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**SU92-BSAIM-F24-037**

**BSAI-3A**

**Documentation on model based reflex agent**

**Introduction:**

It is an intelligent agent that make decision not only based on the current state of the environment but also on its internal model of how its work. unlike simple reflex agent that only react to immediate environment but the model base agent can remember past actions and condition to make more efficient decisions.

**Overview:**

* Type of the given agent is model based agent.
* The purpose of making this agent is just to regulate the temperature of the environment like room temperature in an efficient manner.
* Key feature of this model is that it maintains an internal state that represents a relevant aspects of the world.

**Working principle:**

* The model will receive the temperature from the environment as an input for example like a room temperature.
* The agent will update its internal model by considering by knowing the previous actions and the action taken.
* It will make the decision according to the temperature to turn on the ac and turn of the ac. it will work according to the temperature of the environment.
* The agent does not perform the actions repeatedly if the desired condition is being maintained.
* The conclusion of the working principle of this model in simple words is that it will turn on or off the ac according to the temperature of the room. that will be considered as the useful agent for us in the future but in more high developed companies that type of agent are performing their actions.

**Example temperature control:**

* If the temperature of the room is too cold the agent will turn on the heater.
* But if the temperature of the room is hot the agent will automatically turn on the ac.
* If the temperature of the room is too high and the heater is on the agent will do nothing.
* It will perform the actions according to the temperature of the room.

**Advantages:**

* Prevents repeatedly switching off and on the heater it will save the energy of the human.
* Another advantage is that it will maintain the desired temperature smoothly.
* It uses memory to make better decision as compared to the simple agent.

**Disadvantages:**

* Require designing an internal model which can increase the development difficulty.
* It’s also needs an additional storage to keep tracks of the past states and actions.
* If the internal model become inaccurate it can make wrong decisions.
* It will cost more expensive than a simple agent because of its decision making technique.

Conclusion of the model is simple is that it will turn on or off the ac or heater according to the temperature of the room.