

PROJECT DEVELOPMENT PHASE

DELIVERY OF SPRINT-4

Date	16 November 2022
Team ID	PNT2022TMID34762
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[] = "SS"; char pass[]
```

```
= "SS"; 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(); }
```

