Task description

Environment Obs

Solution

Action

**Task**

**Env.**

Task Status

Iterative tasks

**Agent Backbone**

Retrieved Memory

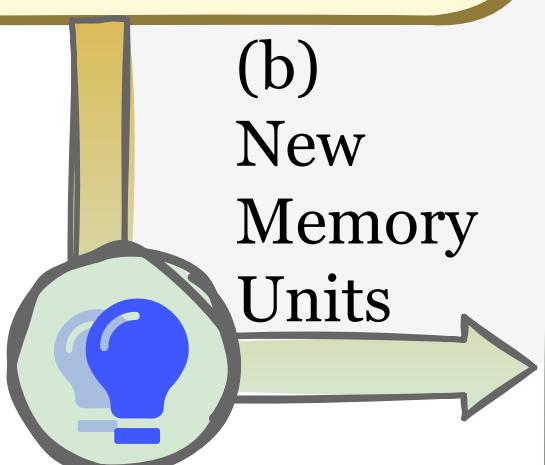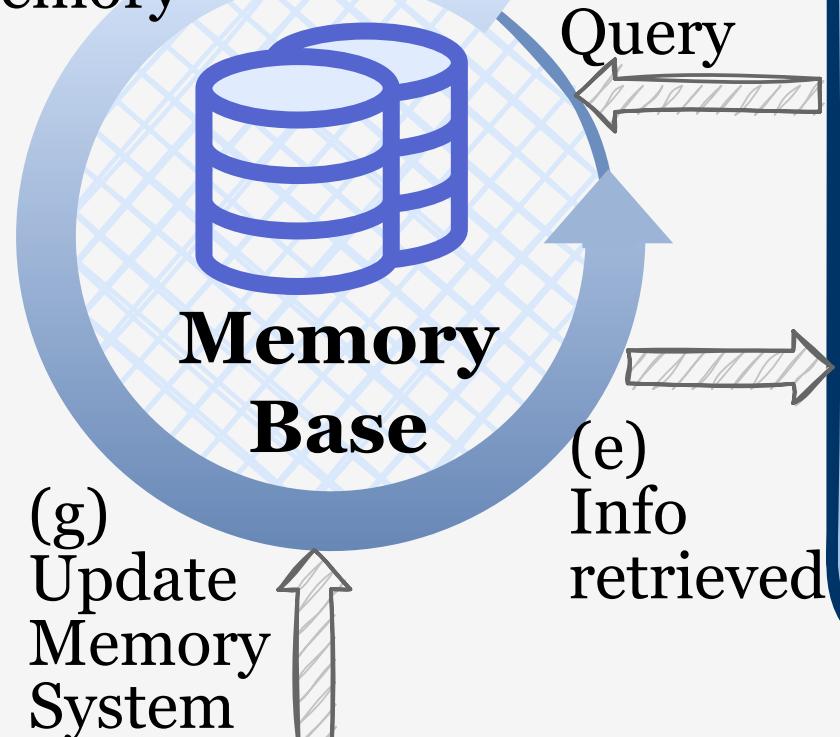(a) Raw information

Memory Lookup

**3. Memory Retrieval**

**1. Memory Formulation**

*raw data* → *Mem Unit*

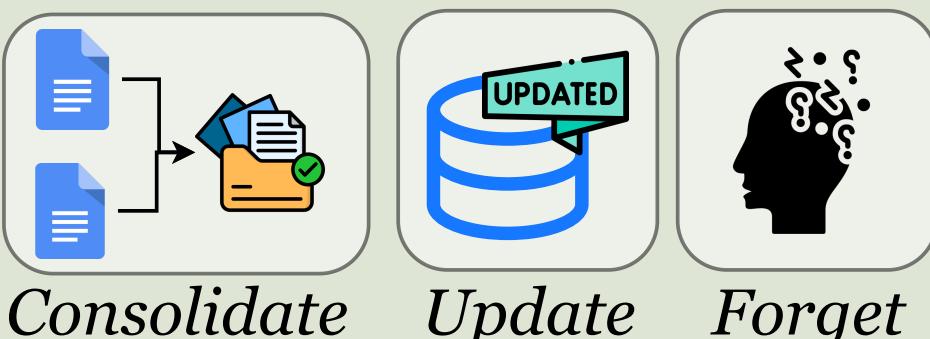| Semantic Summarize | Knowledge Distillation |
| Structured Construction | Latent Representation |
| Parametric Internalization | ...... |

Self-evolving Memory

**Memory Base**

(d) Retrieval Query

*When&Where to retrieve*

*What to retrieve*

*How to retrieve*

*How to consolidate*

(e) Info retrieved

(g) Update Memory System

(b) New Memory Units

(f) Existing Similar Memories

(c) Query Related Memories

**2. Memory Evolution**
Integrate the newly extracted memories with the existing memory repository

*Consolidate*   *Update*   *Forget*

**Notations** ⟶ Operations inside memory systems   ⇢ Operations between agents and memory systems