PROJECT DEVELOPMENT PHASE –SPRINT 4

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

Sprint 4

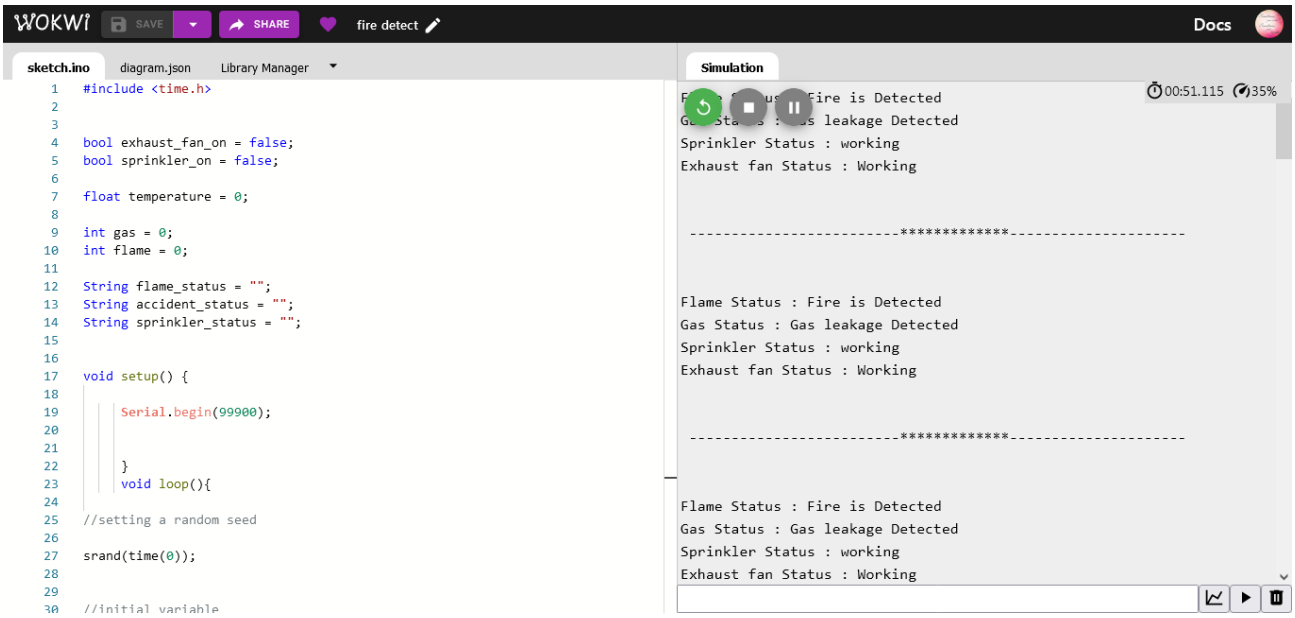
Program:

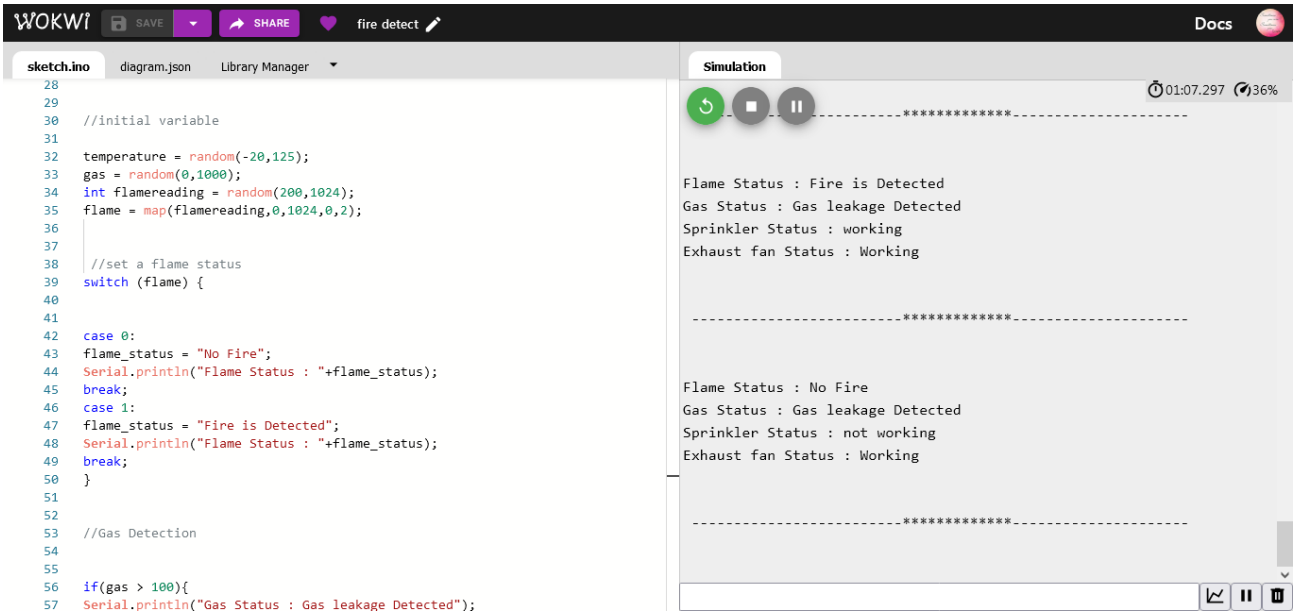
```
#include <time.h>

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) {
```

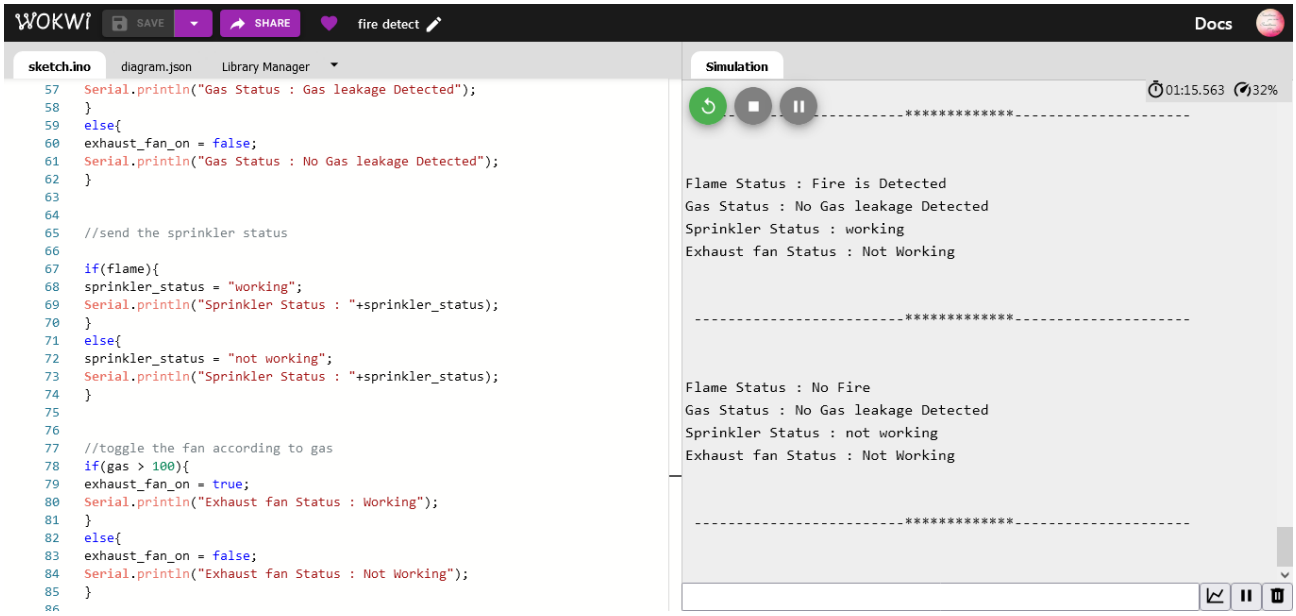
```
case 0:
   flame_status = "No Fire";
   Serial.println("Flame Status : "+flame_status);
   break;
case 1:
   flame_status = "Fire is Detected";
   Serial.println("Flame Status : "+flame_status);
   break;
}

//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("");
```

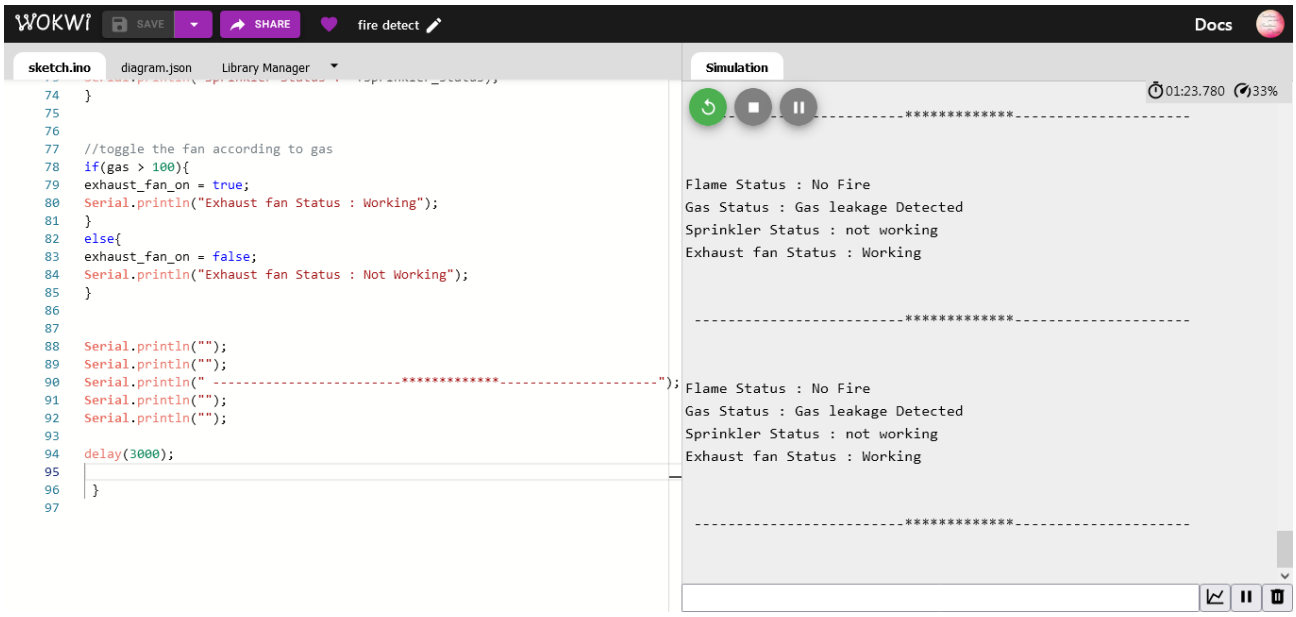
```
    delay(3000);
}
```

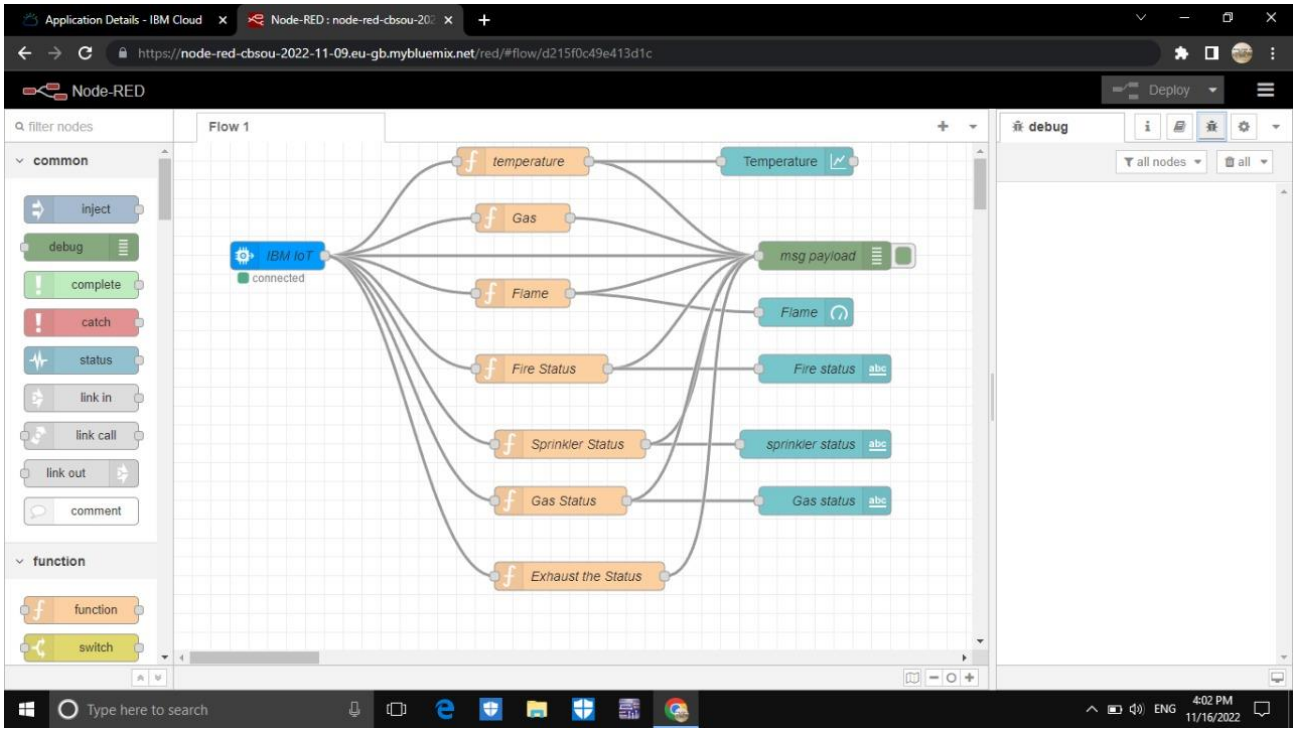
Output:



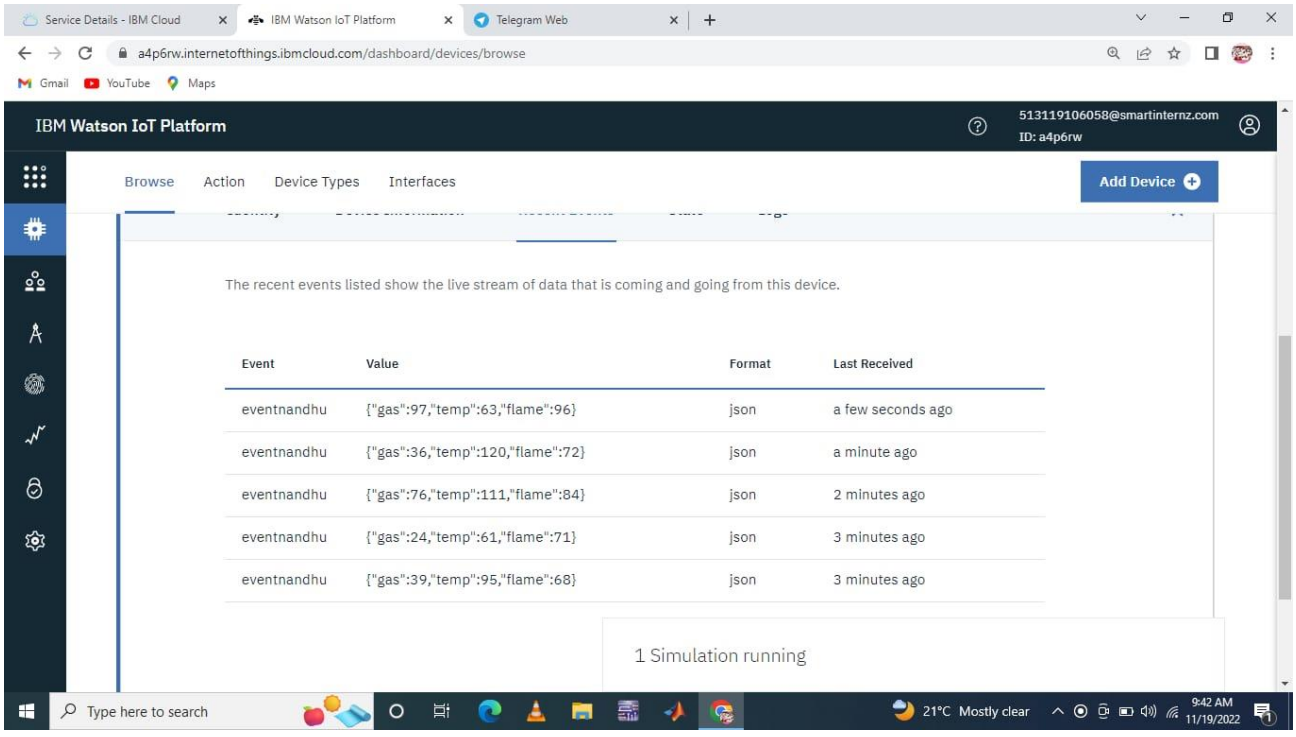



WOKWI
SAVE
SHARE
fire detect
Docs
sketch.ino
diagram.json
Library Manager
Simulation
01:15.563
32%
Serial.println("Gas Status : Gas leakage Detected");
}
else{
exhaust_fan_on = false;
Serial.println("Gas Status : No Gas leakage Detected");
}
//send the sprinkler status
if(flame){
sprinkler_status = "working";
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");
}
Flame Status : Fire is Detected
Gas Status : No Gas leakage Detected
Sprinkler Status : working
Exhaust fan Status : Not Working
Flame Status : No Fire
Gas Status : No Gas leakage Detected
Sprinkler Status : not working
Exhaust fan Status : Not Working


WOKWI
SAVE
SHARE
fire detect
Docs
sketch.ino
diagram.json
Library Manager
Simulation
01:23.780
33%
}
//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);
}
Flame Status : No Fire
Gas Status : Gas leakage Detected
Sprinkler Status : not 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



NODE RED OUTPUT