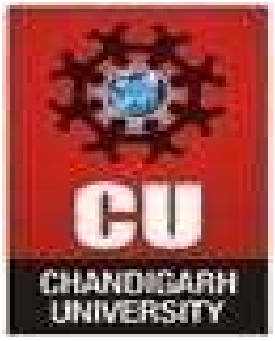

CHANDIGARH UNIVERSITY

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UNIVERSITY INSTITUTE OF ENGINEERING

Department of Computer Science & Engineering

Subject Name: Internet Of Things Lab

Subject Code: 20CSP-358

Submitted to:

Er. Namrata(E13783)

Submitted by:

Name: Anish Kumar

UID: 20BCS1385

Section: 20BCS_DM_719 A

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Ex. No	List of Experiments	Conduct (MM: 12)	Viva (MM: 10)	Record (MM: 8)	Total (MM: 30)	Remarks/Signature
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1.2						
1.3						
1.4						
2.1						
2.2						
2.3						
3.1						
3.2						
3.3						

Experiment 8

Student Name: Nikhil Kumar **UID: 20BCS1817**
Branch: CSE **Section/Group: 716/B**
Semester: 6th **Date of Performance:24/04/2023**
Subject Name: IOT Lab **Subject Code:20CSP358**

1. Aim:

Interfacing Air Quality Sensor (MQ135), displays data on LCD

2. Apparatus:

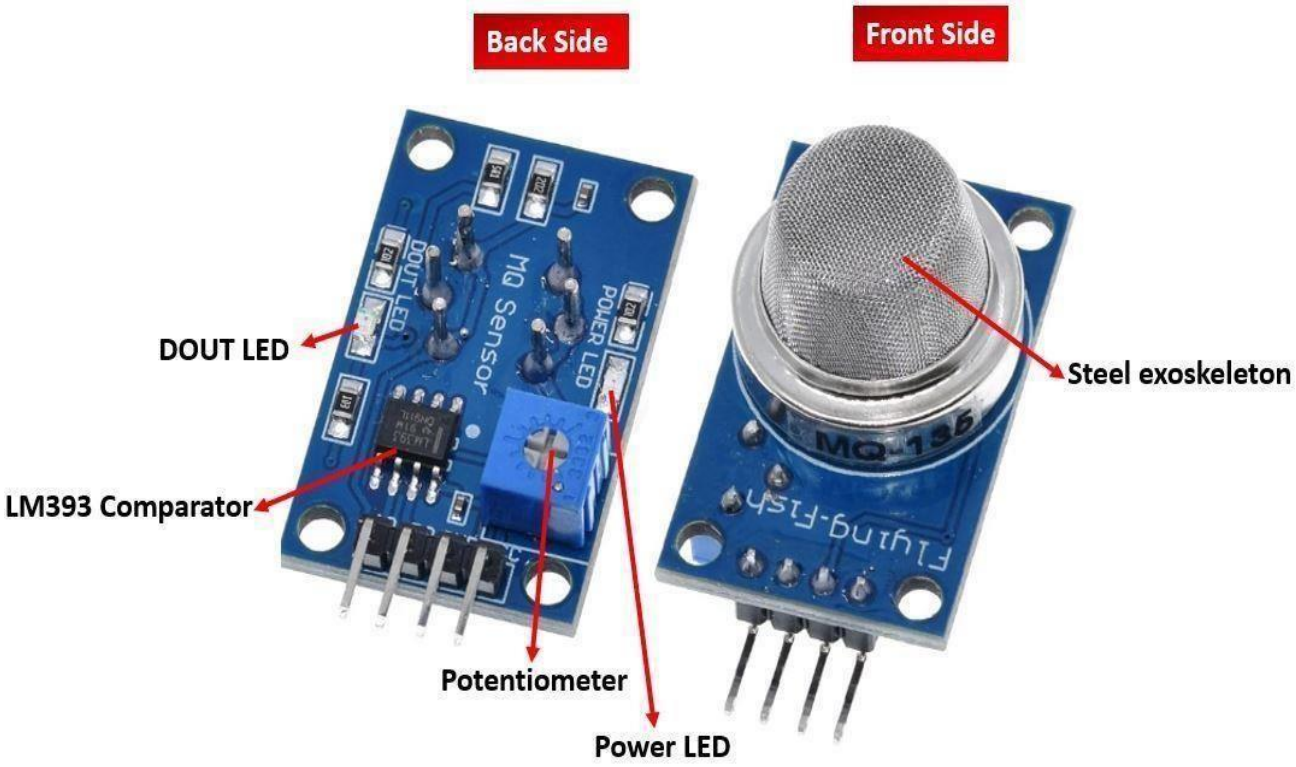
Components Required:
You will need the following components

- 1 × Breadboard
- 1 × Arduino Uno R3
- 1 × MQ 135 Ai rQuality Sensor Module
- 1 × LED
- 1 × LCD • 1 × 330Ω Resistor
- 2 × Jumper

3. Theory:

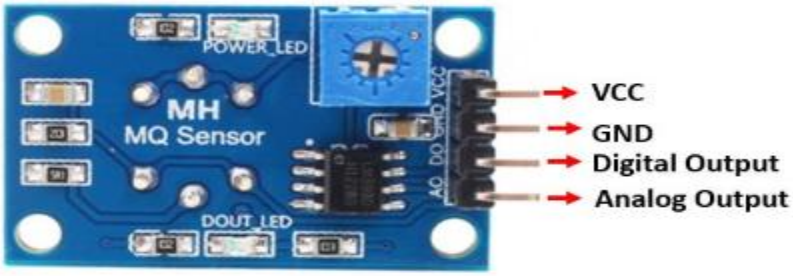
Air Quality Sensor:

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.



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

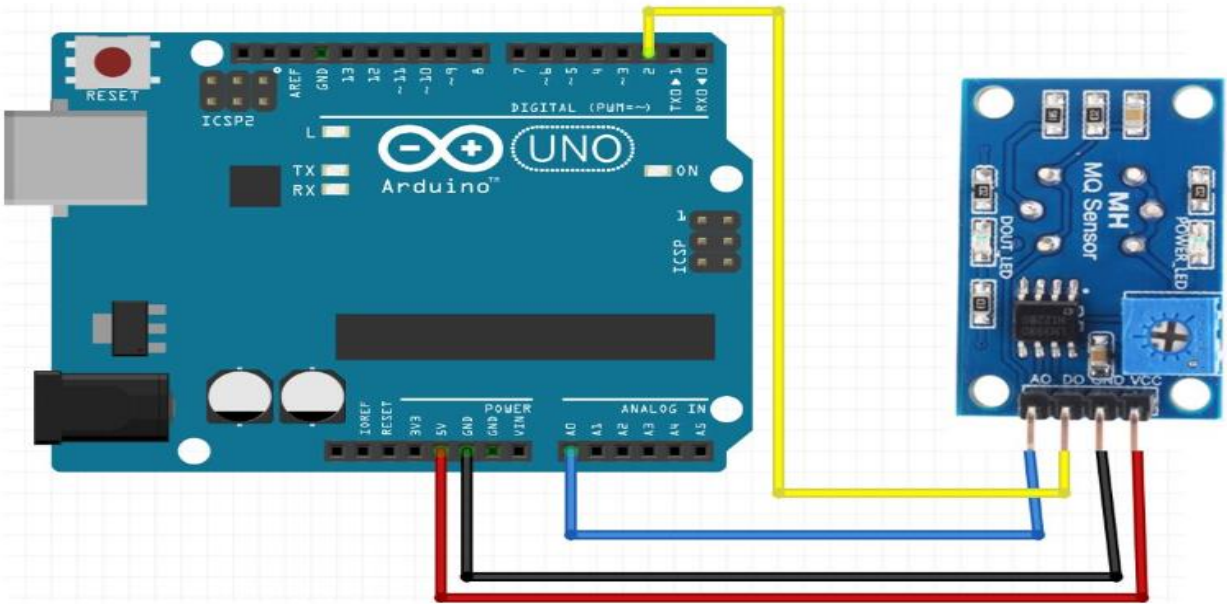
Feature	Description
Operating Voltage	2.5-5.0V
Detecting Concentration	10ppm-300ppm for NH3 10ppm-1000ppm for Benzene 10ppm-300ppm for Alcohol
Load Resistance	Adjustable
Heater Resistance	33Ω ± 5%
Heater Consumption	less than 800mW
Operating Temperature	-10 to 45°C



This sensor has 4 pins:

- 5V: Module power supply – 5 V
- GND: Ground
- DOUT: Digital output
- AOUT: Analog output

CIRCUIT:-



4. 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   digital Write( 13,
LOW);

  Serial.println(sensorValue, DEC); // prints the value read
  Serial.println(digitalValue, DEC);
delay(1000); // wait 100ms for next
reading
}
```

5. Output