

## ASSINGNMENT-IV

|                     |                  |
|---------------------|------------------|
| Team ID             | PNT2002TMID46618 |
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| Student Roll Number | 821019104001     |
| Assignment Date     | 11 November 2022 |

### CODE:

```
#include <WiFi.h>
#include <PubSubClient.h>
WiFiClient wifiClient;
String data3;
#define ORG "co65hn"
#define DEVICE_TYPE "ManiMD"
#define DEVICE_ID "manimd07"
#define TOKEN "0708012359"
#define speed 0.034 #define led 14 char server[] = ORG
".messaging.internetofthings.ibmcloud.com"; char publishTopic[]
= "iot-2/evt/manimd/fmt/json"; char topic[] = "iot-
2/cmd/led/fmt/String"; char authMethod[] = "use-token-auth";
char token[] = TOKEN;
char clientId[] = "d:" ORG ":" DEVICE_TYPE ":" DEVICE_ID;
PubSubClient client(server, 1883, wifiClient);
const int trigpin=5;
const int echopin=18;
String command;
String data="";

long duration;
float dist;
void setup() {
```

```

    Serial.begin(115200);

    pinMode(led, OUTPUT);
    pinMode(trigpin, OUTPUT);

    wifiConnect();

    mqttConnect();
} void loop() { bool isNearby =
dist < 100; digitalWrite(led,
isNearby);

    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(500);
    }
}
initManagedDevice();
Serial.println();
}
}

void initManagedDevice() { if
(client.subscribe(topic)) {
    // Serial.println(client.subscribe(topic));
    Serial.println("IBM 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){
    String payload = "{\"Alert
    Distance\":\""; payload += dist; payload
    += "\"}";
    Serial.print("\n");
    Serial.print("Sending payload: ");
    Serial.println(payload);
  }
}

```

```

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

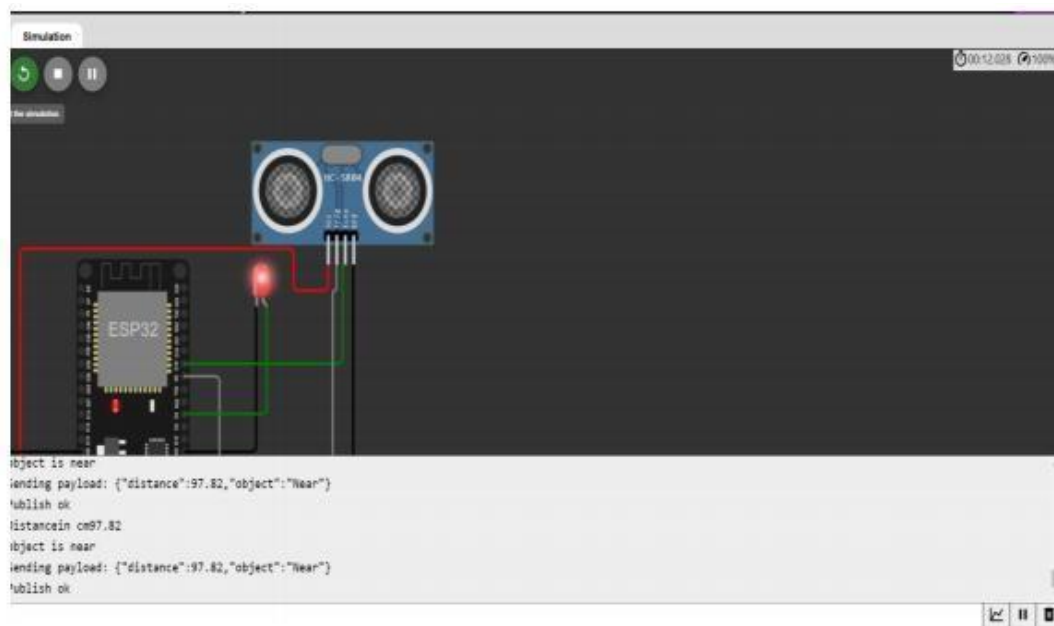
    } if(dist>100){
        String payload = "{\"Distance\":";
        payload += dist; payload += "}";
        Serial.print("\n");
        Serial.print("Sending payload: ");
        Serial.println(payload); if(client.publish(publishTopic,
        (char*) payload.c_str())) { Serial.println("Publish OK");
        }else {
            Serial.println("Publish FAILED");
        }
    }
}
}

```

## OUTPUT



**when object is near to the ultrasonic sensor**



▼

DESIAM3DETECT

Disconnected

ULTRASON

Device

Oct 20, 2022 9:46 AM

→ ...

Identity

Device Information

Recent Events

State

Logs

X

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

| Event | Value                              | Format | Last received     |
|-------|------------------------------------|--------|-------------------|
| Data  | ("distance":79.66,"object":"Near") | json   | a few seconds ago |
| Data  | ("distance":79.64,"object":"Near") | json   | a few seconds ago |
| Data  | ("distance":79.66,"object":"Near") | json   | a few seconds ago |
| Data  | ("distance":79.64,"object":"Near") | json   | a few seconds ago |
| Data  | ("distance":79.66,"object":"Near") | json   | a few seconds ago |

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