Post Lab-Task: Simple Reflex Agent and Model Based Reflex Agent

Sure, let's consider a real-life task for a simple reflex agent and Model Based Reflex Agent:

Task: Design and implement a simple reflex and Model Based Reflex Agent to assist in temperature regulation in a room.

Requirements:

1. **Environment**: Create a simulation of a room with a thermostat to regulate temperature. The room should have a temperature sensor to provide feedback to the agent.
2. **Perception**: Define a perception function for the agent to sense the current temperature of the room.
3. **Actions**: Define actions for the agent to adjust the thermostat settings based on the perceived temperature.
4. **Goal**: The goal of the agent is to maintain the room temperature within a specified range (e.g., 20-25 degrees Celsius).
5. **Agent Behavior**:
    - If the room temperature is too high, the agent should lower the thermostat setting.
    - If the room temperature is too low, the agent should increase the thermostat setting.
    - If the room temperature is within the desired range, the agent should maintain the current thermostat setting.
6. **Simulation**: Create a simulation environment where the agent can interact with the room environment. The simulation should display the current room temperature, the thermostat setting, and the actions taken by the agent.
7. **Termination**: The simulation should continue until the room temperature remains within the desired range for a specified duration or until a manual stop signal is provided.