**Model-Based Reflex Agent**

Project:

This agent not only checks the current temperature but also remembers the previous action to avoid turning the heater on or off unnecessarily.

**Code logic: (About project)**

1. **Model-Based Reflex Agent**
   * The agent doesn’t just look at the *current temperature*.
   * It also remembers its **previous action** (ON or OFF).
   * This makes the agent smarter, since it avoids repeating the same action unnecessarily.
2. **Temperature Threshold (20°C)**
   * A simple **rule** is defined:
     + If temperature < 20 → it’s cold → heater should turn **ON**.
     + If temperature ≥ 20 → it’s warm → heater should turn **OFF**.
3. **Memory Check (Avoiding Repetition)**
   * Before turning ON/OFF, the agent checks:
     + “Is the heater already ON?” → If yes, no need to repeat, just say *“Heater is already ON.”*
     + “Is the heater already OFF?” → If yes, no need to repeat, just say *“Heater is already OFF.”*
   * This avoids wasting energy and prevents meaningless commands.
4. **Efficiency & Real-World Behaviuor**
   * In real life, a heater should not keep switching ON/OFF unnecessarily.
   * The memory logic makes the agent behave more realistically and efficiently.
5. **Decision Flow**
   * **Step 1**: Read the current temperature.
   * **Step 2**: Apply the rule (if <20 → ON, else OFF).
   * **Step 3**: Compare with last action (memory).
   * **Step 4**:
     + If action is the same → do nothing, just report.
     + If action is different → update state and change heater status.