Project Development Phase
Sprint 2

Date	05 November 2022
Team ID	PNT2022TMID04334
Project Name	Gas leakage monitoring and alerting system for industries

Sprint 2:

The gas sensor measures from 200 ppm to 10000 ppm.

If the sensor value of gas reaches above 2000 ppm, warning light is glown to alert.

Threshold value for gas is marked as 2000ppm

Code:

```
#include <WiFi.h>
#include <PubSubClient.h>
#include "DHTesp.h"
#include<stdio.h>
#include <stdlib.h>
#define LED 2
const int DHT_PIN = 15;
DHTesp dhtSensor;
int gas;

void setup()
{
  Serial.begin(115200);
  dhtSensor.setup(DHT_PIN, DHTesp::DHT22);
```

```
  pinMode(LED, OUTPUT);
  delay(10);
  wificonnect();
  mqttconnect();
}
void loop()
{
    TempAndHumidity  data = dhtSensor.getTempAndHumidity();
    gas=random(10000);
    Serial.println("Temp: " + String(data.temperature, 2) + "°C");
    Serial.println("Humidity: " + String(data.humidity, 1) + "%");
    Serial.println("gas_val " + String(gas));
    PublishData(String(data.temperature,2),String(data.humidity,
1),String(gas),int(data.temperature),int(data.humidity),int(gas));
    delay(1000);
    if (!client.loop()) {
      mqttconnect();
    }
}
void PublishData(String temp,String hum,String gas1,int temp1,int hum1,int gas2)
{
  mqttconnect();
  if (gas2>2000)
  {
    digitalWrite(LED, HIGH);
    Serial.println("Fire alert");
  }
  else
  {
    digitalWrite(LED, LOW);
    Serial.println("Normal");
  }
```

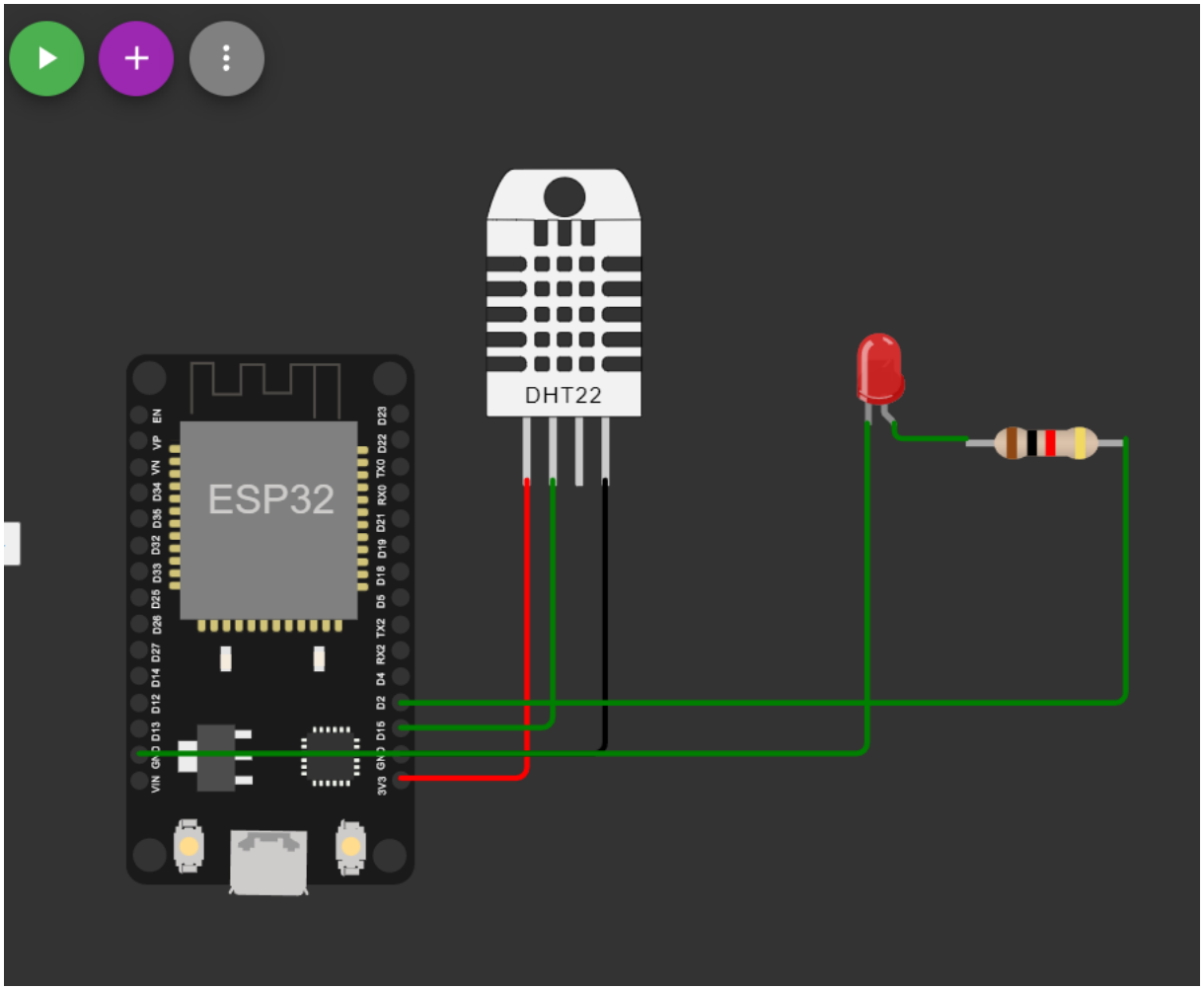
```
void wificonnect()
{
  Serial.println();
  Serial.print("Connecting to ");
  WiFi.begin("Wokwi-GUEST", "", 6);
  while (WiFi.status() != WL_CONNECTED)
  {
    delay(500);
    Serial.print(".");
  }
  Serial.println("");
  Serial.println("WiFi connected");
  Serial.println("IP address: ");
  Serial.println(WiFi.localIP());
}
}
```

Diagram.json:

```
{
  "version": 1,
  "author": "HARISH M 19CSR055",
  "editor": "wokwi",
  "parts": [
    { "type": "wokwi-esp32-devkit-v1", "id": "esp", "top": 0, "left": 0, "attrs": {} },
    {
      "type": "wokwi-dht22",
      "id": "dht1",
      "top": -66.38,
```

```
      "left": 132.82,
      "attrs": { "humidity": "41.5", "temperature": "80" }
    },
    {
      "type": "wokwi-led",
      "id": "led1",
      "top": -14.38,
      "left": 258.15,
      "attrs": { "color": "red" }
    },
    {
      "type": "wokwi-resistor",
      "id": "r1",
      "top": 24.3,
      "left": 309.63,
      "attrs": { "value": "1000" }
    }
  ],
  "connections": [
    [ "esp:TX0", "$serialMonitor:RX", "", [] ],
    [ "esp:RX0", "$serialMonitor:TX", "", [] ],
    [ "dht1:VCC", "esp:3V3", "red", [ "v109.5", "h-43.84" ] ],
    [ "dht1:SDA", "esp:D15", "green", [ "v0" ] ],
    [ "dht1:GND", "esp:GND.1", "black", [ "v0" ] ],
    [ "led1:C", "esp:GND.2", "green", [ "v0" ] ],
    [ "r1:2", "esp:D2", "green", [ "v0" ] ],
    [ "led1:A", "r1:1", "green", [ "v0" ] ]
  ]
}
```

Circuit Diagram:



Thus sprint 2 has been completed successfully