Task 3

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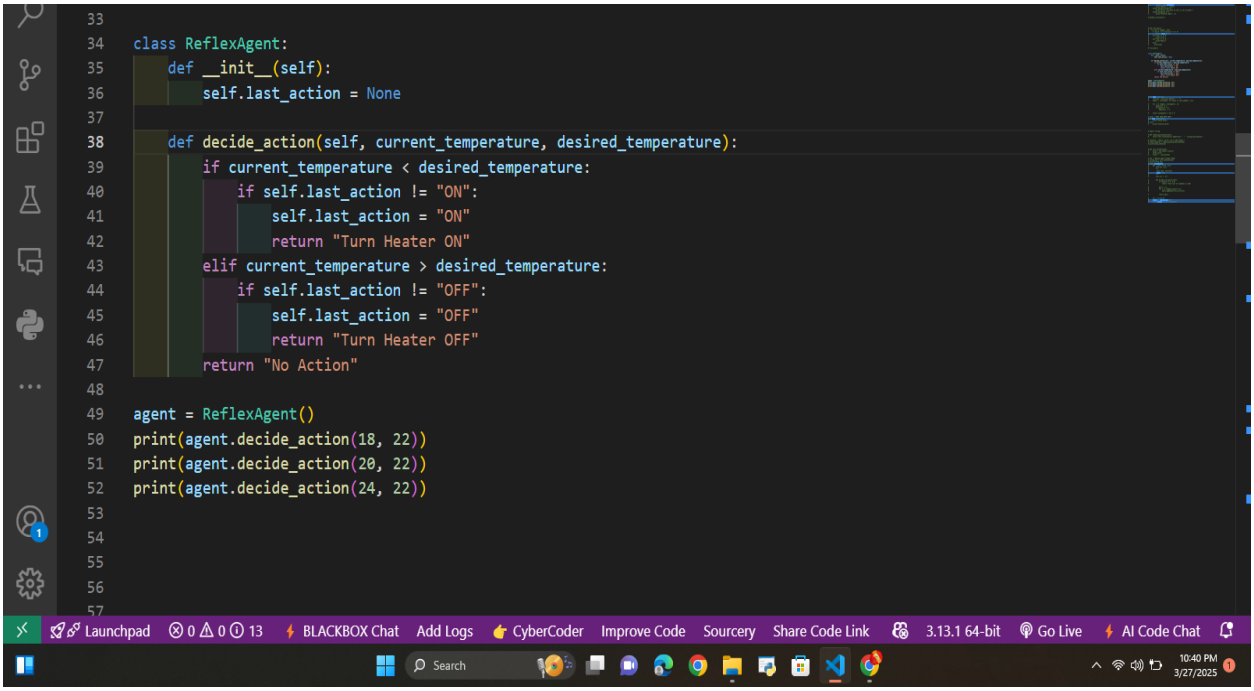

```python
class ReflexAgent:
    def __init__(self):
        self.last_action = None

    def decide_action(self, current_temperature, desired_temperature):
        if current_temperature < desired_temperature:
            if self.last_action != "ON":
                self.last_action = "ON"
                return "Turn Heater ON"
        elif current_temperature > desired_temperature:
            if self.last_action != "OFF":
                self.last_action = "OFF"
                return "Turn Heater OFF"
        return "No Action"

agent = ReflexAgent()
print(agent.decide_action(18, 22))
print(agent.decide_action(20, 22))
print(agent.decide_action(24, 22))
```

The Model-Based Reflex Agent is a basic AI thing that helps decide when to turn a heater on or off, but in a kinda smart way. It keeps track of what it did last time, like if it turned the heater ON or OFF, so it doesn't keep switching for no reason. If the room is too cold, it turns the heater ON, but only if it wasn't already ON before. Same way, if it's too hot, it switches the heater OFF, but only if it was ON before. If the temperature is fine, it just does nothing because, well, why bother? This makes it better because it doesn't waste energy or mess up the heater by turning it on and off all the time. The agent is made using Python, with a simple class that remembers the last action and decides what to do next. The example at the end shows how it reacts to different temperatures, making sure the heater runs in a kinda smart but lazy way.