

Ibm watson cloud

Asssignment Date	25.10.2022
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Maximum marks	2 marks

QUESTION 1:

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 ibm cloud image.

Solution:

Wokwi link : <https://wokwi.com/projects/346681002711581267>

output:

The screenshot displays the Wokwi web-based simulation environment. On the left, the 'sketch.ino' file is open, showing the following code:

```
68 void mqttconnect() {
69   if (!client.connected()) {
70     Serial.print("Reconnecting client to ");
71     Serial.println(server);
72     while (!client.connect(clientId, authMethod, token)) {
73       Serial.print(".");
74       delay(500);
75     }
76     initManagedDevice();
77     Serial.println();
78   }
79 }
80 void wificonnect()
81 {
82   Serial.println();
83   Serial.print("Connecting to ");
84   WiFi.begin("Wokwi-GUEST", "", 6);
85   while (WiFi.status() != WL_CONNECTED) {
86     delay(500);
87     Serial.print(".");
88   }
89   Serial.println("");
90   Serial.println("Wifi connected");
91   Serial.println("IP address: ");
92   Serial.println(WiFi.localIP());
93 }
94 void initManagedDevice() {
95   if (client.subscribe(subscribetopic)) {
96     Serial.println((subscribetopic));
97     Serial.println("subscribe to cmd OK");
98   } else {
99     Serial.println("subscribe to cmd FAILED");
```

On the right, the 'Simulation' window shows a visual representation of the ESP32 microcontroller and the HC-SR04 ultrasonic sensor connected by wires. Below the simulation, the 'Publish ok' status is shown, along with the following output:

```
Distance (cm): 73.98
ALERT!!
Sending payload: {"Distance":73.98,"ALERT!!":"Distance less than 100cms"}
Publish ok
Distance (cm): 73.98
ALERT!!
```

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The screenshot displays the IBM Watson IoT Platform interface. The top navigation bar includes tabs for 'Browse', 'Action', 'Device Types', and 'Interfaces'. A search bar labeled 'Search by Device ID' is present. The main content area shows a table of devices, with one device selected (ID: 12345, Status: Disconnected, Device Type: assign, Class ID: Device, Date Added: Oct 27, 2022 8:13 PM). Below the table, the 'Recent Events' tab is active, showing a list of events with columns for Event, Value, Format, and Last Received. The events are JSON objects containing distance and alert information.

Device ID	Status	Device Type	Class ID	Date Added	Descriptive Location
12345	Disconnected	assign	Device	Oct 27, 2022 8:13 PM	

Event	Value	Format	Last Received
Data	{"Distance":73.98,"ALERT!!":"Distance less than ...	json	a few seconds ago
Data	{"Distance":73.98,"ALERT!!":"Distance less than ...	json	a few seconds ago
Data	{"Distance":73.98,"ALERT!!":"Distance less than ...	json	a few seconds ago
Data	{"Distance":73.98,"ALERT!!":"Distance less than ...	json	a few seconds ago
Data	{"Distance":38.96,"ALERT!!":"Distance less than ...	json	a few seconds ago