```
#include <WiFi.h>
#include <PubSubClient.h>
#include <ArduinoJson.h>

WiFiClient wifiClient;
#define ORG "oa3490"
#define DEVICE_TYPE "TestDeviceType"
#define DEVICE_ID "12345"
#define TOKEN "-A)0raS44f)fdjYBVS"
#define speed 0.034

char server[] = ORG ".messaging.internetofthings.ibmcloud.com";
char publishTopic[] = "iot-2/evt/abcd_1/fmt/json"; char topic[]
= "iot-2/cmd/home/fmt/String"; char authMethod[] = "use-token-
auth"; char token[] = TOKEN;
char clientId[] = "d:" ORG ":" DEVICE_TYPE ":" DEVICE_ID;
PubSubClient client(server, 1883, wifiClient); void
publishData();
 const int
trigpin=5; const
int echopin=18;
String command;

String data="";
String lat="14.167589";
String lon="80.248510";
String name="point2";
String icon="";
long duration;
int dist;
void setup()
{ Serial.begin(115200) ; pinMode(trigpin,
  OUTPUT)
  ; pinMode(echopin, INPUT)
  ;          wifiConnect();
  mqttConnect();
}
void loop() {
```

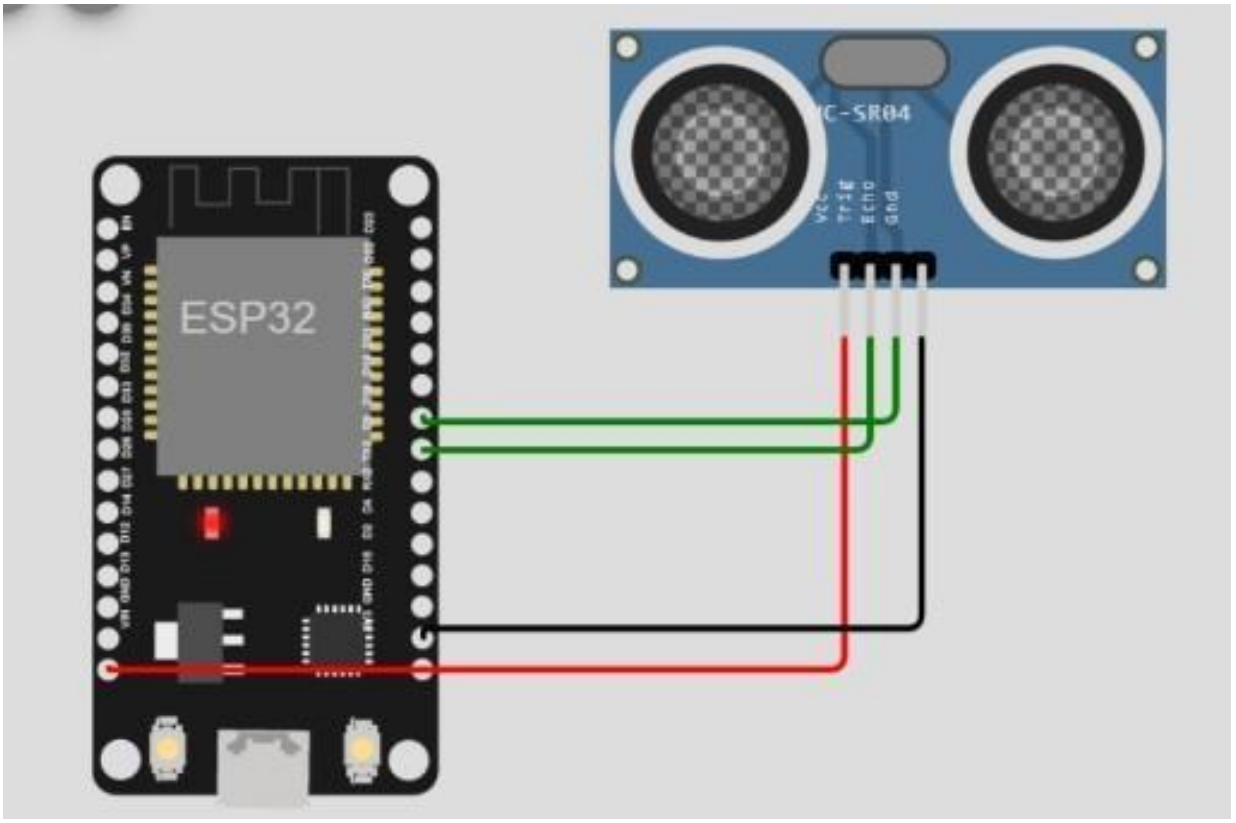
```
  publishData(); delay(500)
  ;
 if (!client.loop()) {
    mqttConnect();
  }
}
 void wifiConnect()
{
  Serial.print("Connecting to "); Serial.print("Wifi")
  ; WiFi.begin("Wokwi-GUEST", "", 6) ; while (
  WiFi.status() != WL_CONNECTED) { delay(500)
  ; Serial.print(".") ;
  }
  Serial.print("WiFi connected, IP address: ") ;
Serial.println( WiFi.localIP());
}
void mqttConnect() {
  if (! client.connected()) {

    Serial.print("Reconnecting MQTT client to ") ;
Serial.println( server); while (!client.connect(clientId,
    authMethod, token)) { Serial.print(".") ; delay(1000)
    ; }
    initManagedDevice(); Serial.println()
    ;
  }
}
 void initManagedDevice()
{
  if ( client.subscribe(topic)) {
     Serial.println( client.subscribe(topic));
    Serial.println("subscribe to cmd OK") ;
  } else {
    Serial.println("subscribe to cmd FAILED") ;
  } } void publishData()
{ digitalWrite(trigpin,LOW) ;
digitalWrite(trigpin,HIGH) ;
delayMicroseconds(10) ;
digitalWrite(trigpin,LOW) ;
duration=pulseIn(echopin,HIGH) ;
dist=duration*speed/2;
if(dist<100){
    dist=100- dist; icon="fa- trash";
```

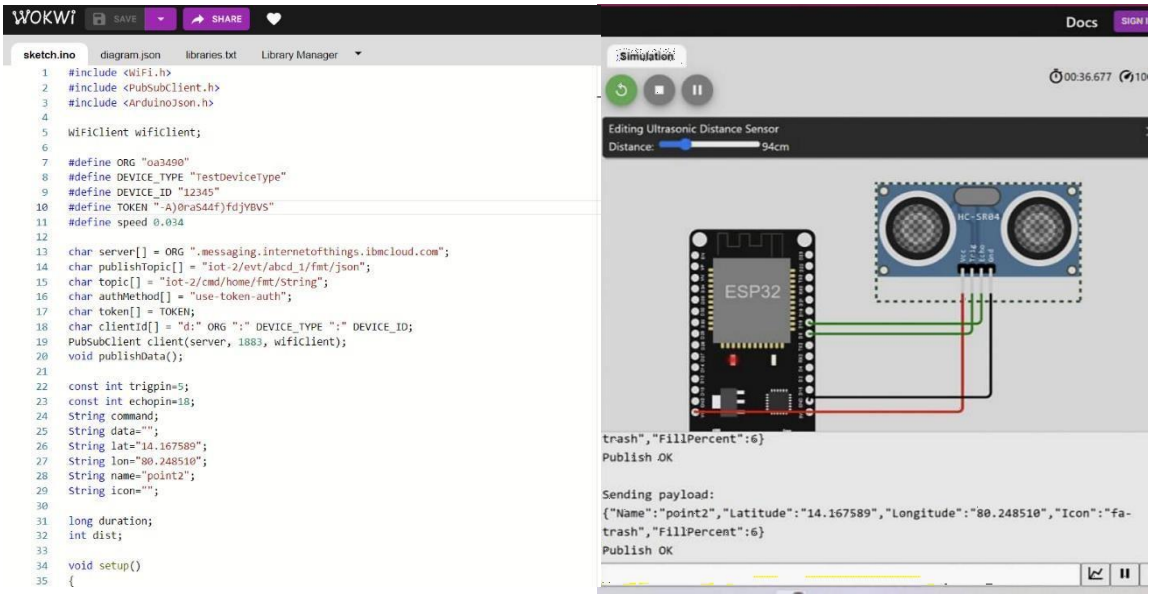
```
  }else{ dist=0;
    icon="fa-trash- o";
  }
  DynamicJsonDocument doc(1024) ;
  String payload; doc["Name"]=
  name; doc["Latitude"]= lat;
  doc["Longitude"]= lon;
  doc["Icon"]= icon;
  doc["FillPercent"]= dist;
  serializeJson(doc, payload);
  delay(3000) ; Serial.print("\n")
  ;
  Serial.print("Sending payload: ") ; Serial.println( payload);


  if (client.publish(publishTopic, (char*) payload.c_str())) {
    Serial.println("Publish OK") ;
  } else {
    Serial.println("Publish FAILED") ;
  }
}
```

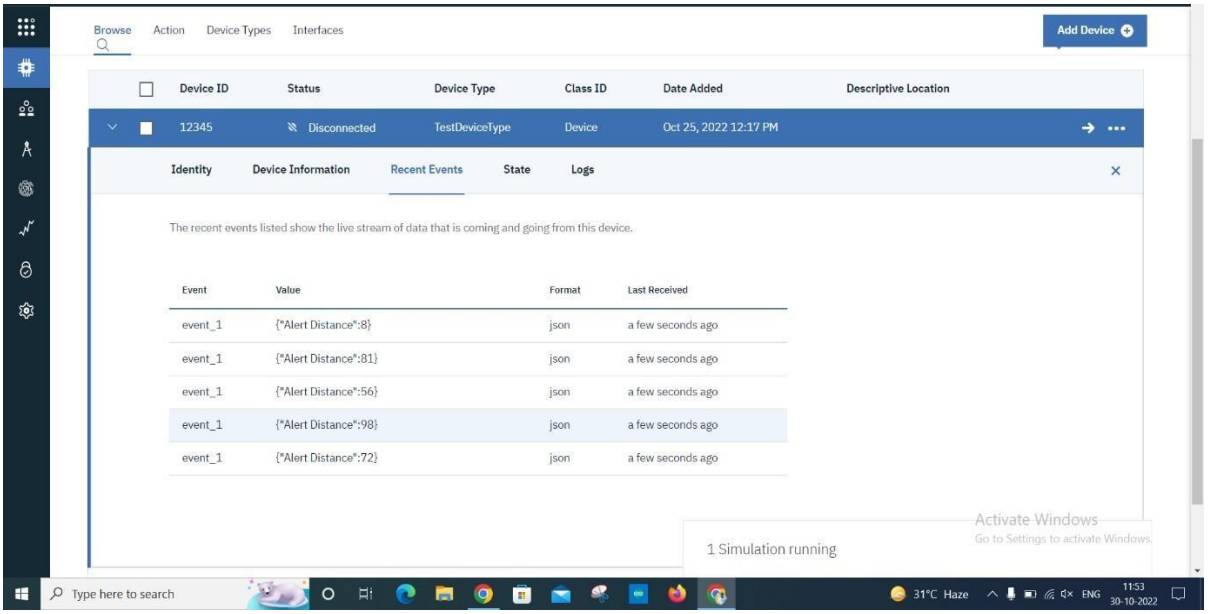
Connections:



Output:



Output :(IBM Cloud)


Browse
Action
Device Types
Interfaces
Add Device
Device ID
Status
Device Type
Class ID
Date Added
Descriptive Location
12345
Disconnected
TestDeviceType
Device
Oct 25, 2022 12:17 PM
Identity
Device Information
Recent Events
State
Logs
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
{"Alert Distance":8}
json
a few seconds ago
event_1
{"Alert Distance":81}
json
a few seconds ago
event_1
{"Alert Distance":56}
json
a few seconds ago
event_1
{"Alert Distance":98}
json
a few seconds ago
event_1
{"Alert Distance":72}
json
a few seconds ago
Activate Windows
Go to Settings to activate Windows.
1 Simulation running
Type here to search
31°C Haze
ENG
11:53
30-10-2022