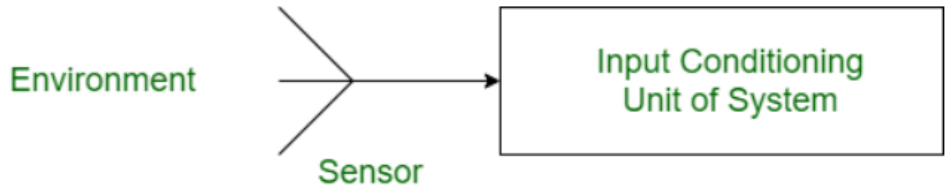
IoT sensors and IoT actuators

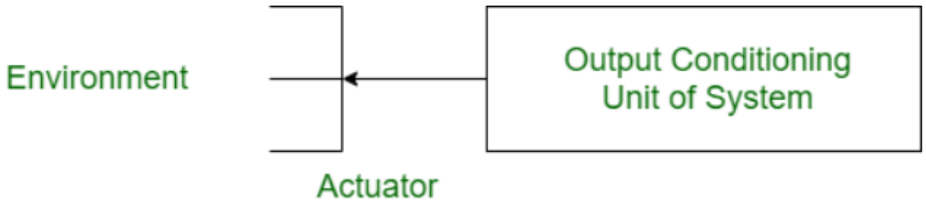
1. Sensor:
Sensor is a device used for the conversion of physical events or characteristics into the electrical signals. This is a hardware device that takes the input from environment and gives to the system by converting it.
For example, a thermometer takes the temperature as physical characteristic and then converts it into electrical signals for the system.

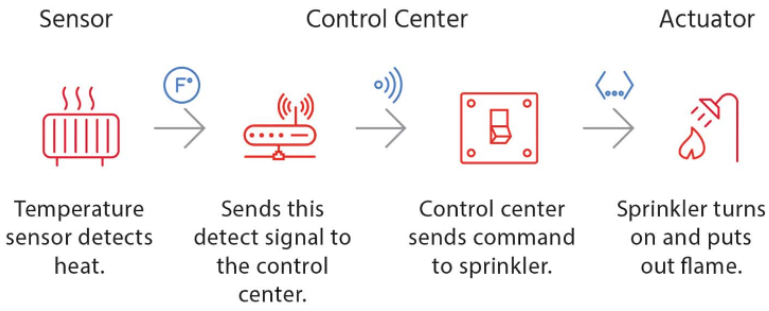
IoT sensor – An IoT device that observes one or more properties of a physical entity and converts those properties into information



2. Actuator:
Actuator is a device that converts the electrical signals into the physical events or characteristics. It takes the input from the system and gives output to the environment.
For example, motors and heaters are some of the commonly used actuators.

IoT actuator – An IoT device that can change one or more properties of a physical entity in response to received information.





Difference between Sensor and Actuator :

SENSOR	ACTUATOR
It converts physical characteristics into electrical signals.	It converts electrical signals into physical characteristics.
It takes input from environment.	It takes input from output conditioning unit of system.
It gives output to input conditioning unit of system.	It gives output to environment.
Sensor generated electrical signals.	Actuator generates heat or motion.
It is placed at input port of the system.	It is placed at output port of the system.
It is used to measure the physical quantity.	It is used to measure the continuous and discrete process parameters.
It gives information to the system about environment.	It accepts command to perform a function.
Example: Photo-voltaic cell which converts light energy into electrical energy.	Example: Stepper motor where electrical energy drives the motor.

- Programming for IoT is usually a polyglot (multiple languages) effort since the Internet-of-Things (IoT) is a system of inter-related computing devices that are provided with unique identifiers and the ability to transfer data over a network.
- The choice of programming-language depends on the capability and purpose of the device.
- IoT encompasses a variety of devices including edge devices, gateways, and cloud servers.