

## Symbols

- Black font: Notations
- Red font: Operations
- Forward Process
- Edges between nodes
- Insight node Query node
- Agent utterance node

## Query/Task $Q$

Topic: Embodied  
Difficulty: ★★★★☆  
You are in the middle of a room. Looking quickly around you, you see a cabinet 6, a cabinet 5, ... Your task is to: put a clean egg in microwave.

Topic: Web search  
Difficulty: ★★★★☆  
Are both Lygodium or Maxillaria a genus of orchids?

Topic: Embodied  
Difficulty: ★★★★☆  
Your task is to find a butterfly egg in the outside. Move it to the green box in the bathroom.

Topic: Game  
Difficulty: ★★★★☆  
b1 is on b2., b2 is on b6., b3 is on b7., b5 is on b3.

## Insight Graph

$$\mathcal{G}_{\text{insight}}^{(t)} = (\mathcal{I}, \mathcal{E}_i)$$

### Insight

Ensure the search terms are precise and directly related to the specific entity or institution ...

### Similarity-based Retrieval

## Query Graph

$$\mathcal{G}_{\text{query}}^{(t)} = (\mathcal{Q}, \mathcal{E}_q)$$

### Interactions

- . CEO agent: assigning tasks...
- . Thinker agent: OK, I will...
- . Executor agent: ...

## Interaction Graphs

$$\mathcal{G}_{\text{inter}}^{(Q)} = (\mathcal{U}^{(Q)}, \mathcal{E}_u^{(Q)})$$

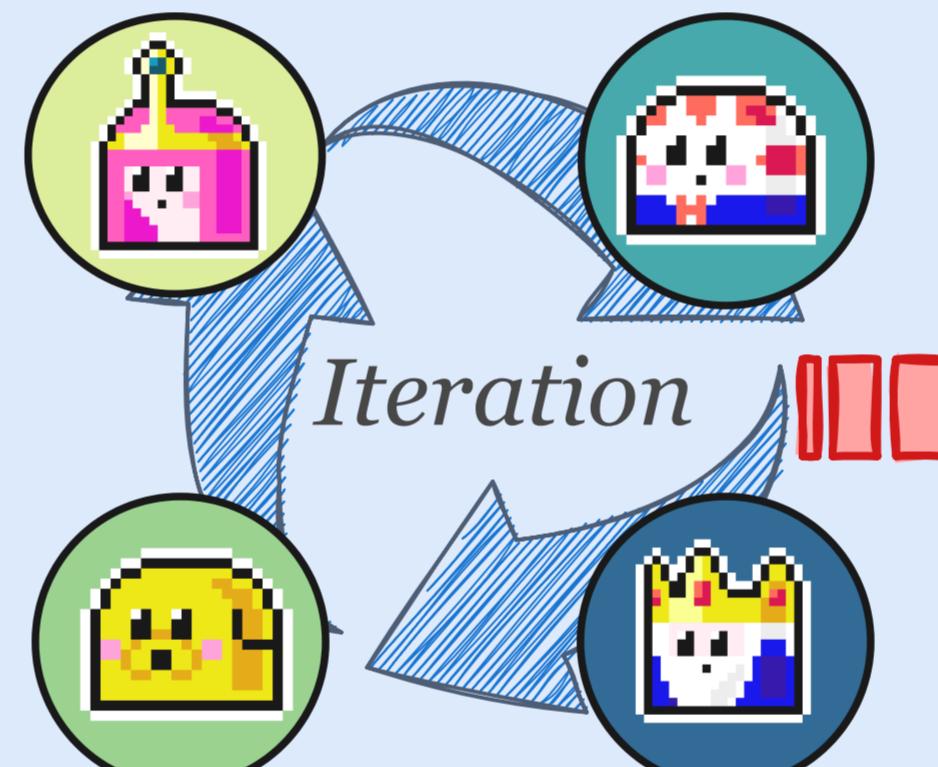
## Distilled Insights

Insight 1: Clearly identify key entities and their roles, use specific names and titles  
from

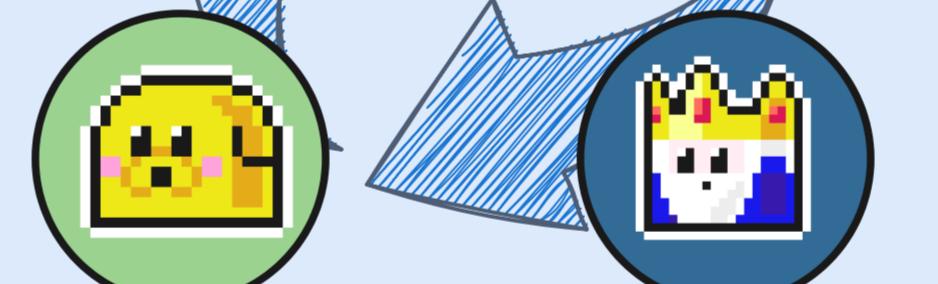
Insight 2: Double-check the relevance of the search results  
from and

## Memory Augmentation

## Multi-agent System $\mathcal{G}$



### Iteration



## Memory Augmentation

## Output Solution

Since both are confirmed as film directors from their respective countries, the answer is Yes.

## Environment Feedback

- Execution: Success
- Token cost: 3,345
- Tool calls: 3 ...

## Trajectory Condensation

### Core Path Extraction

### Collab. Experience

- This history follows a chain-style, collaboration strategy...

### Failure Lessons

- Take care when summarizing the final result, DO NOT ...

