Sprint-1

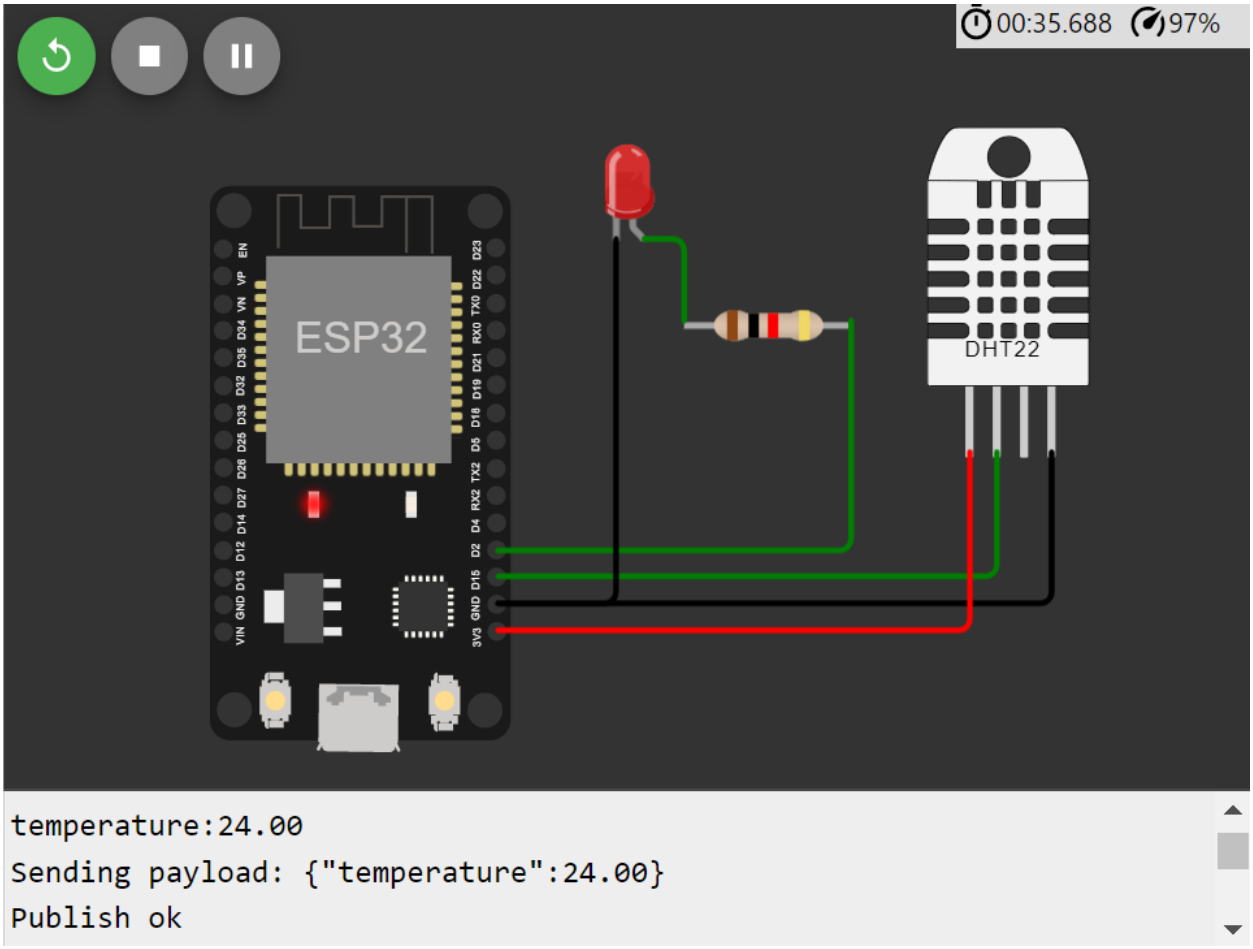
Date	7 November 2022
Team ID	PNT2022TMID34904
Project Name	Industry-Specific Intelligent Fire Management System

Display the temperature values:

Submitted by: Fershia G Geona,Reshma Xavier

Student Roll number:962819106014,962819106033

Wokwi link: https://wokwi.com/projects/347571790373978706



Program:

```
#include <WiFi.h>//library for wifi

#include <PubSubClient.h>//library for MQtt

#include "DHT.h"// Library for dht11

#define DHTPIN 15   // what pin we're connected to

#define DHTTYPE DHT22   // define type of sensor DHT 11

#define LED 2

DHT dht (DHTPIN, DHTTYPE);// creating the instance by passing pin and typr
of dht connected


void callback(char* subscribetopic, byte* payload, unsigned int
payloadLength);


//-------credentials of IBM Accounts------


#define ORG "zbgr67"//IBM ORGANITION ID

#define DEVICE_TYPE "fershidevicetype"//Device type mentioned in ibm
watson IOT Platform

#define DEVICE_ID "fershideviceid"//Device ID mentioned in ibm watson IOT
Platform

#define TOKEN "fershiageona"      //Token

String data3;

float t;
```

```
//-------- Customise the above values --------

char server[] = ORG ".messaging.internetofthings.ibmcloud.com";// Server Name

char publishTopic[] = "iot-2/evt/Data/fmt/json";// topic name and type of event perform and format in which data to be send

char subscribetopic[] = "iot-2/cmd/command/fmt/String";// cmd  REPRESENT command type AND COMMAND IS TEST OF FORMAT STRING

char authMethod[] = "use-token-auth";// authentication method

char token[] = TOKEN;

char clientId[] = "d:" ORG ":" DEVICE_TYPE ":" DEVICE_ID;//client id



//-----------------------------------------

WiFiClient wifiClient; // creating the instance for wificlient

PubSubClient client(server, 1883, callback ,wifiClient); //calling the predefined client id by passing parameter like server id,portand wificredential

void setup()// configureing the ESP32

{

  Serial.begin(115200);

  dht.begin();

  pinMode(LED,OUTPUT);

  delay(10);

  Serial.println();

  wificonnect();

  mqttconnect();

}


void loop()// Recursive Function
```

```
{


  t = dht.readTemperature();
  Serial.print("temperature:");
  Serial.println(t);


  PublishData(t);
  delay(1000);
  if (!client.loop()) {
    mqttconnect();
  }
}




/*.....................................retrieving to
Cloud.............................*/


void PublishData(float temp) {
  mqttconnect();//function call for connecting to ibm
  /*
     creating the String in in form JSon to update the data to ibm cloud
  */
  String payload = "{\"temperature\":";
  payload += temp;
  payload += "}";
```

```
  Serial.print("Sending payload: ");
  Serial.println(payload);



  if (client.publish(publishTopic, (char*) payload.c_str())) {
    Serial.println("Publish ok");// if it sucessfully upload data on the cloud then it will print publish ok in Serial monitor or else it will print publish failed
  } else {
    Serial.println("Publish failed");
  }


}
void mqttconnect() {
  if (!client.connected()) {
    Serial.print("Reconnecting client to ");
    Serial.println(server);
    while (!!!client.connect(clientId, authMethod, token)) {
      Serial.print(".");
      delay(500);
    }


     initManagedDevice();
     Serial.println();
  }
}
void wificonnect() //function defination for wificonnect
```

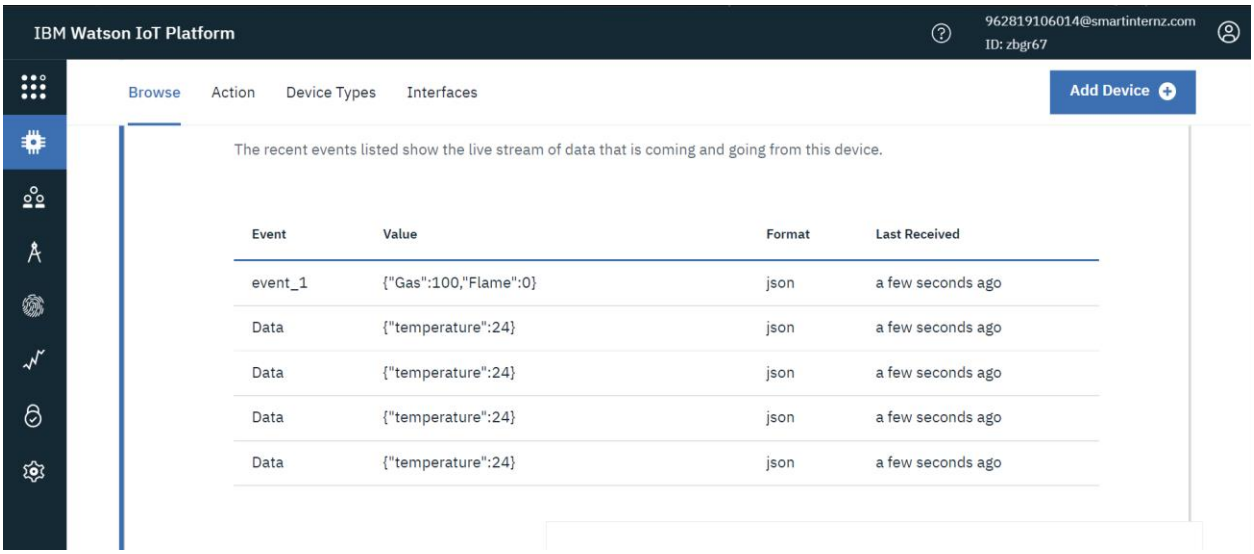
```
{
  Serial.println();
  Serial.print("Connecting to ");

  WiFi.begin("Wokwi-GUEST", "", 6);//passing the wifi credentials to
establish the connection
  while (WiFi.status() != WL_CONNECTED) {
    delay(500);
    Serial.print(".");
  }
  Serial.println("");
  Serial.println("WiFi connected");
  Serial.println("IP address: ");
  Serial.println(WiFi.localIP());
}

void initManagedDevice() {
  if (client.subscribe(subscribetopic)) {
    Serial.println((subscribetopic));
    Serial.println("subscribe to cmd OK");
  } else {
    Serial.println("subscribe to cmd FAILED");
  }
}

void callback(char* subscribetopic, byte* payload, unsigned int
payloadLength)
{
```

```
  Serial.print("callback invoked for topic: ");
  Serial.println(subscribetopic);
  for (int i = 0; i < payloadLength; i++) {
    //Serial.print((char)payload[i]);
    data3 += (char)payload[i];
  }

  Serial.println("data: "+ data3);
  if(data3=="lighton")
  {
Serial.println(data3);
digitalWrite(LED,HIGH);

  }

  else
  {
Serial.println(data3);
digitalWrite(LED,LOW);

  }
data3="";


}
```

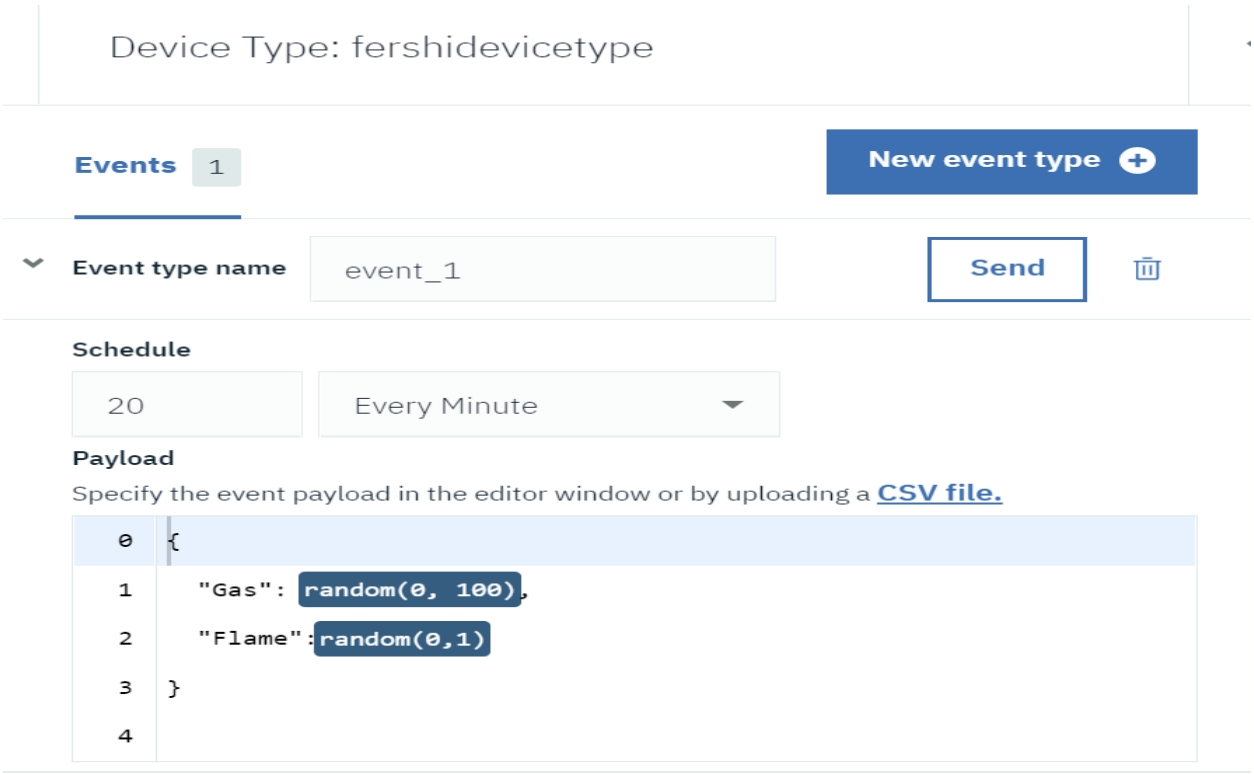
Displaying flame sensor values:

Submitted by:Godsy D,Aswini A

Student Roll no:962819106016,962819106008



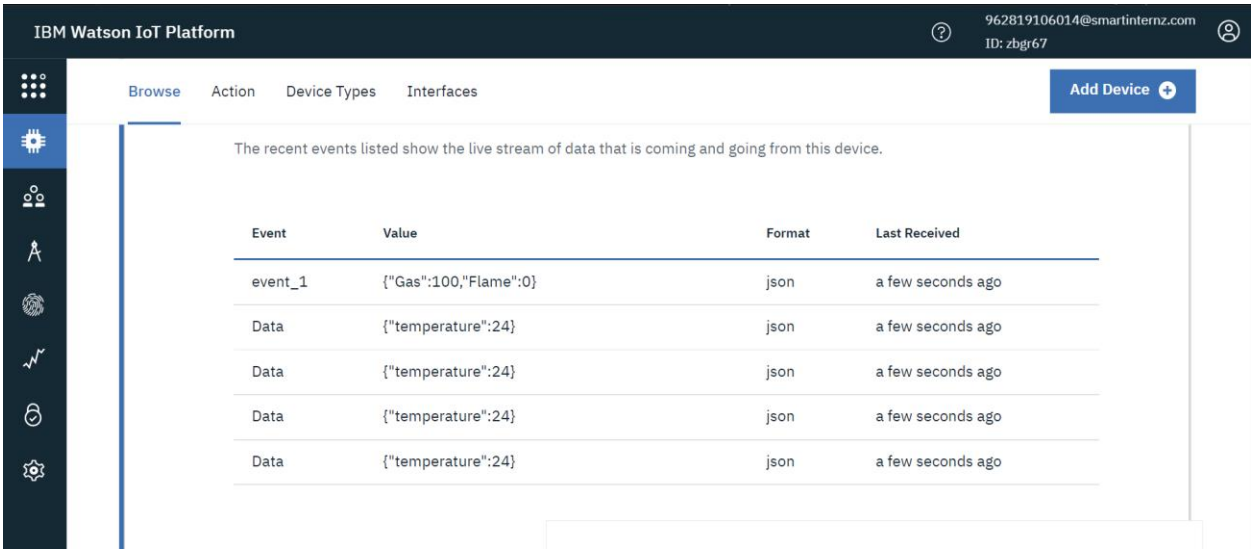
Code:



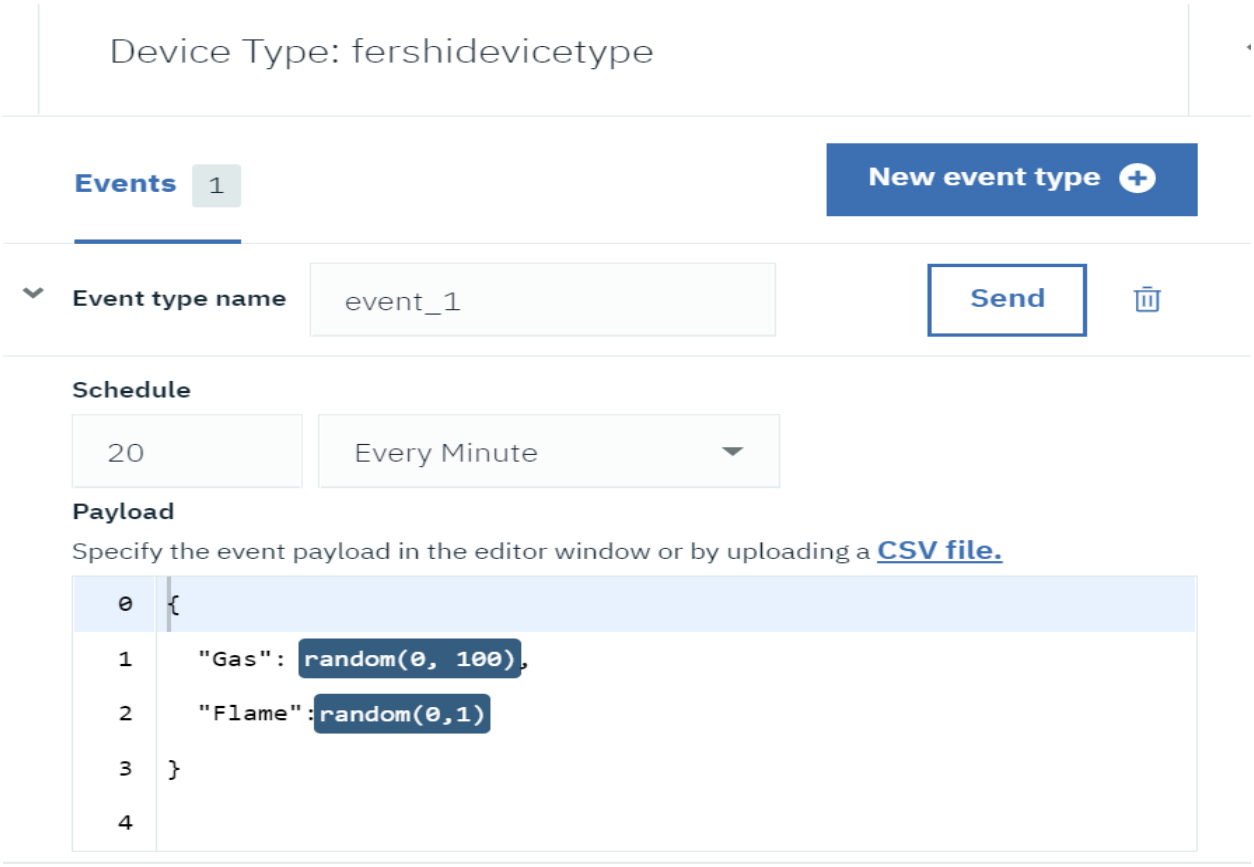
Displaying gas sensor values:

Submitted by:Fershia G Geona, Reshma Xavier

Student Roll number:962819106014,962819106033



Code:


Device Type: fershidevicetype
Events 1
New event type
Event type name
event_1
Send
Schedule
20
Every Minute
Payload
Specify the event payload in the editor window or by uploading a CSV file.
0 {
1 "Gas": random(0, 100),
2 "Flame":random(0,1)
3 }
4