

Assignment-4

Question:

Write code and connections in Wokwi for the ultrasonic sensor.

Whenever the distance is less than 100 cm, send an "alert" to the IBM cloud and display in the device recent events.

Code:

```
#define trigPin 12
#define echoPin 13
int Buzzer = 8; // Connect buzzer pin to 8
int ledPin = 6; // Connect LED pin to 6
int duration, distance; // to measure the distance and time taken

void setup() {
    Serial.begin(9600);
    // Define the output and input objects (devices)
    pinMode(trigPin, OUTPUT);
    pinMode(echoPin, INPUT);
    pinMode(Buzzer, OUTPUT);
    pinMode(ledPin, OUTPUT);
}

void loop() {

    digitalWrite(trigPin, HIGH);
    delayMicroseconds(10);
    digitalWrite(trigPin, LOW);
    duration = pulseIn(echoPin, HIGH);
    distance = (duration / 2) / 29.1;
    // When distance is greater than or equal to 200 OR less than or equal to 0, the buzzer and LED are off
    if (distance >= 200 || distance <= 0)
    {
        Serial.println("no object detected");
        digitalWrite(Buzzer, LOW);
    }
}
```

```

        digitalWrite(ledPin,LOW);
    }
else{
    Serial.println("objectdetected\n");Serial.
    print("distance=");
    Serial.print(distance);

    //printsthedistanceifitisbetweentherange0to200tone(Buz
    //playtoneof400Hzfor500msdigitalWrite(ledPin,HIGH);

    zer,400);
}
}
}

```

Output:

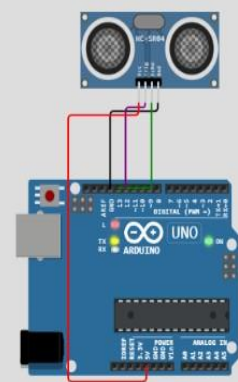
Library Manager ▾

```

1  #define trigPin 12
2  #define echoPin 13
3  int Buzzer = 8; // Connect buzzer pin to 8
4  int ledPin= 6; //Connect LEd pin to 6
5  int duration, distance; //to measure the distance and time taken
6
7  void setup() {
8      Serial.begin (9600);
9      //Define the output and input objects(devices)
10     pinMode(trigPin, OUTPUT);
11     pinMode(echoPin, INPUT);
12     pinMode(Buzzer, OUTPUT);
13     pinMode(ledPin, OUTPUT);
14 }
15
16 void loop() {
17
18     digitalWrite(trigPin, HIGH);
19     delayMicroseconds(10);
20     digitalWrite(trigPin, LOW);
21     duration = pulseIn(echoPin, HIGH);
22     distance = (duration/2) / 29.1;
23     //when distance is greater than or equal to 200 OR less than or equal to 0
24     if (distance >= 200 || distance <= 0)
25     {
26         Serial.println("no object detected");

```

00:47.666



```

distance= 99object detected
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```