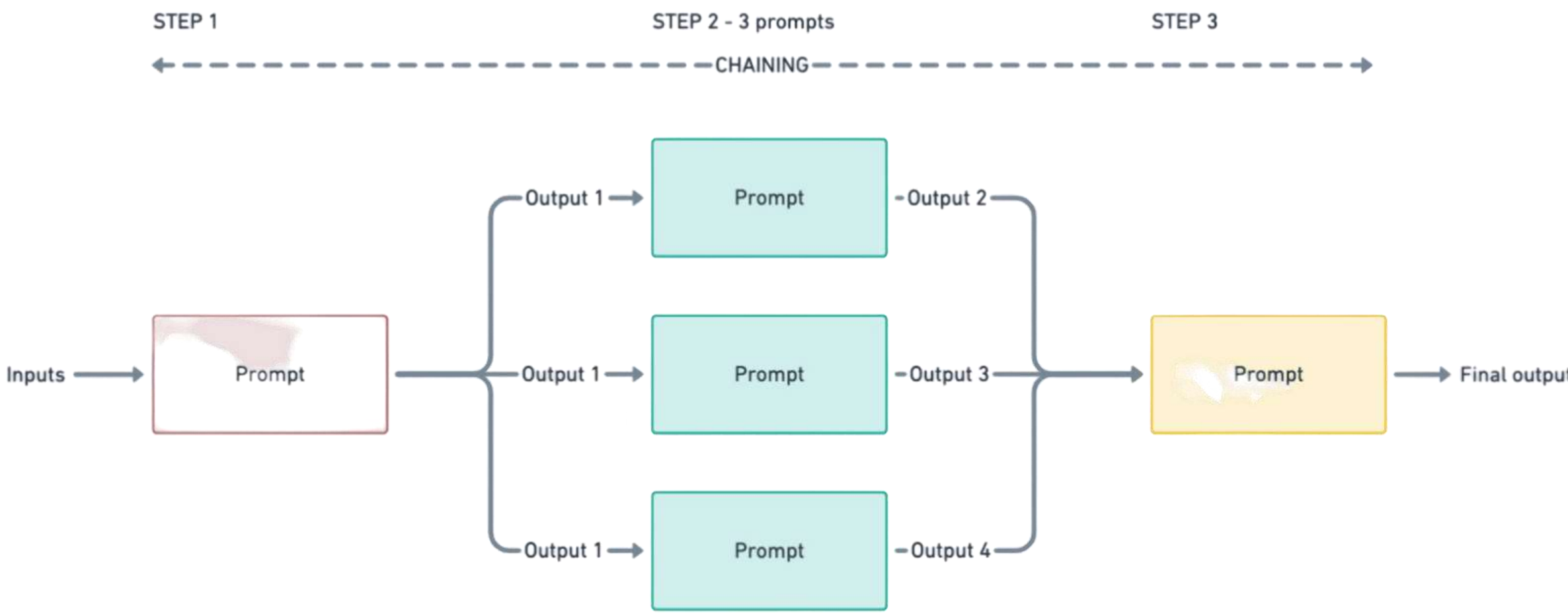
9. Prompt Engineering

Crafting inputs to optimize AI responses.

- Directly impacts LLM output.
- Uses context, examples, and formatting.
- Essential for developers & AI engineers.



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10. Model Inference

Generating responses in real time.

- Runs LLMs on trained data.
- Used in chatbots, search, AI apps.
- Requires GPU/TPU acceleration.