class ModelBasedReflexAgent:

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

        self.desired\_temperature = desired\_temperature

        self.model = {}

    def perceive(self, room, current\_temperature):

        self.model[room] = current\_temperature

        return current\_temperature

    def act(self, room):

        current\_temperature = self.model.get(room)

        if current\_temperature is None:

            return "No temperature data for this room."

        if current\_temperature < self.desired\_temperature:

            action = "Turn on heater"

        else:

            action = "Turn off heater"

        return action

rooms = {

    "Living Room": 18,

    "Bedroom": 22,

    "Kitchen": 20,

    "Bathroom": 24

}

desired\_temperature = 22

agent = ModelBasedReflexAgent(desired\_temperature)

for room, temperature in rooms.items():

    agent.perceive(room, temperature)

    action = agent.act(room)

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