## **CODE:**

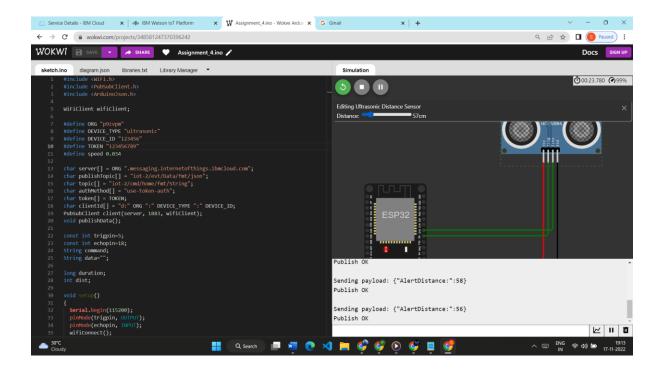
```
#include <WiFi.h>
#include < PubSubClient.h >
#include <ArduinoJson.h>
WiFiClient wifiClient;
#define ORG "p9zvpm"
#define DEVICE_TYPE "ultrasonic"
#define DEVICE ID "123456"
#define TOKEN "123456789"
#define speed 0.034
char server[] = ORG ".messaging.internetofthings.ibmcloud.com";
char publishTopic[] = "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: ");
```

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

## **WOKWI LINK:**

https://wokwi.com/projects/348581247370396242



## **IBM CLOUD SCREENSHOT:**

