

## PROJECT DEVELOPMENT PHASE

### DELIVERY OF SPRINT-4

Date	<b>14 November 2022</b>
Team ID	<b>PNT2022TMID14319</b>
Project Name	<b>Industry - specific intelligent management system</b>

```
#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[] = "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 ); // 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();
}
```