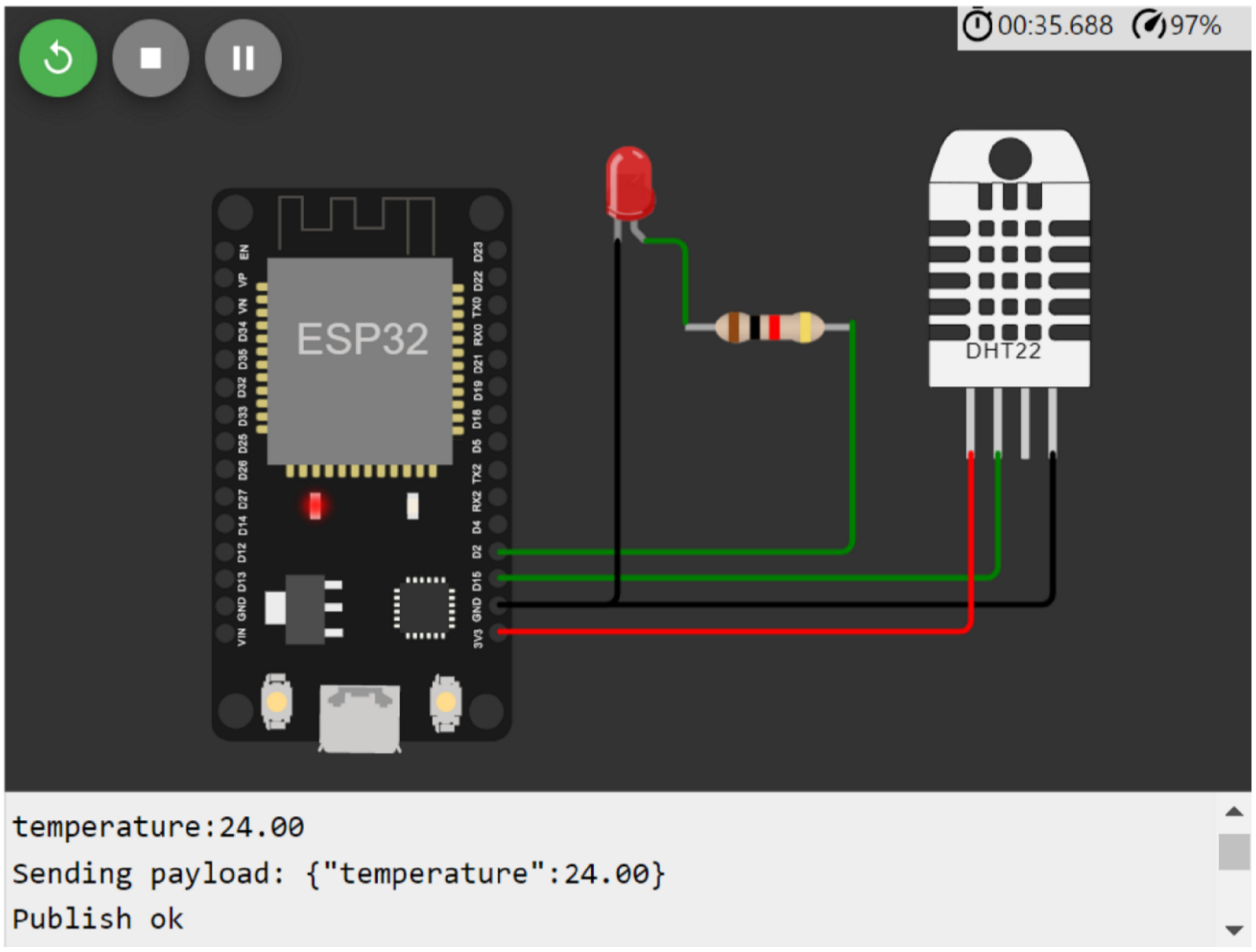
Sprint-1

Date	16 November 2022
Team ID	PNT2022TMID22484
Project Name	Industry-Specific Intelligent Fire Management System

Display the temperature values:



```
temperature:24.00
Sending payload: {"temperature":24.00}
Publish ok
```

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];

  }

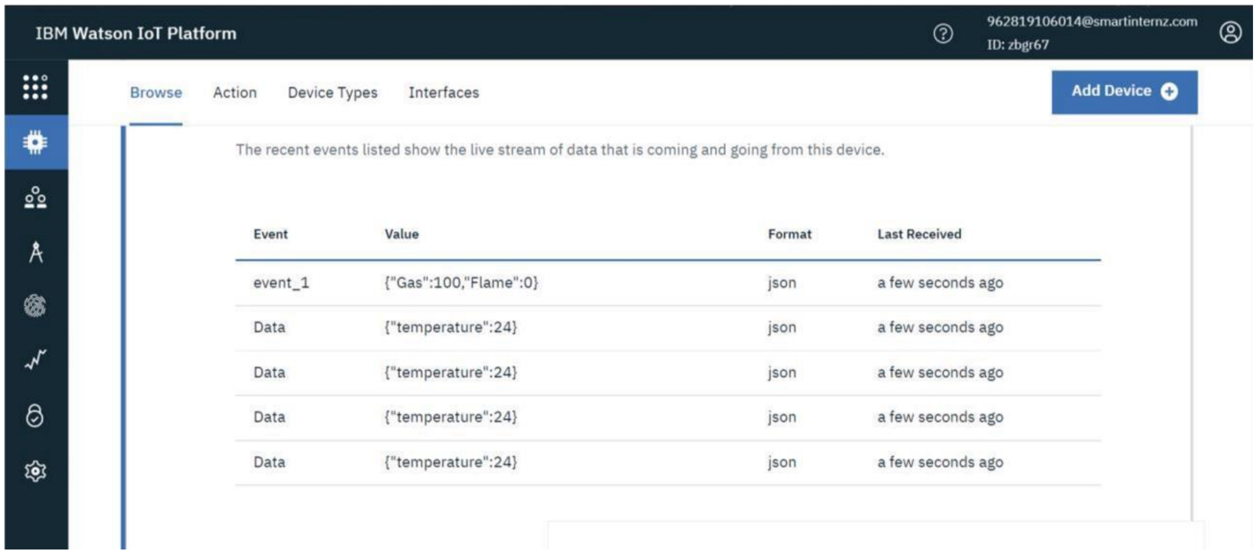
  Serial.println("data: "+ data3);   if(data3=="lighton")

  {
Serial.println(data3); digitalWrite(LED,HIGH);

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

}
```

Displaying flame sensor values:


IBM Watson IoT Platform

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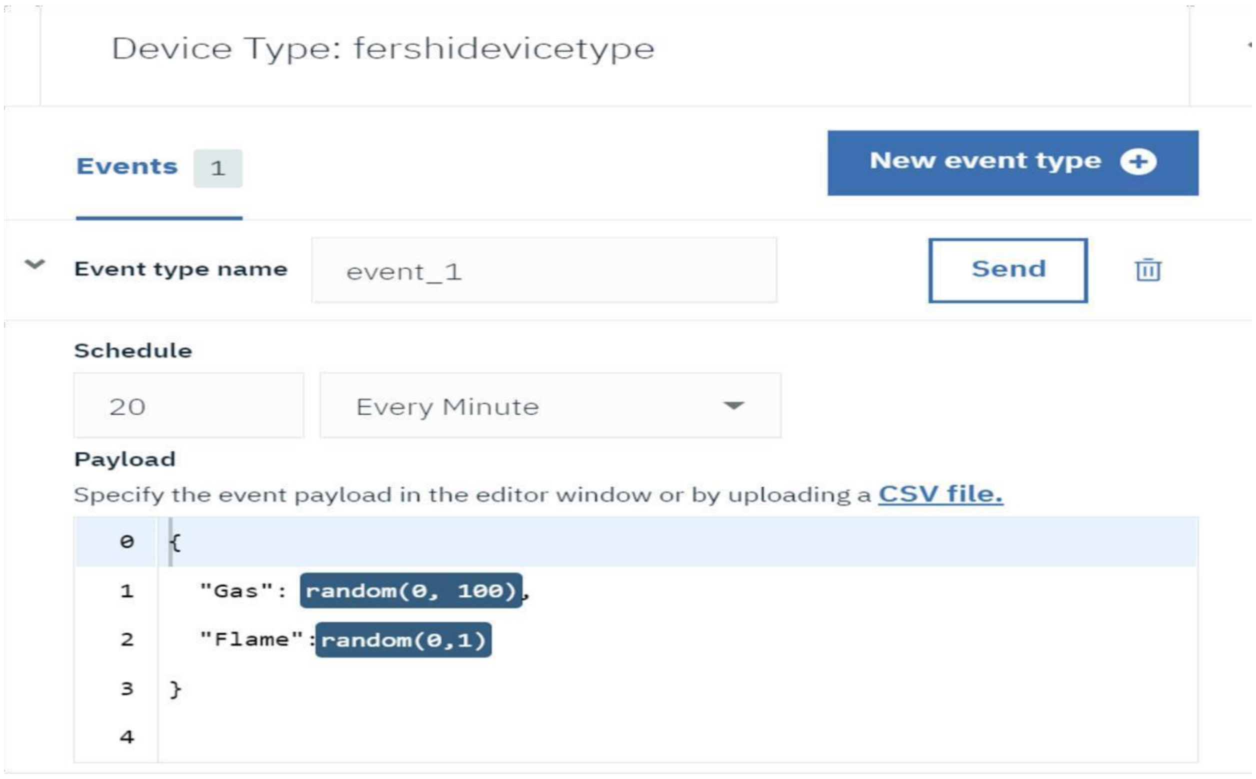
ID: zbgr67

Browse Action Device Types Interfaces Add Device

The recent events listed show the live stream of data that is coming and going from this device.

Event	Value	Format	Last Received
event_1	{"Gas":100,"Flame":0}	json	a few seconds ago
Data	{"temperature":24}	json	a few seconds ago
Data	{"temperature":24}	json	a few seconds ago
Data	{"temperature":24}	json	a few seconds ago
Data	{"temperature":24}	json	a few seconds ago

Code:


Device Type: fershidevicetype

Events 1 New event type

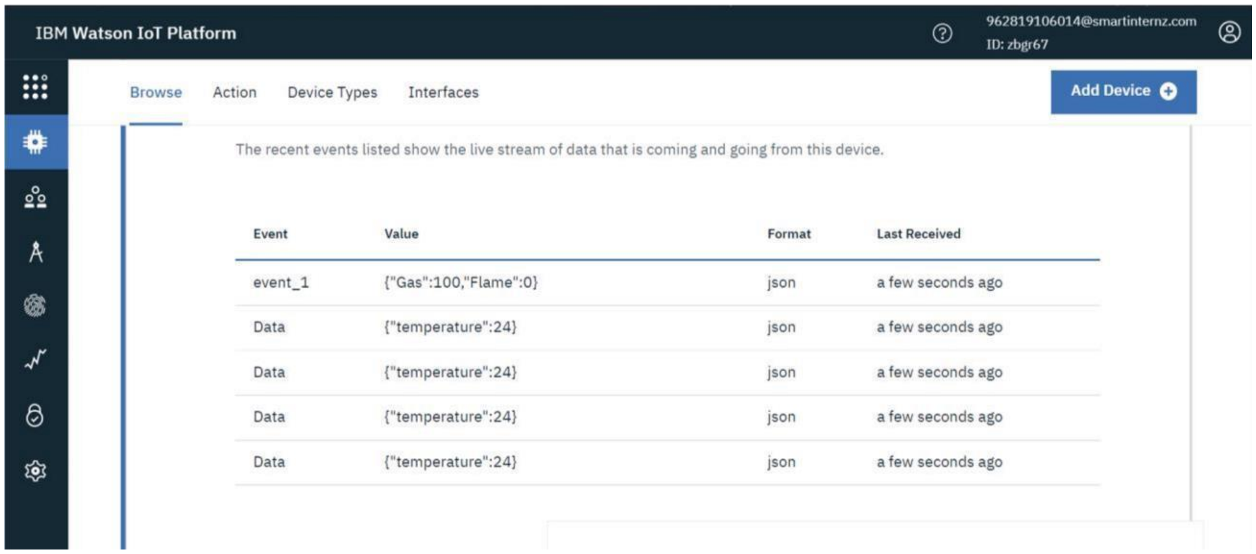
Event type name: event_1 Send

Schedule: 20 Every Minute

Payload
Specify the event payload in the editor window or by uploading a CSV file.

```
{
  "Gas": random(0, 100),
  "Flame":random(0,1)
}
```

Displaying gas sensor values:



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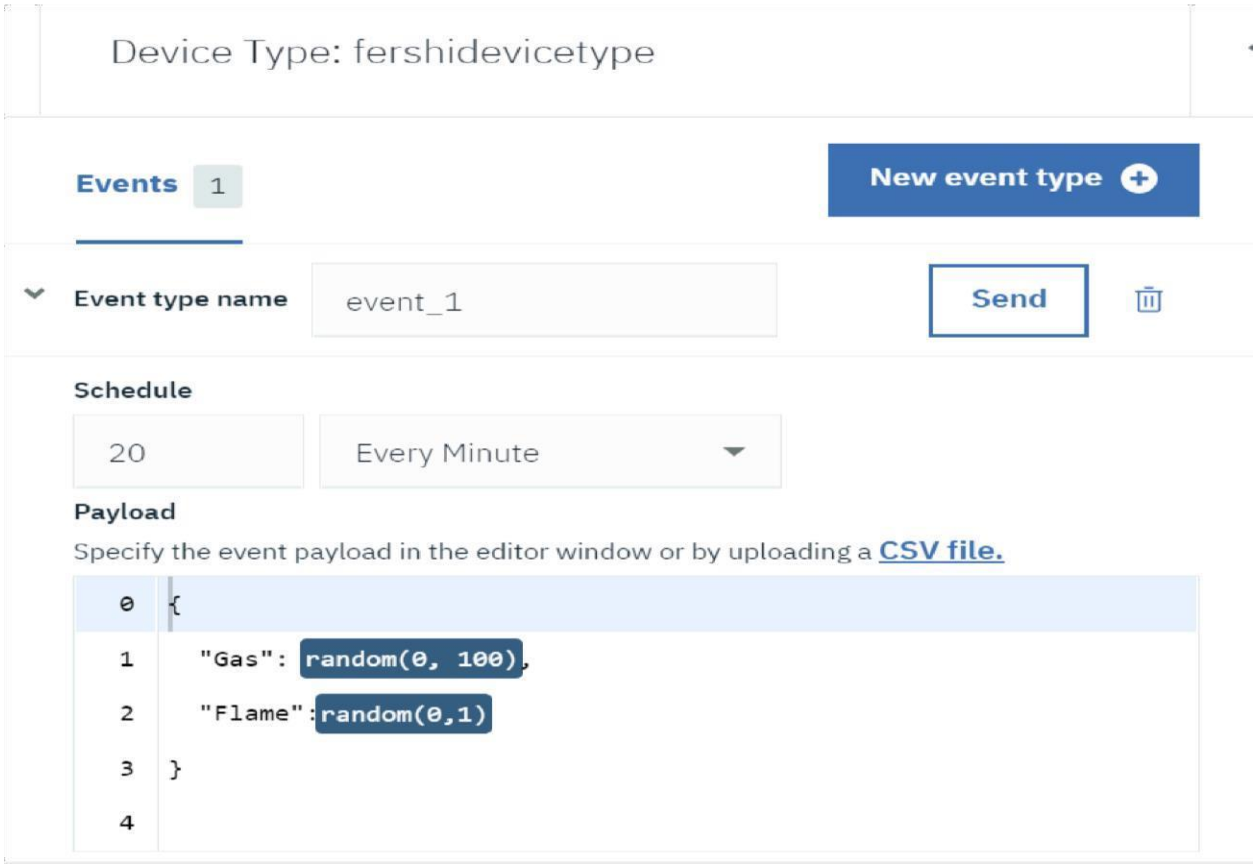
Code:



Device Type: fershidevicetype

Event type name: event_1

Schedule: 20 Every Minute

Payload

Specify the event payload in the editor window or by uploading a CSV file.

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{
  "Gas": random(0, 100),
  "Flame":random(0,1)
}

```