

PROJECT DEVELOPMENT PHASE

DELIVERY OF SPRINT-4

Date	15 November 2022
Team ID	PNT2022TMID29501
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[] = "RIYAZ";
char pass[] = "RIYAZ";
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();
}

```