

**Write a code and connections in wowki for the ultrasonic sensor. Whenever the distance is less than 100cms send an “alert” to IBM cloud and display in the vice recent events.**

## **CODE :**

```
#include <WiFi.h>
#include <PubSubClient.h>
#include <ArduinoJson.h>
WiFiClient wifiClient;
#define ORG "o3esl6"
#define DEVICE_TYPE "HAYAN24"
#define DEVICE_ID "HAYAN24id"
#define TOKEN "hayanthika2411"
#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();
```

```

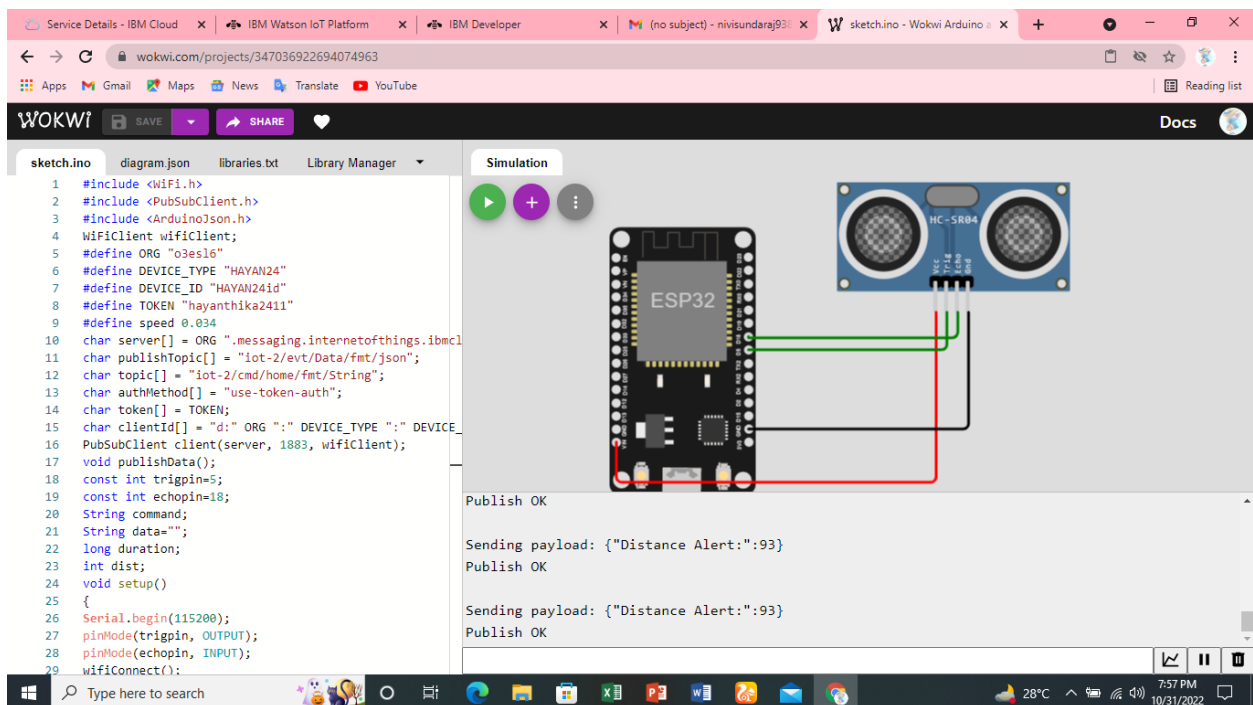
}
}
void wifiConnect() {
  Serial.print("Connecting to "); Serial.print("Wifi");
  WiFi.begin("Wokwi-GUEST", "", 6);
  while (WiFi.status() != WL_CONNECTED) {
    delay(500);
    Serial.print(".");
  }
  Serial.print("WiFi connected, IP address: "); Serial.println(WiFi.localIP());
}
void mqttConnect() {
  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["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/347036922694074963>

n IoT Platform

?

922119106066@smartinter  
ID: o3esl6

Browse

Action

Device Types

Interfaces

Add Device

▼

■

HAYAN24id

Disconnected

HAYAN24

Device

31 Oct 2022 16:30

→

...

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":"","93}	json	a few seconds ago
Data	{"Distance Alert":"","93}	json	a few seconds ago
Data	{"Distance Alert":"","96}	json	a few seconds ago
Data	{"Distance Alert":"","97}	json	a few seconds ago
Data	{"Distance Alert":"","93}	json	a few seconds ago

1 Simulation running