

PROJECT DEVELOPMENT PHASE –SPRINT 4

DATE	13 NOV 2022
TEAM ID	PNT2022TMID29717
PROJECT TITLE	INDUSTRY SPECIFIC INTELLIGENT FIRE MANAGEMENT SYSTEM

Sprint 4

Program:

```
#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:

WOKWI SAVE SHARE fire detect Docs

sketch.ino diagram.json Library Manager

```

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

```

Simulation 00:51.115 35%

```

Fire is Detected
Gas Status : Gas leakage Detected
Sprinkler Status : working
Exhaust fan Status : Working

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

Flame Status : Fire is Detected
Gas Status : Gas leakage Detected
Sprinkler Status : working
Exhaust fan Status : Working

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

Flame Status : Fire is Detected
Gas Status : Gas leakage Detected
Sprinkler Status : working
Exhaust fan Status : Working

```

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sketch.ino diagram.json Library Manager

```

28
29 //initial variable
30
31 temperature = random(-20,125);
32 gas = random(0,1000);
33 int flamereading = random(200,1024);
34 flame = map(flamereading,0,1024,0,2);
35
36
37 //set a flame status
38 switch (flame) {
39
40
41
42 case 0:
43     flame_status = "No Fire";
44     Serial.println("Flame Status : "+flame_status);
45     break;
46 case 1:
47     flame_status = "Fire is Detected";
48     Serial.println("Flame Status : "+flame_status);
49     break;
50 }
51
52 //Gas Detection
53
54
55 if(gas > 100){
56     Serial.println("Gas Status : Gas leakage Detected");
57

```

Simulation 01:07.297 36%

```

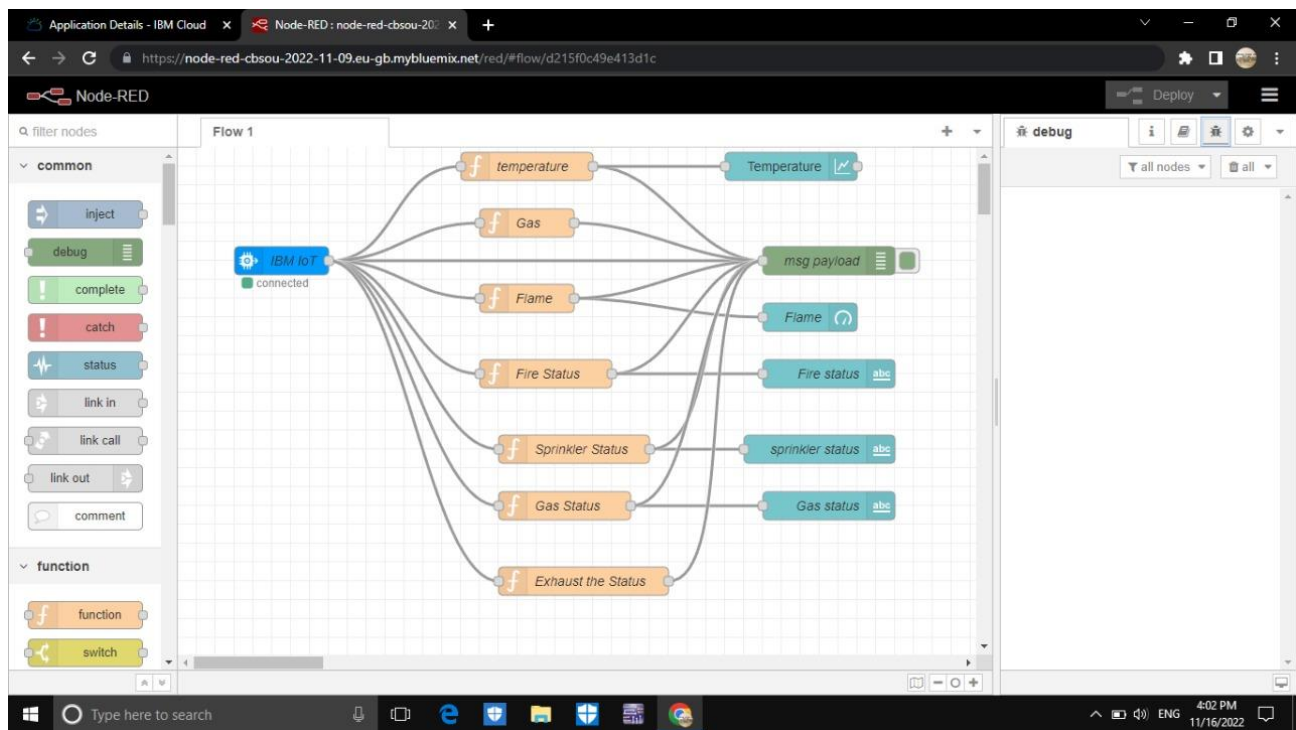
Flame Status : Fire is Detected
Gas Status : Gas leakage Detected
Sprinkler Status : working
Exhaust fan Status : Working

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

Flame Status : No Fire
Gas Status : Gas leakage Detected
Sprinkler Status : not working
Exhaust fan Status : Working

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

```

IBM WATSON IOT PLATFORM

The image shows the IBM Watson IoT Platform dashboard. The top navigation bar includes 'Service Details - IBM Cloud', 'IBM Watson IoT Platform', and 'Telegram Web'. The main content area displays a table of recent events for a device. The table has four columns: 'Event', 'Value', 'Format', and 'Last Received'. Below the table, it indicates '1 Simulation running'.

Event	Value	Format	Last Received
eventnandhu	{"gas":97,"temp":63,"flame":96}	json	a few seconds ago
eventnandhu	{"gas":36,"temp":120,"flame":72}	json	a minute ago
eventnandhu	{"gas":76,"temp":111,"flame":84}	json	2 minutes ago
eventnandhu	{"gas":24,"temp":61,"flame":71}	json	3 minutes ago
eventnandhu	{"gas":39,"temp":95,"flame":68}	json	3 minutes ago

1 Simulation running

NODE RED OUTPUT

