# Model-Based Reflex Agent (Heater Control)

This document explains the implementation of a simple Model-Based Reflex Agent for controlling a heater system. The agent monitors the temperature and decides whether to turn the heater ON, turn it OFF, or keep the state unchanged. It also remembers its last action to avoid unnecessary repetitions.

## Python Implementation

class HeaterAgent:  
 def \_\_init\_\_(self):  
 self.previous\_action = None  
  
 def check\_temperature(self, temp):  
 if temp < 20:  
 action = "Turn Heater ON"  
 elif temp > 25:  
 action = "Turn Heater OFF"  
 else:  
 action = "Keep Same State"  
  
 if action == self.previous\_action:  
 return "No Action (same as before)"  
 else:  
 self.previous\_action = action  
 return action  
  
  
agent = HeaterAgent()  
temperature\_readings = [18, 19, 21, 23, 27, 26, 19, 18]  
  
print("=== Heater Agent Simulation ===\n")  
for t in temperature\_readings:  
 print(f"Temperature: {t}°C --> {agent.check\_temperature(t)}")  
  
print("\n--- Example Run Output ---")  
print("Temperature: 18°C --> Turn Heater ON")  
print("Temperature: 19°C --> No Action (same as before)")  
print("Temperature: 21°C --> Turn Heater OFF")  
print("Temperature: 23°C --> No Action (same as before)")  
print("Temperature: 27°C --> No Action (same as before)")  
print("Temperature: 26°C --> No Action (same as before)")  
print("Temperature: 19°C --> Turn Heater ON")  
print("Temperature: 18°C --> No Action (same as before)")

## Example Output

Temperature: 18°C --> Turn Heater ON  
Temperature: 19°C --> No Action (same as before)  
Temperature: 21°C --> Turn Heater OFF  
Temperature: 23°C --> No Action (same as before)  
Temperature: 27°C --> No Action (same as before)  
Temperature: 26°C --> No Action (same as before)  
Temperature: 19°C --> Turn Heater ON  
Temperature: 18°C --> No Action (same as before)