

SMARTBRIDGE EXTERNSHIP

Internet of Things (IOT)

Assignment – 1

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VIT - AP

Question: In Wowki, if the distance is less than 100cms for an ultrasonic sensor, glow a LED.

Code:

sketch.ino:

```
sketch.ino  diagram.json  Library Manager  ▼
1  #define ECHO_PIN 2
2  #define TRIG_PIN 3
3
4  void setup() {
5      Serial.begin(115200);
6      pinMode(LED_BUILTIN, OUTPUT);
7      pinMode(TRIG_PIN, OUTPUT);
8      pinMode(ECHO_PIN, INPUT);
9  }
10
11 float readDistanceCM() {
12     digitalWrite(TRIG_PIN, LOW);
13     delayMicroseconds(2);
14     digitalWrite(TRIG_PIN, HIGH);
15     delayMicroseconds(10);
16     digitalWrite(TRIG_PIN, LOW);
17     int duration = pulseIn(ECHO_PIN, HIGH);
18     return duration * 0.034 / 2;
19 }
20
21 void loop() {
22     float distance = readDistanceCM();
23     bool isNearby = distance < 100;
24     digitalWrite(LED_BUILTIN, isNearby);
25     Serial.print("Measured distance: ");
26     Serial.println(readDistanceCM());
27     delay(100);
28 }
29
```

diagram.json:

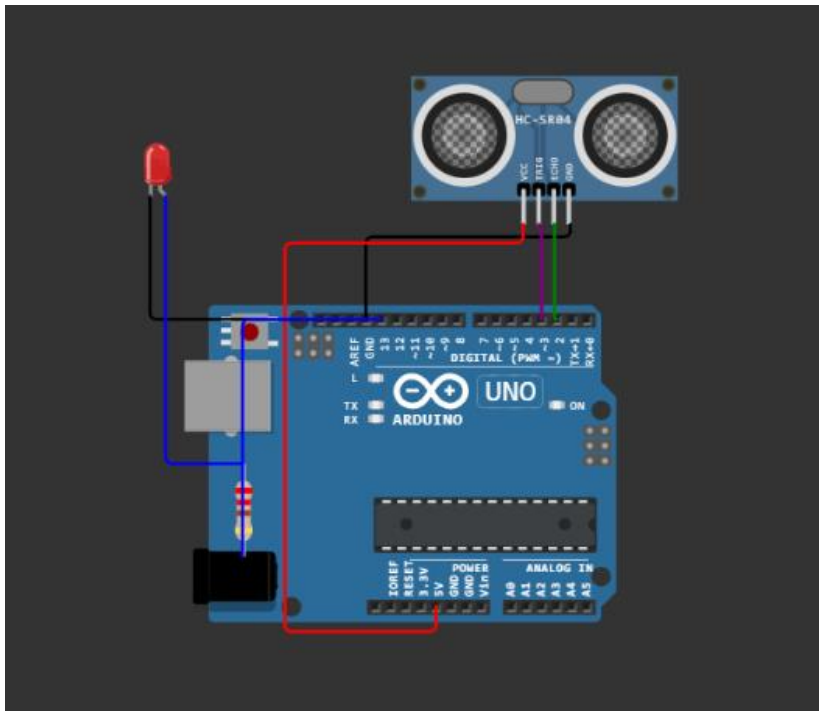
sketch.ino

diagram.json

Library Manager ▾

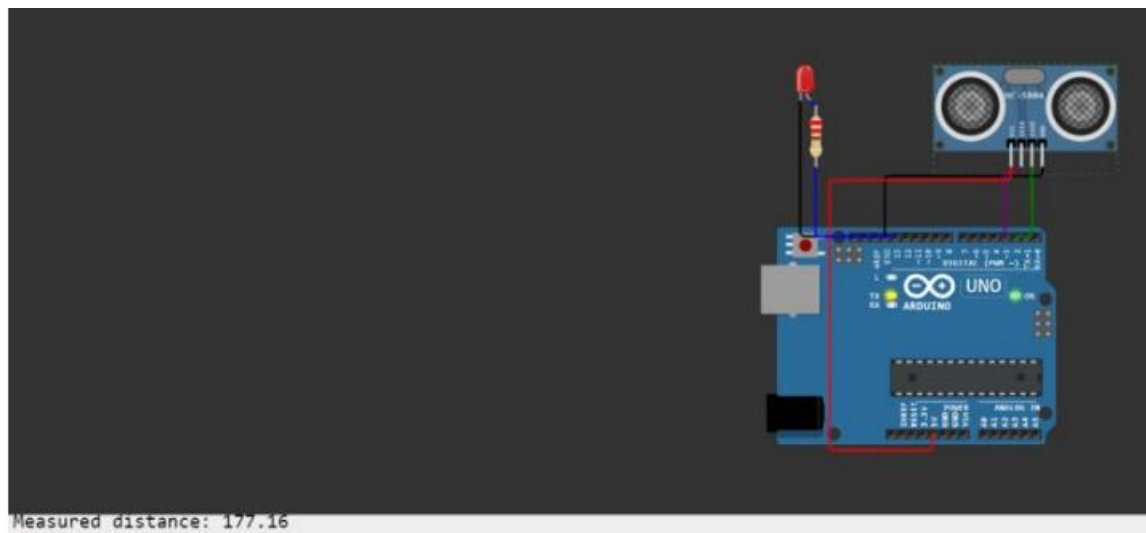
```
1  {
2    "version": 1,
3    "author": "JYOTI PRAKASH BEHURA 20BCE7355",
4    "editor": "wokwi",
5    "parts": [
6      { "type": "wokwi-arduino-uno", "id": "uno", "top": 85.63, "left": 103.03, "attrs": {} },
7      {
8        "type": "wokwi-resistor",
9        "id": "r1",
10       "top": 210.34,
11       "left": 110.84,
12       "rotate": 90,
13       "attrs": { "value": "220" }
14     },
15     {
16       "type": "wokwi-led",
17       "id": "led",
18       "top": -25.5,
19       "left": 66.38,
20       "attrs": { "color": "red", "flip": "" }
21     },
22     {
23       "type": "wokwi-hc-sr04",
24       "id": "ultrasonic",
25       "top": -60.16,
26       "left": 246.99,
27       "attrs": { "distance": "70" }
28     }
29   ],
30   "connections": [
31     [ "uno:GND.1", "ultrasonic:GND", "black", [ "v-8", "*", "v8" ] ],
32     [ "uno:2", "ultrasonic:ECHO", "green", [ ] ],
33     [ "uno:3", "ultrasonic:TRIG", "purple", [ "*", "v4" ] ],
34     [ "uno:5V", "ultrasonic:VCC", "red", [ "v16", "h-96", "*", "v12" ] ],
35     [ "uno:GND.1", "led:C", "black", [ ] ],
36     [ "r1:1", "led:A", "blue", [ ] ],
37     [ "uno:13", "r1:2", "blue", [ ] ]
38   ],
39   "dependencies": {}
40 }
```

Diagram:



Output:

- Distance more than 100cm:



- Distance less than 100cm:

