Project Development

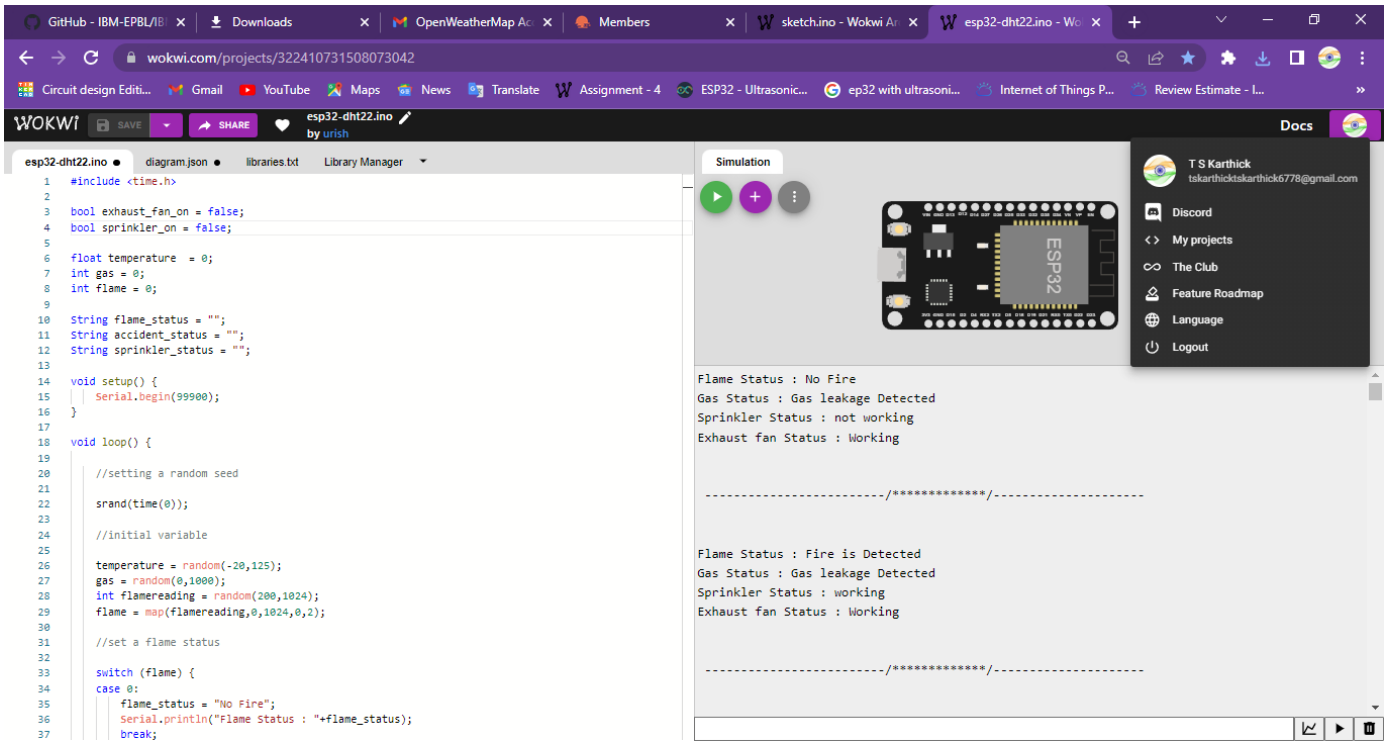
Phase

Sprint - I

Date	29 October 2022
Team ID	PNT2022TMID47980
Project Name	Industry-Specific Intelligent Fire Management System

Link: https://wokwi.com/projects/322410731508073042

OUTPUT:



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(2000);


}
```

TEST CASES:

S.NO	INPUT	OUTPUT	RESULT
1	Gas:62 Temperature:45.30 Flame:366	Exhaust Fan: Not Working Sprinkler: Not Working Status Logged: Done	PASSED
2	Gas:598 Temperature:51.40 Flame:412	Exhaust Fan: Working Sprinkler: Not Working Status Logged: Done	PASSED

3	Gas:334 Temperature:49.30 Flame:912	Exhaust Fan: Working Sprinkler: Working Status Logged: Done	PASSED
4	Gas:18 Temperature:67.90 Flame:745	Exhaust Fan: Not Working Sprinkler: Working Status Logged: Done	PASSED
5	Gas: 354 Temperature:69.30 Flame:446	Exhaust Fan: Working Sprinkler: Not Working Status Logged: Done	PASSED