

Embedded Systems Professional Track
EgFWD - Udacity

On-demand Traffic Light control

Project Documentation

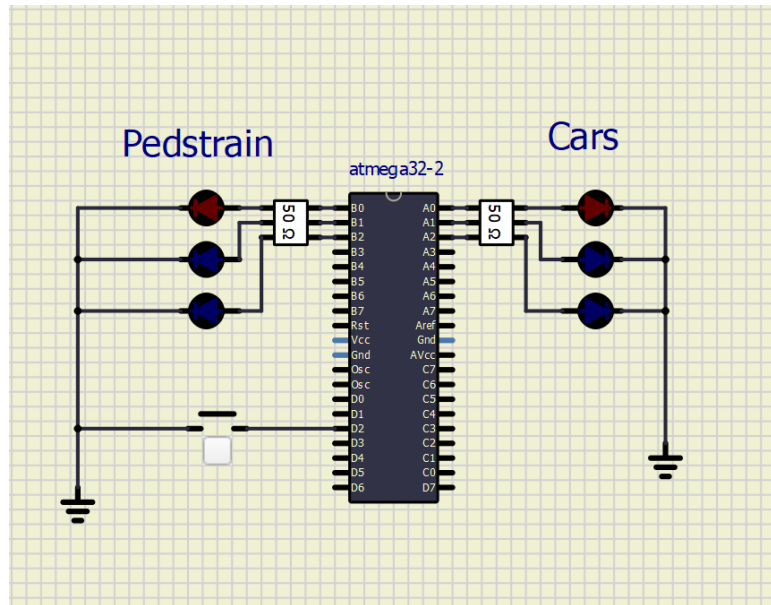
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1. System Description



1.1 System Overview

The system aims to provide an on-demand traffic control system. It includes a pedestrian button to allow for pedestrians to pass.

1.2 System Functionality

The system can detect when the button is pressed. Afterwards, based on current state it would decide what to do. It allows pedestrians to walk by making sure cars are stopped first. Refer to [Flow Chart](#) for more information.

2. System Design

2.1 System Requirements

The system consists of:

- AVR Atmega32 (1MHz)
- 2 Green LEDs
- 2 Yellow LEDs
- 2 Red LEDs
- 6 300 Ohm resistors
- 1 10k Ohm resistor
- 1 Push Button

2.2 Operating Environment

The program has been tested on SimulIDE simulator. It should be used in traffic light control systems on streets with a pedestrian push button included to allow for full system functionality.

2.3 Input & Output Formats

The only system input is in the form of the pedestrian push button. When it comes to output it handles 6 LEDs at once given the current state, time and push button press state.



3. Flow Chart