# Explanation of ModelBasedReflexAgent Code

This document explains the Python code for the 'ModelBasedReflexAgent' class. The class simulates an agent that controls the room temperature by turning a heater on or off, based on the current temperature compared to a desired temperature. It also saves and retrieves decisions from a memory file (memory.txt).

## Class Initialization (\_\_init\_\_ method)

The \_\_init\_\_ method initializes the agent with the desired temperature, creates a memory file (if not already present), and ensures the file contains a header line ('Temperature,Action'). It also sets up variables like current\_temperature.

## perceive method

This method takes the current room temperature as input and updates the agent's current\_temperature variable. It returns the perceived temperature.

## load method

This method checks the memory file for a previously saved action corresponding to a given temperature. If found, it returns the saved action; otherwise, it returns None.

## save\_memory method

This method appends the current temperature and its corresponding action (heater ON/OFF) into the memory file for future reference.

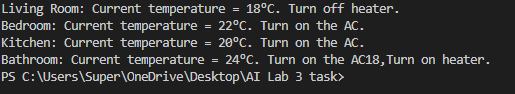
## act method

This is the main decision-making method. It first checks if an action for the given temperature is already stored in memory. If yes, it uses that action. If not, it calculates a new action: turns on the heater if the temperature is below the desired temperature, or turns it off otherwise. The action is then saved to memory.

## Main Program Execution

The program defines different rooms with their current temperatures. It creates an agent with a desired temperature of 16°C. For each room, the agent decides whether to turn the heater on or off, based on the temperature, and prints the result.

**Output**

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