

SMART BRIDGE EXTERNSHIP

ASSIGNMENT – 1

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In Wokwi, if the distance is less than 100cms for ultrasonic sensor, glow a LED

Code:

Sketch.ino

```
const int TriggerPin = 13;
const int EchoPin = 12;
const int ledPin = 2;
void setup() {
  pinMode(TriggerPin, OUTPUT);
  pinMode(EchoPin, INPUT);
  pinMode(ledPin, OUTPUT);
  Serial.begin(9600);
}
void loop() {
  // Trigger the ultrasonic sensor
  digitalWrite(TriggerPin, LOW);
  delayMicroseconds(2);
  digitalWrite(TriggerPin, HIGH);
  delayMicroseconds(10);
  digitalWrite(TriggerPin, LOW);
  // Simulated distance value (in centimeters)
  int distance = 200; // Change this value to simulate different distances
```

```

// Calculate the duration based on the simulated distance
long duration =distance * 2 / 0.034;
// Check if the distance is less than 100 cm
if (distance < 100) {
  digitalWrite(ledPin, HIGH); // Turn on the LED
} else {
  digitalWrite(ledPin, LOW); // Turn off the LED
}
Serial.print("Distance: ");
Serial.print(distance);
Serial.println(" cm");
delay(5000); // Delay for stability
}

```

Diagram.json

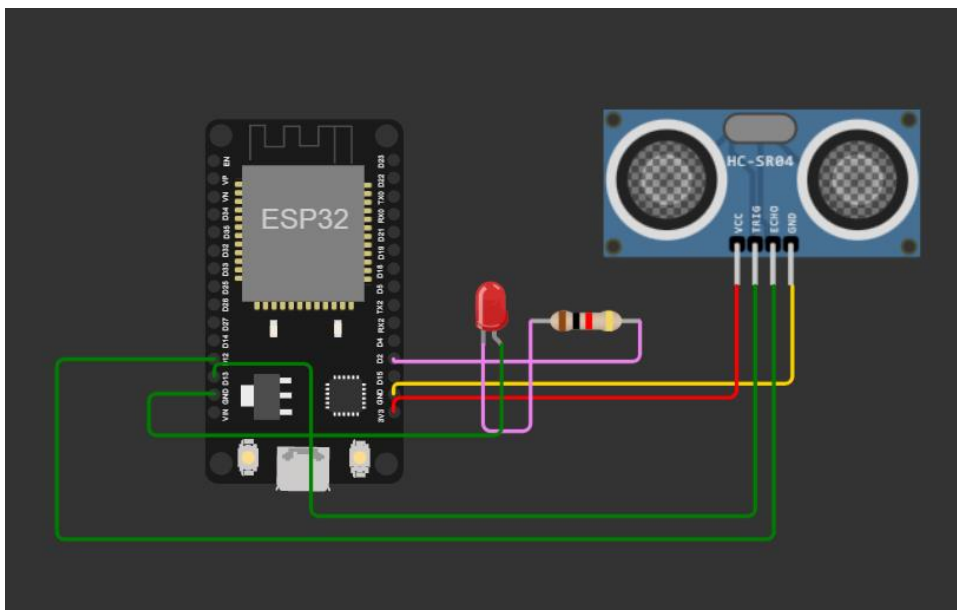
```

{
  "version": 1,
  "author": "Anonymous maker",
  "editor": "wokwi",
  "parts": [
    { "type": "wokwi-esp32-devkit-v1", "id": "esp", "top": 2.67, "left": -89.33, "attrs": {} },
    { "type": "wokwi-hc-sr04", "id": "ultrasonic1", "top": -0.84, "left": 125.02, "attrs": {} },
    {
      "type": "wokwi-led",
      "id": "led1",
      "top": 83.23,
      "left": 45.07,
      "attrs": { "color": "red" }
    },
    {
      "type": "wokwi-resistor",
      "id": "r1",
      "top": 107.22,
      "left": 85.6,
      "attrs": { "value": "1000" }
    }
  ],
  "connections": [

```

```
[ "esp:TX0", "$serialMonitor:RX", "", [] ],
[ "esp:RX0", "$serialMonitor:TX", "", [] ],
[ "ultrasonic1:GND", "esp:GND.1", "gold", [ "v52.56", "h-141.29" ] ],
[ "ultrasonic1:TRIG", "esp:D13", "green", [ "v123.89", "h-238.63", "v-82", "h6.67" ] ],
[ "ultrasonic1:VCC", "esp:3V3", "red", [ "v60.14", "h-110.66" ] ],
[ "r1:1", "led1:C", "violet", [ "v58.9", "h243.36" ] ],
[ "r1:2", "esp:D2", "violet", [ "v21.46", "h-132.85" ] ],
[ "led1:A", "esp:GND.2", "green", [ "v48.78", "h-189.53", "v0" ] ],
[ "ultrasonic1:ECHO", "esp:D12", "green", [ "v136.29", "h-385.19", "v0" ] ]
],
"dependencies": {}
}
```

Diagram:



Output:

```
Distance: 200 cm
Distance: 200 cm
Distance: 200 cm
Distance: 200 cm
```

