Course Name: Internet Of Things Lab **Course code:** 21CSP-344

Date of Performance 19/10/2023

Experiment 3.1

Aim: To design a weather station by checking Air quality of an environment with the help of IoT.

Objectives:

1.Learn about interfacing.
2. Learn about IoT programming.

Components Used:

- Arduino Uno R3
- MQ 135 AirQuality Sensor Module
- Male to Female Jumper Wire
- Software: Arduino IDE

Description:

Arduino:

It is an open-source electronics platform. It consists ATmega328 8-bit Micro controller. It can be able to read inputs from different sensors & we can send instructions to the micro controller in the Arduino. It provides Arduino IDE to write code & connect the hardware devices like Arduino boards & sensors.

About Air Quality Sensor:

MQ-135 sensor belongs to the MQ series that are used to detect different gasses present in the air. The MQ-135 sensor is used to detect gases such as NH3,NOx, alcohol, Benzene, smoke,CO2 ,etc. steel exoskeleton houses a sensing device within the gas sensor module.

Specifications

The table below shows some key specifications of the MQ-135 sensor module:

Feature	Description
Operating Voltage	2.5-5.0V
Detecting Concentration	10ppm-300ppm for NH3 10ppm-1000ppm for Benzene 10ppm-300ppm for Alcohol

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Feature	Description
Load Resistance	Adjustable
Heater Resistance	33Ω ± 5%
Heater Consumption	less than 800mW
Operating Temperature	-10 to 45°C

CODE:

```
int sensorValue;
//int digitalValue;
void setup()
{
Serial.begin(9600); // sets the serial port to 9600
pinMode(13, OUTPUT);
pinMode(2, INPUT);
}
void loop()
{
sensorValue = analogRead(0); // read analog input pin 0
//digitalValue = digitalRead(2);
if (sensorValue > 400)
{
 digitalWrite(13, HIGH);
}
else
 digitalWrite(13, LOW);
 Serial.println(sensorValue, DEC); // prints the value read
//Serial.println(digitalValue, DEC);
delay(1000); // wait 100ms for next reading
}
```

Output and Simulation :

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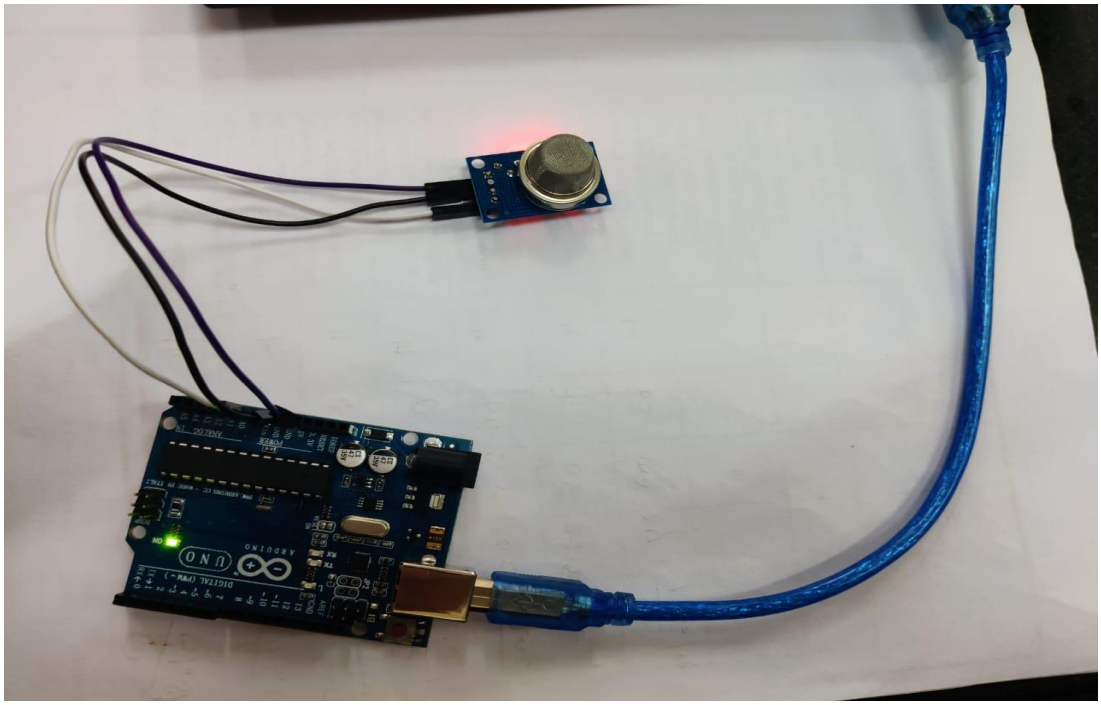

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Learning Outcomes :

- Understanding Air Quality Sensor Technology
- Principles of Air Quality
- Calculating Air Quality of the surrounding.