

Sprint 1

TEAM ID	PNT2022TMID24481
PROJECT NAME	Industry-Specific Intelligent Fire Management System

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);

}

```

Simulation:

The screenshot shows a web-based simulation interface. At the top, there is a dark header bar with a star icon, a 'Docs' label, and a purple icon with a white 'H'. Below this is a 'Simulation' tab. The main area contains two simulation states separated by dashed lines. The first state shows 'Fire is Detected', 'Gas leakage Detected', 'Sprinkler Status : working', and 'Exhaust fan Status : Working'. The second state shows 'No Fire', 'Gas leakage Detected', 'Sprinkler Status : not working', and 'Exhaust fan Status : Working'. A timer at the top right indicates '00:11.166' and '43%'. At the bottom right, there are icons for zoom, pause, and delete.

Simulation

00:11.166 43%

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

-----*****-----