PERSONAL ASSISTANCE FOR SENIORS WHO ARE SELF-RELIANT

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TEAM ID	PNT2022TMID38250
PROJECT NAME	Personal Assistance For Seniors Who Are Self-Reliant
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ASSIGNMENT-4

Write code and connections in wokwi for ultrasonic sensors. Whenever the distance is less than 100 cms send an "alert" to the IBM cloud and display in the device recent events. Upload document with wokwi share link and images of IBM cloud.

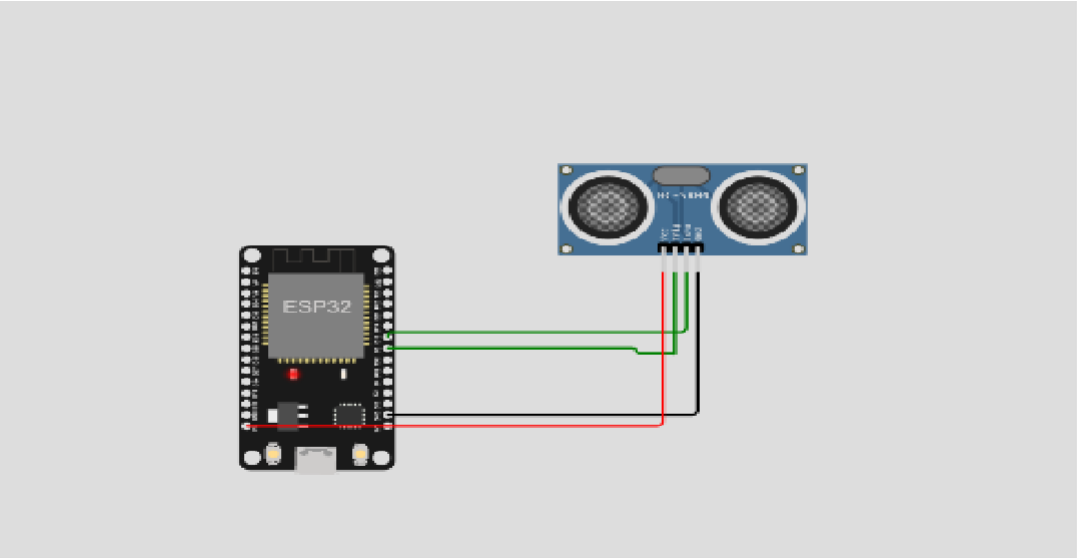
CODE:

```
#include <WiFi.h>
#include <PubSubClient.h>
#include <ArduinoJson.h>
WiFiClient wifiClient;#define ORG
#define ORG "8n29fa"
#define DEVICE_TYPE "raspberrypi"
#define DEVICE_ID "12345"
#define TOKEN "12345678"
#define speed 0.034

char server[] = ORG ".messaging.internetofthings.ibmcloud.com";
char publishTopic[] = "iot-2/evt/raspberrypi_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");
  }
}
```

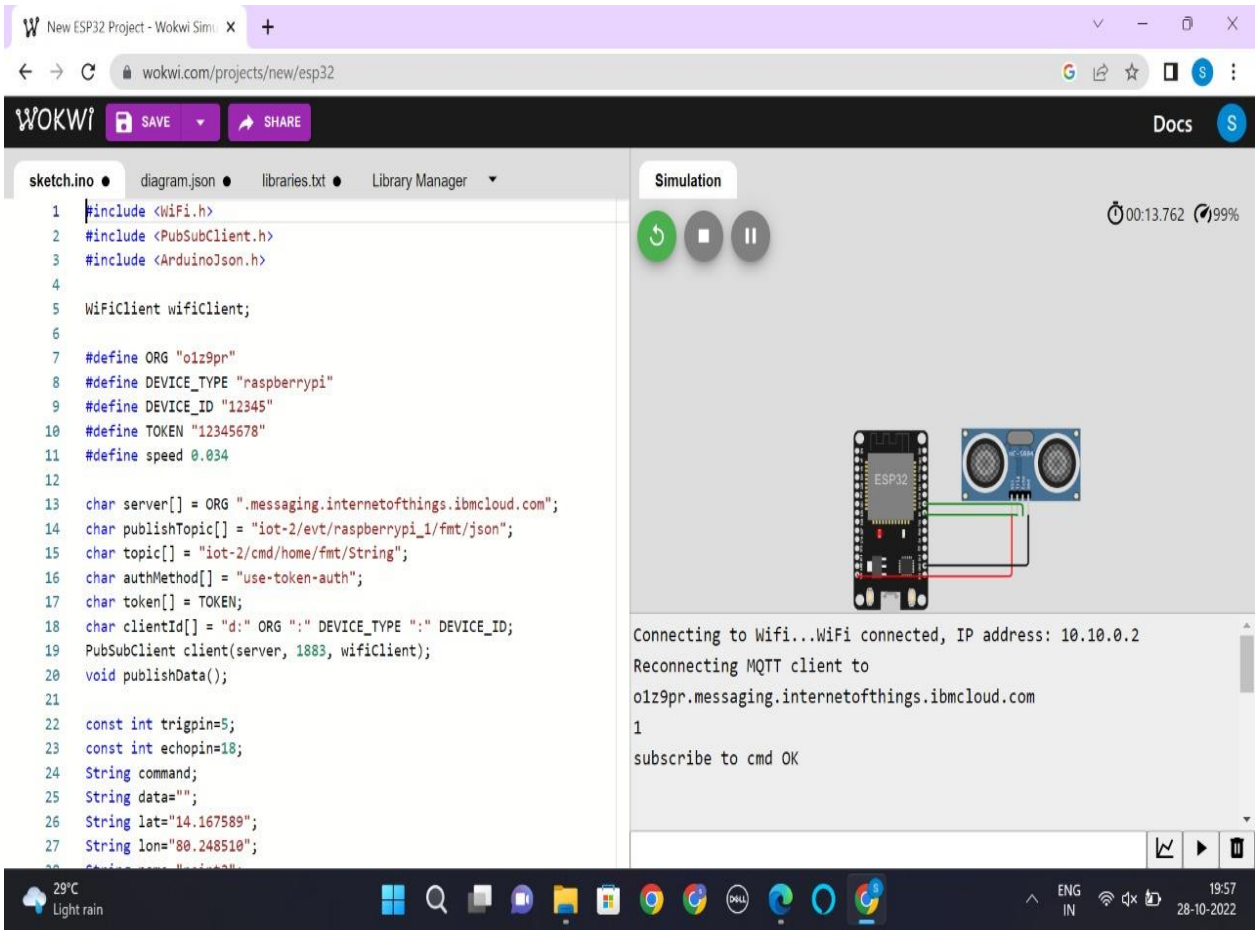
CONNECTIONS:

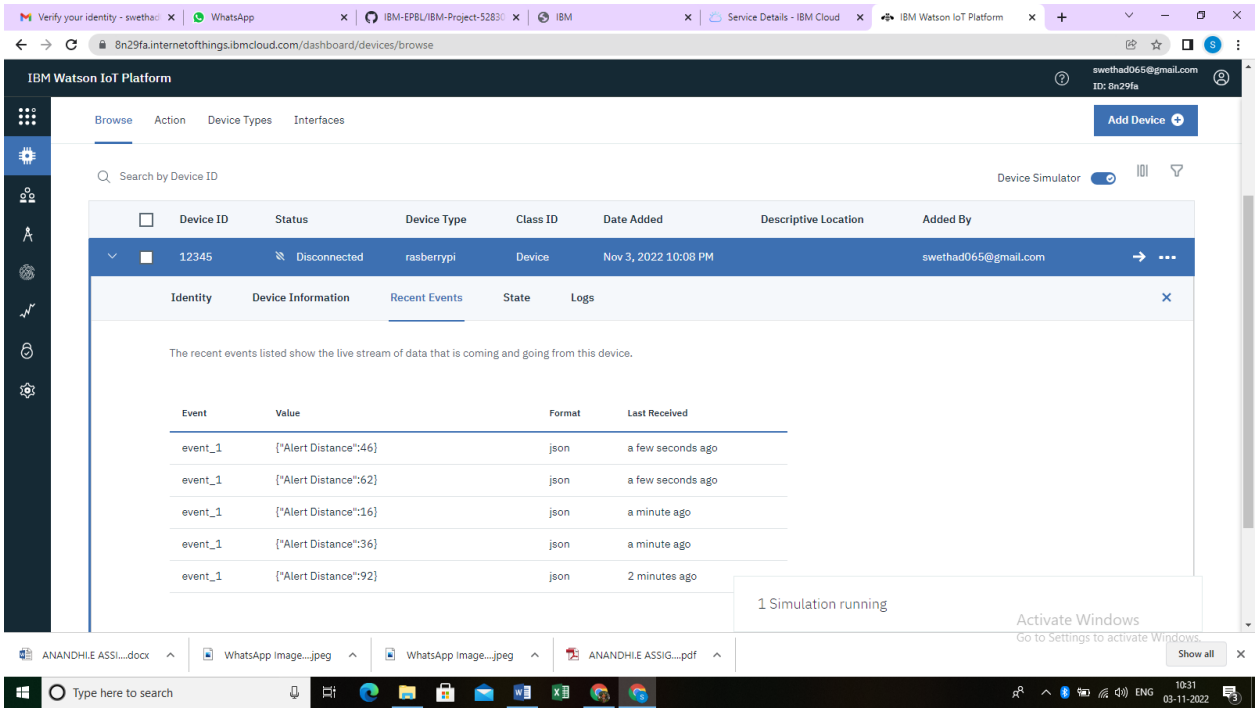


WOKWI LINK:

https://wokwi.com/projects/346772907862524499

OUTPUT:




IBM Watson IoT Platform
swethad065@gmail.com
ID: 8n29fa
Browse
Action
Device Types
Interfaces
Add Device
Search by Device ID
Device Simulator
Device ID
Status
Device Type
Class ID
Date Added
Descriptive Location
Added By
12345
Disconnected
rasberrypi
Device
Nov 3, 2022 10:08 PM
swethad065@gmail.com
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":46}
json
a few seconds ago
event_1
{"Alert Distance":62}
json
a few seconds ago
event_1
{"Alert Distance":16}
json
a minute ago
event_1
{"Alert Distance":36}
json
a minute ago
event_1
{"Alert Distance":92}
json
2 minutes ago
1 Simulation running
Activate Windows
Go to Settings to activate Windows.
Show all
Type here to search
ENG
10:31
03-11-2022