1. **Agent Function:**

An abstract mathematical mapping from perceptual sequences to actions is called an agent function.

1. **Agent Program:**

A particular system implementation is an agent program.

**Difference between Agent Function and Agent System:**

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| **Agent Function** | **Agent Program** |
| Information from the agent's sensors is processed by an agent function. represented by the following formula: f:P\* - A | Actuators on the agent are managed by an agent program. The agent program executes the physical architecture to create function f. |
| To a limited number of inputs, an agent function is applicable. | An endless number of inputs can be used with an agent program. |
| The agent function takes the full history of perception. | An agent program takes the current percept as input. |
| Agent program implements the agent function | Return an action to the actuators |

**How many agent programs can there be for a given agent function?**

It is feasible to have many agent programs that each carry out a specific agent function. Consider an agent that adds up a set of numbers as an illustration. This function might be implemented by one agent program by computing the sum of the integers in the list by moving directly down the list. By adding in either the biggest to smallest or the smallest to greatest order, another agent program might accomplish this function. The end outcome is the same regardless of how it is carried out.