

Write code and connections in wokwi for ultrasonic. Whenever distance is less than 100 cms send “alert” to ibm cloud and display in device recent events.

Solution:

```
#define ECHO_PIN 2

#define TRIG_PIN 3

#define organization = "mmbh4c"

#define deviceType = "Ultrasonic"

#define deviceId = "pga460_sensor"

#define authMethod = "use-token-auth"

#define authToken = "123456789"

void setup() {

    Serial.begin(9600);

    pinMode(TRIG_PIN, OUTPUT);

    pinMode(ECHO_PIN, INPUT);

}

float readDistanceCM() {

    digitalWrite(TRIG_PIN, LOW);

    delayMicroseconds(2);

    digitalWrite(TRIG_PIN, HIGH);

    delayMicroseconds(10);

    digitalWrite(TRIG_PIN, LOW);

    int duration = pulseIn(ECHO_PIN, HIGH);

    return duration * 0.034 / 2;
```

```
}
```

```
void loop() {
```

```
    float distance = readDistanceCM();
```

```
    if(distance <= 100)
```

```
    {
```

```
        Serial.println("person detected ");
```

```
    }
```

```
    else{
```

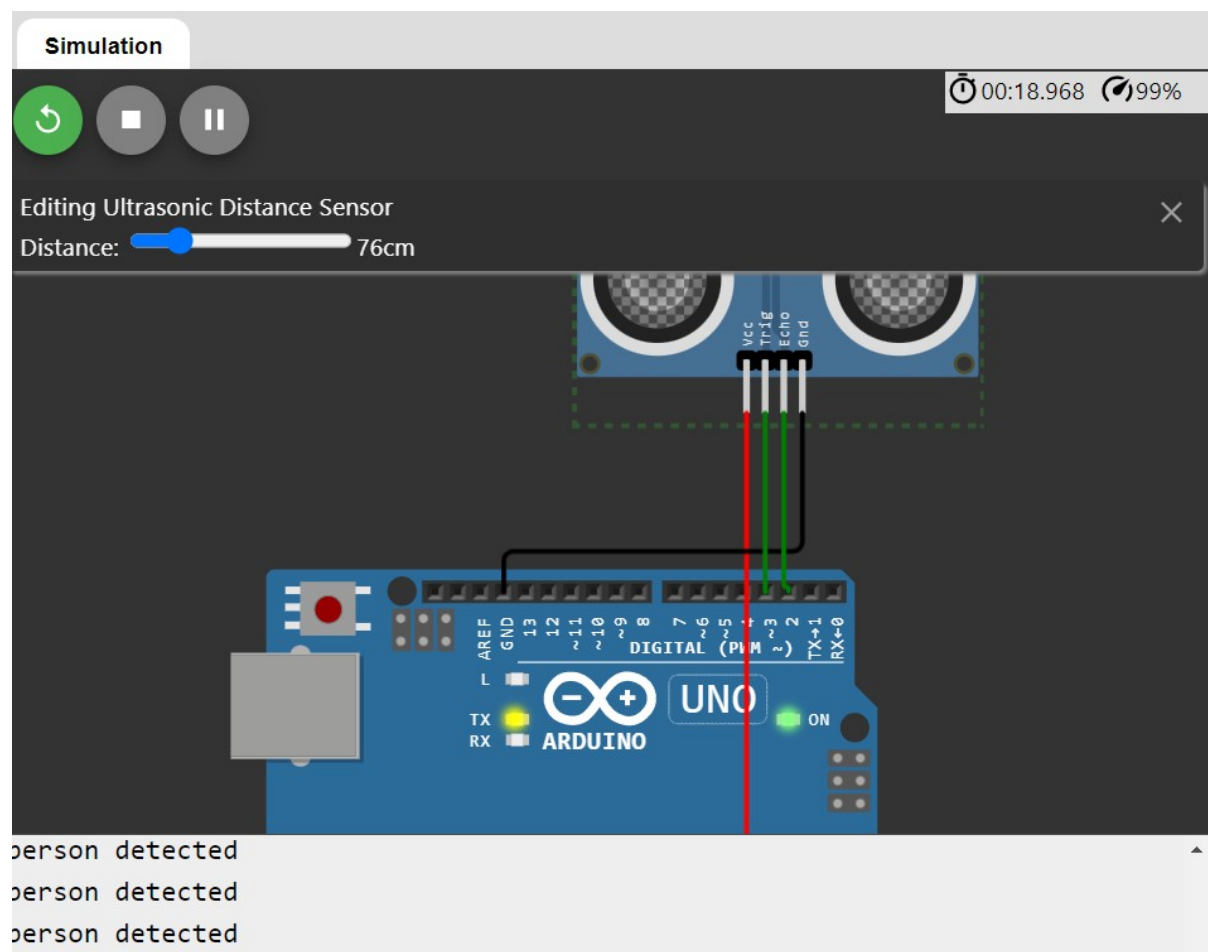
```
        Serial.print("Measured distance: ");
```

```
        Serial.println(readDistanceCM());
```

```
    }
```

```
    delay(1000);
```

```
}
```



IBM Cloud

Device Recent Events

Browse Action Device Types Interfaces
Add Device +

Search by Device ID
Device Simulator ☐

	Device ID	Status	Device Type	Class ID
>	1234	Disconnected	SmartFarmer	Device
▼	Ultrasonic_1	Disconnected	Ultrasonic	Device → ...

Identity Device Information Recent Events State Logs
×

Device ID Ultrasonic_1

Device Type Ultrasonic

Date Added Oct 25, 2022 4:25 PM

Added By 820419205501@smartinternz.com

Connection Status **Disconnected**
Last Connected: Oct 25, 2022 4:28 PM
Client Address: 42.109.148.176 SecureToken
Duration: 2 minutes
Data Transferred: 2.7 KB

>	pga460_sensor	Disconnected	Ultrasonic	Device
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The screenshot shows the AWS IoT console interface. At the top, there are tabs for 'Browse', 'Action', 'Device Types', and 'Interfaces'. On the left sidebar, there are icons for various IoT services. The main content area displays details for a device named 'Ultrasonic_1', which is 'Connected'. Below this, there are tabs for 'Identity', 'Device Information', 'Recent Events', 'State', and 'Logs'. The 'Recent Events' tab is selected, showing a message: 'The recent events listed show the live stream of data that is coming and going from this device.' Below this message is a table with four columns: 'Event', 'Value', 'Format', and 'Last Received'. The table contains five rows of event data, all with the value '{"Persondetected"}' and format 'json'. At the bottom of the console, there is a status bar showing 'pgs460_sensor' as 'Disconnected', a timestamp 'Oct 25, 2022 1:19 PM', and a simulation indicator '1 Simulation running'.

Event	Value	Format	Last Received
event_1	{"Persondetected" }	json	a few seconds ago
event_1	{"Persondetected" }	json	a few seconds ago
event_1	{"Persondetected" }	json	a few seconds ago
event_1	{"Persondetected" }	json	a few seconds ago
event_1	{"Persondetected" }	json	a few seconds ago