

ASSIGNMENT 4

**MAHENDRA ENGINEERING COLLEGE FOR
WOMEN**

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CLASS:4 YEAR CSE

SUBJECT:IBM

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**Write code and connections in wokwi for
ultrasonic sensor.**

**Whenever distance is less than 100 cms send
"alert" to ibm cloud and display in device
recent events.**

**Upload document with wokwi share link and
images of ibm cloud**

CODE:

```
#include <WiFi.h>
#include <PubSubClient.h> WiFiClient wifiClient;

#define ORG "nhpwjc"
#define DEVICE_TYPE "NodeMCU"
#define DEVICE_ID "USE YOUR ID"
#define TOKEN "USE YOUR TOKEN"
#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-tokenauth"; 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; float
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(500); }
        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);

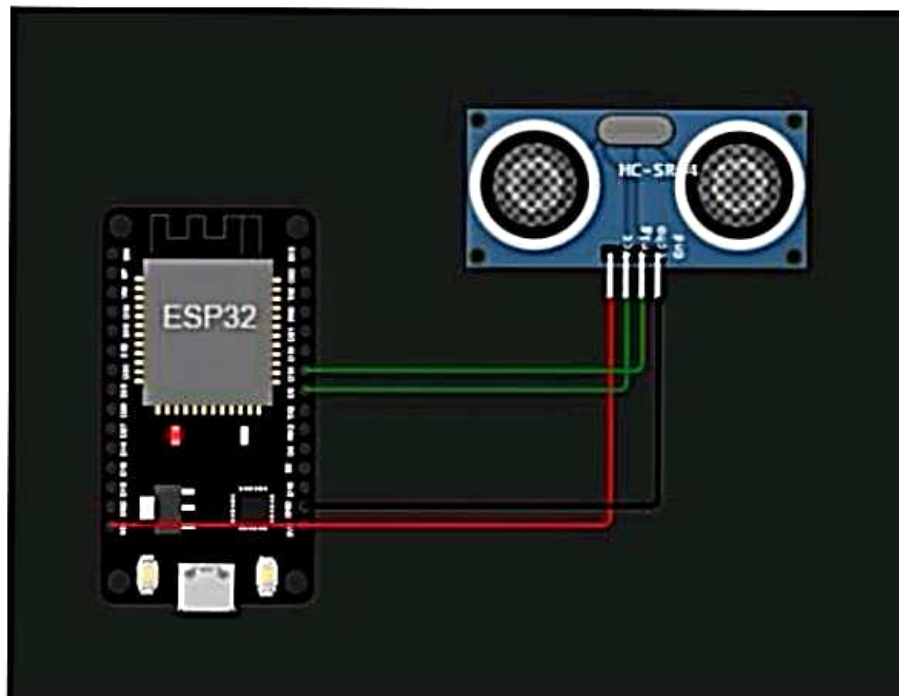
```

```

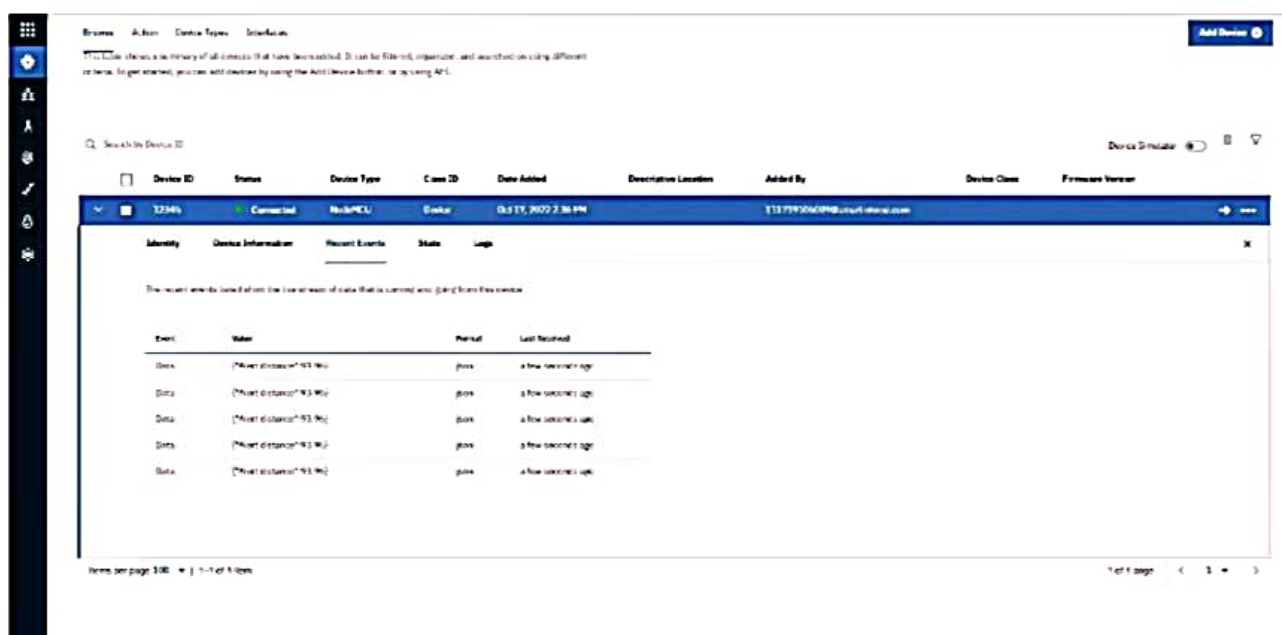
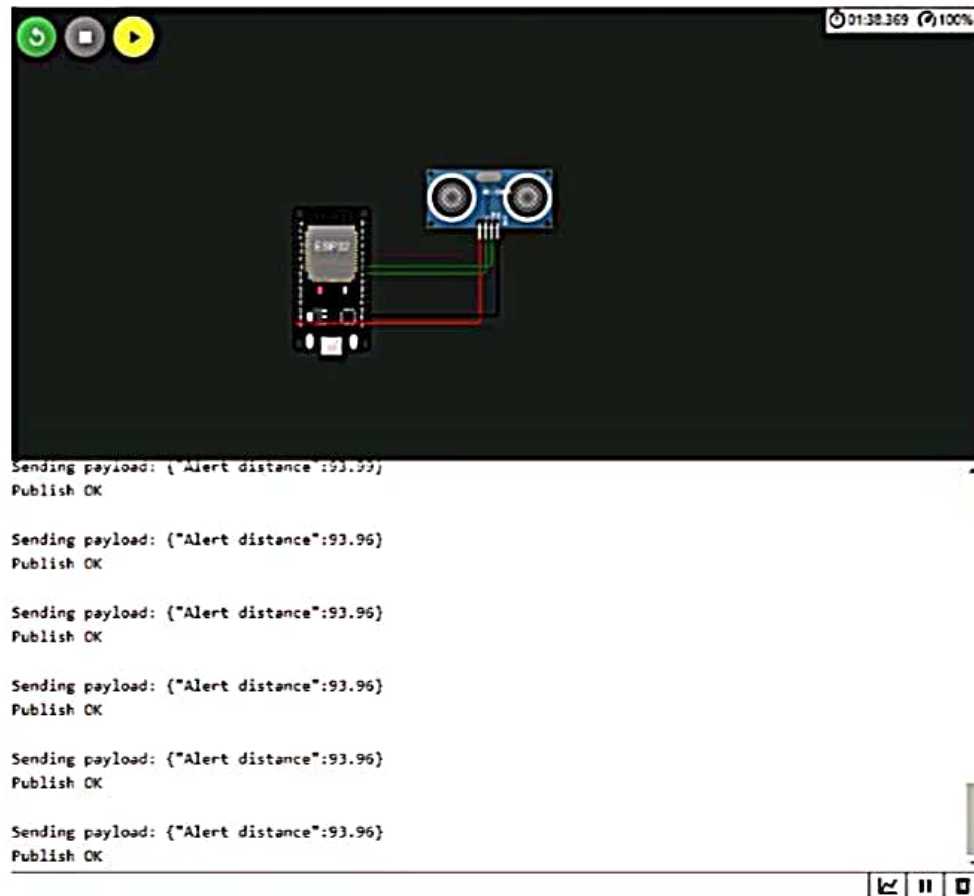
delayMicroseconds(10); digitalWrite(trigpin,LOW);
duration=pulseIn(echopin,HIGH);
dist=duration*speed/2; if(dist<100){ String payload =
{"Alert distance\":"; payload += dist; payload += "};
  Serial.print("\n");
  Serial.print("Sending payload: "); Serial.println(payload); if
(client.publish(publishTopic, (char*) payload.c_str())) { Serial.println("Publish
OK");
} else {
  Serial.println("Publish FAILED");}
}
}

```

CONNECTIONS:



OUTPUT:



WOKWI LINK -

<https://wokwi.com/projects/346405970317935188>