

ASSIGNMENT -4

QUESTION:

WRITE A CODE AND CONNECTIONS IN WOKWI FOR ULTRASONIC SENSOR.WHENEVER DISTANCE IS LESS THAN 100 CMS SEND ALERT TO IBM CLOUD AND DISPLAY IN DEVICE EVENTS.

ANSWER :

WOKWI :

The screenshot displays the Wokwi IDE interface. On the left, the code editor shows the following C++ code:

```
1 #include "Ultrasonic.h"
2 Ultrasonic ultrasonic(12, 13);
3 int distance;
4
5 void setup() {
6   Serial.begin(9600);
7   pinMode(6, OUTPUT);
8 }
9
10 void loop() {
11   distance = ultrasonic.read(CM);
12   Serial.print("Distance in CM: ");
13   Serial.println(distance);
14   if(distance<=100)
15   {
16     Serial.println("alert!!!!");
17     digitalWrite(4, HIGH);
18   }
19
20
21   delay(1000);
22 }
```

On the right, the simulation window shows a hardware diagram. An HC-SR04 ultrasonic sensor is connected to an Arduino Uno. The sensor's VCC pin is connected to the 5V pin on the Arduino, and its GND pin is connected to a GND pin. The Trig pin is connected to digital pin 12, and the Echo pin is connected to digital pin 13. A red LED is connected to digital pin 4 (labeled as pin 6 in the code) with its anode to the pin and its cathode to GND. The simulation controls (play, add, and settings buttons) are visible above the diagram.

Below the diagram, the device events log shows the following output:

```
Distance in CM: 50
alert!!!!
Distance in CM: 50
alert!!!!
Distance in CM: 50
alert!!!!
```

IBM CLOUD

Browse

Action

Device Types

Interfaces

Q

Add Device +

<input type="checkbox"/>	Device ID	Status	Device Type	Class ID	Date Added	Descriptive Location
> <input type="checkbox"/>	123	Disconnected	hp1501	Device	Oct 11, 2022 10:32 PM	
▼ <input checked="" type="checkbox"/>	1234	Disconnected	assign4hp	Device	Oct 26, 2022 8:12 PM	→ ...

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
event_1hp	{"distance":30}	json	a few seconds ago
event_1hp	{"distance":28}	json	a few seconds ago
event_1hp	{"distance":48}	json	a few seconds ago
event_1hp	{"distance":76}	json	a few seconds ago
event_1hp	{"distance":59}	json	a few seconds ago

1 Simulation running

< ultrasonic

♥ + Add New Card

📄 Paste Card

⚙ Settings

Line chart

5 minutes

now

distance

1 Simulation running