

## **ASSIGNMENT – 4**

Assignment Date	29-10-2022
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Student Roll Number	2019105508 2019105529 2019105539 2019105579
Maximum Marks	2 Marks

### **QUESTION 1:**

Write Code and connections in wokwi for ultrasonic sensor. whatever distance is less than 100 cm send “Alert” to IBM cloud and display in device recent events

### **SOLUTION:**

#### **Sketch.ion**

```
#define ECHO 2
#define TRIG 3

void setup() {
  Serial.begin(115200);
  pinMode(LED_BUILTIN, OUTPUT);
  pinMode(TRIG, OUTPUT);
  pinMode(ECHO, INPUT);
}

float readDistanceCM() {
  digitalWrite(TRIG, LOW);
  delayMicroseconds(2);
```

```
digitalWrite(TRIG, HIGH);  
delayMicroseconds(10);  
digitalWrite(TRIG, LOW);  
int duration = pulseIn(ECHO, HIGH);  
return duration * 0.034 / 2;  
}  
  
void loop() {  
  float distance = readDistanceCM();  
  bool isNearby = distance < 100;  
  digitalWrite(LED_BUILTIN, isNearby);  
  Serial.print("Measured distance: ");  
  Serial.println(readDistanceCM());  
  delay(100);  
}
```

### **diagram.json**

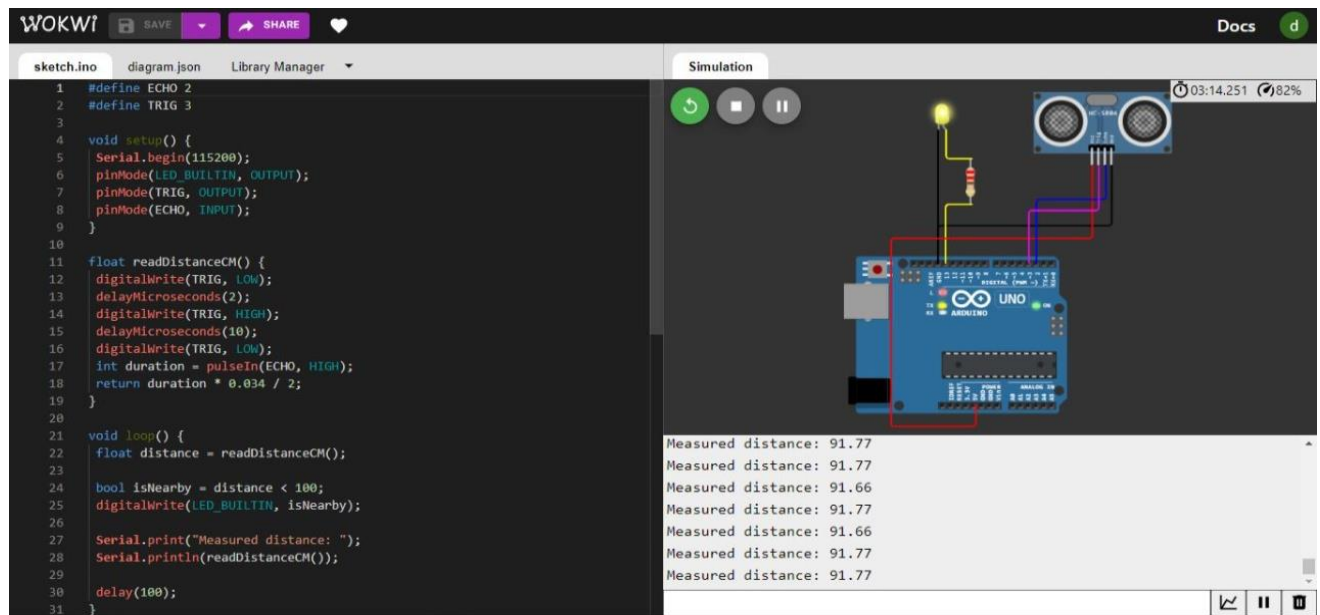
```
{  
  "version": 1,  
  "author": "divya priya",  
  "editor": "wokwi",  
  "parts": [  
    { "type": "wokwi-arduino-uno", "id": "uno", "top": 0, "left": -34.9, "attrs": {} },  
    {  
      "type": "wokwi-led",  
      "id": "led1",
```

```
"top": -204.09,
"left": 65.75,
"attrs": { "color": "yellow" }
},
{
  "type": "wokwi-hc-sr04",
  "id": "ultrasonic1",
  "top": -211.07,
  "left": 198.37,
  "attrs": { "distance": "94" }
},
{
  "type": "wokwi-resistor",
  "id": "r1",
  "top": -106.36,
  "left": 91.33,
  "rotate": 90,
  "attrs": { "value": "220" }
}
],
"connections": [
  [ "uno:GND.1", "ultrasonic1:GND", "black", [ "v-48.11", "h179.91" ] ],
  [ "led1:C", "uno:GND.1", "black", [ "v0" ] ],
  [ "led1:A", "r1:1", "yellow", [ "v0" ] ],
  [ "r1:2", "uno:13", "yellow", [ "h0" ] ],
```

```

[
  "ultrasonic1:VCC",
  "uno:5V",
  "red",
  [ "v93.75", "h-246.98", "v242.09", "h104.15", "v-2.85" ]
],
[ "uno:2", "ultrasonic1:ECHO", "blue", [ "v-81.98", "h85.13", "v-2.85" ] ],
[ "ultrasonic1:TRIG", "uno:3", "magenta", [ "v57.82", "h2.99" ] ]
]
}

```



**Reference link:** <https://wokwi.com/projects/346844196844339795>