

**Code:**

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

WiFiClient wifiClient;

#define ORG "2x3y9u"
#define DEVICE_TYPE "childsafety"
#define DEVICE_ID "123456789"
#define TOKEN "101516123456789"
#define speed 0.034

char server[] = ORG ".messaging.internetofthings.ibmcloud.com";
char publishTopic[] = "iot-2/evt/Data/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="";

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");
    }
}

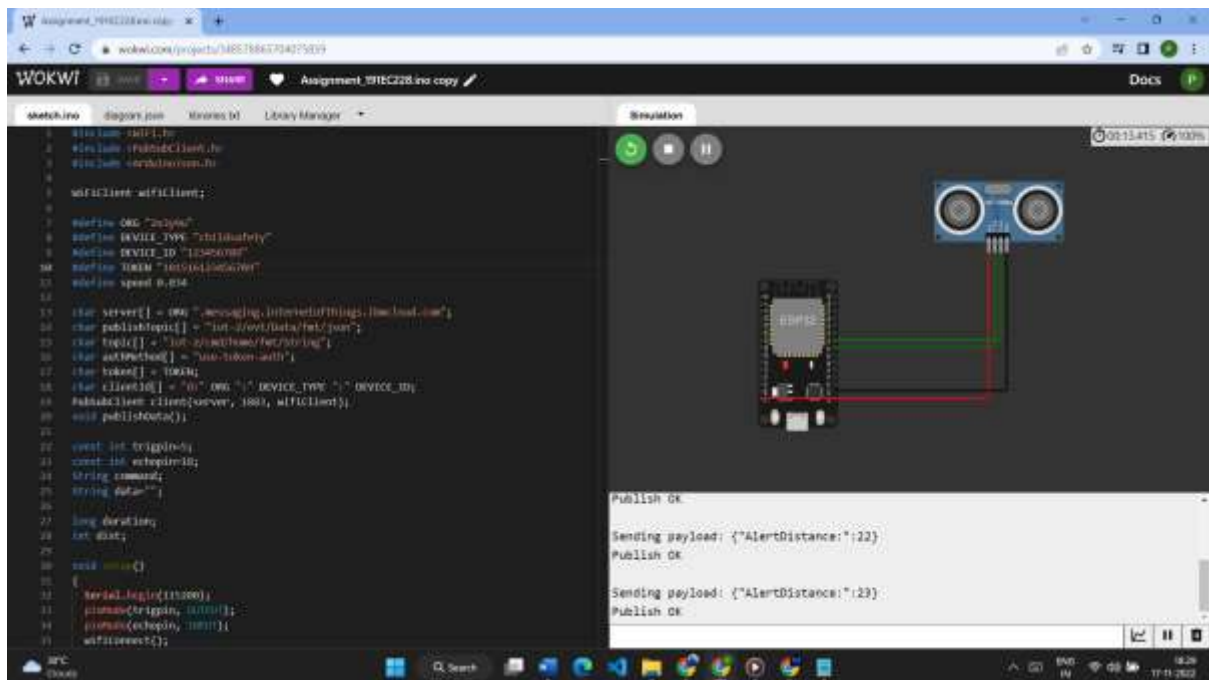
void publishData()
{
    digitalWrite(trigpin,LOW);
    digitalWrite(trigpin,HIGH);
    delayMicroseconds(10);
    digitalWrite(trigpin,LOW);
    duration=pulseIn(echopin,HIGH);
    dist=duration*speed/2;

    if(dist<100){
        DynamicJsonDocument doc(1024);
        String payload;
        doc["AlertDistance:"]=dist;
        serializeJson(doc, payload);
        delay(3000);
        Serial.print("\n");
        Serial.print("Sending payload: ");
    }
}

```

}

<https://wokwi.com/projects/348578865704075859>



## IBM cloud screenshot:

The screenshot displays the IBM Watson IoT Platform interface. The top navigation bar includes 'Browse', 'Action', 'Device Types', and 'Interfaces'. A search bar labeled 'Search by Device ID' is present. The main content area shows a table of devices with columns: Device ID, Status, Device Type, Class ID, Date Added, and Descriptive Location. One device is listed with ID '123456789', status 'Connected', and device type 'rfidability'. Below the table, a modal window titled 'Recent Events' is open, showing a list of events. The events table has columns: Event, Value, Format, and Last Received. The events are all 'Data' type, with values like '["AlertDistance":22]', and they were received 'a few seconds ago' or '2 minutes ago'. A status bar at the bottom indicates '0 Simulations running'.

Device ID	Status	Device Type	Class ID	Date Added	Descriptive Location
123456789	Connected	rfidability	Device	Nov 15, 2022 9:51 PM	

Event	Value	Format	Last Received
Data	["AlertDistance":22]	json	a few seconds ago
Data	["AlertDistance":22]	json	a few seconds ago
Data	["AlertDistance":22]	json	a few seconds ago
Data	["AlertDistance":1]	json	2 minutes ago
Data	["AlertDistance":14]	json	3 minutes ago

0 Simulations running