

# PROJECT DEVELOPMENT PHASE

## SPRINT - I

DATE	11 NOVEMBER 2022
TEAM ID	PNT2022TMID07157
PROJECT NAME	INDUSTRY-SPECIFIC INTELLIGENT FIRE MANAGEMENT SYSTEM
MAXIMUM MARKS	8 MARKS

### CODE:

```
#include <time.h>

bool exhaust_fan_on = false;
bool sprinkler_on = false;

float temperature = 0;
int gas = 0;
int flame = 0;

String flame_status = "";
String accident_status = "";
String sprinkler_status = "";

void setup() {
    Serial.begin(99900);
}

void loop() {

    //setting a random seed

    srand(time(0));

    //initial variable

    temperature = random(-20,125);
    gas = random(0,1000);
    int flamereading = random(200,1024);
    flame = map(flamereading,0,1024,0,2);

    //set a flame status
```

```

switch (flame) {
case 0:
    flame_status = "No Fire";
    Serial.println("Flame Status : "+flame_status);
    break;
case 1:
    flame_status = "Fire is Detected";
    Serial.println("Flame Status : "+flame_status);
    break;
}

//Gas Detection

if(gas > 100){
    Serial.println("Gas Status : Gas leakage Detected");
}
else{
    exhaust_fan_on = false;
    Serial.println("Gas Status : No Gas leakage Detected");
}

//send the sprinkler status
if(flame){
    sprinkler_status = "working";
    Serial.println("Sprinkler Status : "+sprinkler_status);
}
else{
    sprinkler_status = "not working";
    Serial.println("Sprinkler Status : "+sprinkler_status);
}

//toggle the fan according to gas

if(gas > 100){
    exhaust_fan_on = true;
    Serial.println("Exhaust fan Status : Working");
}
else{
    exhaust_fan_on = false;
    Serial.println("Exhaust fan Status : Not Working");
}

Serial.println("");
Serial.println("");
Serial.println(" -----*****-----");
--");
Serial.println("");
Serial.println("");

```

```
delay(3000);
```

```
}
```

## OUTPUT:

The screenshot displays the Wokwi online IDE interface. On the left, the 'sketch.ino' file is open, showing a C++ program. The code includes a header, variable declarations, and a loop function that generates random values for temperature, gas, and flame, and updates their status. On the right, the 'Simulation' window shows the output of the program, which is displayed in two states: 'Fire is Detected' and 'No Fire'. The output text is as follows:

```
-----*****-----  
Flame Status : Fire is Detected  
Gas Status : Gas leakage Detected  
Sprinkler Status : working  
Exhaust fan Status : Working  
  
-----*****-----  
Flame Status : No Fire  
Gas Status : Gas leakage Detected  
Sprinkler Status : not working  
Exhaust fan Status : Working  
  
-----*****-----
```

The bottom of the image shows a Windows taskbar with various application icons and system information, including the date and time (23:41, 12-11-2022).