Experiment 1.2

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Subject Name: Internet of Things Lab
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Aim: Selection of different IoT sensors in different sectors.

Objectives:
1. To study hardware related to IoT.
2. To understand and identify different sensors used in IoT.

Components Used: Arduino Uno

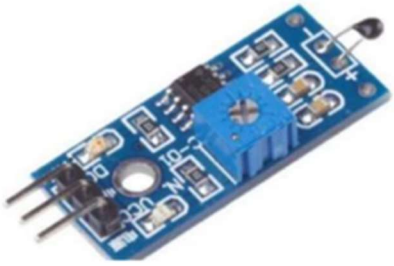
Diagram:

Theory:

The sensors are defined as a machine, module, or a device that detect changes in the environment. The sensors transfer those changes to the electronic devices in the form of asignal.
A sensor and electronic devices always work together. The output signal is easily readable by humans. Nowadays, Sensors are used in daily lives. For example, controlling the brightness of the lamp by touching its base, etc. The use of sensors is expanding with new technologies.
The sensor is a device, which is made up of Single Crystal Silicon. It is considered as a widely used semiconductor material. It has superior mechanical stability, machinability, etc.

Different types of sensors are:

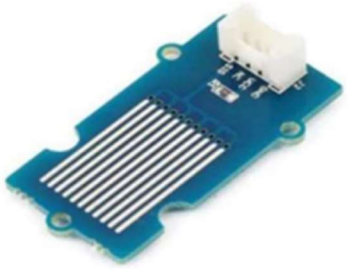
- **Temperature sensor:** Measures ambient temperature, converting it into an electricalsignal for applications in climate control and industrial processes.



- **Proximity sensor:** Detects the presence or absence of an object within a specified range, often used for touchless technology in smartphones and automated systems.

- **Pressure sensor:** Converts physical pressure into an electrical signal, found in applications like tire pressure monitoring and industrial pressure monitoring.

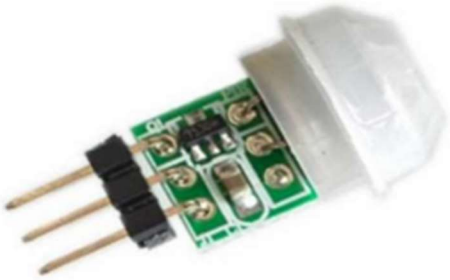
- **Water quality sensor:** Analyzes various parameters to assess water purity, crucialfor monitoring drinking water sources and aquatic ecosystems.



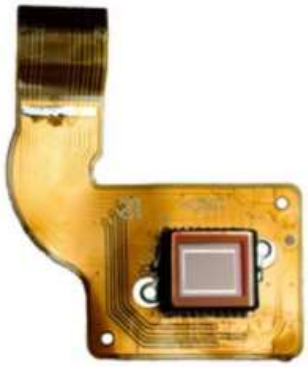
- **Smoke sensor:** Detects the presence of smoke particles, essential for fire safetysystems in homes and commercial buildings.

- **Chemical sensor:** Identifies and measures specific chemicals in the environment, used in fields such as environmental monitoring and industrial processes.

- **Motion detection sensor**: Detects movement within its field of view, commonly usedin security systems and lighting automation for energy conservation.



- **Image Sensor:** Use of image sensors is found in digital cameras & modules, medical imaging and night vision equipment, thermal imaging devices, radar, sonar, media houses, and Biometric & IRIS devices.



Result:
Understood the concept of sensors and their types and uses.