SUPERIOR UNIVERSITY

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:

```
E:\Uni\3rd Semester\2) Artificial Intelligence (Lab)\Assignments\Assignment 3>python task.py
Bedroom1: Current temperature = 22°C. Turn off heater.
Kitchen: Current temperature = 18°C. Turn on heater.
Living Room: Current temperature = 20°C. Turn on heater.
Bedroom2: Current temperature = 24°C. Turn off heater.
Bathroom: Current temperature = 23°C. Turn off heater.
```