SPRINT 4

DATE	14 November 2022
TEAM ID	PTN2022TMID14369
PROJECT NAME	Industry - specific intelligent fire managementsystem

```
#include <WiFi.h>
#include <Wire.h>
#include <SPI.h>
#include "ThingSpeak.h"
#include <WiFiClient.h>

unsigned long myChannelNumber = 2;
const char * myWriteAPIKey  = "25V40ZAPI6KIZFGY";
int LED_PIN = 32;
const int mq2 = 4;
int value = 0;

int flame_sensor_pin = 10;
lame_pin = HIGH;

char ssid[] = "NALAIYA";
char pass[]= "NALAIYATHIRAN";
WiFiClient client;

#define PIN_LM35 39
#define ADC_VREF_mV 3300.0
#define ADC_RESOLUTION 4096.0
#define RELAY_PIN 17
#define RELAY_PIN1 27

void setup(){
  Serial.begin(115200);
  pinMode(RELAY_PIN, OUTPUT);
  pinMode(RELAY_PIN1, OUTPUT);
  Serial.print("Connecting to ");
  Serial.println(ssid);
  WiFi.begin(ssid, pass);
  int wifi_ctr = 0;
  while (WiFi.status() != WL_CONNECTED){
    delay(1000); Serial.print(".");
  }
  Serial.println("WiFi connected");
  ThingSpeak.begin(client);
  pinMode(LED_PIN, OUTPUT);
  pinMode(mq2, INPUT);
  pinMode ( flame_sensor_pin , INPUT );
  pinMode(BUZZER_PIN, OUTPUT);
}
```

```
void temperature(){
  int adcVal = analogRead(PIN_LM35);
  float milliVolt = adcVal * (ADC_VREF_mV / ADC_RESOLUTION);
  float tempC = milliVolt / 10;
  Serial.print("Temperature: ");
  Serial.print(tempC);
  Serial.print("°C");
  if(tempC > 60){
    Serial.println("Alert");
    digitalWrite(BUZZER_PIN, HIGH);
  }
  else{
    digitalWrite(BUZZER_PIN, LOW);
  }
  int x = ThingSpeak.writeField(myChannelNumber,1, tempC, myWriteAPIKey);
}

void GasSensors(){
  int gassensorAnalogmq2 = analogRead(mq2);
  Serial.print("mq2 Gas Sensor: ");
  Serial.print(gassensorAnalogmq2);
  Serial.print("\t");
  Serial.print("\t");
  Serial.print("\t");
  if (gassensorAnalogmq2 > 1500){
    Serial.println("mq2Gas");
    Serial.println("Alert");
    digitalWrite(RELAY_PIN1, HIGH);
  }
  else{
    Serial.println("No mq2Gas");
    digitalWrite(RELAY_PIN1, LOW);
    delay(100);
  }
  int a = ThingSpeak.writeField(myChannelNumber,4, gassensorAnalogmq2, myWriteAPIKey);

}

void flamesensor(){
  flame_pin = digitalRead( flame_sensor_pin );
  if (flame_pin == LOW ){
    Serial.println ( " ALERT: FLAME IS DETECTED" );
    digitalWrite (BUZZER_PIN,HIGH ) ;
  }
  else{
    Serial.println ( " NO FLAME DETECTED " );
    digitalWrite (BUZZER_PIN , LOW );
  }
  int value = digitalRead(flame_sensor_pin);
  if (value ==LOW) {
    Serial.print("FLAME");
    digitalWrite(RELAY_PIN, HIGH);
  } else {
    Serial.print("NO FLAME");
    digitalWrite(RELAY_PIN, LOW);
  }
}
void loop() {
  temperature();
  GasSensors();
  flamesensor();
}
```