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***Artificial Intelligence (Lab)***

***Assignment - 3***

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**Department:**

Software Engineering Department.

**Program:**

Artificial Intelligence.

**Section:**

BSAI-3A

**Question # 1:**

Task: Model-Based Reflex Agent:

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

**Code:**

**As it remembers the previous action it is no longer a simple reflex agent.**

class SimpleReflexAgent:

    def \_\_init\_\_(self, desired\_temperature):

        self.desired\_temperature = desired\_temperature

        self.previous\_action=None

    def percept(self, current\_temperature):

        return current\_temperature

    def act(self, current\_temperature):

        if current\_temperature<self.desired\_temperature:

            action = "Turn on heater"

        elif current\_temperature>self.desired\_temperature:

            action = "Turn off heater"

        else:

            action = self.previous\_action

        if action != self.previous\_action:

            self.previous\_action=action

        return action

rooms = {

    "Bedroom1": 22,

    "Kitchen": 18,

    "Living Room": 20,

    "Bedroom2": 24,

    "Bathroom": 23

}

desired\_temperature = 22

agent = SimpleReflexAgent(desired\_temperature)

for room, temperature in rooms.items():

    action = agent.act(temperature)

    print(f"{room}: Current temperature = {temperature}°C. {action}.")

**Output:**

