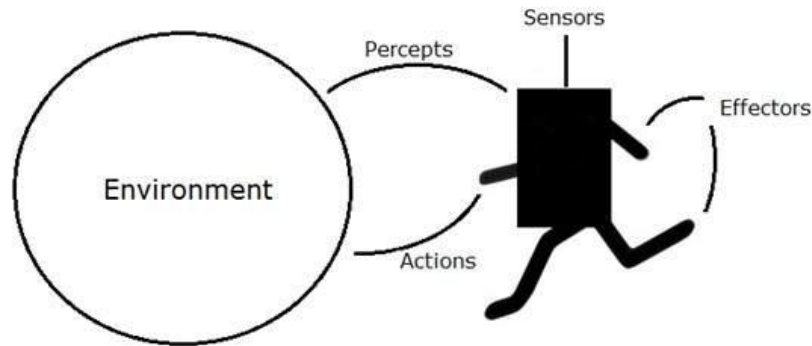


Intelligent Agents

- by Naveen Boinapelly

Introduction

- The main aim of the AI is to build the intelligent agents.
- Agent is like anything which is a human, machine, program or a robot etc.
- Agent the senses or precepts the information from the environment with the help of sensors.
- The agent performs the actions based on that precepts using the actuators.
- The actions performed by the agents will make changes in the environment.



Goals of Agents -> High Performance

Optimized Results

Rational Actions

- The four important factors of an agent

'P'-Performance


'E' - Environment

'A'- Actions

'S' - Sensors



Types of Agents

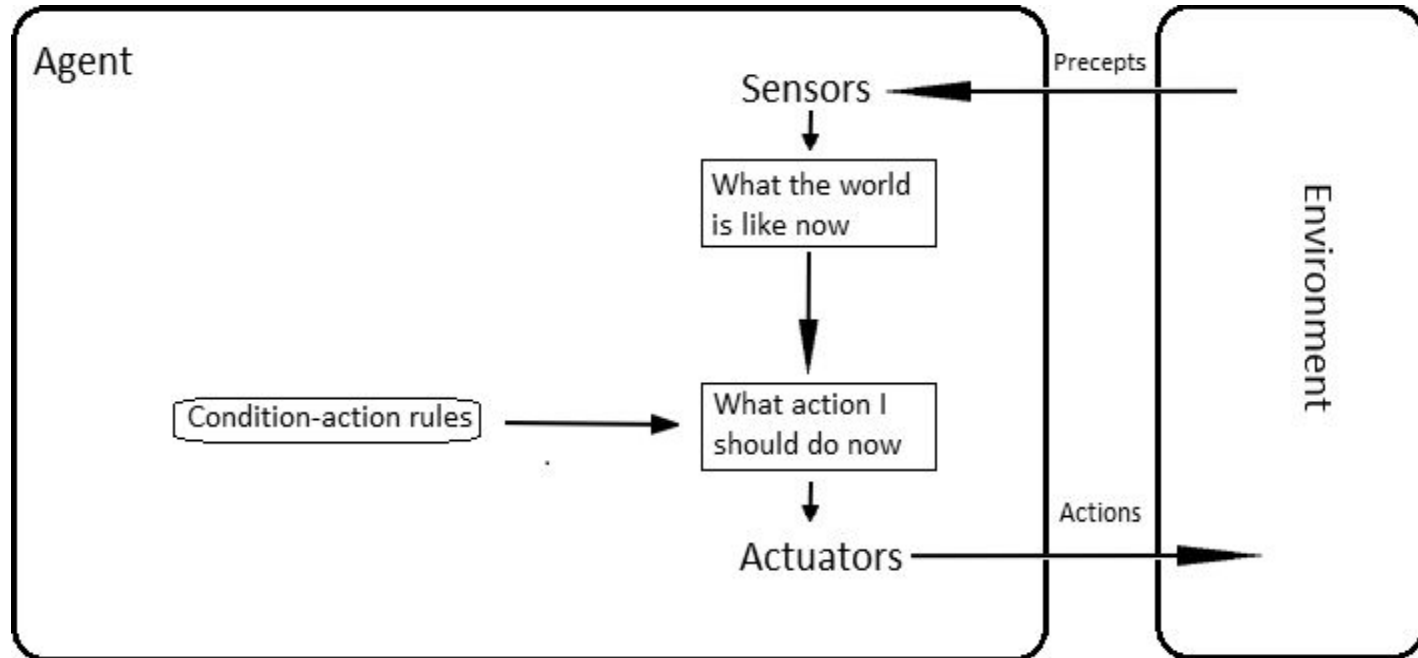
- Simple Reflex Agents
 - Model Based Agents
 - Goal Based Agents
 - Utility Based Agents
 - Learning Agents
- 

Simple Reflex Agents

- Acts only on the basis of current perception.
- Ignores the rest of percept history.
- Based on 'If-Then' rules.
- Environment should be fully observed.
- Example: Applying car break.

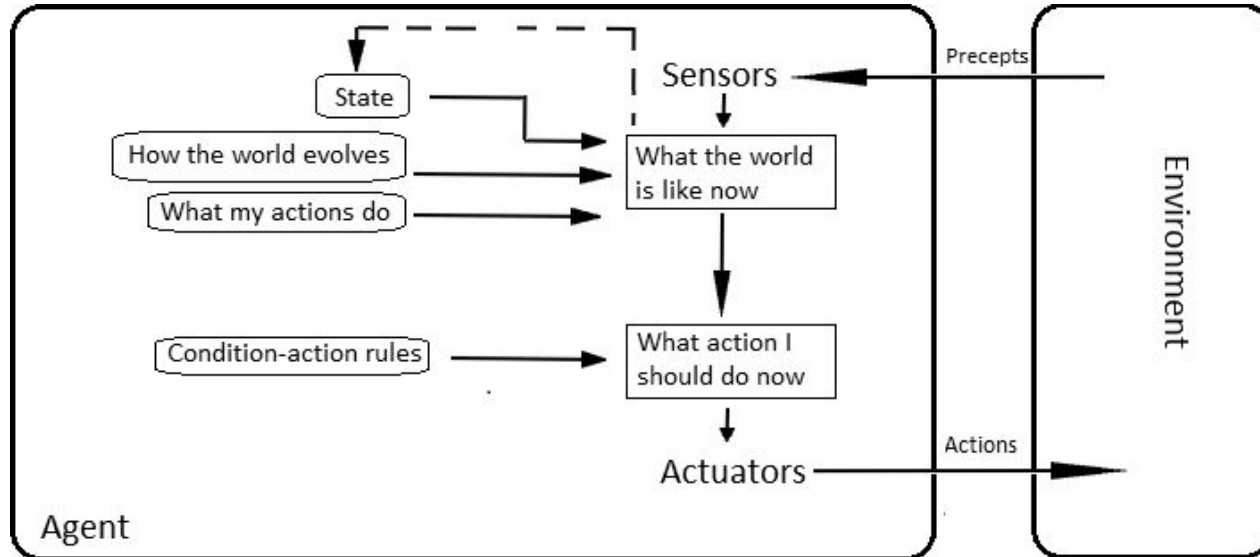


Simple Reflex Agents



Model Based Reflex Agents

- Partially observable environment.
- Store percept history(internal model)

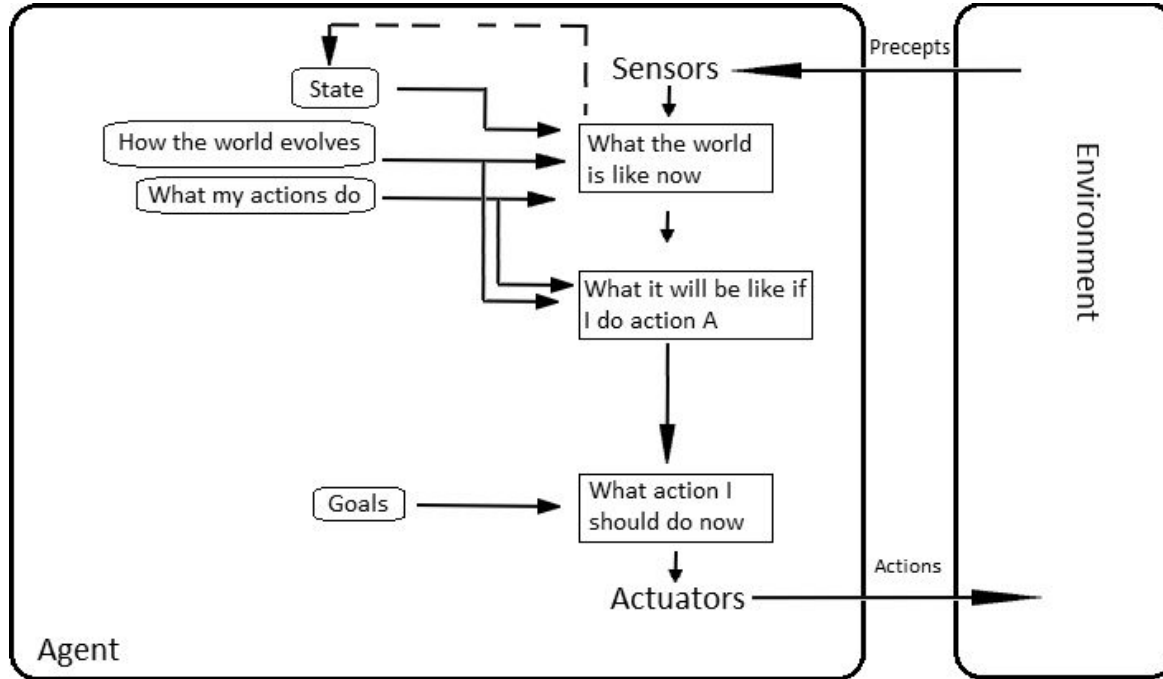


Goal Based Agents

- Expansion of Model based reflex agents.
- Desirable situation(goal).
- Goal Oriented.
- Searching and planning.



Goal Based Agents

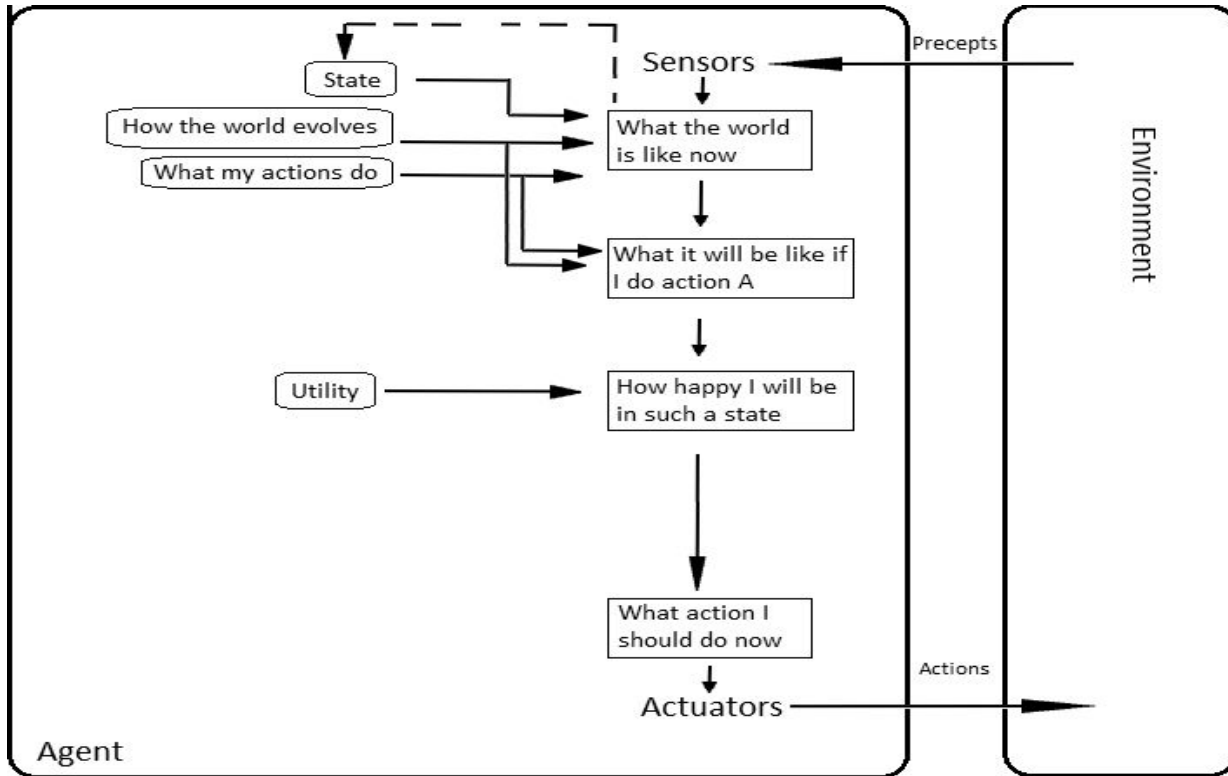


Utility Based Agents

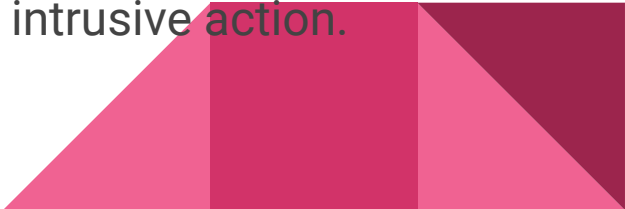
- Focus on utility not goal.
- Utility Function
- Deals with happy and unhappy state.



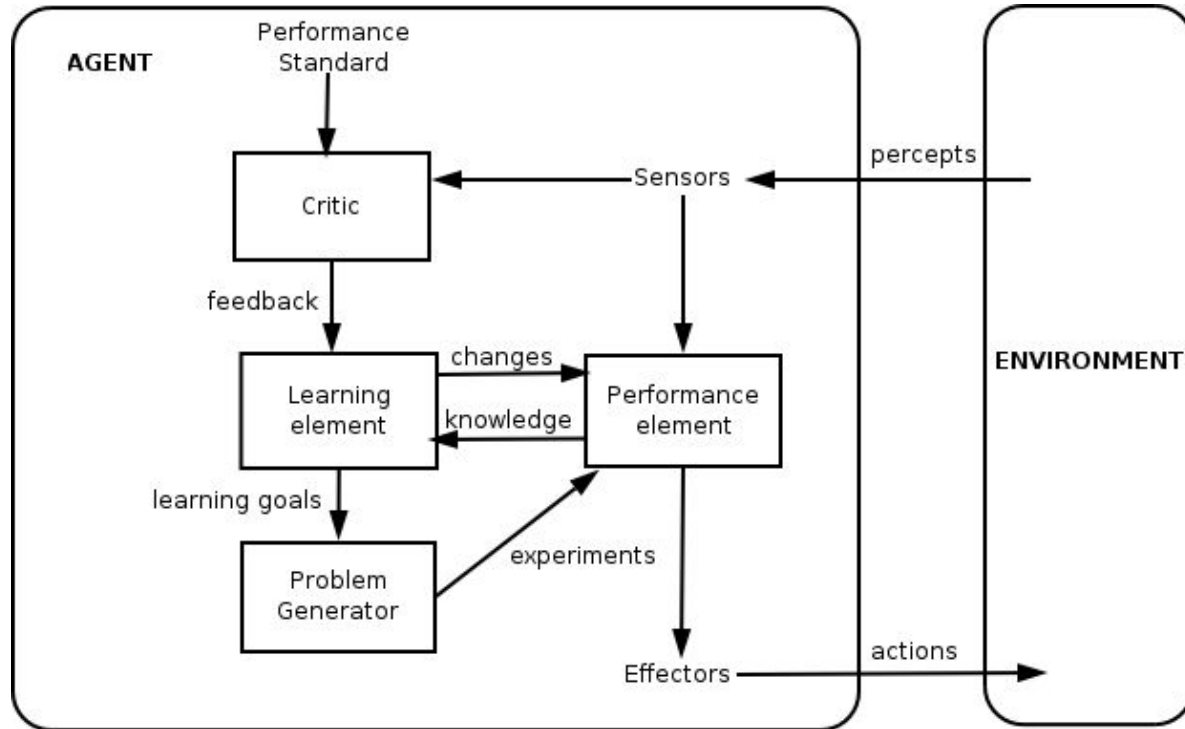
Utility Based Agents



Learning Agents

- Learns from its own mistakes.
 - **Components** - Critics, Learning elements, Performance elements, Problem generator.
 - According to the current percept it is suppose to understand the expected behaviour and enhance its standards.
 - Performance element is responsible to choose the actions to act upon the external environment.
 - Based on the new goal learn by the learning agent, problem generator suggest new or alternative action which will leads to new and intrusive action.
- 

Learning Agents



Applications

- 1) Improving the Efficiency of Software Development.

- 2) Industrial Applications
 - 2.1) Process Control (ARCHON)
 - 2.2) Manufacturing (YAMS)
 - 2.3) Air Traffic Control (OASIS)



Applications

3) Commercial Applications

3.1) Information Management

3.2) Electronic Commerce

3.3) Business Process Management (ADEPT)

4) Medical Applications

4.1) Patient Monitoring(SICu)

4.2) Health Care

5) Entertainment (Games, Cinemas)





Thank you!