



Percept Sequence	Action
[A, Clean]	Right
[A, Dirty]	Suck
[B, Clean]	Left
[B, Dirty]	Suck
[A, Clean], [A, Clean]	Right
[A, Clean], [A, Dirty]	Suck
...	

Fig 2.1.6: Partial tabulation of a simple agent function for the example: vacuum-cleaner world shown in the **Fig 2.1.5**

- **Characteristics of Intelligent Agents**

PEAS Representation

PEAS is a type of model on which an AI agent works upon. When we define an AI agent or rational agent, then we can group its properties under the PEAS representation model. It is made up of four words:

P: Performance measure

E: Environment

A: Actuators

S: Sensors

Here performance measure is the objective for the success of an agent's behavior.

PEAS for self-driving cars:

Performance: Safety, time, legal drive, comfort

Environment: Roads, other vehicles, road signs, pedestrian



Actuators: Steering, accelerator, brake, signal, horn

Sensors: Camera, GPS, speedometer, odometer, accelerometer, sonar.

- **Types of Agents**

Agents can be grouped into five classes based on their degree of perceived intelligence and capability. All these agents can improve their performance and generate better action over time. These are given below:

- Simple Reflex Agent
- Model-based reflex agent
- Goal-based agents
- Utility-based agent
- Learning agent

1. Simple Reflex agent:

- ★ The Simple reflex agents are the simplest agents. These agents take decisions on the basis of the current percepts and ignore the rest of the percept history.
- ★ These agents only succeed in the fully observable environment.
- ★ The Simple reflex agent does not consider any part of perceived history during their decision and action process.
- ★ The Simple reflex agent works on Condition-action rule, which means it maps the current state to action. Such as a Room Cleaner agent, it works only if there is dirt in the room.
- ★ Problems for the simple reflex agent design approach:
 - ★ They have very limited intelligence
 - ★ They do not have knowledge of non-perceptual parts of the current state
 - ★ Mostly too big to generate and to store.
 - ★ Not adaptive to changes in the environment.