

Name – S Malini  
Reg no - 922119106053

```
#include <WiFi.h>

#include <PubSubClient.h>

#include <ArduinoJson.h>

WiFiClient wifiClient;

#define ORG "zaxg8h"

#define DEVICE_TYPE "CROP"

#define DEVICE_ID "Malini123"

#define TOKEN "malinimalini"

#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()

{
```

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```
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);
```

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```
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){
```

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```
DynamicJsonDocument doc(1024);

String payload;

doc["Distance Alert:"]=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/347300642711142994>

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Service Details - IBM Cloud x IBM Watson IoT Platform x sketch.ino - Wokwi Arduino and x (3) WhatsApp x +

wokwi.com/projects/347300642711142994

WOKWI SAVE SHARE sketch.ino Docs

sketch.ino diagram.json libraries.txt Library Manager

```
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18 void publishData();
19 const int trigpin=5;
20 const int echopin=18;
21 String command;
22 String data="";
23 long duration;
24 int dist;
25 void setup()
26 {
27   Serial.begin(115200);
28   pinMode(trigpin, OUTPUT);
29   pinMode(echopin, INPUT);
30   wifiConnect();
```

Simulation

02:01:929 96%

HC-SR04

ESP32

Publish OK

Sending payload: {"Distance Alert":58}

Publish OK

Sending payload: {"Distance Alert":58}

Publish OK

Service Details - IBM Cloud x IBM Watson IoT Platform x sketch.ino - Wokwi Arduino and x (3) WhatsApp x +

zaxg8h.internetofthings.ibmcloud.com/dashboard/devices/browse

IBM Watson IoT Platform maliniresush86@gmail.com ID: zaxg8h

Browse Action Device Types Interfaces Add Device +

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
Data	{"Distance Alert":58}	json	a few seconds ago
Data	{"Distance Alert":58}	json	a few seconds ago
Data	{"Distance Alert":58}	json	a few seconds ago
Data	{"Distance Alert":58}	json	a few seconds ago
Data	{"Distance Alert":59}	json	a few seconds ago

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