Experiment Number 4

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Branch ::	CSE - IoT	Sec/Grp ::	1/A
Semester ::	5th	Date ::	30th Sept, 2021
Subject ::	WSN Lab	CODE ::	CSD-331

1. Aim :

Interfacing of Smoke detector with arduino.

2. Requirements :

1. TinkerCad
2. MQ2 Smoke detector
3. Buzzer
4. ESP8266

3. Theory :

Smoke sensor is a type of gas detector which detects the presence of gases present in the atmosphere.
Here in this experiment we use MQ2 sensor with Arduino Uno.

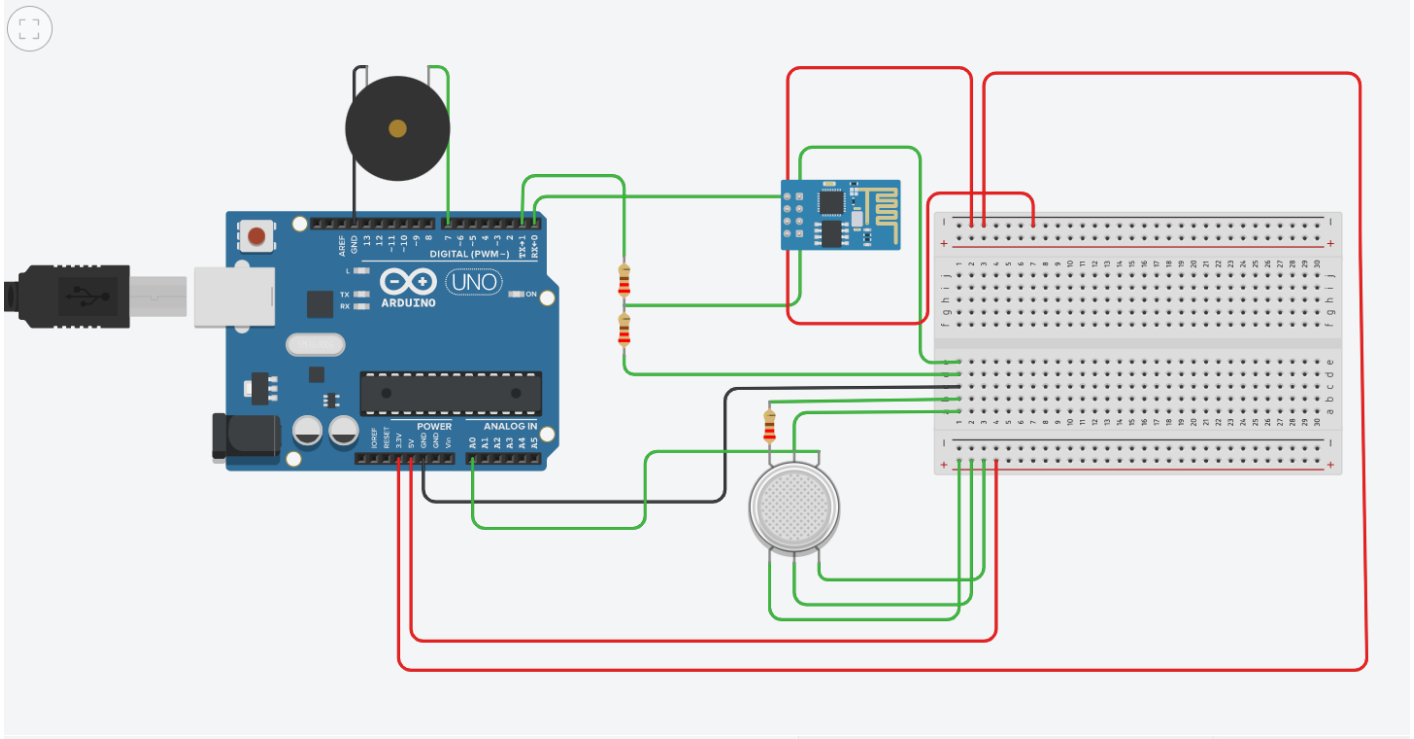
- H – Pins Out of the two H – pins, one pin is connected to supply and the other to ground.
- A – Pins the A pins and B pins are interchangeable. These pins will be tied to the Supply voltage.
- B – Pins the A pins and B pins are interchangeable. One pin will act as output while the other will be pulled to ground.

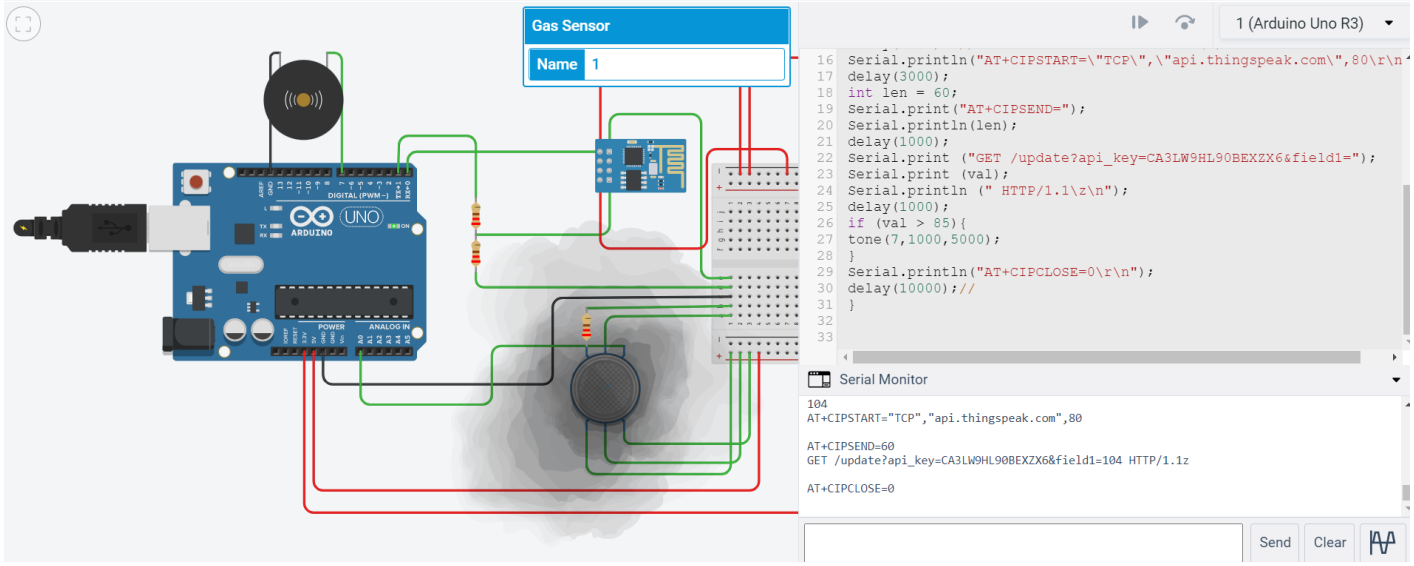
Features

- Operating voltage is +5V
- Can be used to Measure or detect LPG, Alcohol, Propane, Hydrogen, CO and even methane
- Analog output voltage : 0V or 5V
- Digital output voltage: 0V or 5V
- Preheat duration 20 seconds.

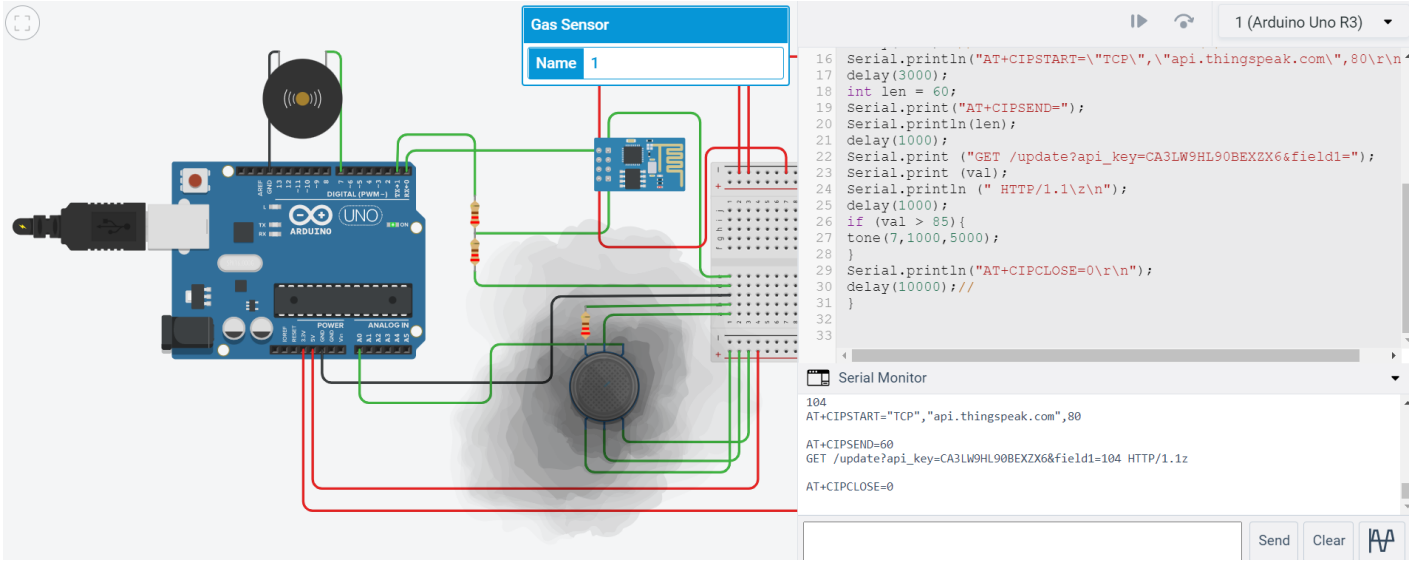
4. Source Code :

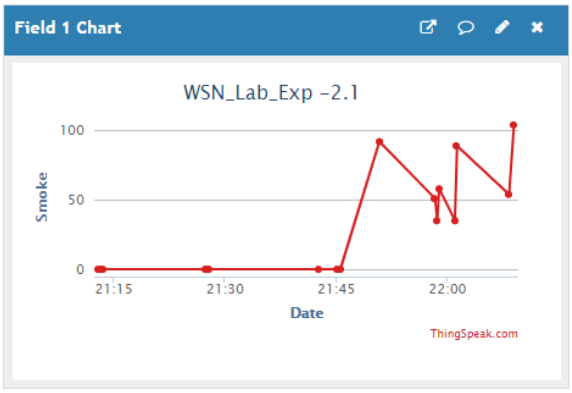
```
int val = 0;

void setup()
{
    Serial.begin(115200);
    delay(100);
    Serial.println("AT+CWJAP=\"Simulator Wifi\",\"\"\r\n");
    delay(3000);
    pinMode(7, OUTPUT);
    pinMode(A0, INPUT);
}

void loop()
{
    val = analogRead(A0);
    Serial.println(val);
    delay(1000); // Wait for 1000 millisecond(s)
    Serial.println("AT+CIPSTART=\"TCP\",\"api.thingspeak.com\",80\r\n");
    delay(3000);
    int len = 60;
    Serial.print("AT+CIPSEND=");
    Serial.println(len);
    delay(1000);
    Serial.print("GET /update?api_key=CA3LW9HL90BEXZX6&field1=");
    Serial.print(val);
    Serial.println(" HTTP/1.1\z\n");
    delay(1000);
    if (val > 85)
    {
        tone(7, 1000, 5000);
    }
    Serial.println("AT+CIPCLOSE=0\r\n");
    delay(10000); //
}
```

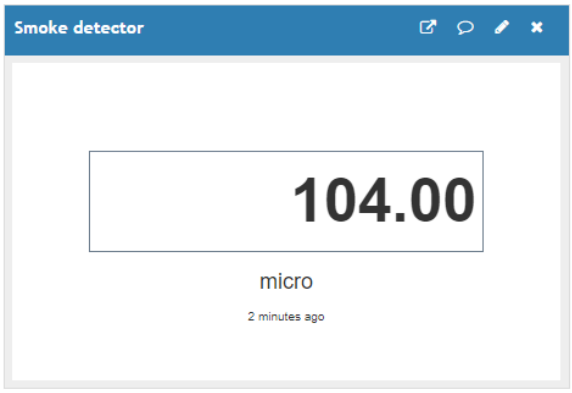

DIGITAL (PWM~)
ARDUINO
UNO
POWER
ANALOG IN

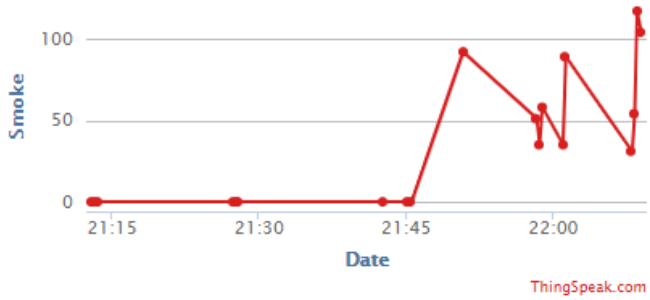

Gas Sensor
Name 1
1 (Arduino Uno R3)
16 Serial.println("AT+CIPSTART=\"TCP\",\"api.thingspeak.com\",80\r\n
17 delay(3000);
18 int len = 60;
19 Serial.print("AT+CIPSEND=");
20 Serial.println(len);
21 delay(1000);
22 Serial.print ("GET /update?api_key=CA3LW9HL90BEXZX6&field1=");
23 Serial.print (val);
24 Serial.println (" HTTP/1.1\z\n");
25 delay(1000);
26 if (val > 85){
27 tone(7,1000,5000);
28 }
29 Serial.println("AT+CIPCLOSE=0\r\n");
30 delay(10000);//
31 }
32
33
Serial Monitor
104
AT+CIPSTART="TCP","api.thingspeak.com",80
AT+CIPSEND=60
GET /update?api_key=CA3LW9HL90BEXZX6&field1=104 HTTP/1.1z
AT+CIPCLOSE=0
Send
Clear

5. Observations :









Learning Outcomes :

- Smoke Sensor
- ThingSpeak
- MQ2 Sensor

S. No.	Parameters	Marks Obtained	Maximum Marks
1.			
2.			
3.			