# Documentation: Model Based Reflex Agent

## Overview

This program implements a Model-Based Reflex Agent in Python. The agent is designed to control a heater based on the temperature input it receives. It keeps track of its previous action (turning the heater on or off) and uses that along with the current percept (temperature) to decide the next action.

## Class: ModelBasedReflexAgent

### \_\_init\_\_(self, temp)

Constructor method that initializes the agent.  
- temp: The fixed (desired) temperature.  
- self.fixed\_temp stores the desired temperature.  
- self.previous\_action starts with 'Turn off the Heater'.

### sensor(self, temp)

Receives the current temperature as input and updates self.current\_temp.

### performance(self)

Decides the next action based on the current temperature and the previous action:  
- If current temperature < fixed temperature:  
 \* If heater was previously off → Turn on the Heater.  
 \* If heater was already on → Keep Heater on.  
- If current temperature >= fixed temperature:  
 \* If heater was previously on → Turn off the Heater.  
 \* If heater was already off → Keep Heater off.  
The chosen action is stored in self.previous\_action and returned.

### actuators(self)

Executes the action decided by performance() and prints the current temperature along with the chosen action.

## Execution Flow

1. An instance of ModelBasedReflexAgent is created with a fixed temperature of 22.  
2. The initial previous action is printed.  
3. The agent senses an initial temperature (18) and acts accordingly.  
4. A list of temperatures is iterated over, with the agent sensing each temperature and performing an action.  
5. The final previous action of the agent is printed.

## Key Features

- Demonstrates a model-based reflex agent.  
- Uses both the current percept (temperature) and memory of the previous action to decide behavior.  
- Simulates a heater control system with intelligent decision-making.