

## Assignment-4

Write code and connections in wokwi for ultra sonic sensor. When ever distance is less than 100 cm send "alert" to ibm cloud and display in device recent events.

Date	10-11-2022
Team ID	PNT2022TMID02546
Project Name	Project: Smart Waste management System for Metropolitan Cities
Maximum Marks	2 Marks

Wokwi simulation interface showing the code and the simulated circuit.

**Code (sketch.ino):**

```
1 const int TRIG_PIN=7;
2 const int ECHO_PIN=8;
3 const unsigned int max_dist=23200;
4 void setup()
5 {
6   digitalWrite(TRIG_PIN,LOW);
7   Serial.begin(9600);
8 }
9 void loop(){
10  unsigned long t1;
11  unsigned long t2;
12  unsigned long pulse_width;
13  float cm;
14  float inches;
15  digitalWrite(TRIG_PIN,HIGH);
16  delayMicroseconds(10);
17  digitalWrite(TRIG_PIN,LOW);
18  //Waitforpulseonechopin
19  while(digitalRead(ECHO_PIN)==0);
20  t1 = micros();
21  while(digitalRead(ECHO_PIN) == 1);
22  t2=micros();
23  pulse_width=t2-t1;
24  cm=pulse_width/58.0;
25  inches=pulse_width/148.0;
26  if(pulse_width > max_dist ){
27    Serial.println("Outofrange");
28  }
29  else
30  {
31    Serial.println("*****");
32    Serial.print("Distance Measuredincm:");
33    Serial.println(cm);
34    if(cm < 100){
```

**Simulation:**

The simulation shows an Arduino Uno connected to an HC-SR04 ultrasonic sensor. The sensor is connected to the Arduino's digital pins 7 (TRIG) and 8 (ECHO). The simulation output shows the distance measured in cm: 57.86 cm, which is less than 100 cm, triggering an alert.

\*\*\*\*\*  
Distance Measuredincm:57.86  
Alert!!  
\*\*\*\*\*

Wokwi - Wokwi Arduino and x Document from Vishnu Pradeep x

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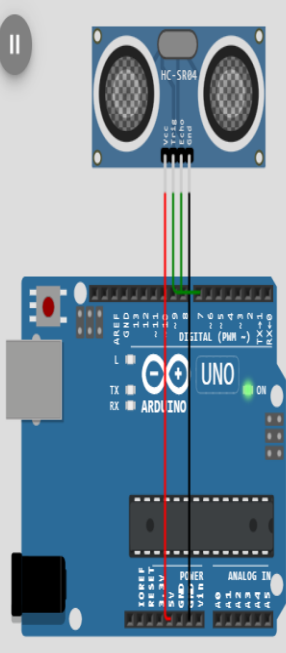
WOKWI SAVE SHARE sketch.ino Docs SIGN UP

sketch.ino diagram.json Library Manager

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34    if(cm < 100){
```

Simulation

00:07.469 100%



Distance Measuredincm:180.55

\*\*\*\*\*

Distance Measuredincm:180.48

\*\*\*\*\*

Distance Measuredincm:180.55

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14   float cm;
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16   digitalWrite(TRIG_PIN,HIGH);
17   delayMicroseconds(10);
18   digitalWrite(TRIG_PIN,LOW);
19   //Wait for pulse to echo pin
20   while(digitalRead(ECHO_PIN)==0);
21   t1 = micros();
22   while(digitalRead(ECHO_PIN)== 1);
23   t2=micros();
24   pulse_width=t2-t1;
25   cm=pulse_width/58.0;
26   inches=pulse_width/148.0;
27   if(pulse_width > max_dist ){
28     Serial.println("Outofrange");
29   }
30   else
31   {
32     Serial.println("*****");
33     Serial.print("Distance Measured in cm:");
34     Serial.println(cm);
35   }
36 }
```

Simulation

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Editing Ultrasonic Distance Sensor

Distance: 400cm

Outofrange

Outofrange

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