

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:
```

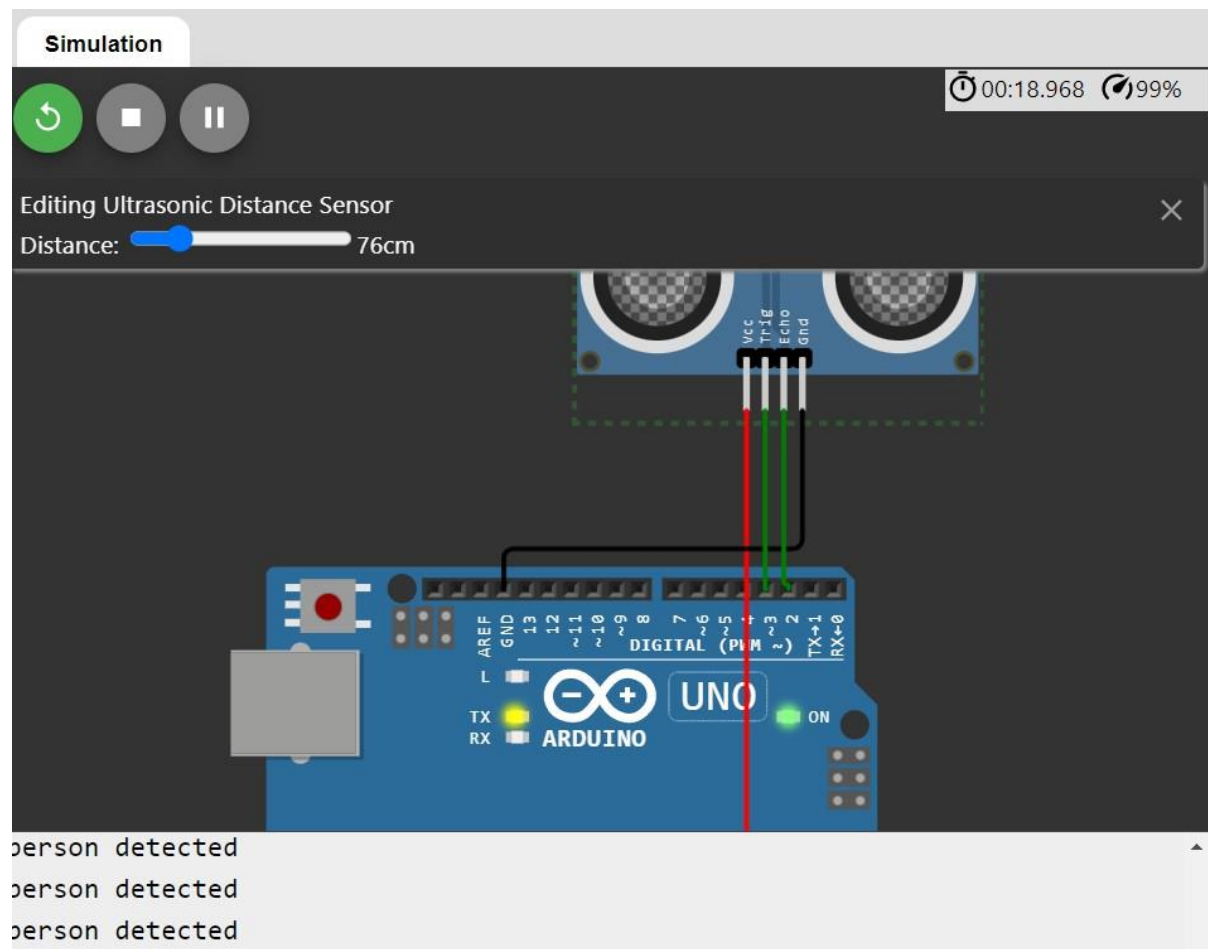
```
    "); Serial.println(readDistanceCM())
```

```
;
```

```
}
```

```
    delay(1000);
```

```
}
```



WokwiLink : <https://wokwi.com/projects/346662045946479187>

IBMCloud

DeviceRecentEvents

The screenshot shows the Wokwi interface with a sidebar on the left containing icons for various functions. The main area displays a table of devices. The 'Ultrasonic_1' device is selected, and its 'Recent Events' panel is open. The device is currently 'Disconnected'.

Device ID	Status	Device Type	Class ID
1234	Disconnected	SmartFarmer	Device
Ultrasonic_1	Disconnected	Ultrasonic	Device
pga460_sensor	Disconnected	Ultrasonic	Device

Device Information for Ultrasonic_1:

- 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

The screenshot shows the Wokwi interface with the 'Ultrasonic_1' device selected. The device is now 'Connected'. The 'Recent Events' panel is open, displaying a live stream of data events.

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

Items per page 50 | 1-3 of 3 items

1 Simulation running