

**PERSONAL ASSISTANCE FOR SENIORS WHO ARE SELF-  
RELIANT**

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<b>TEAM ID</b>	PNT2022TMID38250
<b>PROJECT NAME</b>	Personal Assistance For Seniors Who Are Self-Reliant
<b>REGISTER NO</b>	412319205027

**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));
    }
}

```

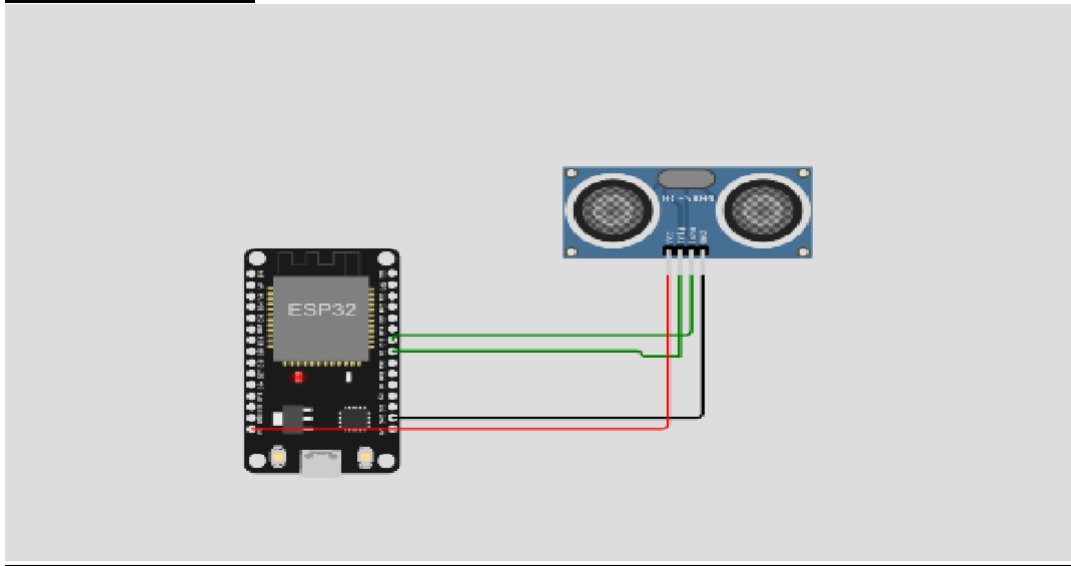
```

        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:

W New ESP32 Project - Wokwi Simu X +

wokwi.com/projects/new/esp32

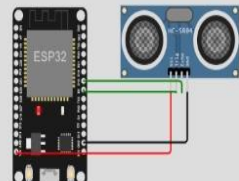
WOKWI SAVE SHARE Docs

sketch.ino diagram.json libraries.txt Library Manager

```
1 #include <WiFi.h>
2 #include <PubSubClient.h>
3 #include <ArduinoJson.h>
4
5 WiFiClient wificlient;
6
7 #define ORG "o1z9pr"
8 #define DEVICE_TYPE "raspberrypi"
9 #define DEVICE_ID "12345"
10 #define TOKEN "12345678"
11 #define speed 0.034
12
13 char server[] = ORG ".messaging.internetofthings.ibmcloud.com";
14 char publishTopic[] = "iot-2/evt/raspberrypi_1/fmt/json";
15 char topic[] = "iot-2/cmd/home/fmt/String";
16 char authMethod[] = "use-token-auth";
17 char token[] = TOKEN;
18 char clientId[] = "d:" ORG ":" DEVICE_TYPE ":" DEVICE_ID;
19 PubSubClient client(server, 1883, wificlient);
20 void publishData();
21
22 const int trigpin=5;
23 const int echopin=18;
24 String command;
25 String data="";
26 String lat="14.167589";
27 String lon="80.248510";
```

Simulation

00:13.762 99%



Connecting to Wifi...WiFi connected, IP address: 10.10.0.2  
Reconnecting MQTT client to  
o1z9pr.messaging.internetofthings.ibmcloud.com  
1  
subscribe to cmd OK

29°C  
Light rain

ENG IN 19:57  
28-10-2022

Verify your identity - swetha...WhatsAppIBM-EP8L/IBM-Project-5283...IBMService Details - IBM CloudIBM Watson IoT Platform

8n29fa.internetofthings.ibmcloud.com/dashboard/devices/browse

swethad065@gmail.comID: 8n29fa

IBM Watson IoT Platform

BrowseActionDevice TypesInterfacesAdd Device

Search by Device IDDevice 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

IdentityDevice InformationRecent EventsStateLogs

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 WindowsGo to Settings to activate Windows.

ANANDHILE ASSI...docxWhatsApp Image...jpegWhatsApp Image...jpegANANDHILE ASSIG...pdf

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