

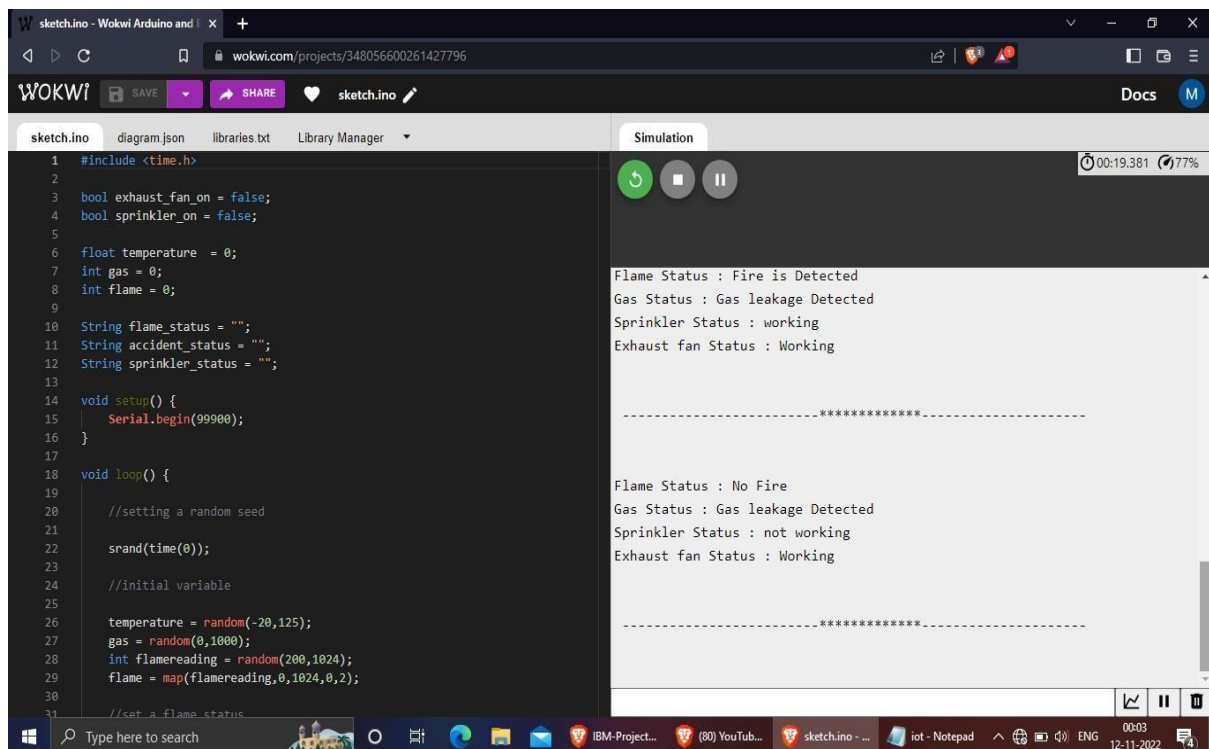
Project development phase

Sprint - I

Date	29 October 2022
Team ID	PNT2022TMID13566
Project Name	Industry-specific intelligent fire management system

Link: <https://wokwi.com/projects/348056600261427796>

OUTPUT:



```
1 #include <time.h>
2
3 bool exhaust_fan_on = false;
4 bool sprinkler_on = false;
5
6 float temperature = 0;
7 int gas = 0;
8 int flame = 0;
9
10 String flame_status = "";
11 String accident_status = "";
12 String sprinkler_status = "";
13
14 void setup() {
15     Serial.begin(99900);
16 }
17
18 void loop() {
19     //setting a random seed
20
21     srand(time(0));
22
23     //initial variable
24
25     temperature = random(-20,125);
26     gas = random(0,1000);
27     int flamereading = random(200,1024);
28     flame = map(flamereading,0,1024,0,2);
29
30     //set a flame status
```

Simulation

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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

-----*****

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);

}

```

TEST CASE:

S.NO	INPUT	OUTPUT	RESULT
1	Gas:42 Temperature:59.30 Flame:267	Exhaust Fan: Not Working Sprinkler: Not Working Status Logged: Done	PASSED
2	Gas:612 Temperature:59.30 Flame:367	Exhaust Fan: Working Sprinkler: Not Working Status Logged: Done	PASSED

3	Gas:327 Temperature:59.30 Flame:841	Exhaust Fan: Working Sprinkler: Working Status Logged: Done	PASSED
4	Gas:13 Temperature:59.30 Flame:601	Exhaust Fan: Not Working Sprinkler: Working Status Logged: Done	PASSED
5	Gas: 123 Temperature:59.30 Flame:385	Exhaust Fan: Working Sprinkler: Not Working Status Logged: Done	PASSED