SNS COLLEGE OF TECHNOLOGY

Coimbatore-35
An Autonomous Institution

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DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

19EET304/ IOT for Electrical Sciences
III YEAR VI SEM

UNIT 1 – INTRODUCTION

TOPIC 3 – Sensors for IoT Applications

WHAT ARE IOT SENSORS?

- IoT sensors are pieces of hardware that detect changes in an environment and collect data.
- They're the pieces of an IoT ecosystem that bridge the digital world to the physical world.
- IoT sensors may detect things like temperature, pressure, and motion, and if they are connected to a network, they share data with the network.
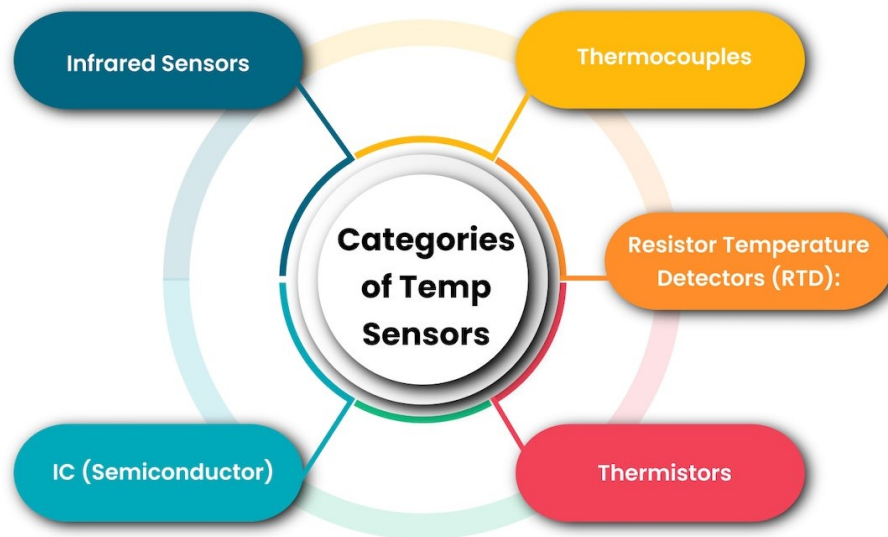
Types of IoT Sensors
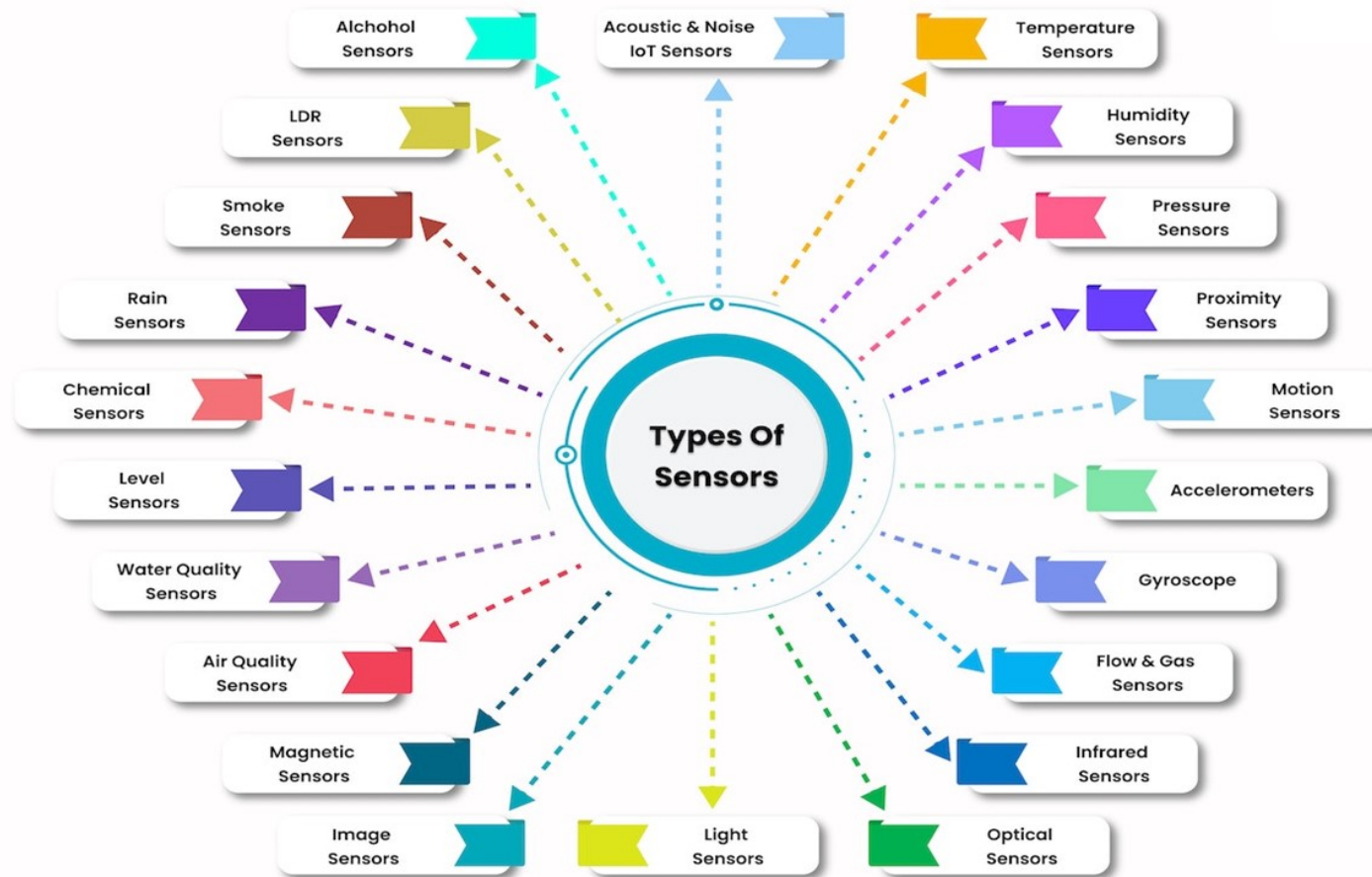
TEMPERATURE SENSORS

Temperature sensors measure the amount of heat generated from an area or an object. They detect a temperature change and convert the findings to data. Temperature sensors are used in various industries, including manufacturing, healthcare, and agriculture. Some examples are thermistors, thermocouples, and resistor temperature detectors (RTD).

PROXIMITY SENSORS
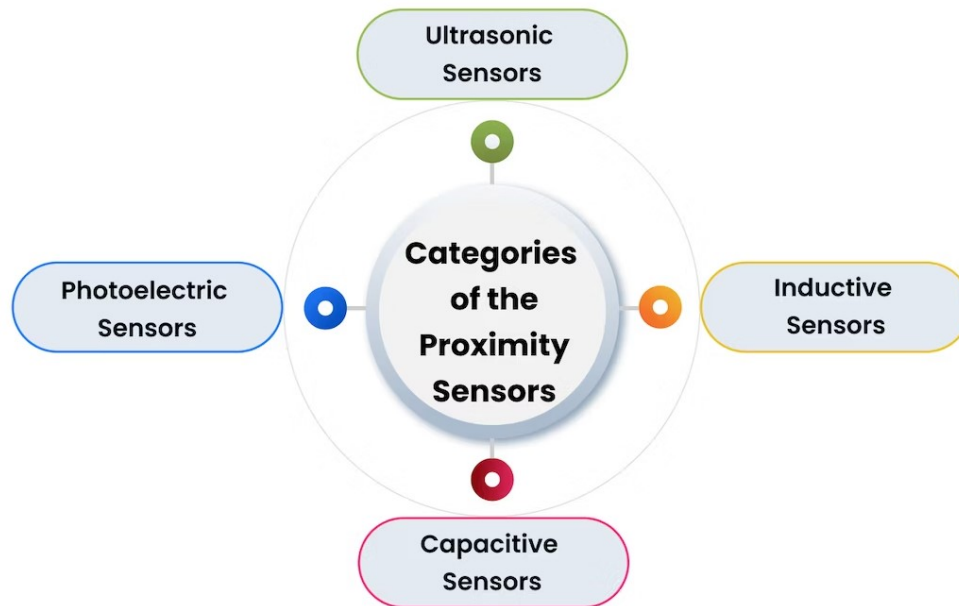
Proximity sensors detect the presence or absence of objects near the sensor without physical contact. They often emit a beam of radiation like infrared or an electromagnetic field. They can be used for process monitoring and control, object counting, assembly lines, and determining available space. Proximity sensors are common in retail settings, industrial complexes, and parking lots. Some examples are photoelectric, magnetic, capacitive, inductive, and ultrasonic.

PRESSURE SENSORS

IoT Pressure Sensors

These sensors detect changes in a gas or liquid. When the pressure range is beyond a set threshold, pressure sensors alert to the problem. They are used for leak testing, water systems, vehicles, and aircraft. For example, the BMP180 is a digital pressure sensor found in cell phones and GPS navigation devices. And some vehicles use a tire pressure monitoring system (TPMS) to alert when tire pressure is low and potentially unsafe.
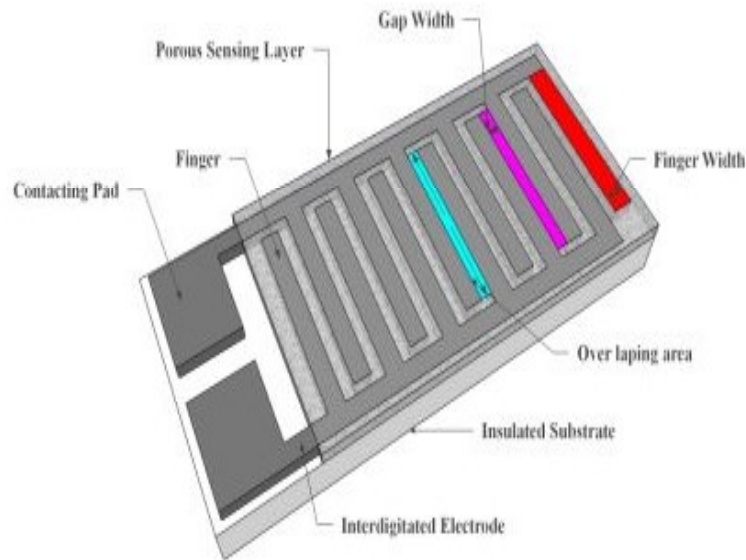
ACOUSTIC AND NOISE SENSORS

Such sensors capture the noise levels emitted within the range of connected devices. Acoustic and noise sensors analyze the surrounding ambient sound using an integrated microphone. They allow you to keep track of the sound levels and generate reports based on the findings.

HUMIDITY SENSORS

These sensors are used to track the air's relative humidity, or the percentage of water vapour and other gases present in the air.

WATER QUALITY SENSORS

• Water quality sensors monitor the quality of water. They are often used in water distribution systems, but they function in a variety of industries.

• There are different kinds of water sensors, including residual chlorine sensors, turbidity sensors, pH sensors, and total organic carbon sensors.

IMAGE SENSORS

They are also known as "Optical Sensors." These connected smart devices are embedded into systems to capture and convert images into a digital signal that can be transmitted over a network.
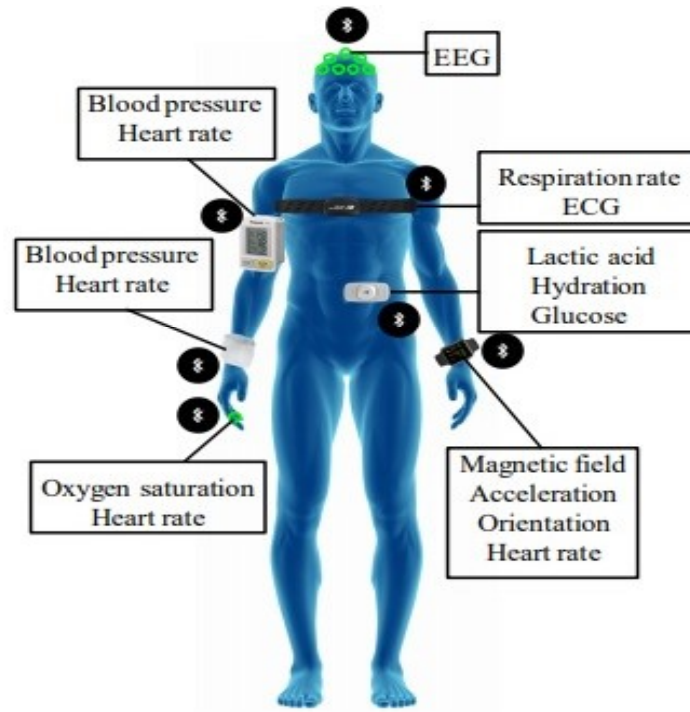
Which sensor is used in home automation light on off?

ASSESSMENT – 2

CAN YOU EXPLAIN THIS SENSORS?

References

- https://www.intuz.com/guide-on-top-iot-sensor-types

- https://www.zipitwireless.com/blog/what-are-iot-sensors-types-uses-and-examples

- https://iot4beginners.com/image-sensor-and-its-types/#:~:text=But%2C%20In%20the%20case%20of,basic%20principle%20of%20image%20sensor.