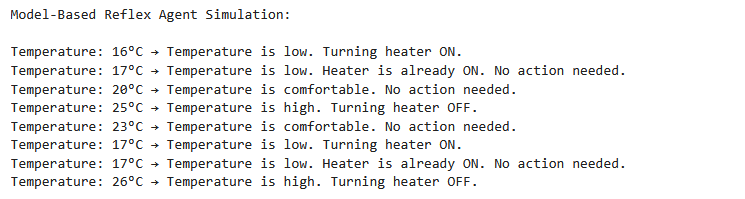
LAB TASK – 3:  
Submitted by:   
 *SYEDA HADIA BATOOL*

* Submitted to:  
   *SIR RASIKH ALI*TASK – 3  
     
  “Model-Based Reflex Agent”  
  **The code simulates a model-based reflex agent that controls a heater based on temperature readings. It doesn’t just look at the current temperature — it also remembers what it did last time (i.e., whether the heater was ON or OFF). This helps avoid unnecessary actions like repeatedly turning the heater on when it’s already on.**Explanation:  
   We define a class called ModelBasedReflexAgent.
* Inside the constructor (\_\_init\_\_), we initialize a variable previous\_action with "OFF", assuming the heater is off at the start.
* decide\_action  
    This function takes the current temperature as input.
* It decides whether to **turn the heater ON**, **turn it OFF**, or **do nothing**.
* **Temperature Thresholds:**
* If temperature < 18°C → it's **cold**
* If temperature > 24°C → it's **warm**
* Between 18°C and 24°C → it's **comfortable**, and the agent takes **no action**

**Key Concepts Demonstrated**:

* **Model-based reflex**: Uses memory of the last action to avoid repeating it
* **Conditional logic**: Makes decisions based on temperature ranges
* **Object-oriented programming**: Uses classes and methods to structure logic

**Output of the code:  
**

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