

Intelligent Agents

* Explain what is Intelligent Agent with its working.

=> The Agent sense the environment through sensors and act on their environment through Actuators.

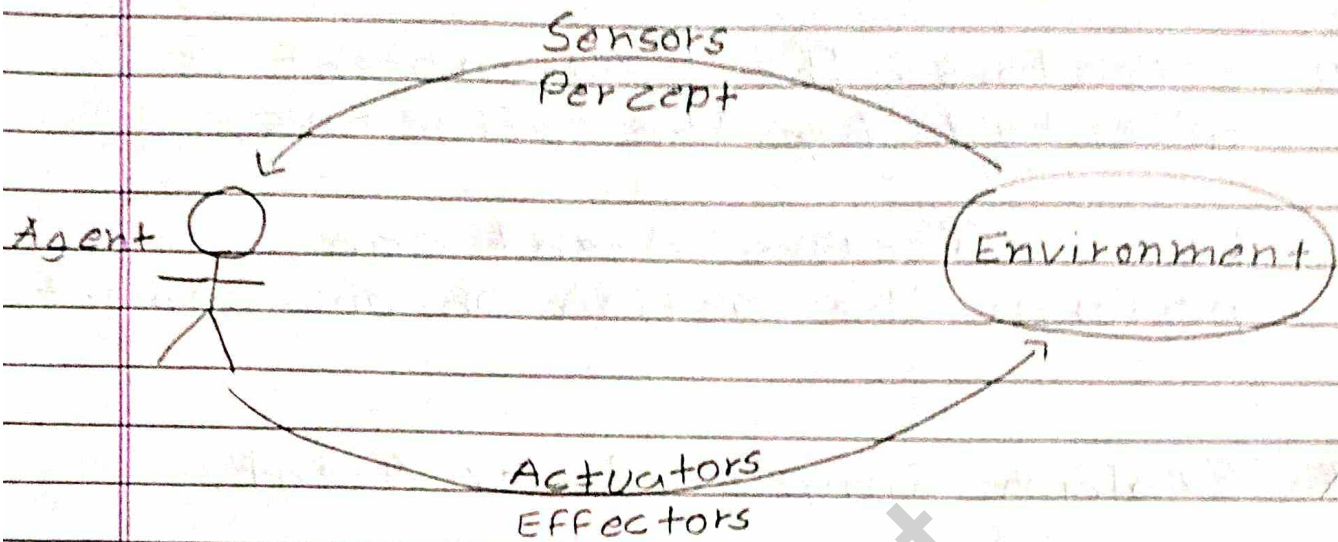
In Artificial Intelligent, we have to use Intelligent Agent.

An Intelligent Agent is an agent that makes a decision, that enables artificial intelligent to be put into action.

Agent can be Human, Robotic and Software system.

Intelligent Agent can work through these three components:

- 1) Sensors
- 2) Actuators
- 3) Effectors



1 Sensors : Sensors is work as a Percept.

A Sensor is an electronic devices that detects the changes in the environment.

After that sensor transmits the information to agent and allows to observe the environment.

2 Actuators : An Actuators are the mechanical component through which energy is convert to the motion.

Using Actuator, Agent can move or control the system.

3 Effectors: The Environment is affected by the effectors.

Using effectors, Agent can perform the action on environment.

* Explain Simplex Reflex Agent.

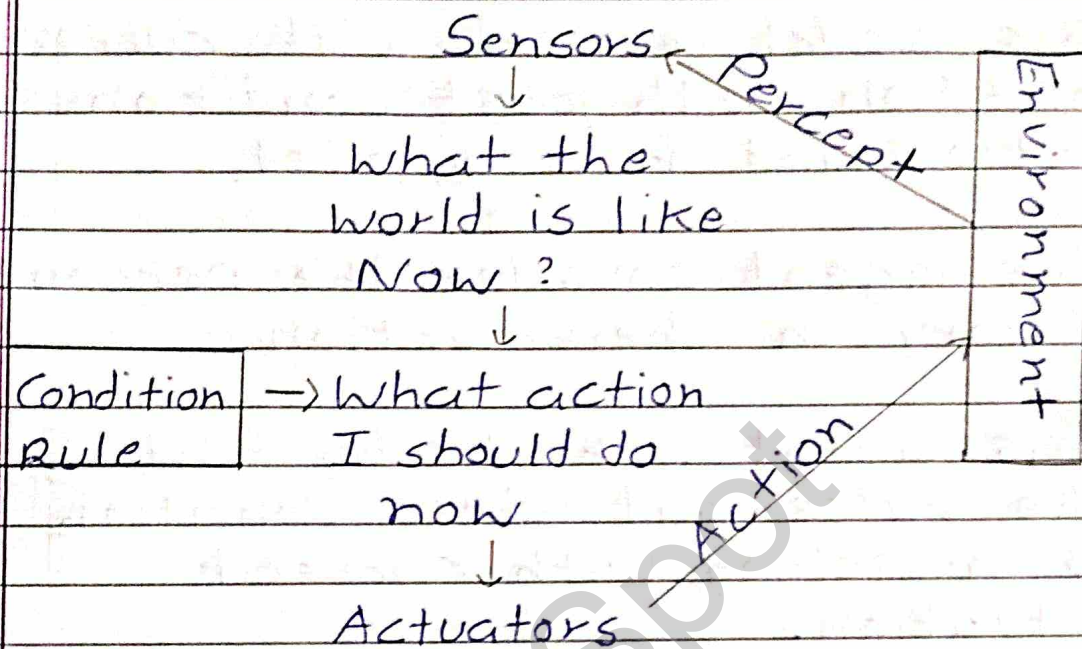
⇒ The Simplex Reflex Agent is a most simple agent among the all the agent.

This Agent is always work on the current situation.

This Agent is always ignore the past condition action and rule applied.

This Agent Act or take decisions according to the current condition.

This Agent is always observe the environment while taking the decisions.



⇒ Limitation:

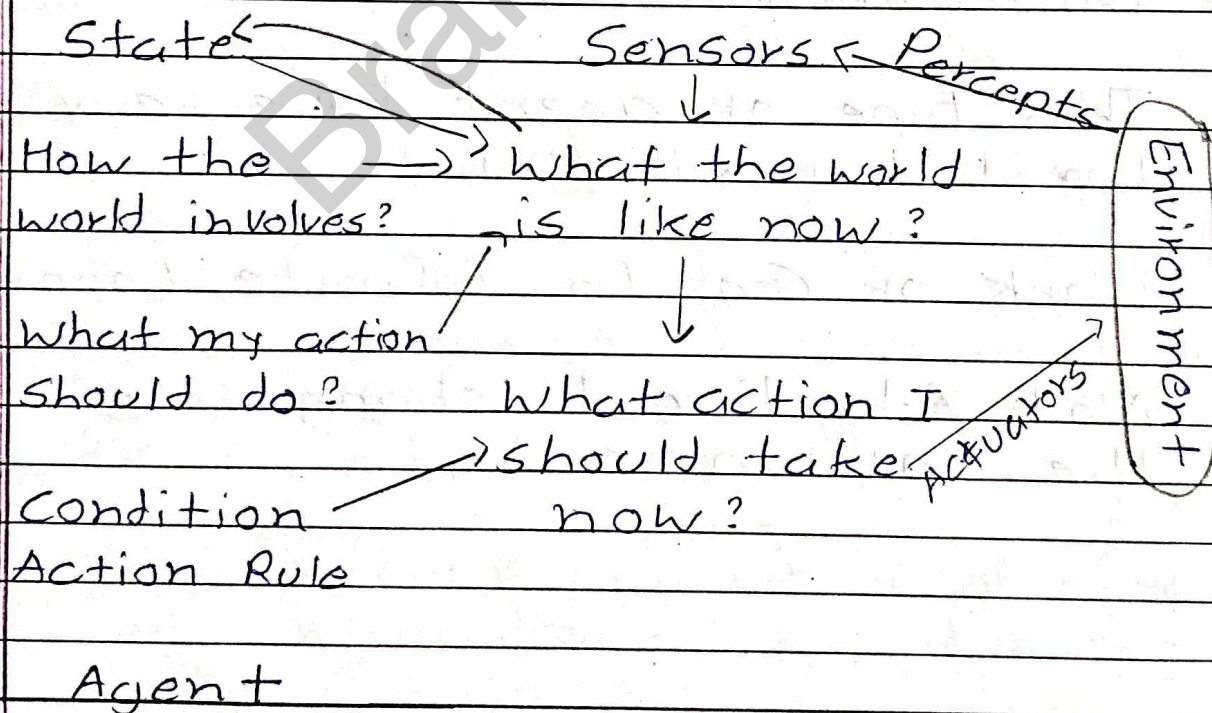
- 1 This type of agent have very limited intelligent.
- 2 Work or Go In Infinite Loop
- 3 Not Adaptive to changes in the environments.

* Explain Model Based Reflex Agent

=> This model is work with current condition with past condition action and rule applied.

This agent consider the percept history in their action.

This agent is works by finding the rules and whose condition is matching with current situation.



These agent have model to take the action based on the program actions.

This agent track the Internal state which is depends on percepts history.

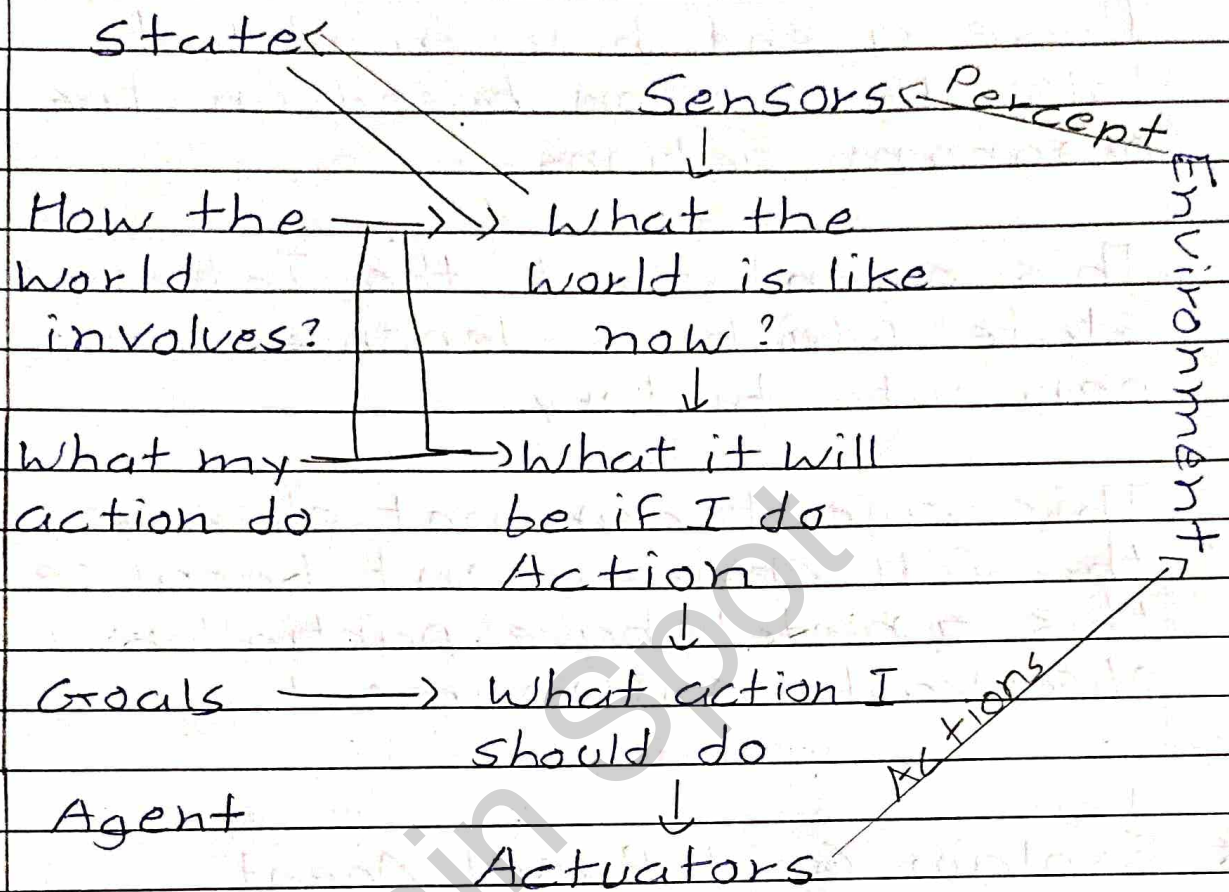
This agent can not observe the full environment because this a model have partially observable environment.

* Explain Goal-Based Agent.

=> The Goal-Based Agent is a expansion of model based reflex agent.

In this type of agent, Agent have Fixed Goal and knowledge about the goal.

Agent takes decision based on how far it is currently from goal state.



This agent is always focuses on reaching the goals.

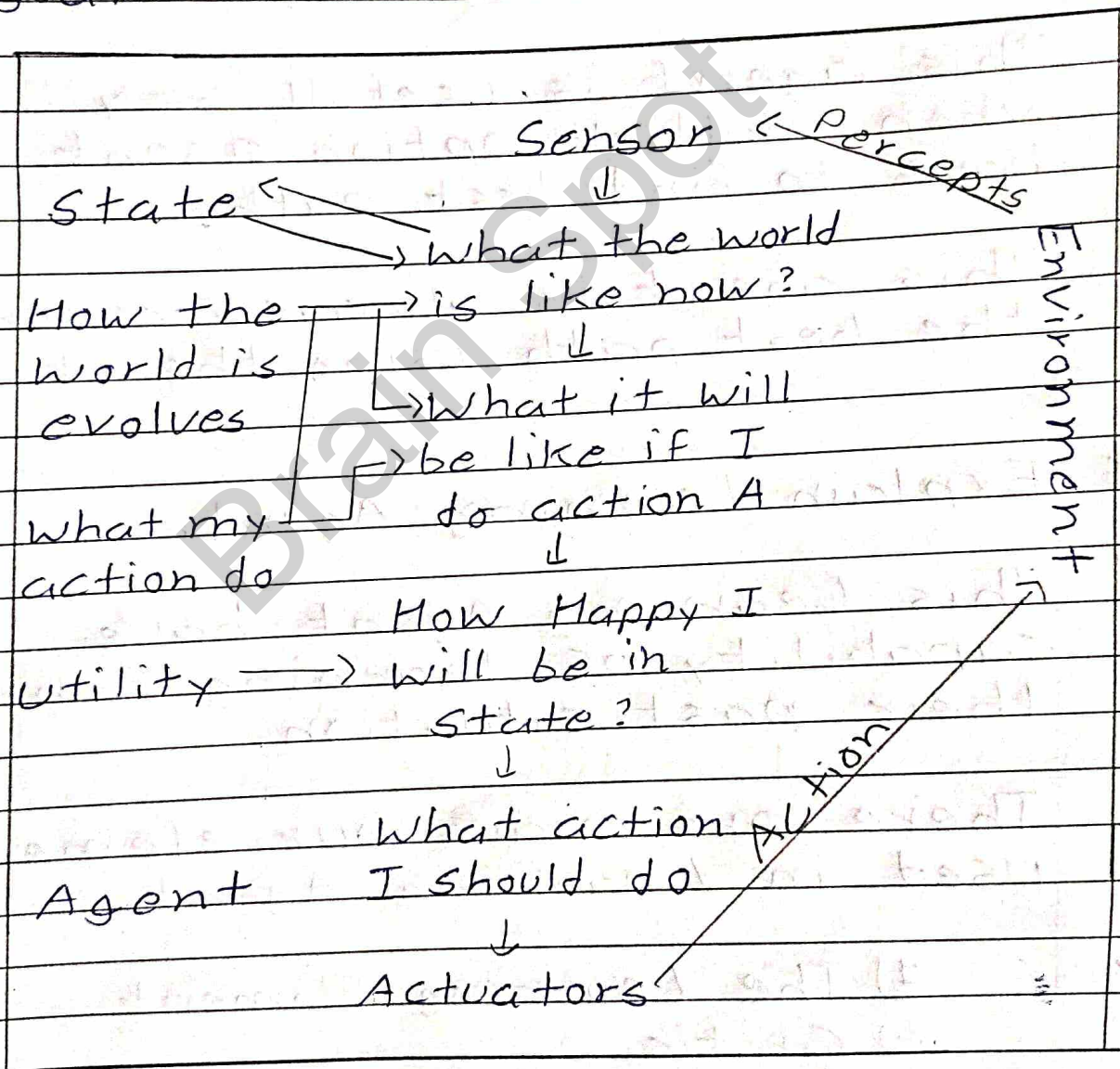
Every action choose by agent they can help to achieve the goals.

Every action is minimize the distance of reaching goal state.

* Explain Utility-Based Agent.

=> These agents are similar to the goal state or goal based agent.

This Utility-Based Agent provides Utility component to reach the goal.



The action is act based not only goals but also try to find the best way.

This agent is try to find the best way to achieve to goal using the utility component.

This agent is usefull ~~way~~ when multiple option agent have to find best path.

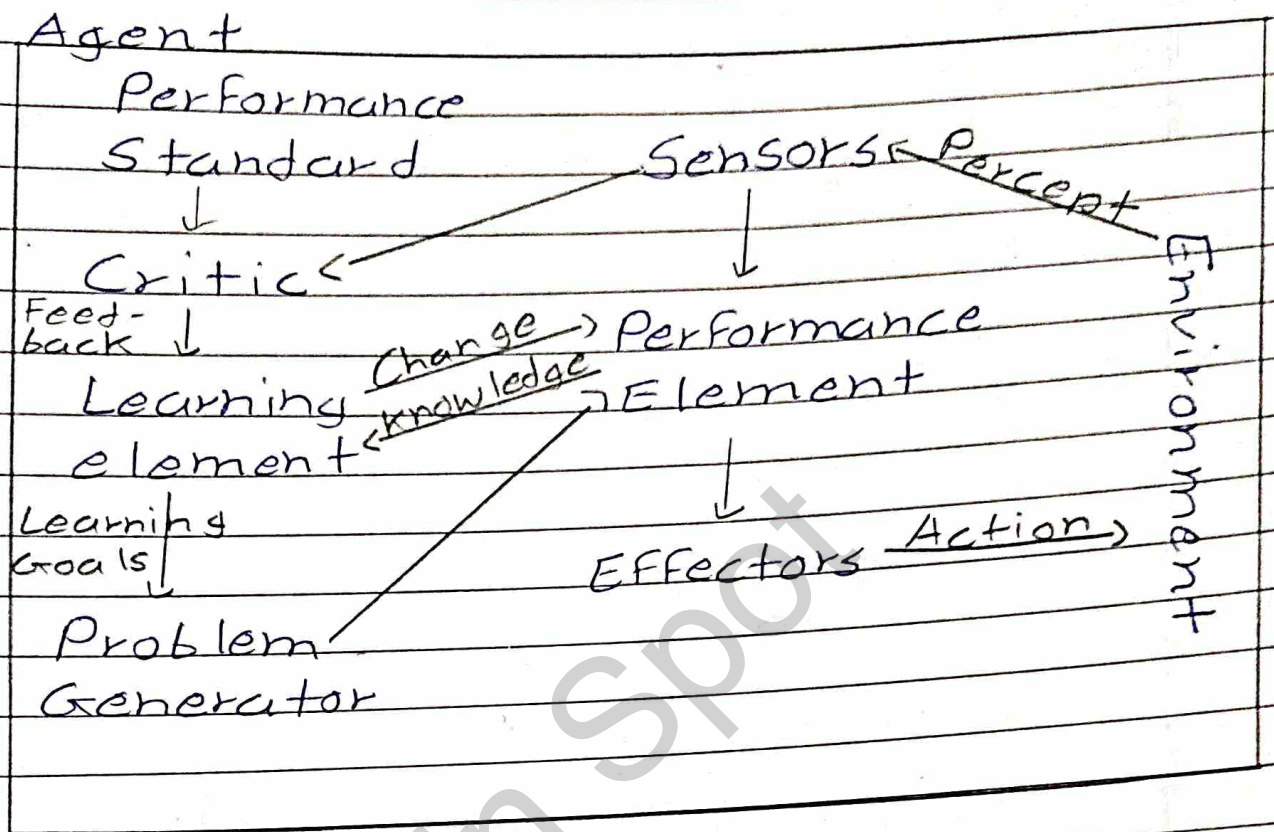
This agent is always measure the best path using the utility.

* Explain Learning Agent.

This Learning Agent have capability of learning from their past situation.

There are main four element used in Learning Agent.

- 1) The Learning Element
- 2) Critic
- 3) Performance Element
- 4) Problem Generator.



- 1 The Learning Elements: This element enables learning agents to learn from past situation.
- 2 Critic: This element provides feedback on Agent.
- 3 Performance Element: This element decides on the external action that needs to taken.
- 4 Problem Generator: This element is performs certain task such as making suggestion and keeping tracking history.