Ultrasonic sensor with LEDS

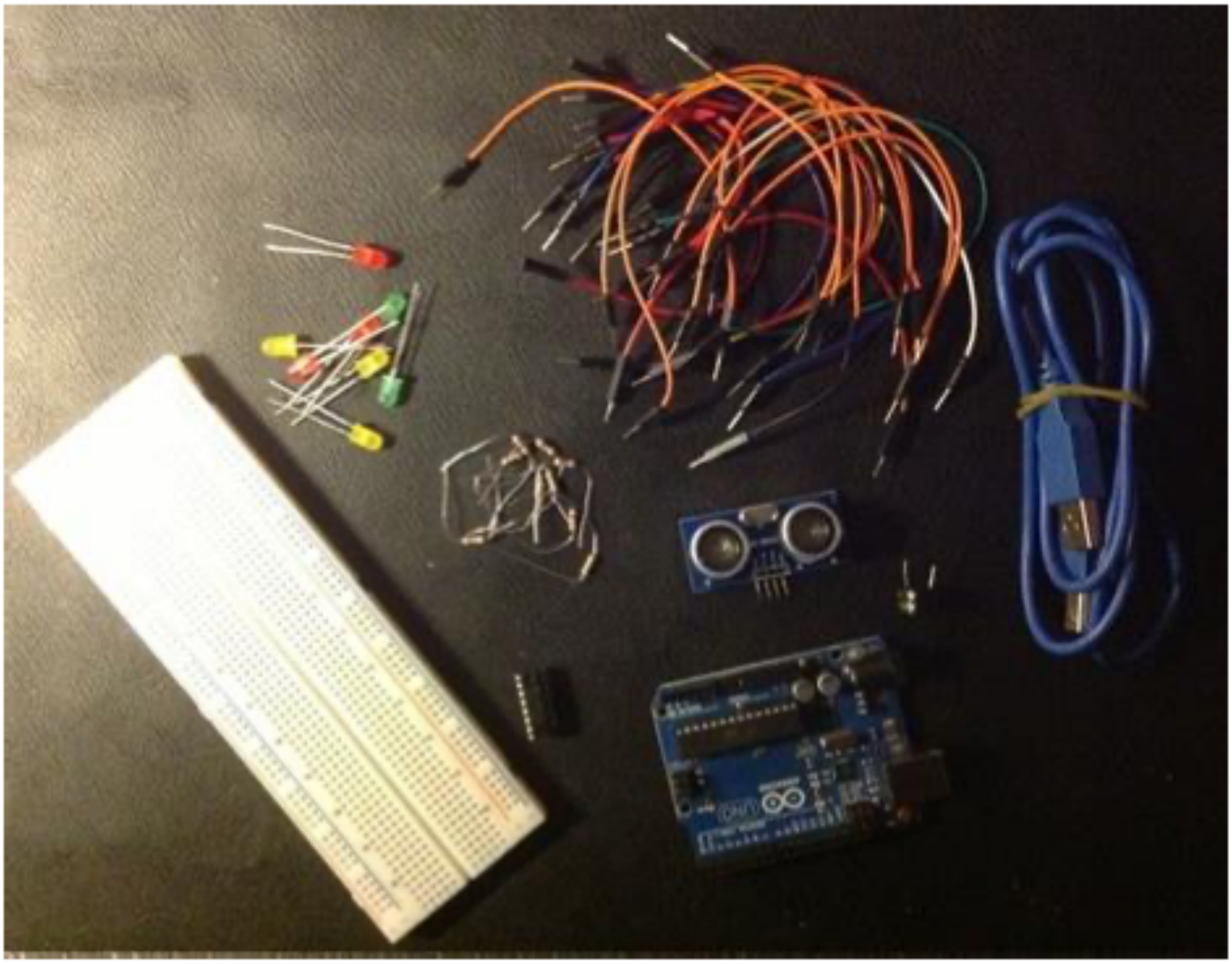
Introduction

In this project you have an ultrasonic sensor that measures the distance and the LEDs bar graph will light up according to your distance from the sensor. As you get closer to the sensor the buzzer beeps in a different way.

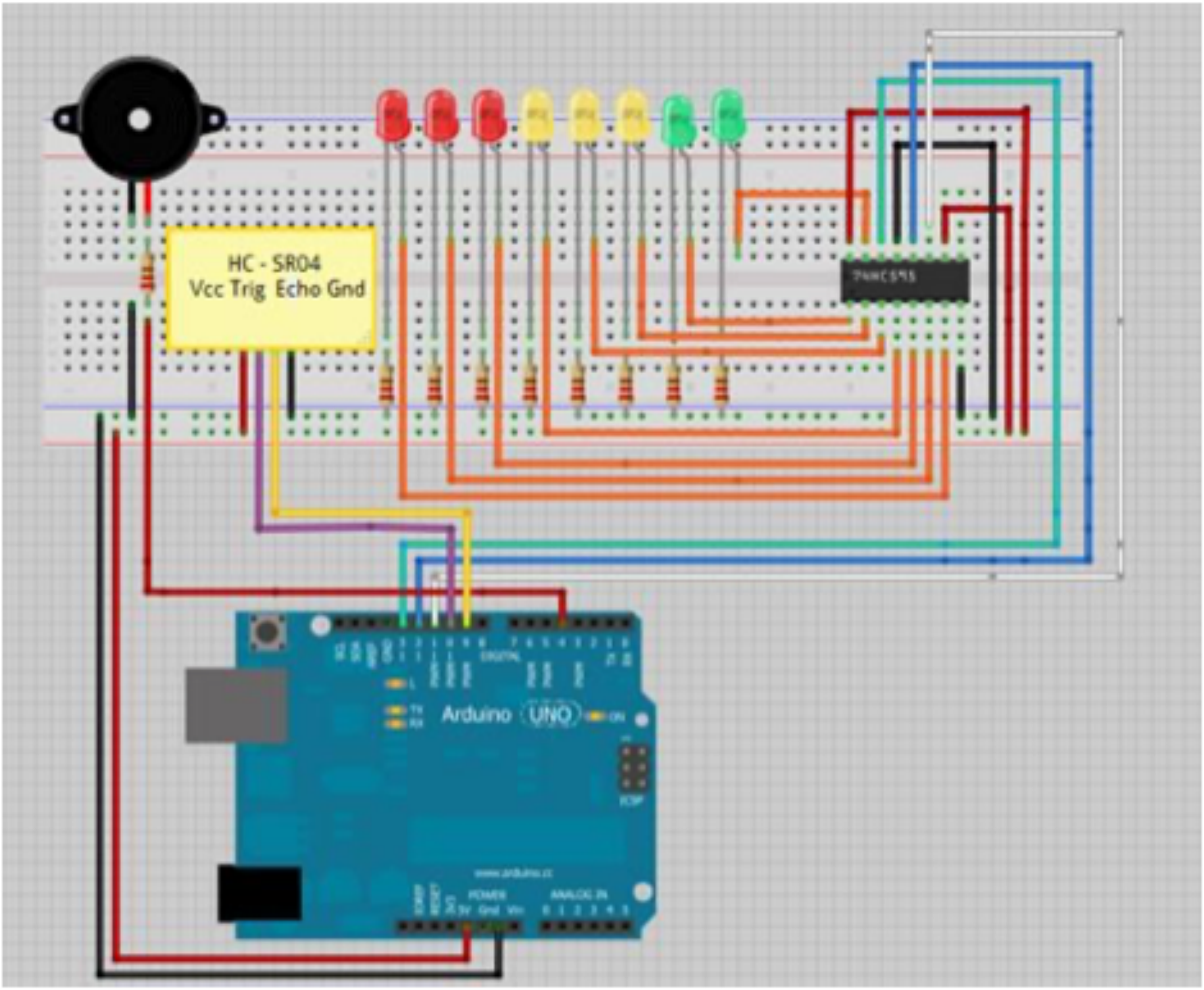
This circuit can work as a parking sensor!

Parts Required

1x Arduino
1x 74HC595 8 Bit Shift Register
Breadboard
8x LEDs (for example: 3x red, 3x yellow, 2x green)
9x 220 Ohm Resistors
1x Buzzer
1x Ultrasonic Sensor (for example: HC-SR04) (eyeball looking thingie)



Schematics



Upload the Code below

```
int tonePin = 4;

int trigPin = 9;

int echoPin = 10;
int clockPin = 11;

int latchPin = 12;

int dataPin = 13;

//Tone - Red Jumper
//Trig - violet Jumper //Echo - yellow
Jumper //IC Pin 11 - white Jumper //IC
Pin 12 - Blue Jumper //IC Pin 14 - Green
Jumper

byte possible_patterns[9] = { B00000000,
B00000001,
B00000011,

B00000111,


B00001111,
B00011111,
B00111111,
B01111111,
B11111111,
};
int proximity=0; int duration; int distance;

void setup() { //Serial Port Serial.begin
(9600);
```

```
pinMode(trigPin, OUTPUT);
pinMode(echoPin, INPUT);
pinMode(clockPin, OUTPUT);
pinMode(latchPin, OUTPUT);
pinMode(dataPin, OUTPUT);
pinMode(tonePin, OUTPUT);

}

void loop() {
digitalWrite(latchPin, LOW);
digitalWrite(trigPin, HIGH);
delayMicroseconds(1000);
digitalWrite(trigPin, LOW); duration =
pulseIn(echoPin, HIGH); distance =
(duration/2) / 29.1;

/*if (distance >= 45 || distance <= 0)
{ Serial.println("Out of range");

}
else {

Serial.print(distance);

Serial.println(" cm"); }*/

proximity=map(distance, 0, 45, 8, 0); //
Serial.println(proximity);

if (proximity <= 0){ proximity=0;

}
```

```
else if (proximity >= 3 && proximity <= 4)
{ tone(tonePin, 200000, 200);

}
else if (proximity >= 5 && proximity <= 6){

tone(tonePin,5000, 200); }

else if (proximity >= 7 && proximity <= 8)
{ tone(tonePin, 1000, 200);

}

shiftOut(dataPin, clockPin, MSBFIRST,
possible_patterns[proximity]);

digitalWrite(latchPin, HIGH);

delay(600);

  noTone(tonePin);
}
```