

Assignment-4

AssignmentDate	25October2022
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ProjectName	Project-SmartFarmer-IoTEnabledSmart FarmingApplication
MaximumMarks	2 Marks

Question-1:

Write code and connections in wokwi for ultrasonic. Whenever distance is less than 100cms 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:
```

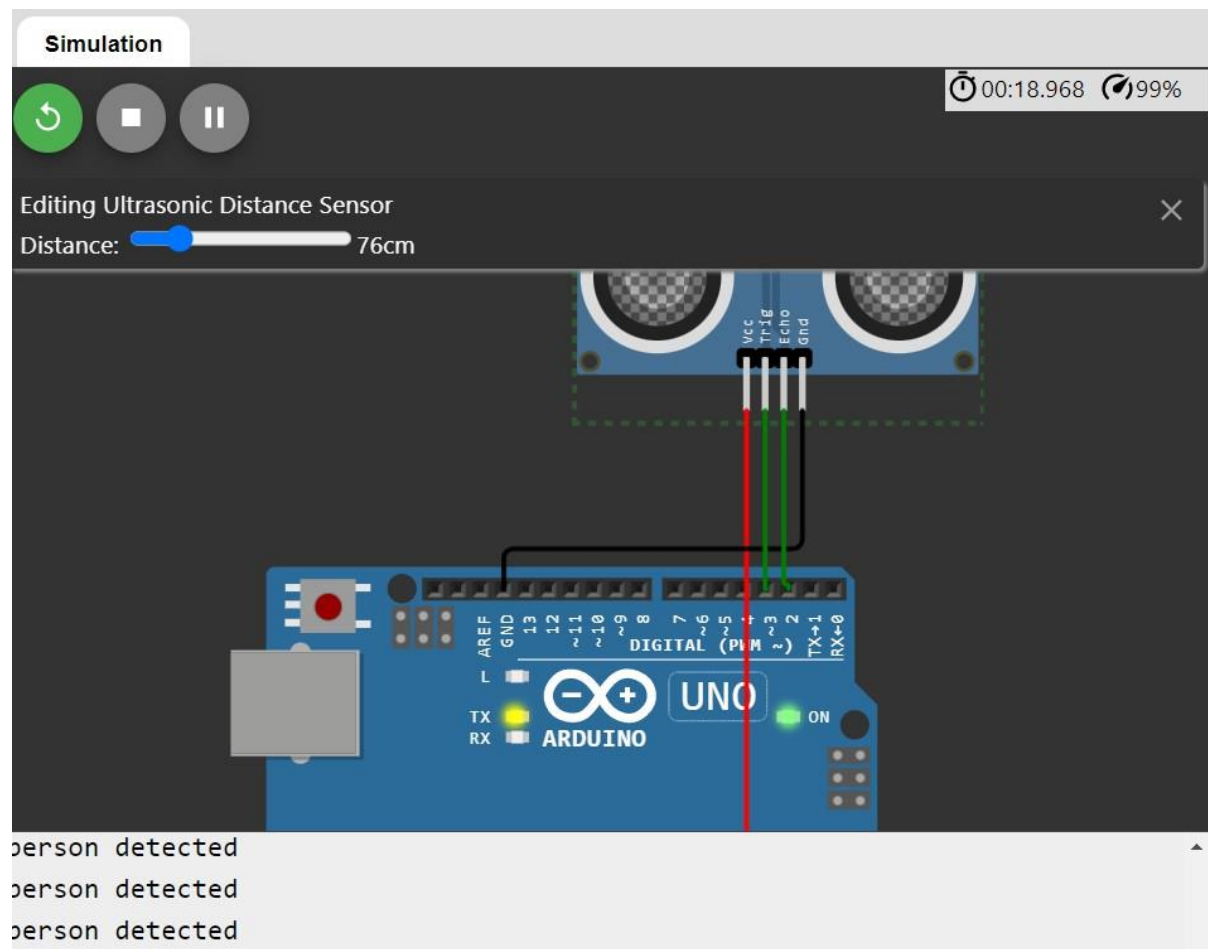
```
    "); Serial.println(readDistanceCM())
```

```
;
```

```
}
```

```
    delay(1000);
```

```
}
```



WokwiLink : <https://wokwi.com/projects/346662300915073618>

IBMCloud

DeviceRecentEvents

The screenshot shows the IBM Cloud IoT Platform console. The top navigation bar includes 'Browse', 'Action', 'Device Types', and 'Interfaces'. A search bar is present with the text 'Search by Device ID'. The main content area displays a table of devices. The first device is 'Ultrasonic_1', which is 'Disconnected'. Below the table, a detailed view for 'Ultrasonic_1' is shown, including its identity, device information, recent events, state, and logs. The device information section shows the following details:

Property	Value
Device ID	Ultrasonic_1
Device Type	Ultrasonic
Date Added	Oct 25, 2022 4:25 PM
Added By	820419205501@smartinternz.com
Connection Status	Disconnected

The connection status section provides additional details: Last Connected: Oct 25, 2022 4:28 PM, Client Address: 42.109.148.176, SecureToken, Duration: 2 minutes, and Data Transferred: 2.7 KB.

The screenshot shows the IBM Cloud IoT Platform console with the 'Recent Events' tab selected for device 'Ultrasonic_1'. The device is now 'Connected'. The recent events section displays a live stream of data. The events are as follows:

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

The bottom of the console shows a status bar with 'Items per page 50' and '1-3 of 3 items'. A simulation status indicator at the bottom right shows '1 Simulation running'.