ASSIGNMENT 4

MAHENDRA ENGINEERING COLLEGE FOR WOMEN

NAME:P.SOBIYA

CLASS:4 YEAR CSE

SUBJECT:IBM

REGISTER NO:611419104082

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(); }
}

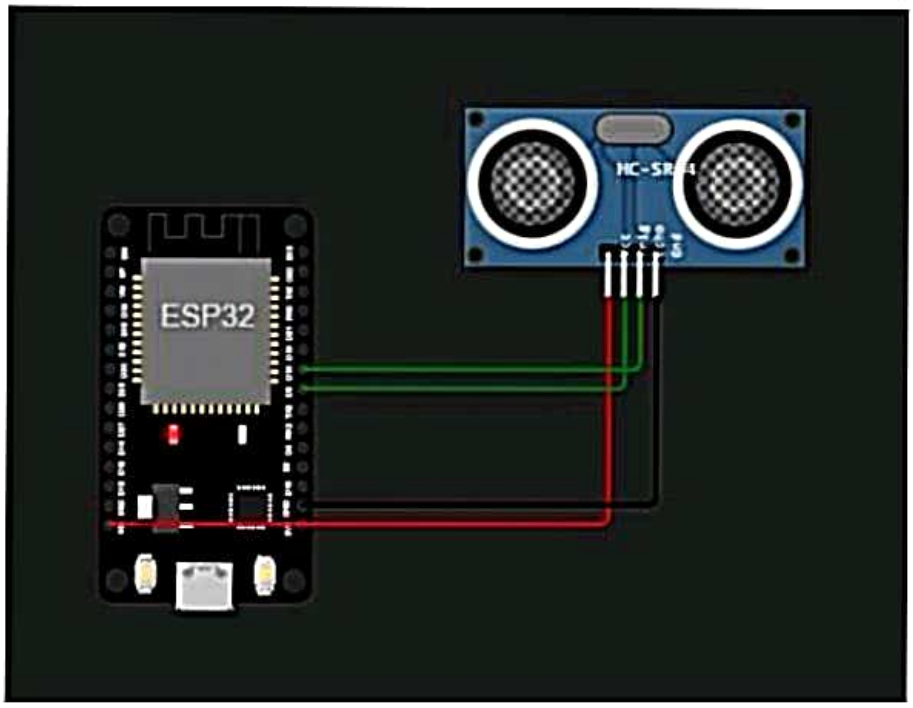
void wifiConnect() {
  Serial.print("Connecting to "); Serial.print("Wifi");
  WiFi.begin("Wokwi-GUEST", "", 6); while (WiFi.status() !=
  WL_CONNECTED) { delay(500);  Serial.print("."); }
  Serial.print("WiFi connected, IP address: "); Serial.println(WiFi.localIP());
}

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(); } }

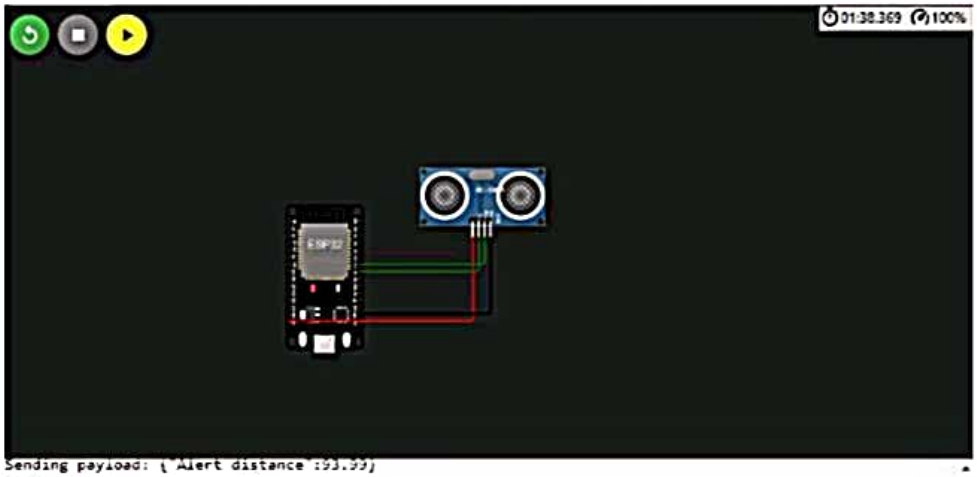
void initManagedDevice() { if
  (client.subscribe(topic)) {
    // Serial.println(client.subscribe(topic)); Serial.println("subscribe to cmd OK");
  } else {
    Serial.println("subscribe to cmd FAILED"); } }  void publishData()
{ digitalWrite(trigpin,LOW); digitalWrite(trigpin,HIGH);
```

```
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:




```
Sending payload: {"Alert distance":93.99}
Publish OK

Sending payload: {"Alert distance":93.96}
Publish OK

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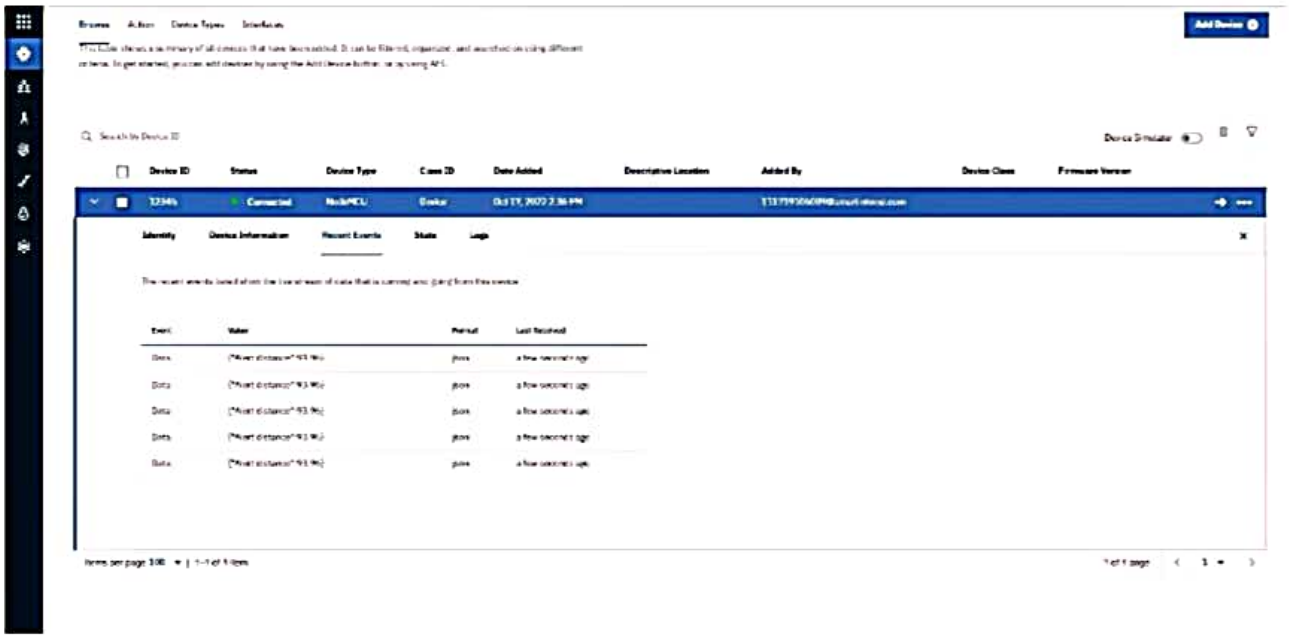

WOKWI LINK -

https://wokwi.com/projects/346405970317935188

ASSIGNMENT 4

MAHENDRA ENGINEERING COLLEGE FOR WOMEN

NAME:M.THILOTHAMA

CLASS:4 YEAR ECE

SUBJECT:IBM

REGISTER NO:611419104095

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.

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