

Smart bridge Externship Program

Summer (2023-24)

Smart parking lot system

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ASSIGNMENT 1:

Link: <https://wokwi.com/projects/365163384340933633>

WOKWI SAVE SHARE Distance >100 glow LED

sketch.ino diagram.json libraries.txt Library Manager

```
1 #define ECHO_PIN 1
2 #define TRIG_PIN 2
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
24   bool isNearby = distance < 100;
25   digitalWrite(LED_BUILTIN, isNearby);
26
27   Serial.print("Measured distance: ");
28   Serial.println(readDistanceCM());
29
30   delay(100);
31 }
32
```

Docs

Simulation

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The image shows a digital simulation of an Arduino Uno R3 microcontroller board. It is connected to an HC-SR04 ultrasonic sensor module and a red LED. The sensor's VCC pin is connected to the 5V pin on the Arduino, and its GND pin is connected to a GND pin. The TRIG pin (pin 2) is connected to digital pin 2, and the ECHO pin (pin 1) is connected to digital pin 1. The red LED's anode is connected to digital pin 13, and its cathode is connected to a GND pin. The simulation interface includes a code editor with the provided C++ code, a terminal window, and a visual representation of the hardware components and their connections. The LED is currently illuminated, indicating that the distance measured by the sensor is less than 100 cm.