ASSIGNMENT-4 DISTANCE DETECTION USING ULTRASONIC SENSOR

Date	16 November 2022
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Maximum Marks	2 Marks

Question1:

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.

WOKWI LINK:

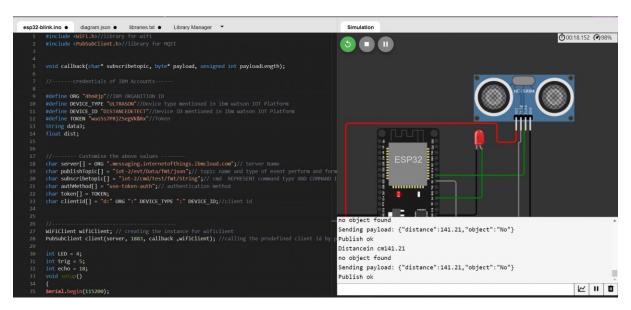
https://wokwi.com/projects/347194582937633363

CODE:

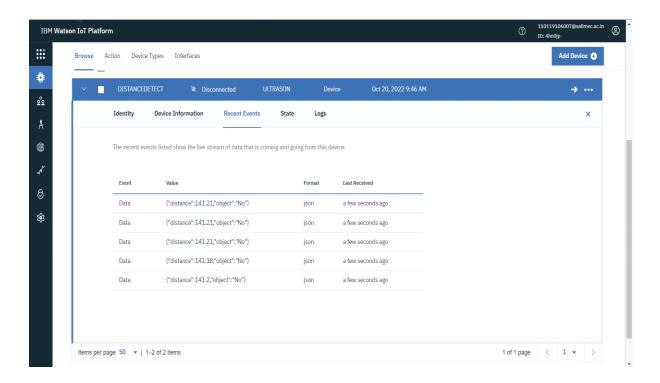
```
esp32-blink.ino •
                  diagram.json •
                                   libraries.txt •
                                                  Library Manager
       pinMode(trig,OUTPUT);
       pinMode(echo,INPUT);
       pinMode(LED, OUTPUT);
       delay(10);
       wificonnect();
       mqttconnect();
       void loop()// Recursive Function
        digitalWrite(trig,LOW);
         digitalWrite(trig,HIGH);
         delayMicroseconds(10);
         digitalWrite(trig,LOW);
         float dur = pulseIn(echo,HIGH);
         float dist = (dur * 0.0343)/2;
         Serial.print ("Distancein cm");
         Serial.println(dist);
         PublishData(dist);
         delay(1000);
         if (!client.loop()) {
           mqttconnect();
       void PublishData(float dist) {
         mqttconnect();//function call for connecting to ibm
```

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esp32-blink.ino •
                   diagram.json •
                                    libraries.txt •
                                                  Library Manager
         WiFi.begin("Wokwi-GUEST", "", 6);//passing the wifi credentials to establish the connection
         while (WiFi.status() != WL_CONNECTED) {
           delay(500);
            Serial.print(".");
         Serial.println("");
         Serial.println("WiFi connected");
         Serial.println("IP address: ");
         Serial.println(WiFi.localIP());
       void initManagedDevice() {
         if (client.subscribe(subscribetopic)) {
            Serial.println((subscribetopic));
            Serial.println("subscribe to cmd OK");
            Serial.println("subscribe to cmd FAILED");
       void callback(char* subscribetopic, byte* payload, unsigned int payloadLength)
         Serial.print("callback invoked for topic: ");
         Serial.println(subscribetopic);
 148
         for (int i = 0; i < payloadLength; i++) {</pre>
           data3 += (char)payload[i];
```

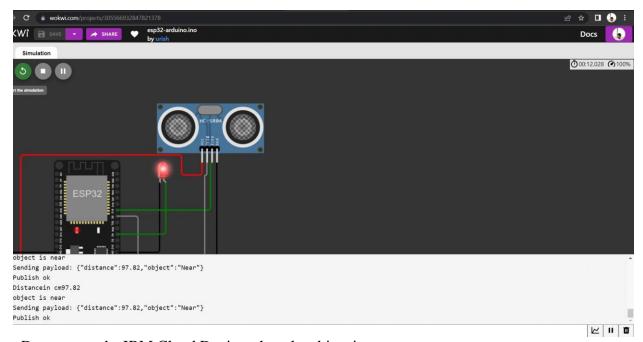
OUTPUT:



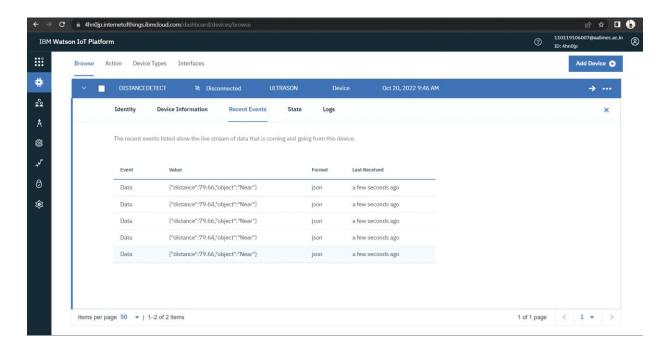
Data send to the IBM cloud device when the object is far



when object is near to the ultrasonic sensor



Data sent to the IBM Cloud Device when the object is near



https://wokwi.com/projects/305566932847821378