egyptfwd initiative

UDACITY

Embedded Systems Professional Track
EgFWD - Udacity

On-demand Traffic Light control

Project Documentation

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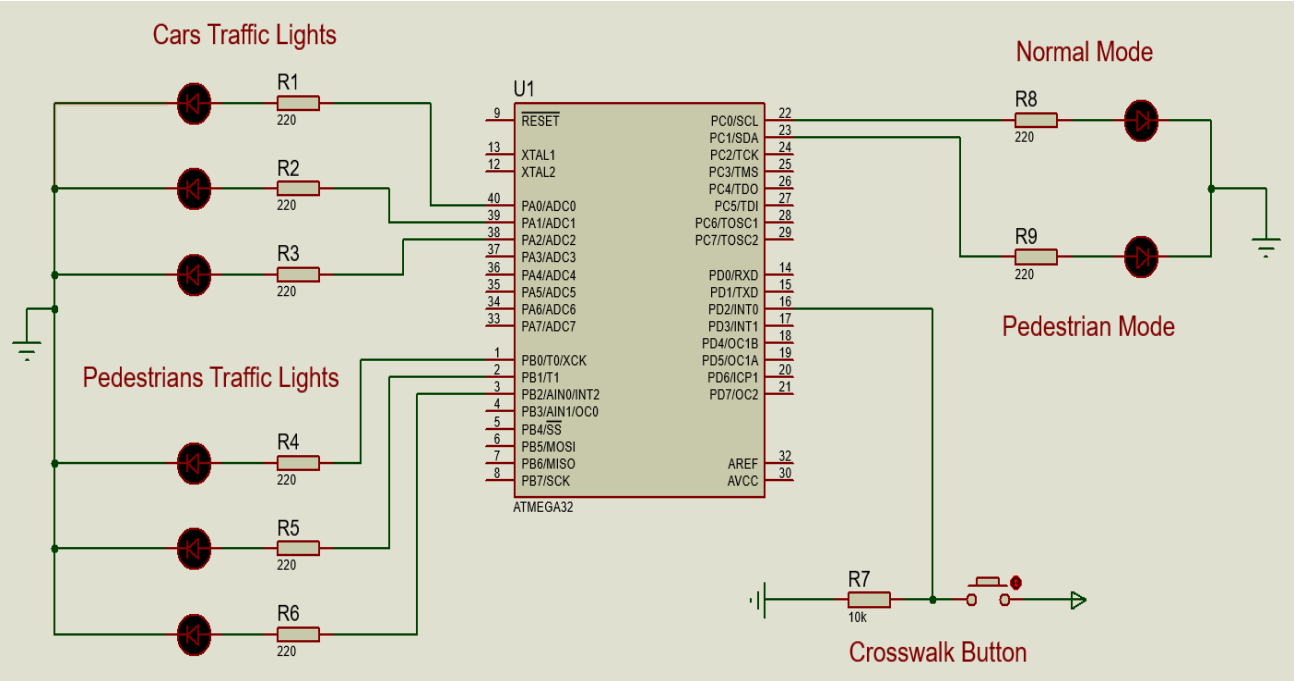
Contents

1. System Description

1.1 System Overview



1.2 System Description

This System is the traffic light device used in intersection, and the main objective is to decrease waiting time for pedestrians and also give him higher priority. This system has two modes: Normal mode, and pedestrian mode. In normal mode, the cars traffic light operates normally, and pedestrian traffic light are initially on red light on until the button is pressed, the system switches to pedestrian mode to allow pedestrians to cross the road safely and when the cycle is finished, the system switches back to normal mode.

2. System Design

2.1 System Requirements

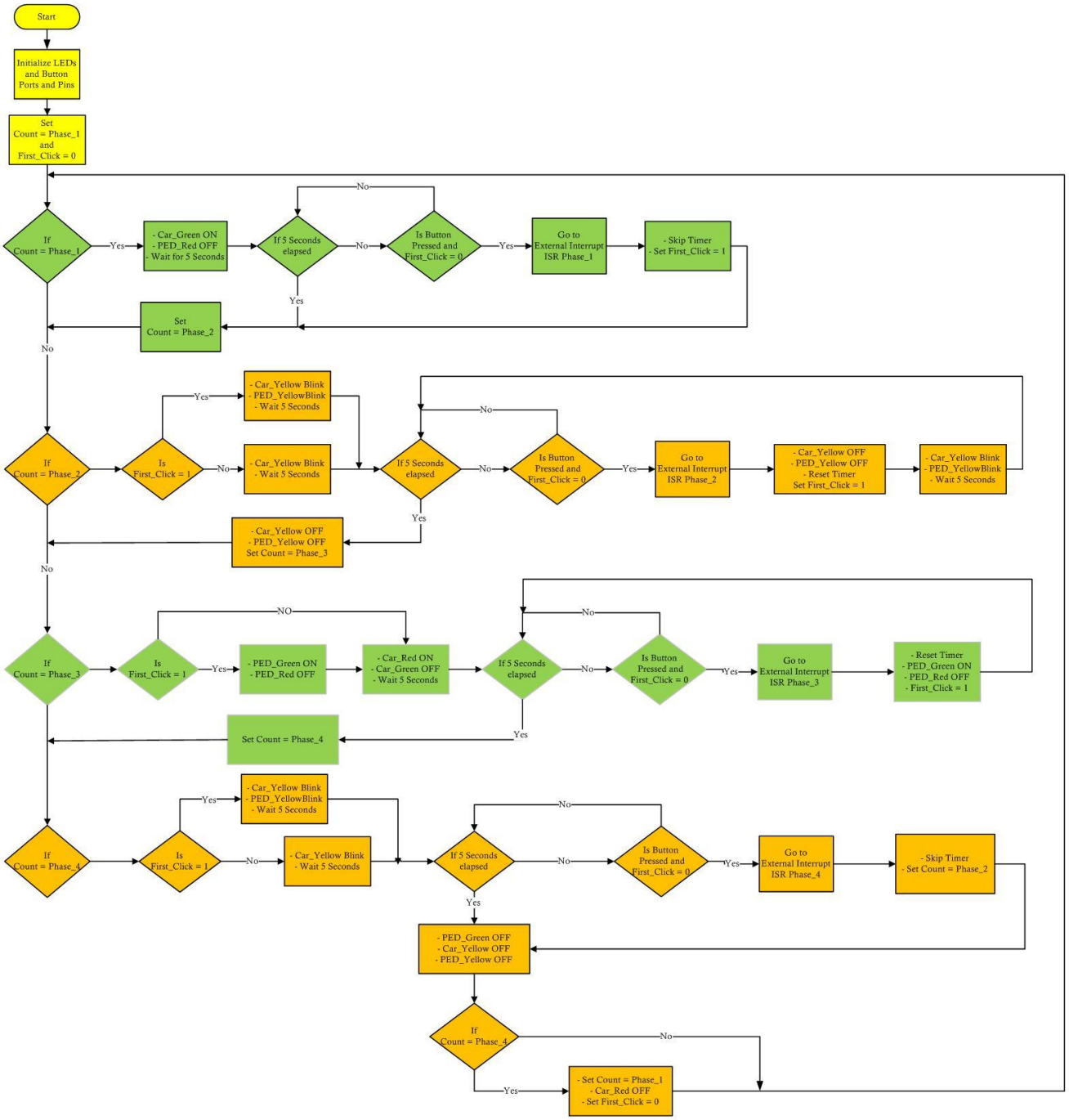
This System Consists of:

- ATmega32 AVR [1 MHz Crystal]
- 3 LEDs for Cars
- 3 LEDs for Pedestrians
- 2 LEDs for Indications
- 8 Resistors 220Ω
- 1 Resistor 10KΩ
- 1 Push Button

2.2 Operating Environment

This Program has been tested by proteus simulator.

3. System Flow Chart



4. System Constraints

1. If the button is pressed while the cars traffic yellow is blinking, both yellow LEDs will start blinking for another 5 seconds.

2. The green pedestrian LED will be turned on if and only if the red cars traffic is on.