

Contact-less cross-walk signaling

Sakib Matin

Abstract

The project uses the Arduino and the Ultrasonic sensor. The project involves two parts. The base process is 3-LED system for the standard traffic system. There are 3 colored LEDs: red, yellow, and green. The Arduino controls the LED traffic light pattern. The second part of the project uses an ultrasonic sensor to determine if a pedestrian is present or not. When a pedestrian is present, the traffic light is set to yellow and then counts down to red, to signal to oncoming cars to stop.

Essential Concepts

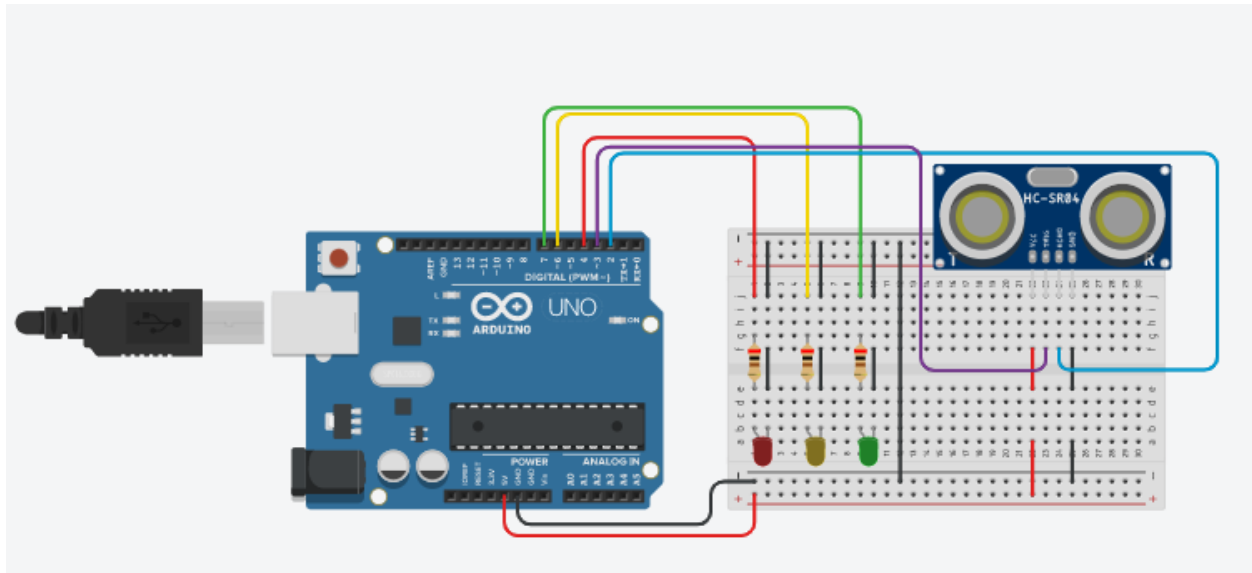
- Arduino powers 3 LEDs (red, yellow and green). The Arduino controls the LED traffic light pattern using a timer.
 - 60 seconds **Green**
 - 10 seconds **Yellow**
 - 60 second **Red**
- Ultrasonic sensor HC-SR04 is used to detect the distance of the objects relative to the sensor. A pulse (ping) is emitted and the return time is used to calculate the distance.

Components

The following parts are required for this project

- Arduino
- Bread board (included in Arduino kit)
- 3 LED (red, yellow and green)
- Ultrasonic sensor HC-SR04 (included in the Arduino kit).

Tinkercad Prototype



Relevance to the Project Guide

This project uses the Arduino to take input from a sensor (Ultrasonic sensor), then processes the input and triggers the LEDs.

Code

My original code is attached as a separate file.