ASSIGNMENT 4

WOKWI SIMULATION

Assignment date	23 October 2022
Student Name	Ms . Shree Sharanya .R
Student Roll Number	727819TUEC223
Maximum Marks	2 mark

Question-1:

Write code and connections in wokwi for the ultrasonic sensor. Whenever the distance is less than 100cms send an alert to the ibm cloud and

display in the device recent events. Link: https://wokwi.com/projects/346141727303664212

Code:

```
#define ECHO_PIN 2
#define TRIG_PIN 3
void setup() {
Serial.begin(115200);
pinMode(LED_BUILTIN, OUTPUT);
pinMode(TRIG_PIN, OUTPUT);
pinMode(ECHO_PIN, INPUT);
}
float readDistanceCM() {
digitalWrite(TRIG_PIN, LOW);
delayMicroseconds(2);
digitalWrite(TRIG_PIN, HIGH);
delayMicroseconds(10);
digitalWrite(TRIG_PIN, LOW);
```

```
int duration = pulseIn(ECHO_PIN, 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": "sindhuja",
"editor": "wokwi",
"parts": [
{
"type": "wokwi-arduino-uno",
"id": "uno",
"top": 275.99,
"left": 47.73,
"rotate": 0,
"hide": false,
"attrs": {}
},
{
"type": "wokwi-resistor",
"id": "r1",
```

```
"top": 165.87,
"left": 142.81,
"rotate": 90,
"hide": false,
"attrs": { "value": "220" }
},
{
"type": "wokwi-led",
"id": "led",
"top": 87.29,
"left": 147.05,
"rotate": 0,
"hide": false,
"attrs": { "color": "blue" }
},
{
"type": "wokwi-hc-sr04",
"id": "ultrasonic",
"top": 108.43,
"left": 196.5,
"rotate": 0,
"hide": false,
"attrs": { "distance": "180" }
}
],
"connections": [
[ "uno:GND.1", "ultrasonic:GND", "black", [ "v-8", "*", "v8" ] ],
[ "uno:2", "ultrasonic:ECHO", "green", [] ],
[ "uno:3", "ultrasonic:TRIG", "purple", [ "*", "v4" ] ],
```

["uno:5V", "ultrasonic:VCC", "blue", ["v16", "h-96", "*", "v12"]],

["uno:GND.1", "led:C", "black", []],

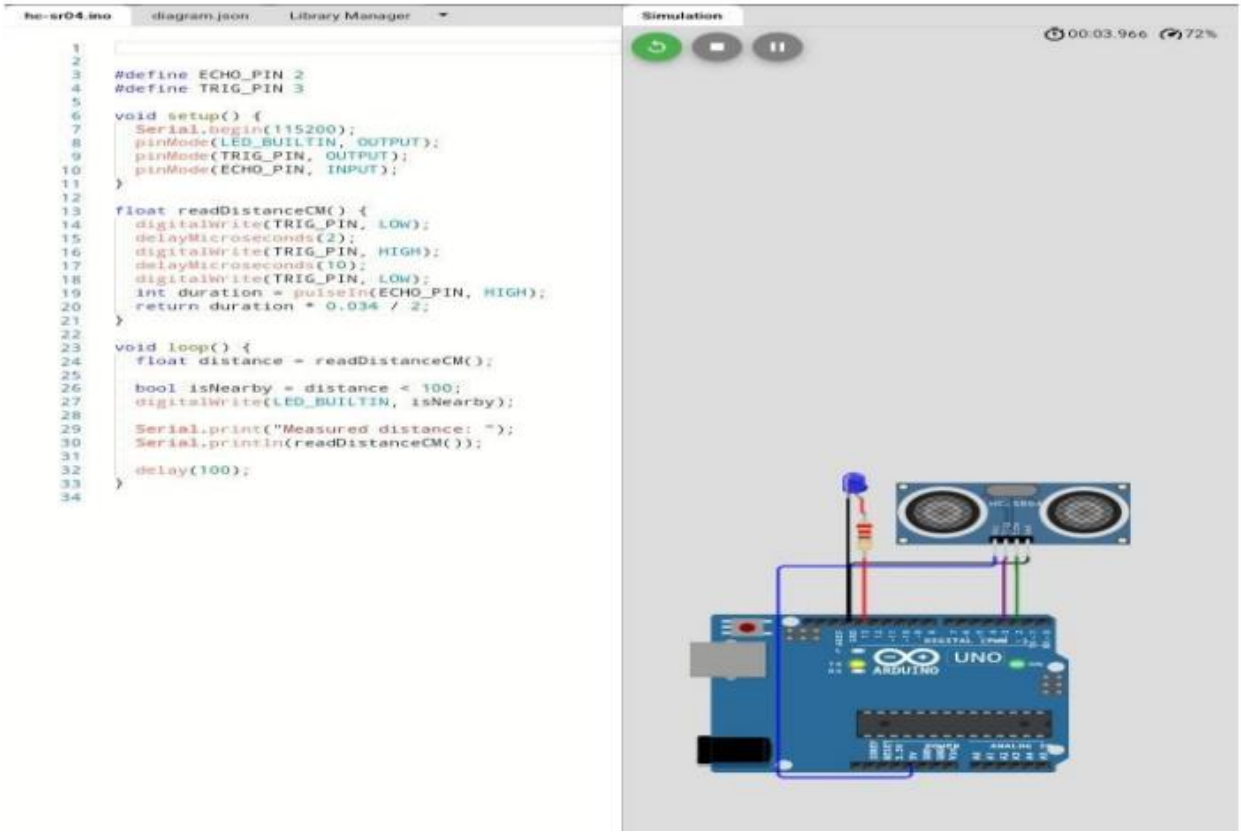
["r1:1", "led:A", "red", []],

["uno:13", "r1:2", "red", []]

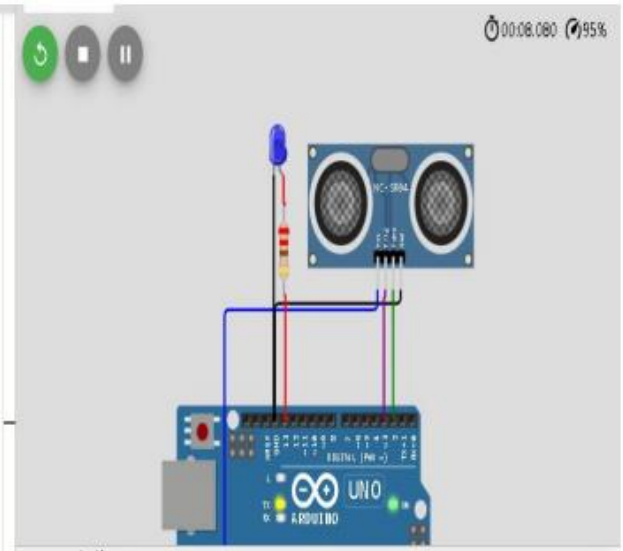
]

}

OUTPUT



```
void setup() {
  Serial.begin(115200);
  pinMode(LED_BUILTIN, OUTPUT);
  pinMode(TRIG_PIN, OUTPUT);
  pinMode(ECHO_PIN, INPUT);
}

float readDistanceCM() {
  digitalWrite(TRIG_PIN, LOW);
  delayMicroseconds(2);
  digitalWrite(TRIG_PIN, HIGH);
  delayMicroseconds(10);
  digitalWrite(TRIG_PIN, LOW);
  int duration = pulseIn(ECHO_PIN, 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);
}
```




```
Measured distance: 177.26
Measured distance: 177.24
Measured distance: 177.26
Measured distance: 177.24
Measured distance: 177.16
Measured distance: 177.24
Measured distance: 177.16
```