**PROJECT DEVELOPMENT PHASE**

**DELIVERY OF SPRINT-4**

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| --- | --- |
| Date | 12 November 2022 |
| Team ID | PNT2022TMID24238 |
| 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[] = "Rathi"; char pass[] = "Rathidevi"; 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();

}