

Assignment -4

Assignment Date	08 November 2022
Student Name	Porkodi S
Student Roll Number	920819106043
Maximum Marks	2 Marks

Question:

Write code and connections in wokwi for the ultrasonic sensor.

Whenever the distance is less than 100 cms 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() {

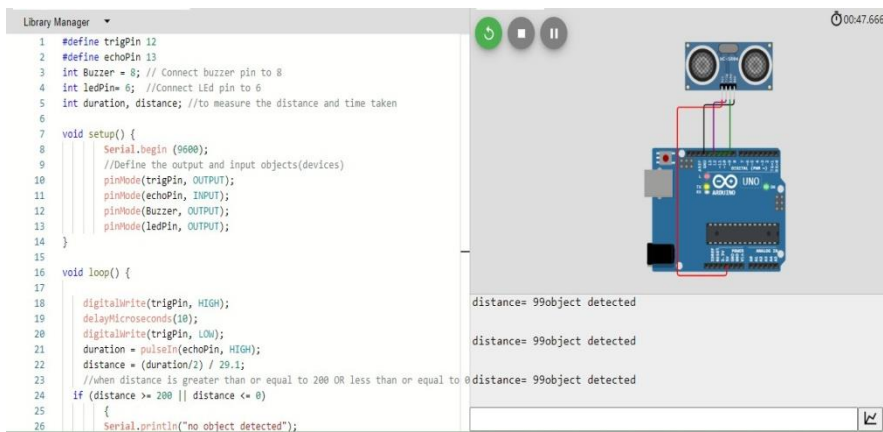
  digitalWrite(trigPin, HIGH);
  delayMicroseconds(10);
  digitalWrite(trigPin, LOW);
  duration = pulseIn(echoPin, HIGH);
  distance = (duration/2) / 29.1;
  //when distance is greater than or equal to 200 OR less than or equal to 0,the buzzer
  and LED are off
  if (distance >= 200 || distance <= 0)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

```

        digitalWrite(ledPin,LOW);
    }
    else {
        Serial.println("object detected \n");
        Serial.print("distance= ");
        Serial.print(distance);          //prints the distance if it is between the range 0 to 200
        tone(Buzzer,400);                // play tone of 400Hz for 500 ms
        digitalWrite(ledPin,HIGH);
    }
}
}

```

Output:



```

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");

```

distance= 99object detected

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