

TEAM ID : PNT2022TMID14142

ASSIGNMENT 4

WRITE A CODE AND CONNECTION IN WOWKI FOR ULTASONIC SENSOR.WHENEVER DISTANCE IS LESS THAN 100 CMS SEND "ALERT" TO IBM CLOUD AND DISPLAY IN DEVICE RECENT EVENTS

CODE

```
// Pins

const int TRIG_PIN = 7;

const int ECHO_PIN = 8;

// Anything over 400 cm (23200 us pulse) is "out of range"
const unsigned int MAX_DIST = 23200;

void setup() {

// The Trigger pin will tell the sensor to range find
pinMode(TRIG_PIN, OUTPUT);
digitalWrite(TRIG_PIN, LOW);

//Set Echo pin as input to measure the duration of
//pulses coming back from the distance sensor
pinMode(ECHO_PIN, INPUT);

// We'll use the serial monitor to view the sensor output
Serial.begin(9600);

}

void loop() {

unsigned long t1;

unsigned long t2;

unsigned long pulse_width;

float cm;

float inches;

// Hold the trigger pin high for at least 10 us
digitalWrite(TRIG_PIN, HIGH);

delayMicroseconds(10);

digitalWrite(TRIG_PIN, LOW);

// Wait for pulse on echo pin
```

TEAM ID : PNT2022TMID14142

```
while (digitalRead(ECHO_PIN) == 0);

// Measure how long the echo pin was held high (pulse width)

// Note: the micros() counter will overflow after ~70 min

tl = micros();

while (digitalRead(ECHO_PIN) == 1);

t2 = micros();

pulse_width = t2- tl;

// Calculate distance in centimeters and inches. The constants

// are found in the datasheet, and calculated from the assumed speed

//of sound in air at sea level (~340 m/s).

cm = pulse_width/58.0;

inches = pulse_width/148.0;

// Print out results

if (pulse_width > MAX_DIST) { Serial.println("Out of range");

} else {

Serial.println("*****");

Serial.print("The Measured Distance in cm: ");

Serial.println(cm);

if(cm<100){

// while(true)

{

Serial.println("Alert!!");

// }

}

Serial.print("*****");

}

// Wait at least 1000ms before next measurement

delay(1000);

}
```

OUTPUT:

TEAM ID : PNT2022TMID14142

1.if the distance is less than 100 cms ,it alerts.

WOKWI SAVE SHARE

hc-sr04.ino diagram.json Library Manager

```
1 // Pins
2 const int TRIG_PIN = 7;
3 const int ECHO_PIN = 8;
4
5 // Anything over 400 cm (23200 us pulse) is "out of range"
6 const unsigned int MAX_DIST = 23200;
7
8 void setup() {
9
10 // The Trigger pin will tell the sensor to range find
11 pinMode(TRIG_PIN, OUTPUT);
12 digitalWrite(TRIG_PIN, LOW);
13
14 //Set Echo pin as input to measure the duration of
15 //pulses coming back from the distance sensor
16 pinMode(ECHO_PIN, INPUT);
17
18 // We'll use the serial monitor to view the sensor output
19 Serial.begin(9600);
20 }
21
22 void loop() {
23
24 unsigned long t1;
25 unsigned long t2;
26 unsigned long pulse_width;
27 float cm;
28 float inches;
29
30 // Hold the trigger pin high for at least 10 us
```

Simulation

00:00.466 58%

Editing Ultrasonic Distance Sensor

Distance: 83cm

UNO

The Measured Distance in cm : 84.14

Alert!!

Activate Windows
Go to Settings to activate Windows.

2.if the distance is more than 100cms ,it won't alert.

WOKWI SAVE SHARE

hc-sr04.ino diagram.json Library Manager

```
1 // Pins
2 const int TRIG_PIN = 7;
3 const int ECHO_PIN = 8;
4
5 // Anything over 400 cm (23200 us pulse) is "out of range"
6 const unsigned int MAX_DIST = 23200;
7
8 void setup() {
9
10 // The Trigger pin will tell the sensor to range find
11 pinMode(TRIG_PIN, OUTPUT);
12 digitalWrite(TRIG_PIN, LOW);
13
14 //Set Echo pin as input to measure the duration of
15 //pulses coming back from the distance sensor
16 pinMode(ECHO_PIN, INPUT);
17
18 // We'll use the serial monitor to view the sensor output
19 Serial.begin(9600);
20 }
21
22 void loop() {
23
24 unsigned long t1;
25 unsigned long t2;
26 unsigned long pulse_width;
27 float cm;
28 float inches;
29
30 // Hold the trigger pin high for at least 10 us
```

Simulation

00:00.599 62%

UNO

The Measured Distance in cm : 227.10

Activate Windows
Go to Settings to activate Windows.

3.Simulation and code execution

TEAM ID : PNT2022TMID14142

