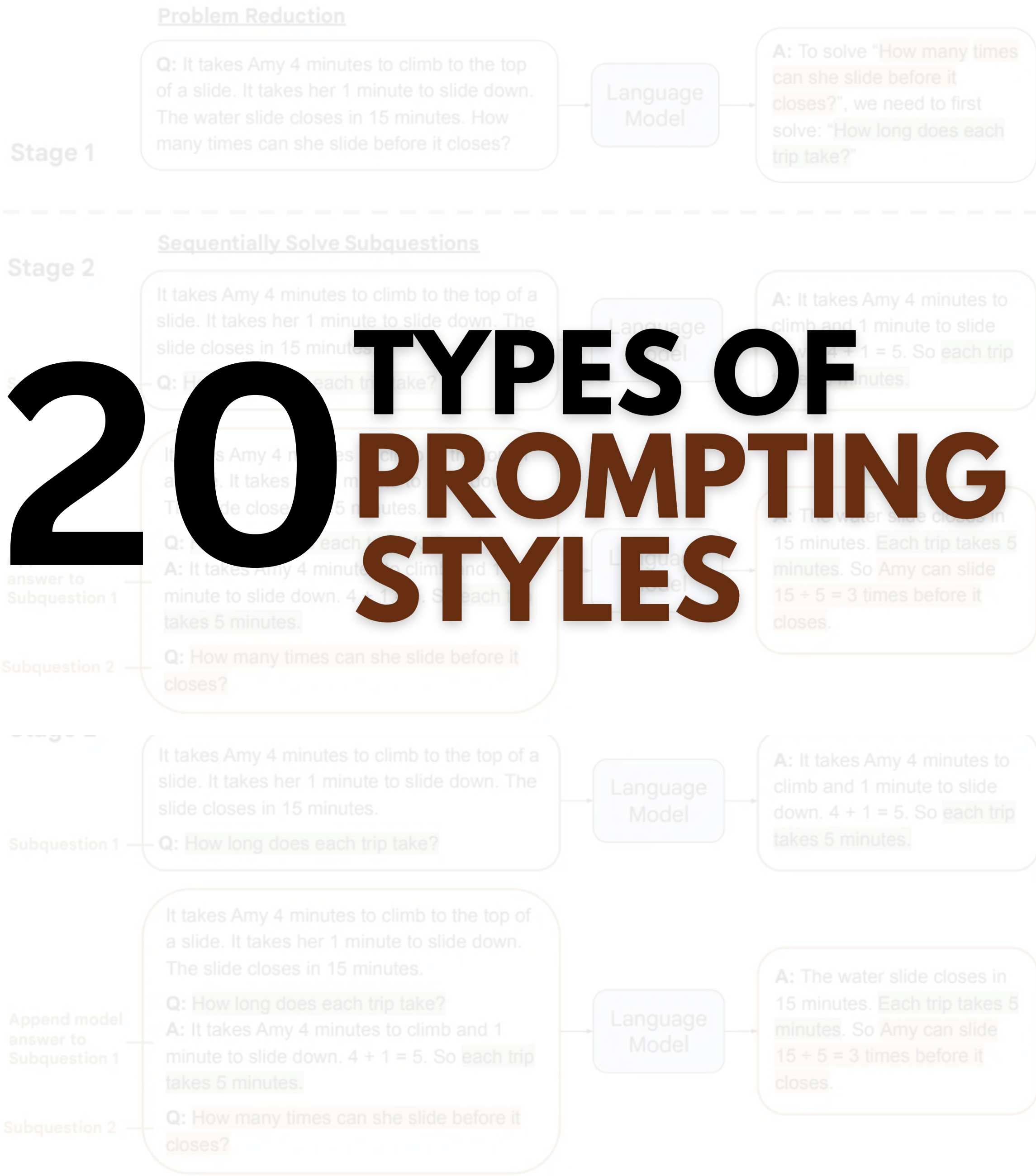
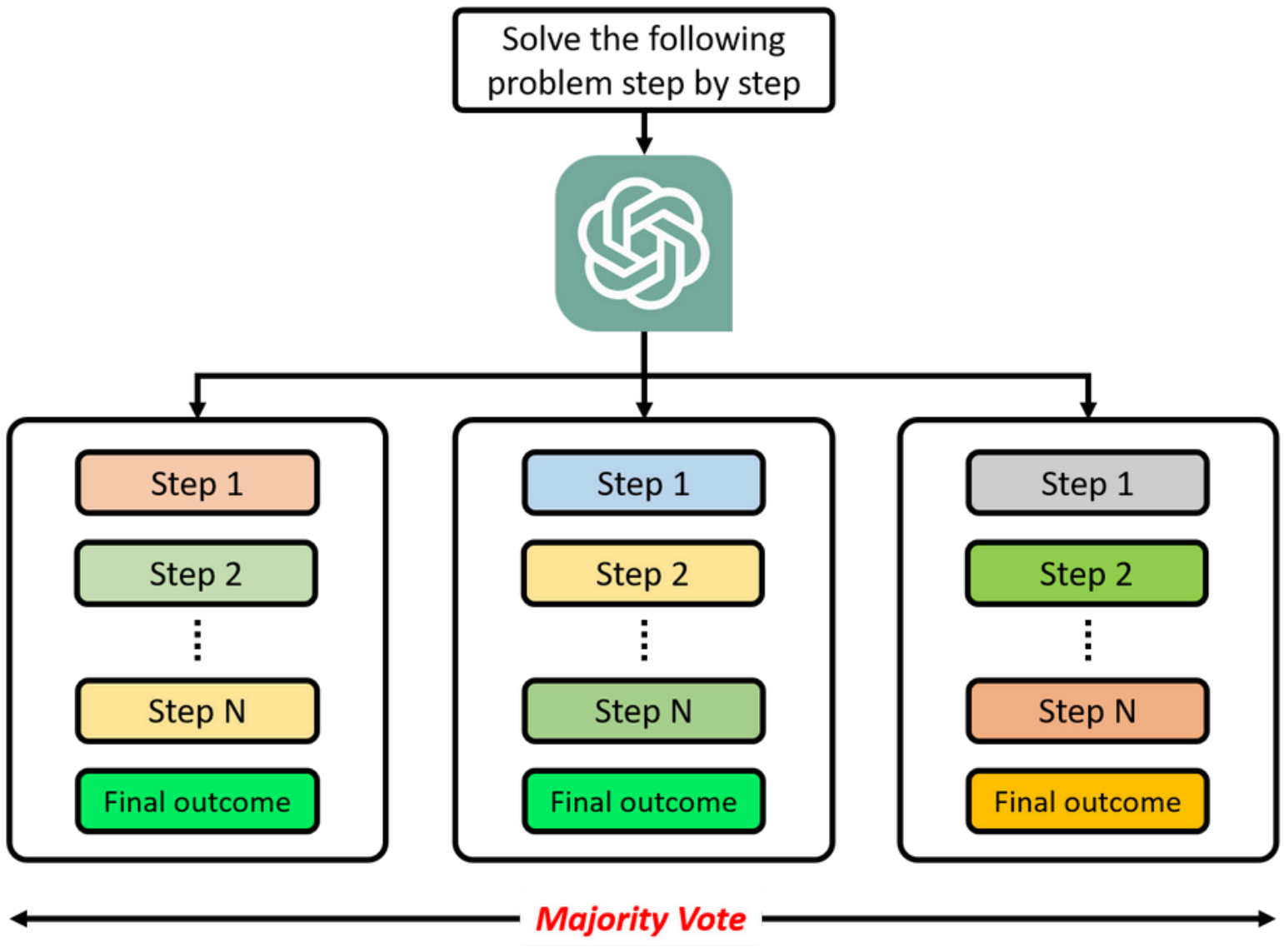
20 TYPES OF PROMPTING STYLES



Bhavishya Pandit

1. SELF-CONSISTENCY

Self-consistency aims "to replace the naive greedy decoding used in chain-of-thought prompting". The idea is to sample multiple, diverse reasoning paths through few-shot CoT, and use the generations to select the most consistent answer.



Source

Prompt :

solve a problem with multiple possible reasoning paths.

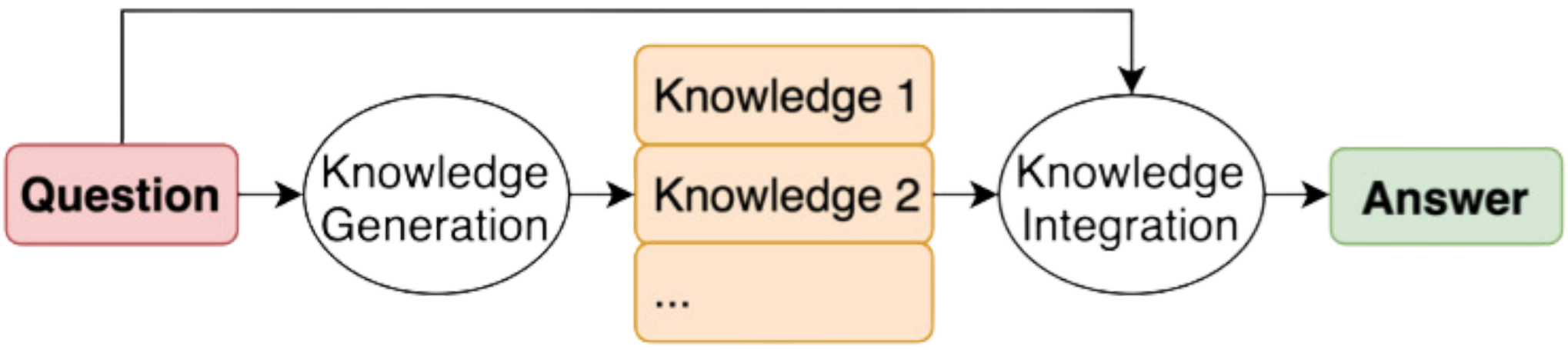
1. Generate at least [Insert Number] distinct reasoning approaches to address the problem.
2. Compare the outputs of each approach to identify commonalities or inconsistencies.
3. Select the solution that appears most frequently or is most logically consistent across approaches.
4. Provide a final answer and explain why it was chosen based on self-consistency.

Problem: [Insert Problem Description]

Desired Outcome: [Describe the goal, e.g., a clear answer, structured output, or reliable insight].

2. GENERATED KNOWLEDGE PROMPTING

Generated Knowledge Prompting is a prompt engineering method that first prompts the LLM to generate useful knowledge related to the task, and then incorporate the knowledge into the prompt alongside the question or task description.



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Example:

Customer question

- "What are the rebooking options if my flight from New York to London is canceled?"

Prompt to generate knowledge

- "Retrieve current UK travel restrictions for passengers flying from New York and check the availability of the next flights from New York to London."

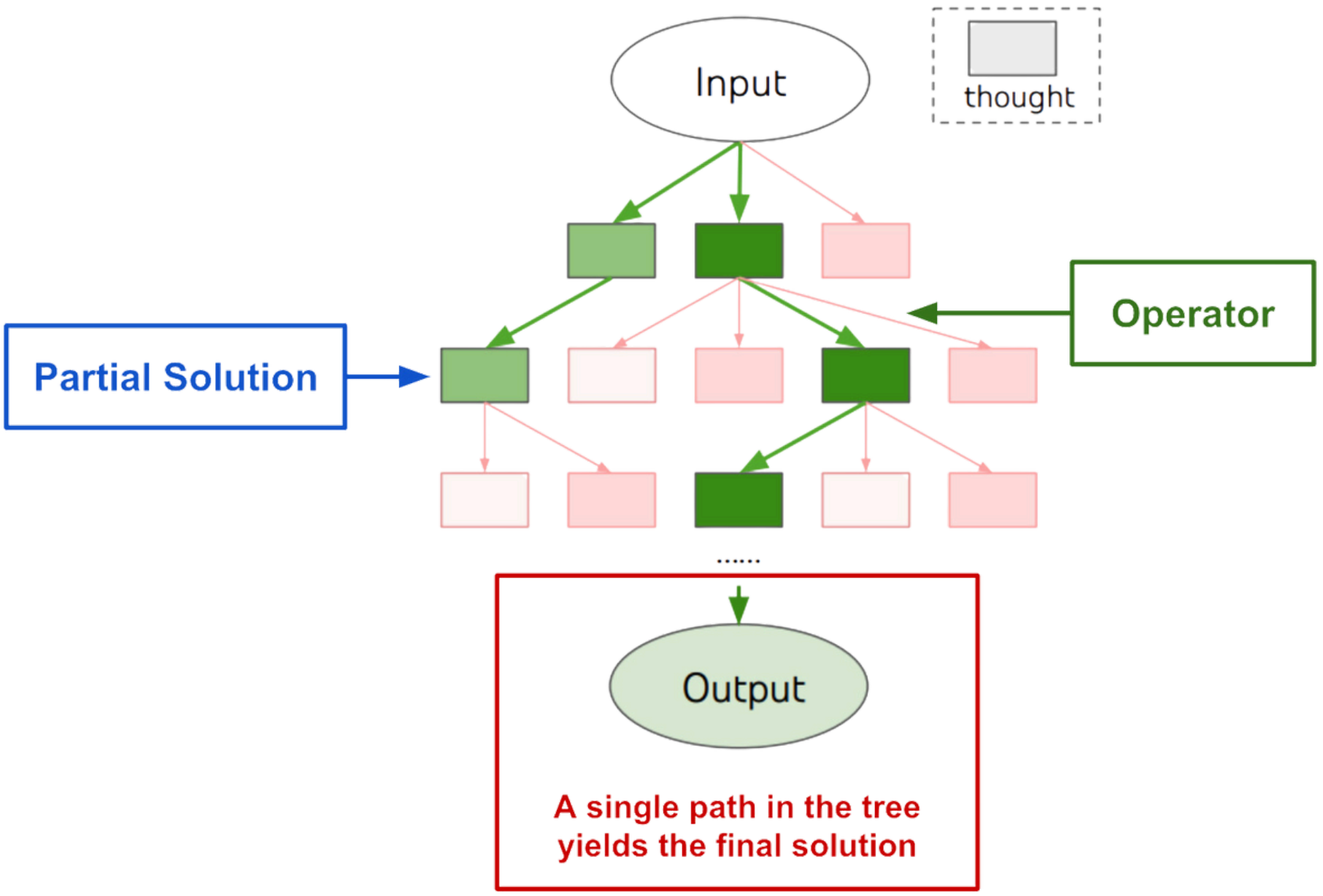
Final integrated prompt

Knowledge: "The current UK travel restrictions allow only limited flights. The next available flight from New York to London is on [date].

User Query: What are the rebooking options for a passenger whose flight has been canceled?"

3. TREE OF THOUGHTS (TOT)

ToT allows LMs to perform deliberate decision making by considering multiple different reasoning paths and self-evaluating choices to decide the next course of action, as well as looking ahead or backtracking when necessary to make global choices.



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Prompt Example:

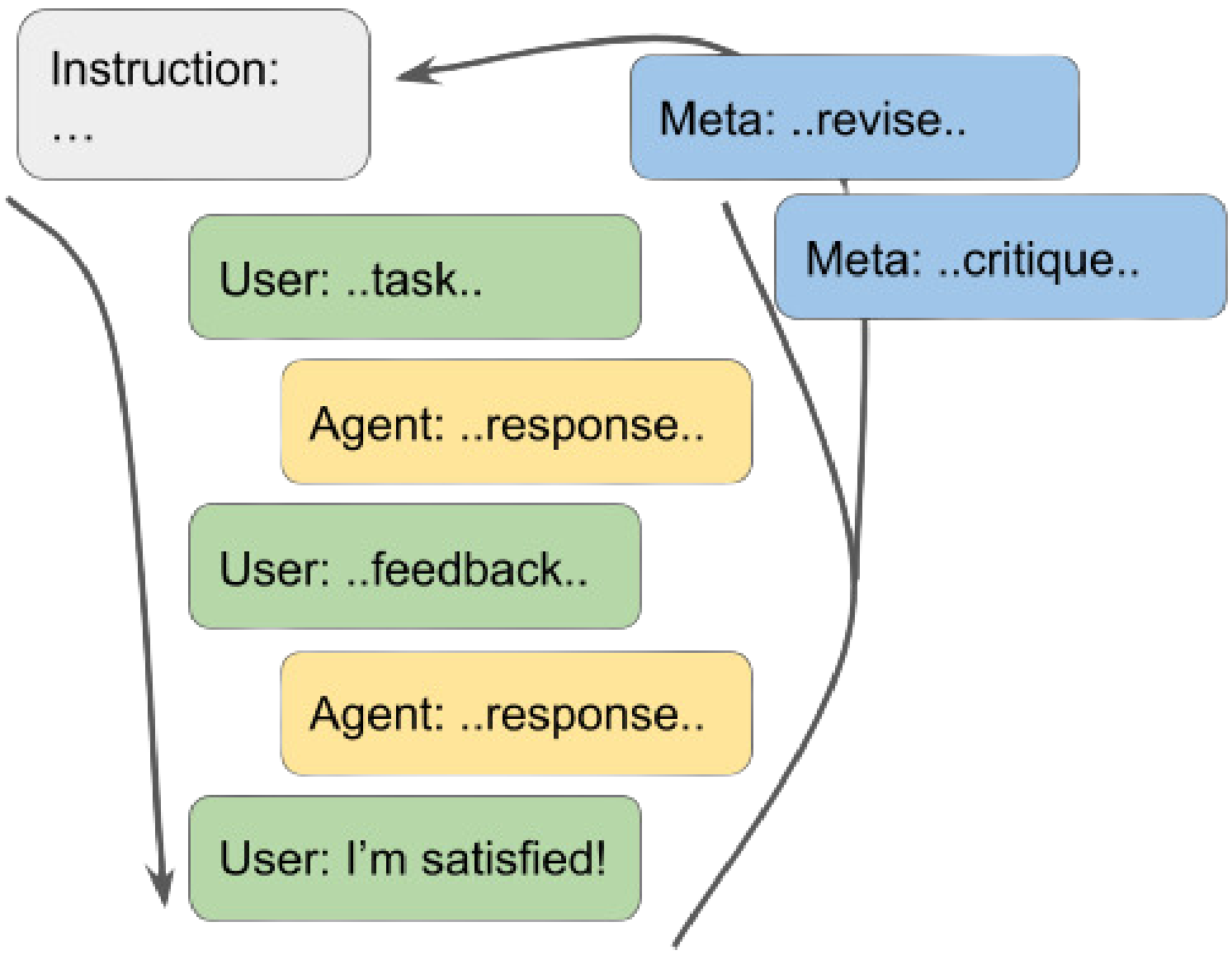
Imagine three different experts are answering this question. All experts will write down 1 step of their thinking,then share it with the group. Then all experts will go on to the next step, etc.

If any expert realises they're wrong at any point then they leave.

The question is...

4. META PROMPTING

Meta Prompting is an advanced prompting technique that focuses on the structural and syntactical aspects of tasks and problems rather than their specific content details. This goal with meta prompting is to construct a more abstract, structured way of interacting with LLMs.



Source

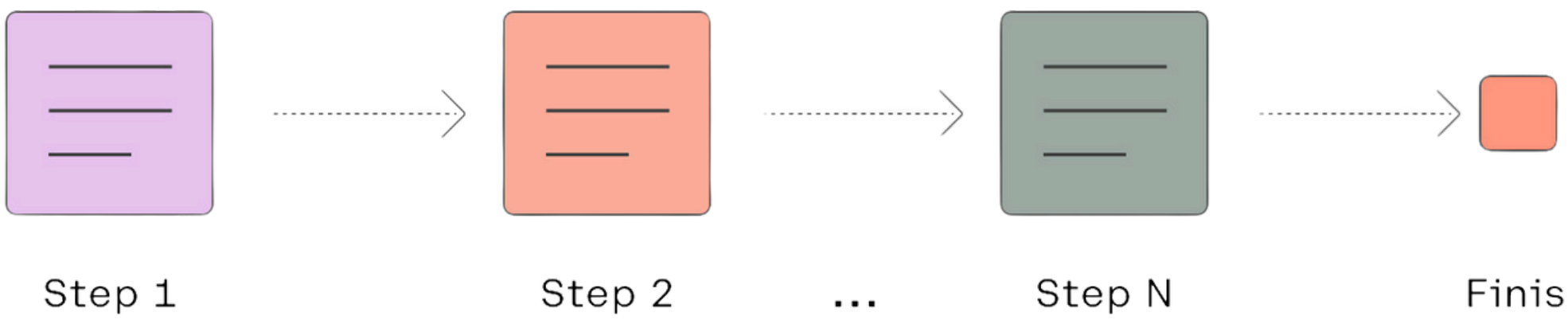
Prompt Example:

Improve the following prompt: 'Explain climate change in simple terms.'

1. Analyze and identify improvements.
2. Optimize the prompt for better clarity and specificity.
3. Provide the revised prompt and explain the enhancements made.

5. PROMPT CHAINING

Prompt chaining is a technique that uses a series of prompts to guide a large language model (LLM) to produce a desired output.



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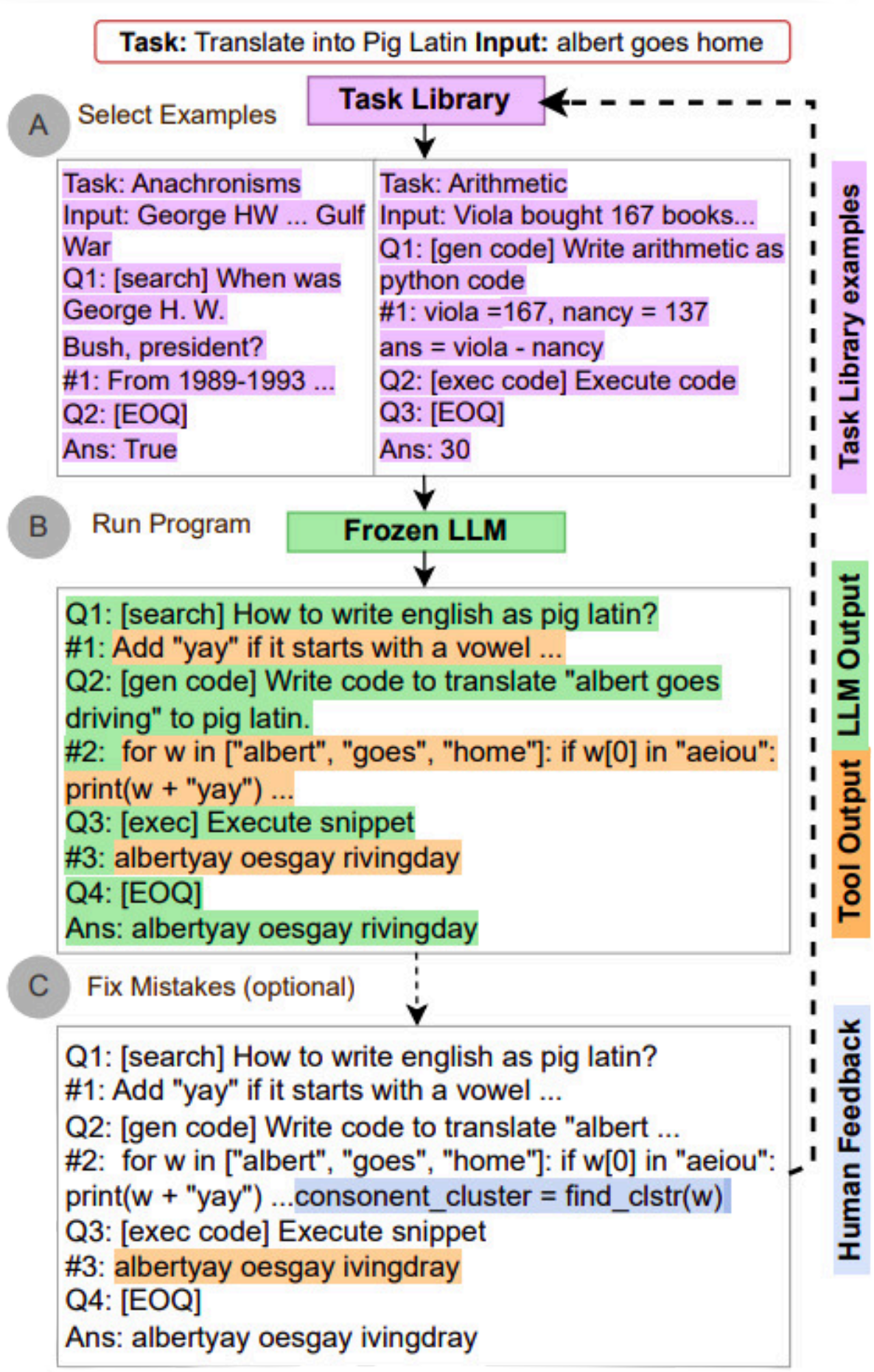
Prompt Example:
You are a helpful assistant. Your task is to help answer a question given in a document. The first step is to extract quotes relevant to the question from the document, delimited by ####. Please output the list of quotes using <quotes></quotes>. Respond with "No relevant quotes found!" if no relevant quotes were found.
{{document}}

Output:
<quotes>
- Chain-of-thought (CoT) prompting[27]
- Generated knowledge prompting[37]
- Least-to-most prompting[38]
- Self-consistency decoding[39]
- Complexity-based prompting[41]
- Self-refine[42]
</quotes>

6. AUTOMATIC REASONING AND TOOL-USE (ART)

Automatic Reasoning and Tool-use (ART) is a prompting technique that combines automatic chain of thought prompting and tool usage to improve the problem-solving capabilities of AI models

Prompt Example:



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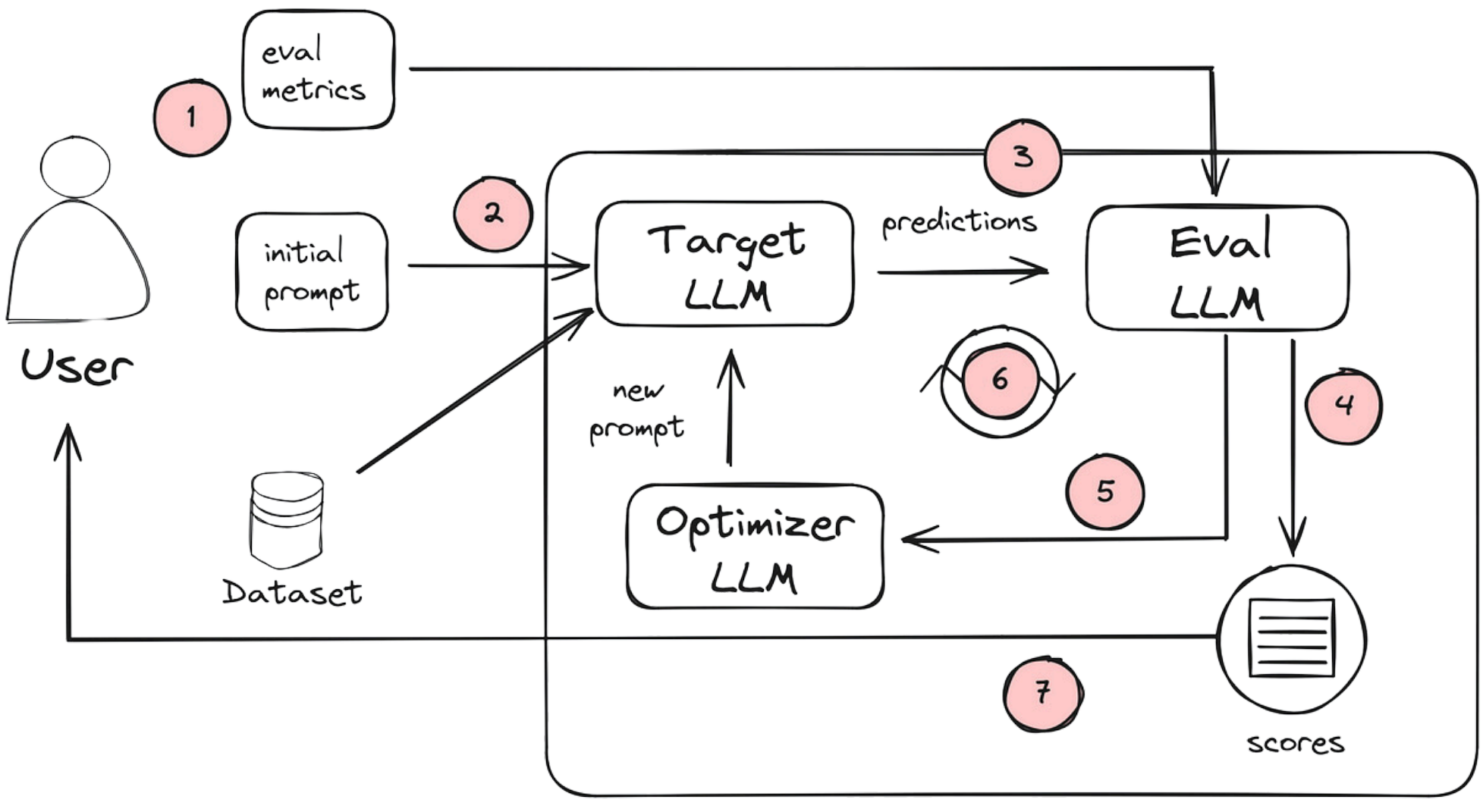
7. AUTOMATIC PROMPT ENGINEER (APE)

Automatic Prompt Engineering (APE) generates optimised prompts for text generation, based on three inputs; the expected input data, the desired output & a prompt template.



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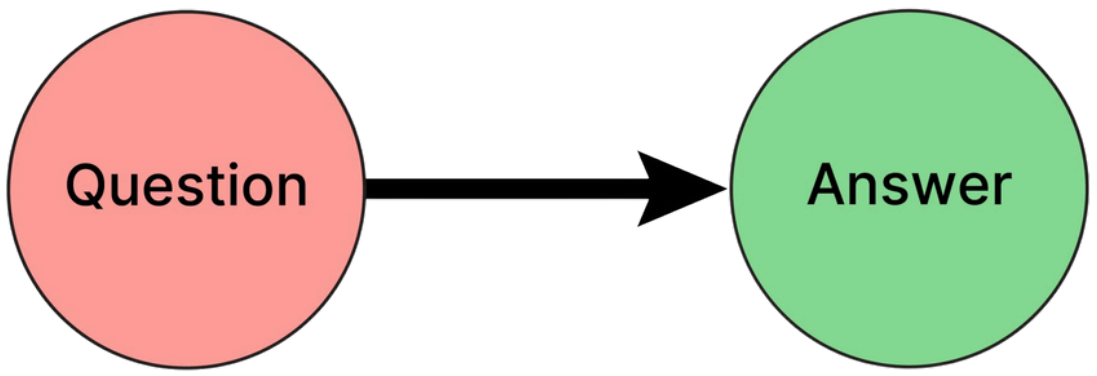
Prompt Example:

You are an Automatic Prompt Engineer. Your task is to generate and refine prompts to create concise and accurate summaries of long articles.

- First, propose three different prompts for this task. Then, test each prompt against the following input text: [insert text]. Analyze the results, pick the best-performing prompt, and explain why it works better than the others.

8. ZERO-SHOT PROMPTING

Zero-shot prompting means that the prompt used to interact with the model won't contain examples or demonstrations. The zero-shot prompt directly instructs the model to perform a task without any additional examples to steer it.



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Zero-shot Approach

Task	Time
Design an effective prompt	minutes to hours
Test the prompt with a pre-trained model	minutes
Refine the prompt if needed	minutes to hours
Deploy the solution	minutes

Source

Prompt Example:

Classify the text into neutral, negative or positive.

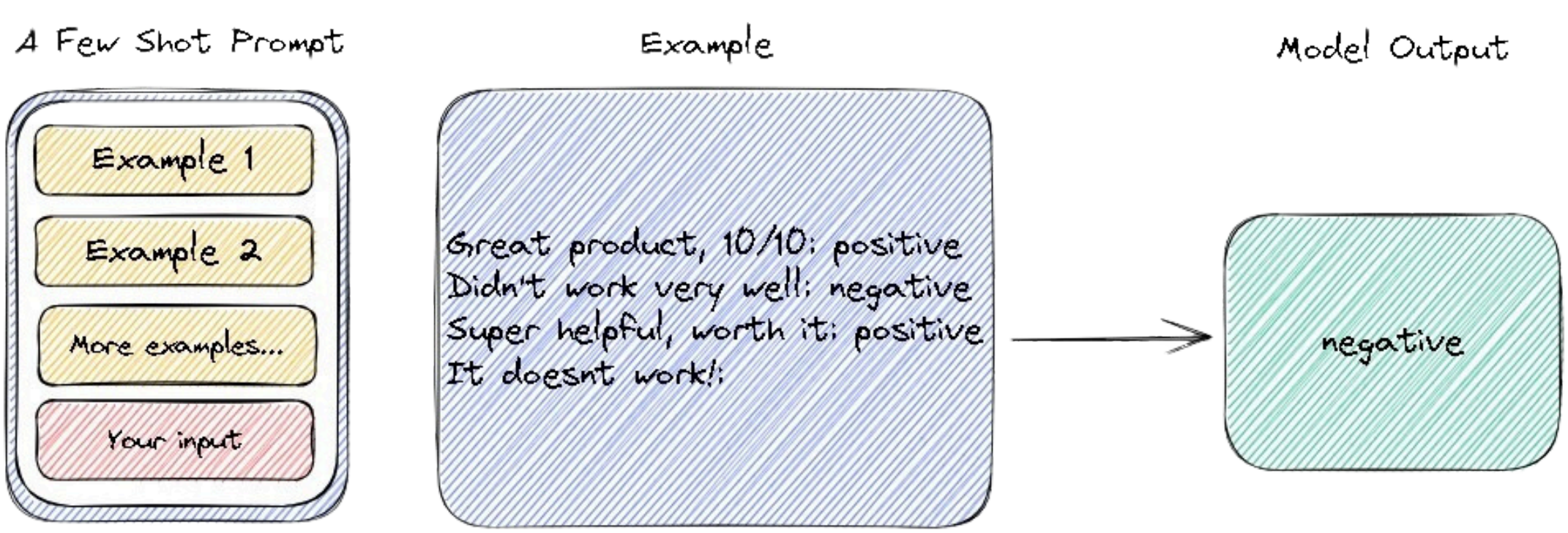
Text: I think the vacation is okay.

Sentiment:

Output: Neutral

9. FEW-SHOT PROMPTING

Few-shot prompting can be used as a technique to enable in-context learning where we provide demonstrations in the prompt to steer the model to better performance.



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Prompt Example:

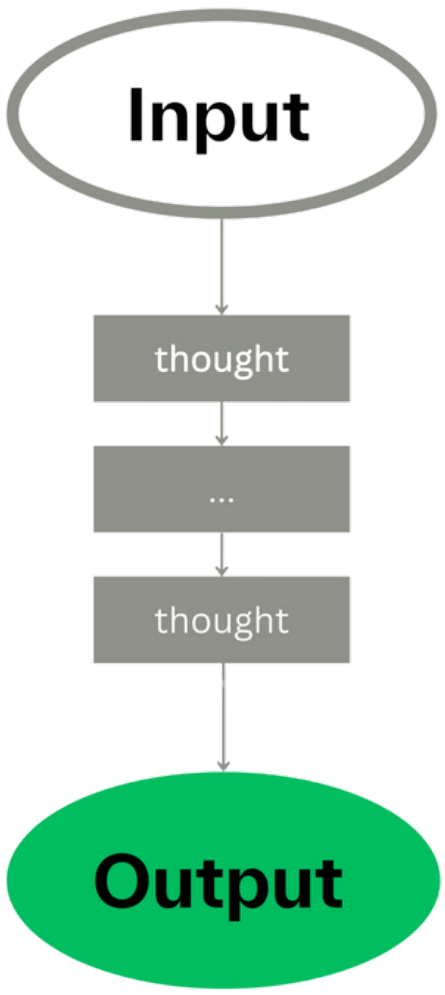
A "whatpu" is a small, furry animal native to Tanzania. An example of a sentence that uses the word whatpu is:
We were traveling in Africa and we saw these very cute whatpus.

To do a "farduddle" means to jump up and down really fast. An example of a sentence that uses the word farduddle is:

Output: When we won the game, we all started to farduddle in celebration.

10. CHAIN-OF-THOUGHT PROMPTING

Chain-of-thought (CoT) prompting enables complex reasoning capabilities through intermediate reasoning steps. You can combine it with few-shot prompting to get better results on more complex tasks that require reasoning before responding.



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Prompt Example:

- The odd numbers in this group add up to an even number: 4, 8, 9, 15, 12, 2, 1.

A: Adding all the odd numbers (9, 15, 1) gives 25. The answer is False.

- The odd numbers in this group add up to an even number: 17, 10, 19, 4, 8, 12, 24.

A: Adding all the odd numbers (17, 19) gives 36. The answer is True.

- The odd numbers in this group add up to an even number: 17, 9, 10, 12, 13, 4, 2.

A: Adding all the odd numbers (17, 9, 13) gives 39. The answer is False.

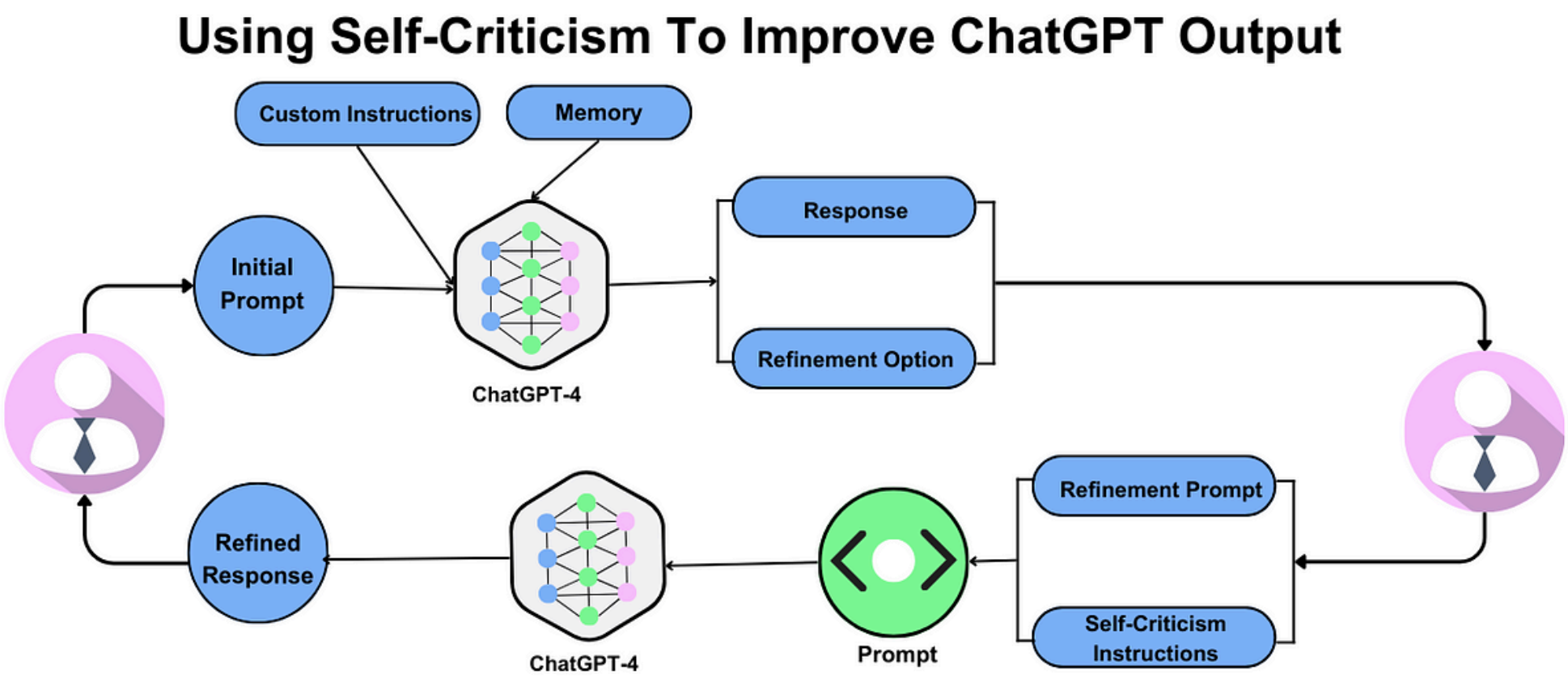
- The odd numbers in this group add up to an even number: 15, 32, 5, 13, 82, 7, 1.

A:

Output: Adding all the odd numbers (15, 5, 13, 7, 1) gives 41. The answer is False.

11. SELF-CRITICISM PROMPT

This is designed to encourage the model to evaluate its own output. By generating a response first and then critically analyzing it, the model can refine its output and learn from potential errors or shortcomings.



Improving response quality with iterative self-criticism

Source

Prompt Example:

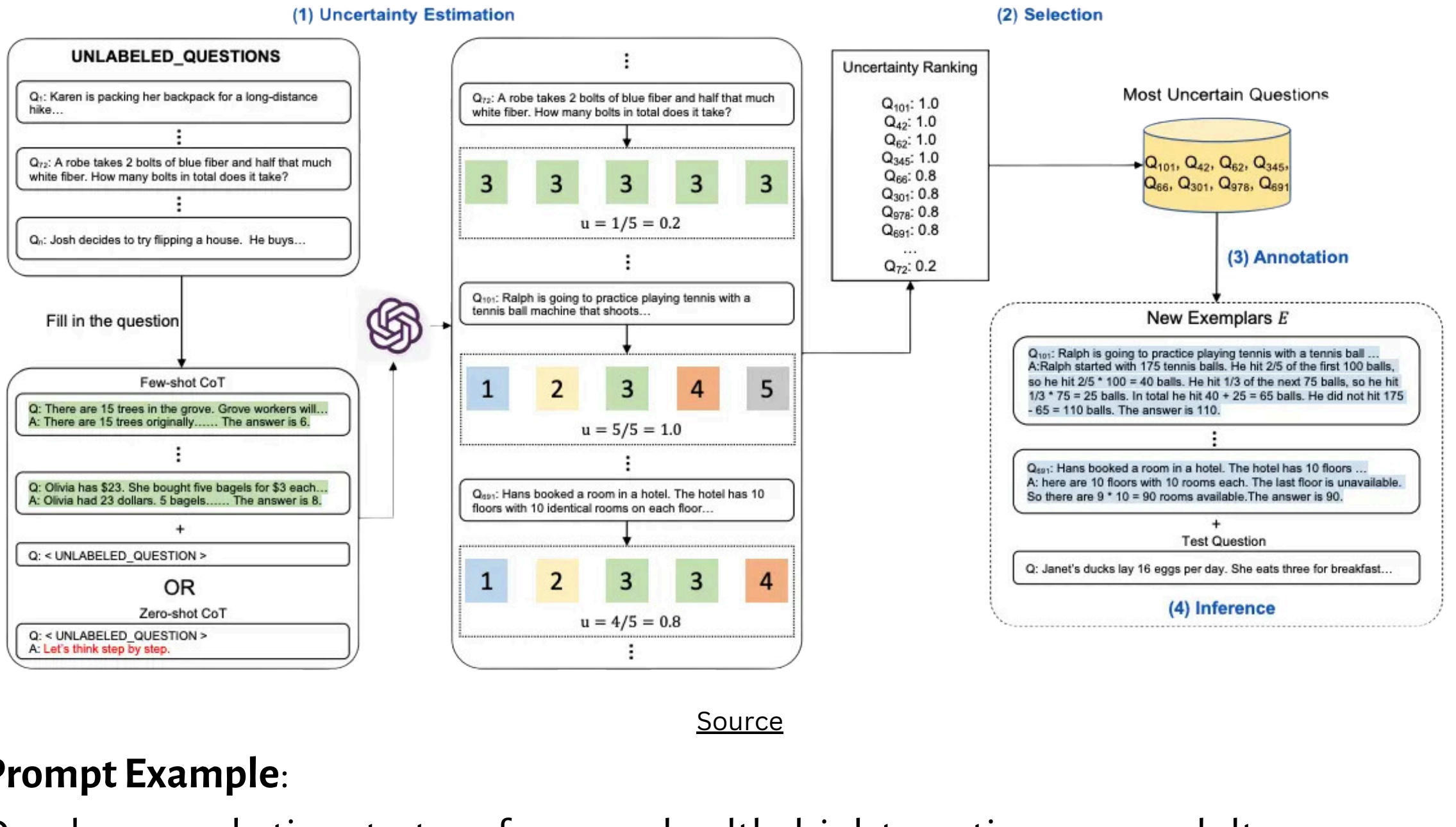
Solve the problem:

Explain the concept of black holes.

1. Provide your initial explanation.
2. Evaluate the explanation for errors or unclear points.
3. Improve the response and explain the revisions made to ensure clarity and accuracy.

12. ACTIVE-PROMPT

Active Prompting is a technique for improving Chain-of-Thought (CoT) prompting performance by selectively human-annotating exemplars where the model shows the most uncertainty



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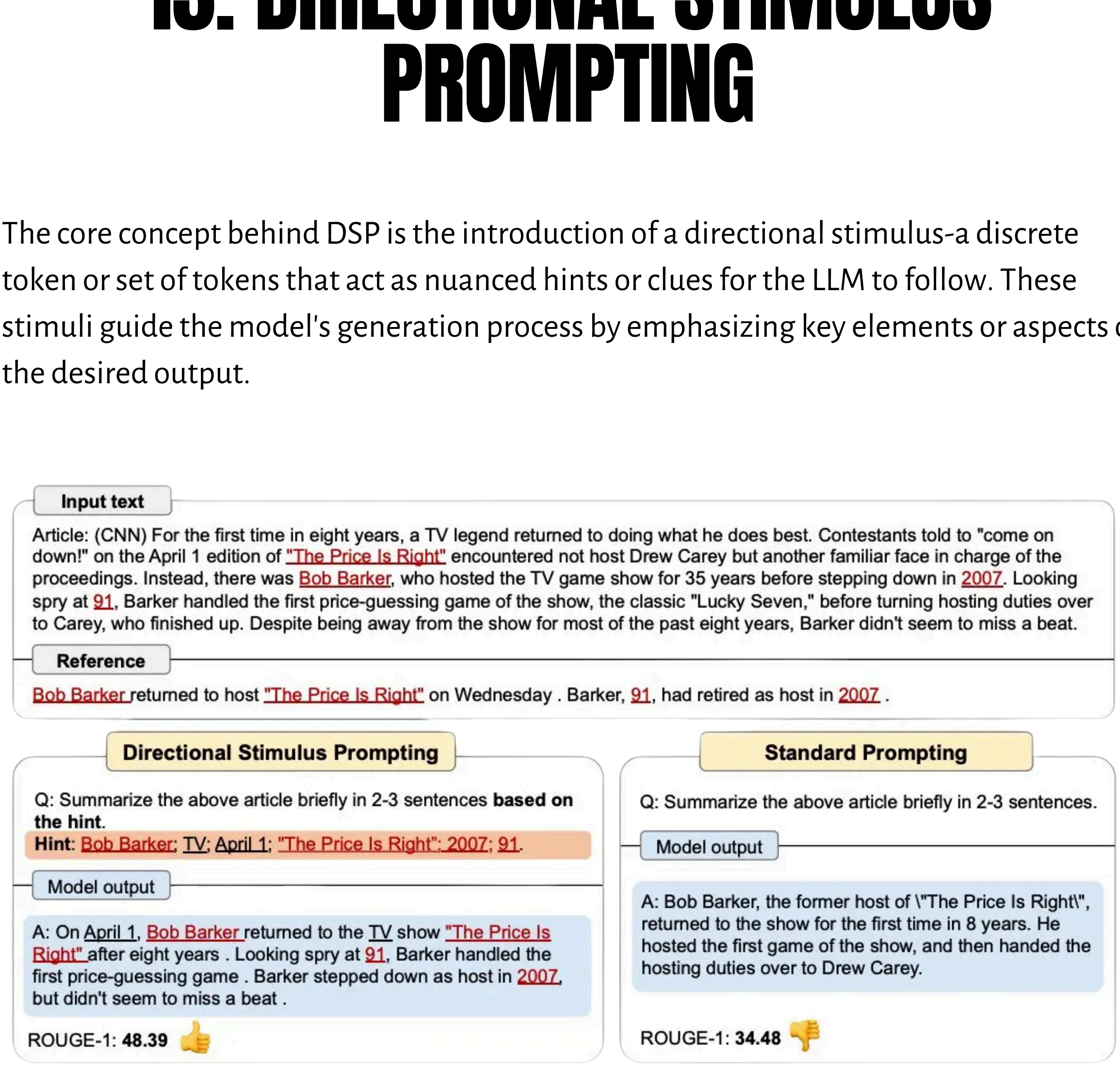
Prompt Example:
Develop a marketing strategy for a new health drink targeting young adults.

Output:
To develop an effective marketing strategy, I need more information. What are the unique selling points of this health drink? Who are the main competitors? What is the preferred social media platform for the target demographic?

In this scenario, instead of directly providing a strategy, the AI uses Active-Prompt to ask relevant follow-up questions.

13. DIRECTIONAL STIMULUS PROMPTING

The core concept behind DSP is the introduction of a directional stimulus-a discrete token or set of tokens that act as nuanced hints or clues for the LLM to follow. These stimuli guide the model's generation process by emphasizing key elements or aspects of the desired output.



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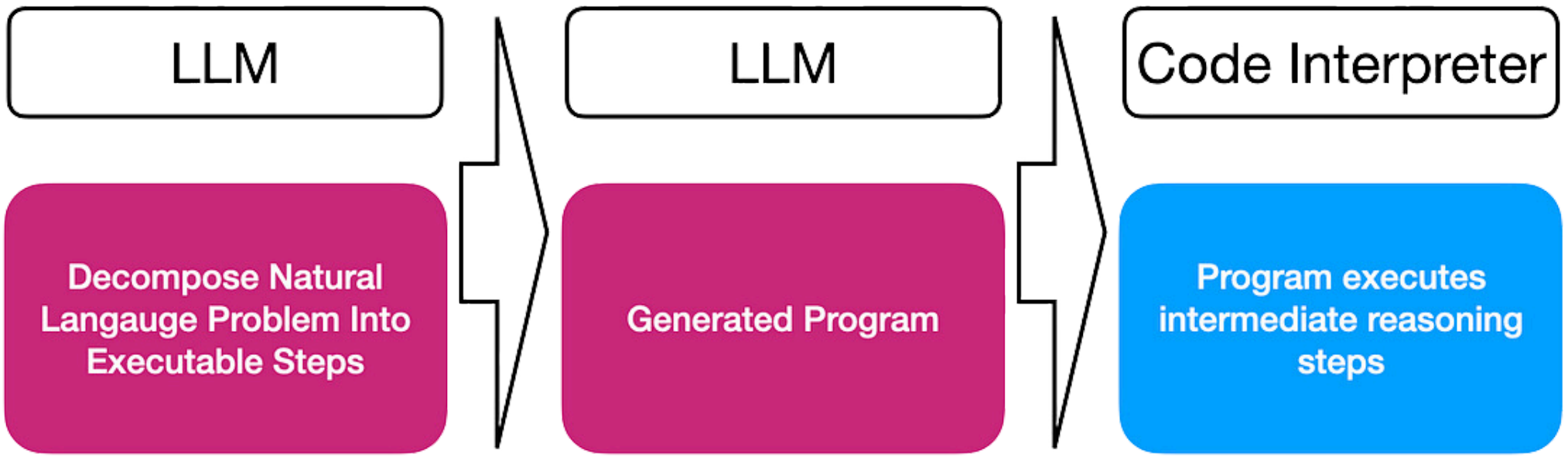
14. PAL (PROGRAM-AIDED LANGUAGE MODELS)

Program-aided Language Models (PAL) use prompting to generate code to solve problems, and then send the code to a runtime to get the answer



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Prompt:

Olivia has $23. She bought five bagels for $3 each. How much money does she have left?

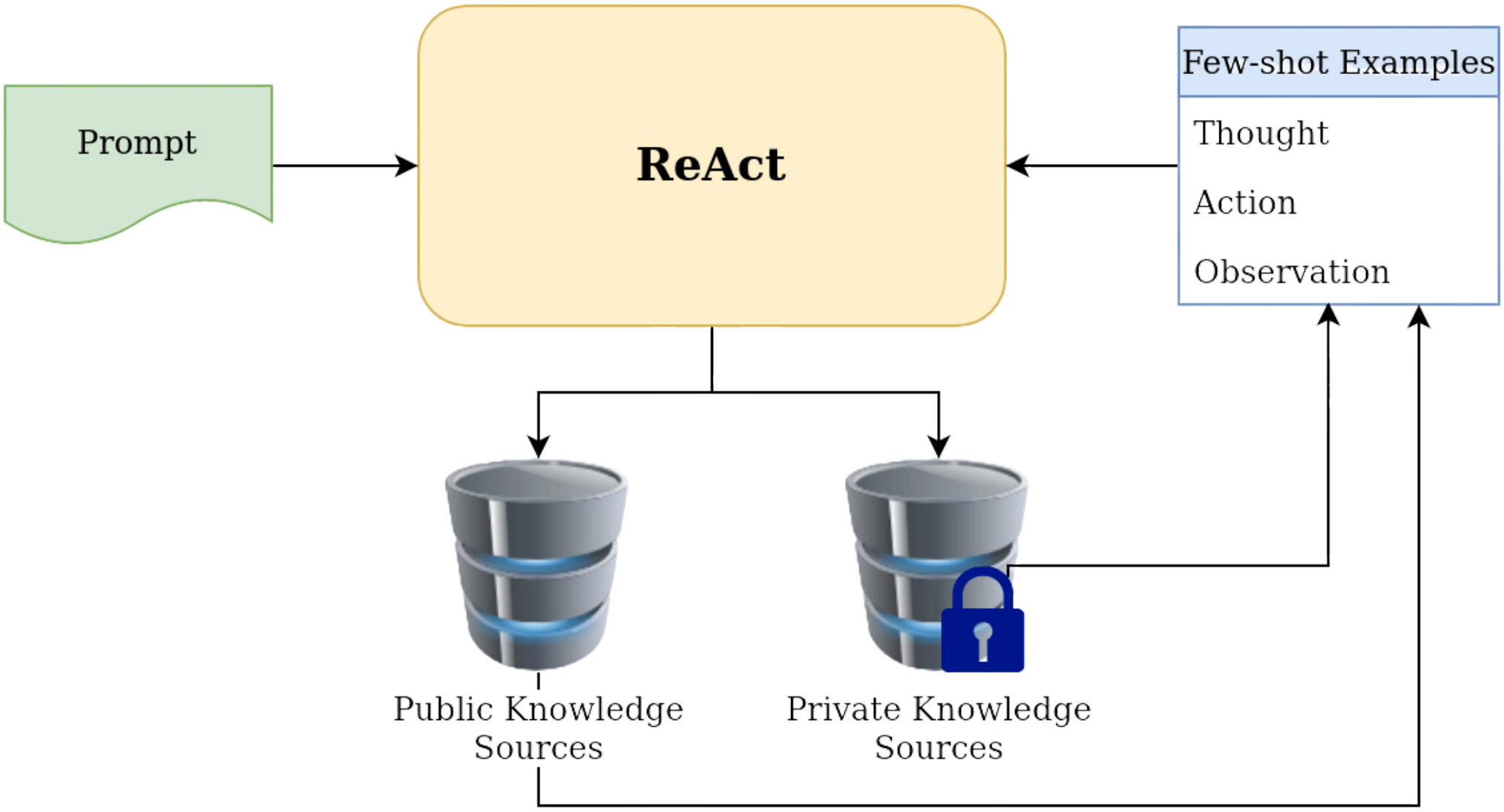
```
money_initial = 23
bagels = 5
bagel_cost = 3
money_spent = bagels * bagel_cost
money_left = money_initial - money_spent
answer = money_left
```

Source

15. REACT PROMPTING

ReAct prompting is a technique that improves the capabilities of large language models (LLMs) by combining reasoning and action:

- Reasoning: The model breaks down the reasoning process into steps.
- Action: The model interacts with external sources to obtain real-world information.



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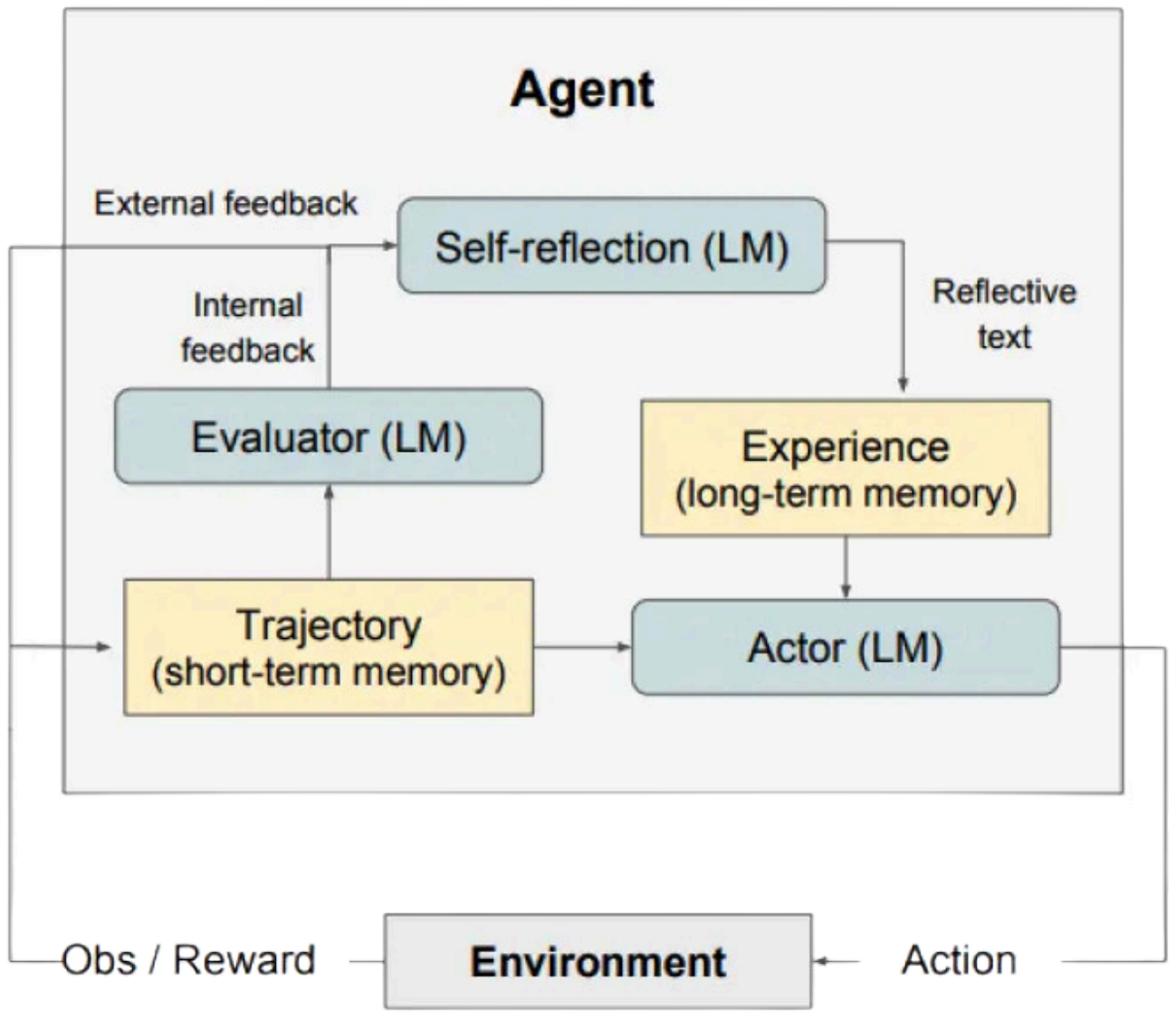
Prompt:

Solve the problem: What are the top three tallest buildings in the world in 2024?

- Reason: Analyze the question and determine the needed actions.
- Act: Search for the latest list of tallest buildings.
- Continue reasoning and acting until a reliable answer is found.
- Output: Provide the list with the building names, heights, and locations.

16. REFLEXION

Reflective prompts are questions or statements that guide the process of critical reflection and help students learn. They can be used to help students understand their beliefs and how they create knowledge, or to help them consider their expectations, perceptions, and assumptions before, during, or after an experience.



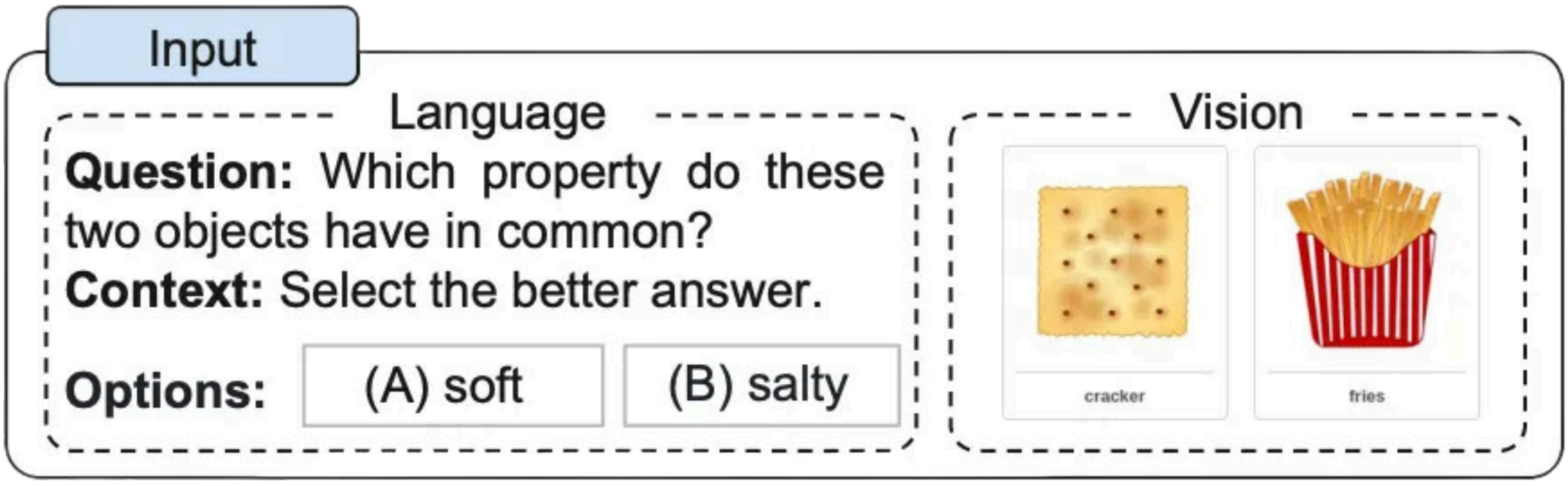
Source

Prompt:

- Initial Prompt: “Explain the benefits of remote work for a tech startup.”
- AI Response: "Remote work offers flexibility, improves employee satisfaction, and reduces office costs."
- Follow-Up Prompt (Reflection Prompting): “Review your previous response and identify any potential drawbacks or missing considerations.”
- AI Response
- Next Prompt
- AI Response……

17.MULTIMODAL COT PROMPTING

Multimodal CoT prompting combines the ideas of Chain-of-Thought (CoT) prompting with multimodal inputs, which allows AI systems to execute advanced reasoning across a variety of data, such as text, pictures, audio and video.



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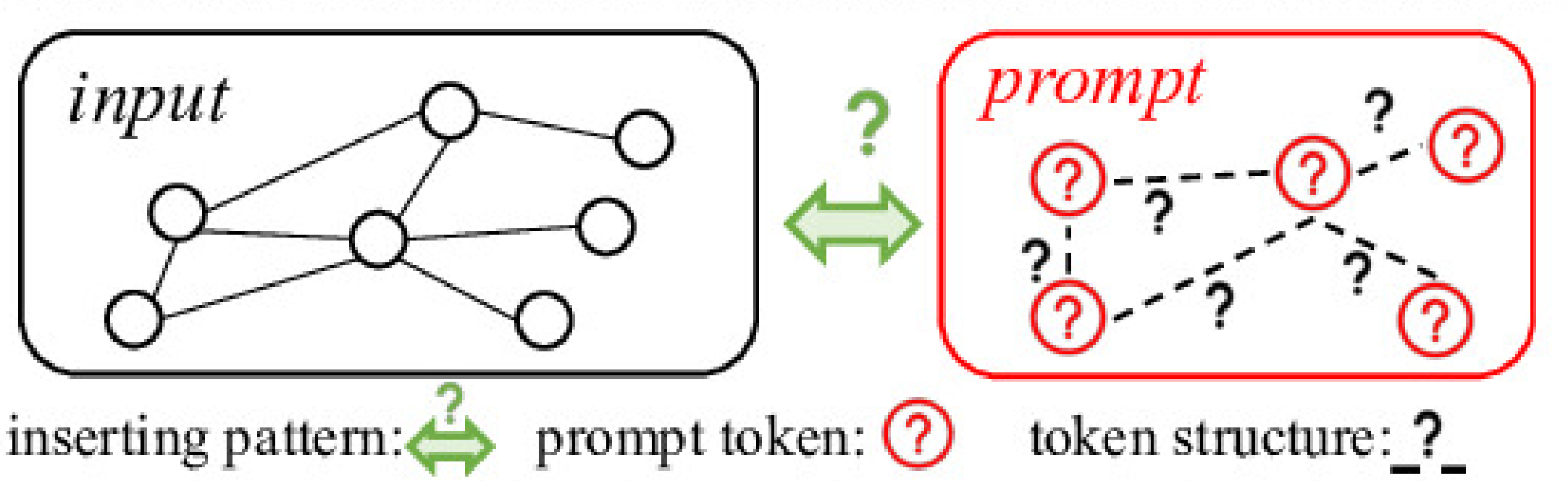
18. GRAPH PROMPT

Graph Prompting is a technique that leverages graph-based representations to enhance AI's understanding and response generation. Graphs can model relationships, hierarchies, and complex structures, making them valuable for tasks involving data, knowledge, or information retrieval.



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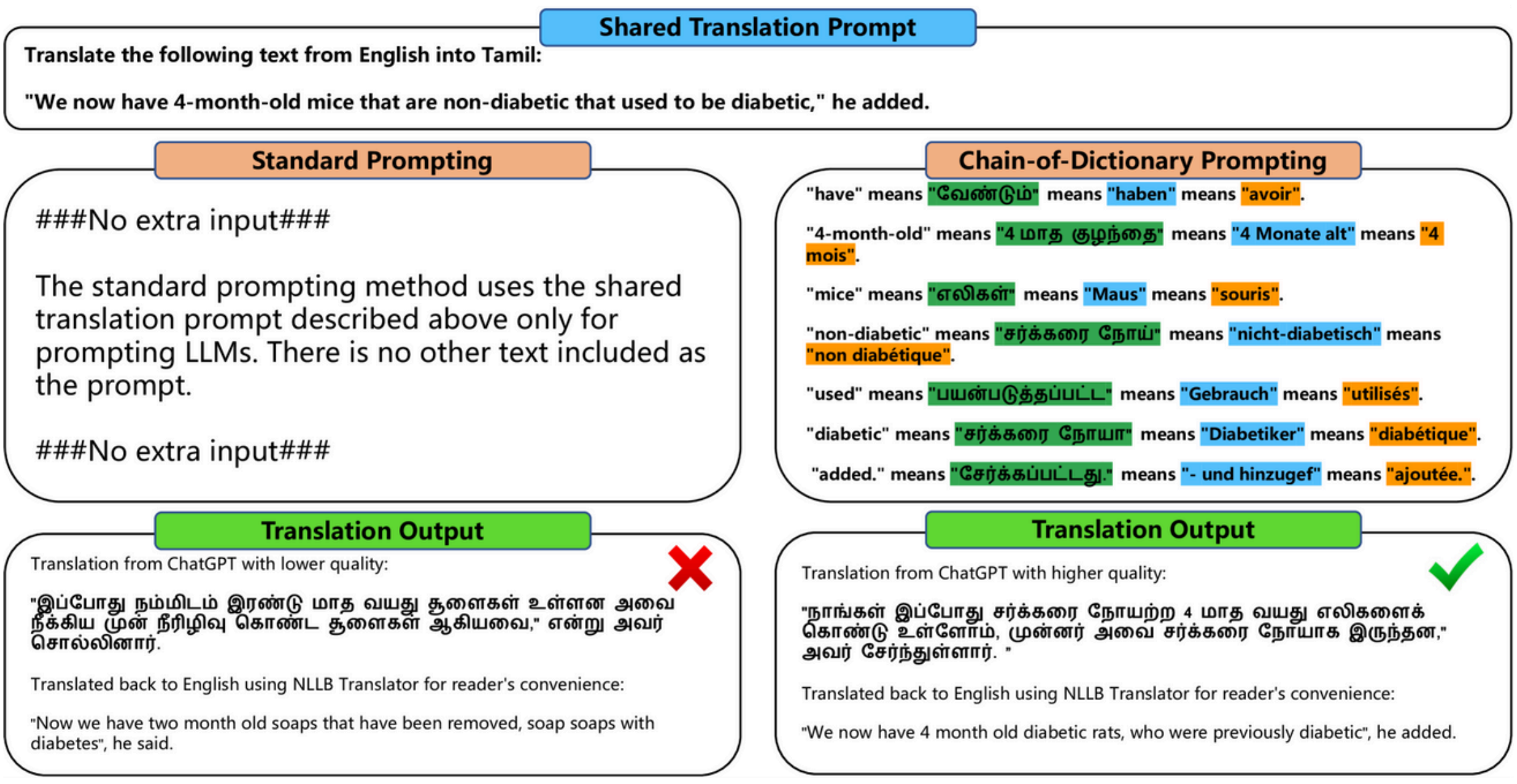
Prompt:

Solve the problem: Find the shortest path from City A to City B in the following road network.

1. Represent cities as nodes and roads as edges, with weights indicating distances.
2. Use a shortest-path algorithm like Dijkstra's to compute the result.
3. Output the path with the total distance and explain the steps taken.

19. CHAIN OF DICTIONARY PROMPT

This helps the model leverage predefined dictionary entries to provide accurate definitions or explanations for new terms.



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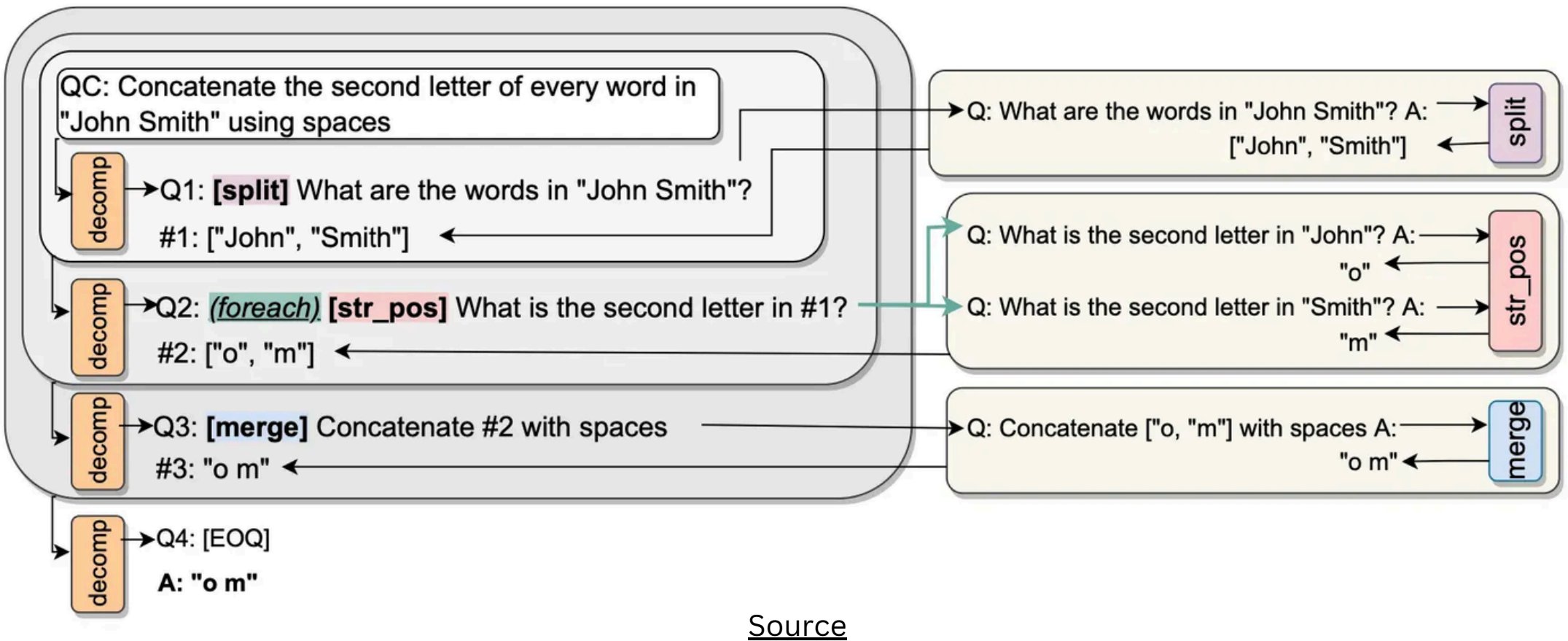
Prompt:

You are a Chain of Dictionary AI. Start with the term: ‘Neural Networks.’

1. Define ‘Neural Networks.’
2. Link related terms like ‘Artificial Neurons,’ ‘Weights,’ and ‘Backpropagation.’
3. Define each related term and continue expanding until a depth of 2 levels is reached.

20. DECOMPOSITION PROMPT

This is designed for complex tasks that require multiple steps to solve. By decomposing the problem into individual components, the model can systematically approach each part, leading to a more accurate and structured response.



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Prompt:

Solve the problem: 'How can a small business improve its online presence?'

1. Break the problem into sub-problems:
   - Identify key areas for improvement (e.g., website, social media, SEO).
   - Propose strategies for each area.
   - Evaluate the impact of these strategies.
2. Solve each sub-problem and combine the results into a cohesive plan.
3. Present a final solution in the form of actionable recommendations.

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