

## PROJECT DEVELOPMENT PHASE

### DELIVERY OF SPRINT-4

Date	7 November 2022
Team ID	PNT2022TMID30849
Project Name	Industry Specific Intelligence Fire Management System

```
#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; // the current reading from the input pin
```

```
int BUZZER_PIN= 12; const int mq2
```

```
= 4; int value
```

```
= 0;
```

```
//Flame int flame_sensor_pin = 10 ;// initializing pin 10 as the sensor digital output  
pin int flame_pin = HIGH ; // current state of sensor
```

```
char ssid[] =
```

```
"PNT2022TMID30849";
```

```
char pass[] =
```

```
"PNT2022TMID30849";
```

```
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 ); // declaring sensor pin as input pin for
  Arduino  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); // turn on
  } else
  {
    digitalWrite(BUZZER_PIN, LOW); // turn on
  }
  int x = ThingSpeak.writeField(myChannelNumber,1, tempC, myWriteAPIKey);  }

```

```

void GasSensors()

```

```

{
  //mq2

  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); // turn on fan 10 seconds    delay(100);
  } else
  {
    Serial.println("No mq2Gas");    digitalWrite(RELAY_PIN1,
LOW); // turn off fan 10 seconds    delay(100);

  }

  int a = ThingSpeak.writeField(myChannelNumber,4, gassensorAnalogmq2,
myWriteAPIKey);

}

void flamesensor()
{ flame_pin = digitalRead ( flame_sensor_pin ) ; // reading from the sensor if
(flame_pin == LOW ) // applying condition
{
Serial.println ( " ALERT: FLAME IS DETECTED" ) ;    digitalWrite (BUZZER_PIN,
HIGH ) ;// if state is high, then turn high the BUZZER } else
{
Serial.println ( " NO FLAME DETECTED " ) ;
digitalWrite (BUZZER_PIN , LOW ) ; // otherwise turn it low
} int value = digitalRead(flame_sensor_pin); // read the analog value from sensor

  if (value ==LOW) {    Serial.print("FLAME");
digitalWrite(RELAY_PIN, HIGH);

```

```
    } else {  
        Serial.print("NO FLAME");    digitalWrite(RELAY_PIN,  
LOW);  
    }  
  
} void loop() {  
temperature(); GasSensors();  flamesensor();  
}
```