AGENTS – Black Box

```
           E N V I R O N M E N T

                   ------------
Input             |            |      Output
Stimulus ---> |            | ---> Response
Percept           |            |      Action
                   ------------

(through sensors)            (through effectors)

- Goal
- Performance measure: Criteria to determine
    how successful an agent is.
```

An agent may be:

Rational: does the right thing.

Omniscient: does the perfect thing.

Ideal: does the optimal thing given its state of knowledge.

Autonomous: Initial kn. + ability to learn.

Agents

- **Type of Agents:**
  - Reflex agents
  - Agents that keep track of the world
  - Goal-based agents
  - Utility-based agents

- **Agents are expected to:**
  - **Achieve goals:** search and planning
  - **Sense environment:** machine vision, NLP
  - **Be autonomous:** machine learning
  - **Store knowledge:** knowledge representation

AGENTS – Inside the Black Box

```
               E N V I R O N M E N T

                    ------------
Input              |  MAPPING   |        Output
Stimulus --->      |     /      | --->   Response
Percept            |  FUNCTION  |        Action
                    ------------

(through sensors)            (through effectors)
```

- This mapping/function is implemented using a **program** that runs on an architecture.