Experiment 8

Student Name: Jatin   **UID: 20BCS5951**
Branch: CSE   **Section/Group: 605-B-ntpp**
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Subject Name: IOT Lab   **Subject Code:20CSP358**

1. <u>Aim:</u>

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

## 2. <u>Apparatus:</u>

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. <u>Theory:</u>

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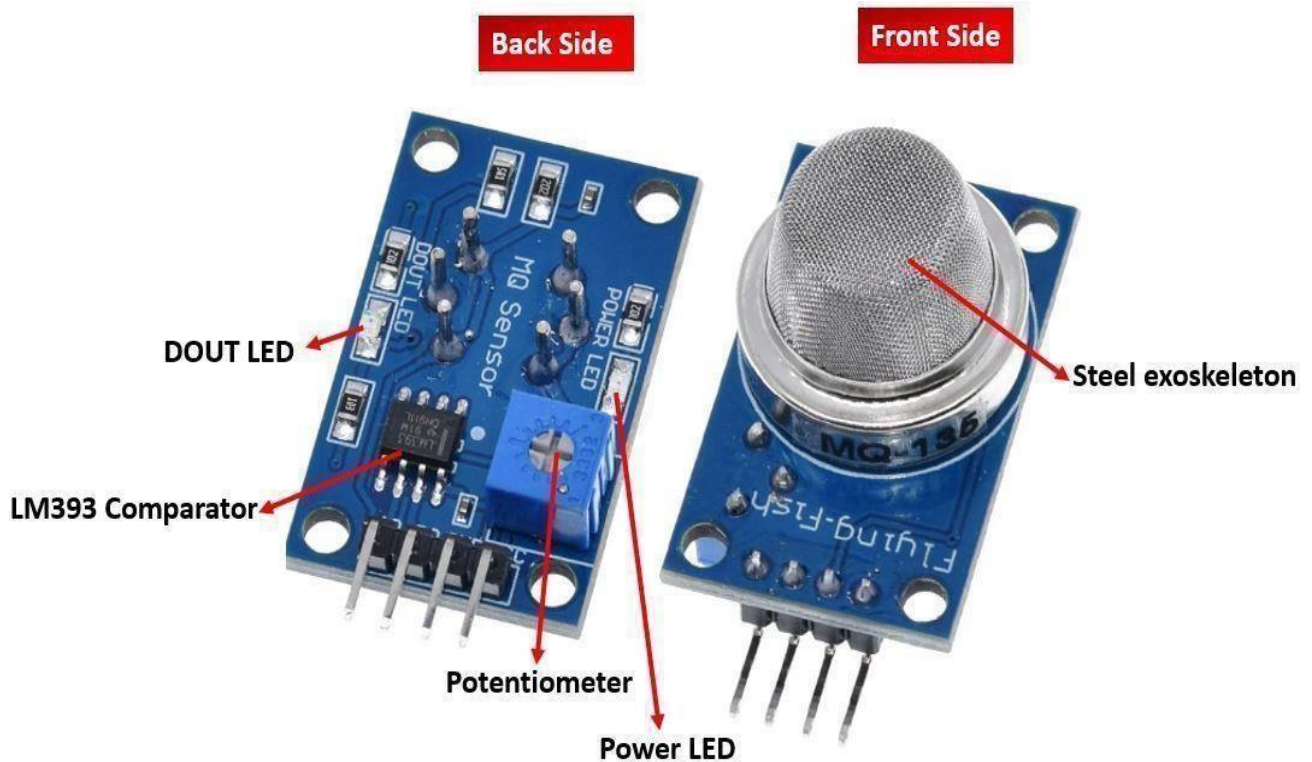
The table below shows some key specifications of the MQ-135 sensor module:

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	$33\Omega \pm 5\%$
Heater Consumption	less than 800mW
Operating Temperature	-10 to 45°C
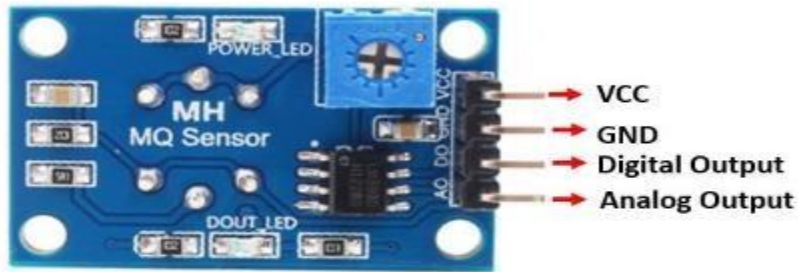
This sensor has 4 pins:

- 5V: Module power supply – 5 V

- GND: Ground

- DOUT: Digital output

- AOUT: Analog output

CIRCUIT:-
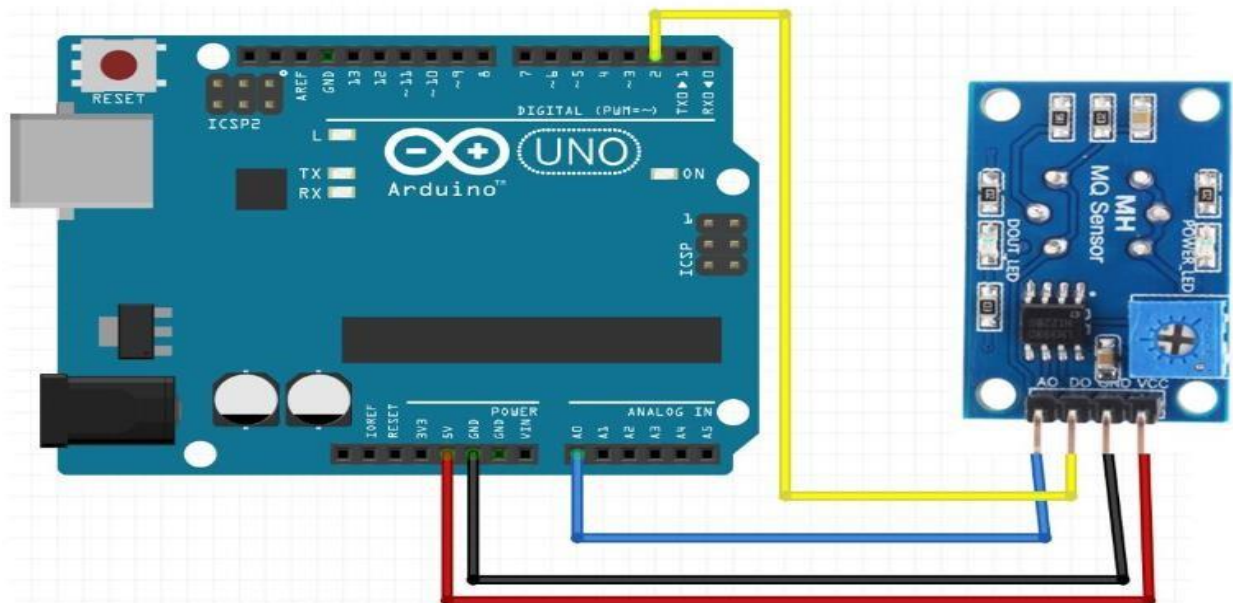
4. Code

```
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