MAS

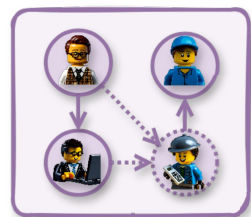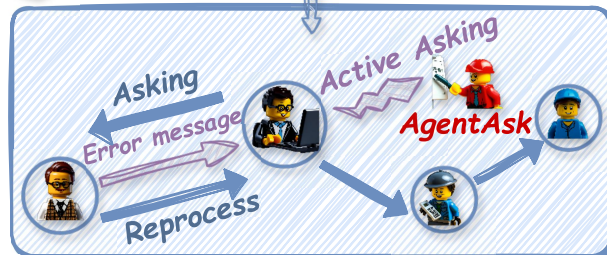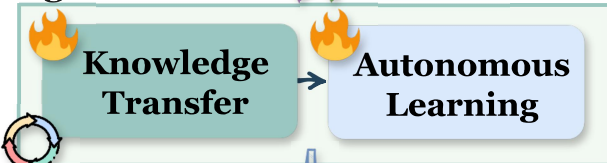**Failure Logs**

To make pizza, together with other ingredients, Kimber needs 10 cups of water, 16 cups of flour, and 1/2 times as many teaspoons of salt as the number of cups of flour. Calculate the combined total number of cups of water, flour, and teaspoons of salt that she needs to make the pizza.

AgentAsk

🔥 **Knowledge Transfer** → 🔥 **Autonomous Learning**

Asking
Error message
Reprocess
Active Asking
AgentAsk

a. Knowledge Transfer via Supervised Fine-tuning   *Lightweight*

Failure Logs   GPT-5   Check   *Failure Logs with Asking*   SFT   **AgentAsk***

b. Autonomous Learning via Reinforcement Optimization

Query: To make pizza ... Calculate the combined total number of ...

Mathematician $Salt = \frac{1}{2} \times 16 = 8tsp; convert\ using\ 1\ cup = 48tsp$
$\Rightarrow 8/48 = \frac{1}{6}\ cup; sum\ 10 + 16 + \frac{1}{6} = 26 + \frac{1}{6}.$

Type

DG RD SC CG None

Does the unit teaspoon need to be converted to cup?

AgentAsk To_agent

Learning of E-GRPO

$$\mathcal{J}_{E\text{-}GRPO}(\theta) = \mathbb{E}_t[\min(\rho_t A_t^{\mathrm{loc}}, \mathrm{clip}(\rho_t, 1 \pm \epsilon)A_t^{\mathrm{loc}})$$
$$+ \lambda_R \min(\rho_t A_t^{\mathrm{glob}}, \mathrm{clip}(\rho_t, 1 \pm \epsilon)A_t^{\mathrm{glob}})]$$
$$- \beta \mathbb{E}_t KL(\pi_\theta(\cdot \mid h_t) \| \pi_{\mathrm{ref}}(\cdot \mid h_t))]$$

Output

Report the combined requirement by unit: 10+16=26 cups and 8 teaspoons of salt. Let T be the combined total: T=10+16+8=34 The answear is 34

Cycle

System Reward

Edge Reward

State Update