On-Demand Traffic Light control

Embedded Systems Professional Track
EgFWD – Udacity

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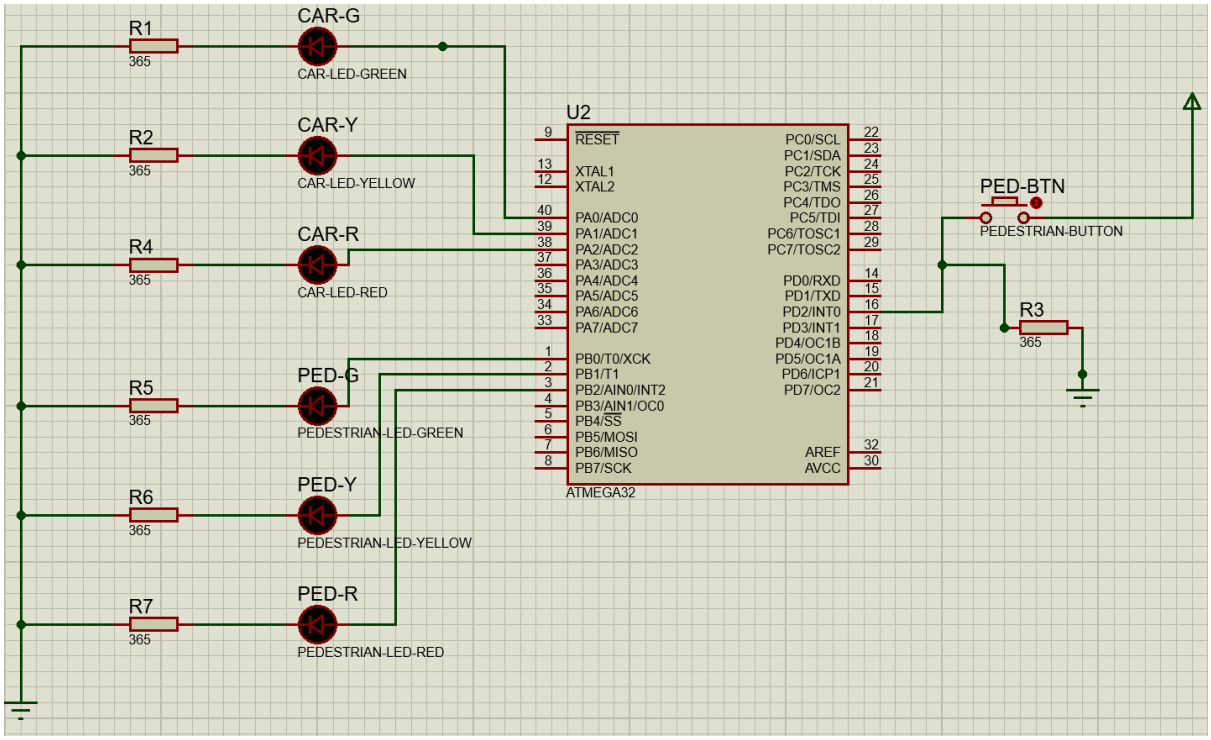
Project Description

This project aims to design a fully functioning traffic light system that turns on green light for cars and red light for pedestrians with a time interval of 5 seconds then blinks a yellow light for cars and pedestrians for 5 seconds. Sequentially, it switches car's light to red and pedestrian's light to green, allowing passengers to cross the street with a time interval of 5 seconds.

Pedestrians can press a button that interrupts the green light for cars to cross the street. The system responds by blinking yellow lights for both pedestrians and cars for 5 seconds, then turning off the car's green light, turning on the car's red light on, turning off the pedestrian's red light and turning on the pedestrian's green light to allow pedestrians to cross the street.



System Design

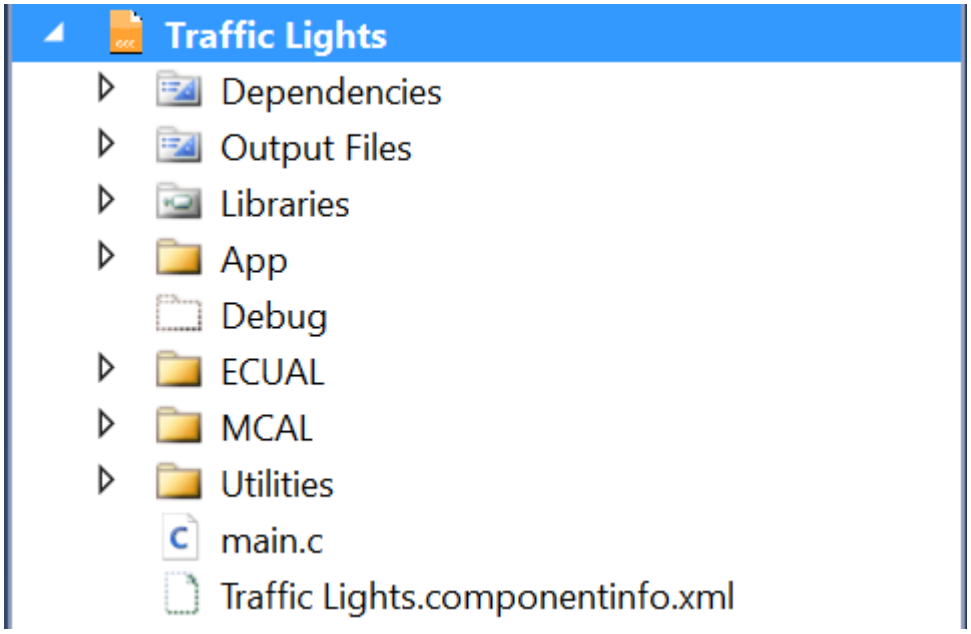
System Requirements

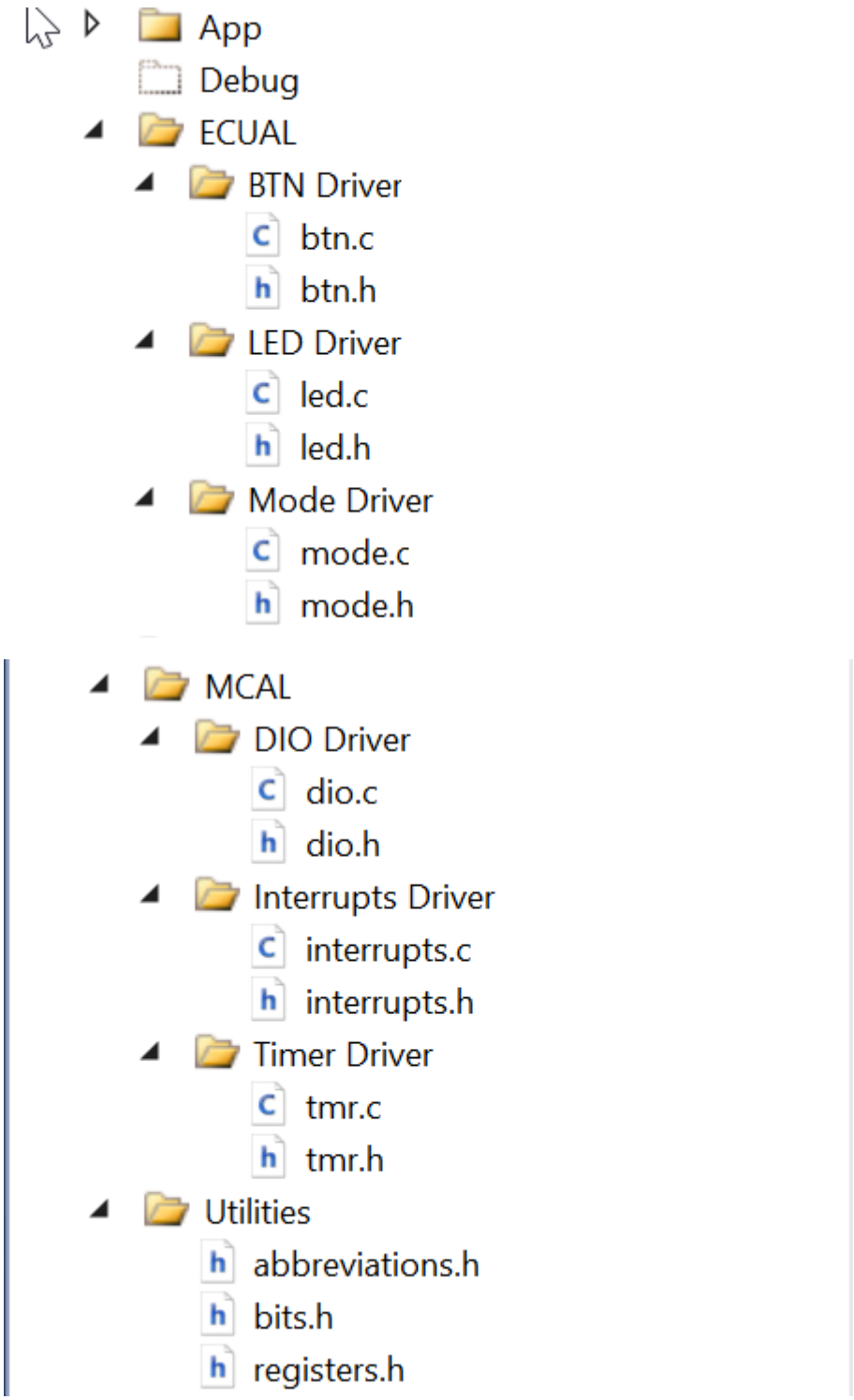
1- AVR Atmega32 (1Mhz) (Check the data sheet on Repo)
2- 2 Green LEDs
3- 2 Yellow LEDs
4- 2 Red LEDs
5- 7 365 Ohm Resistors
6- 1 Push Button

Operating Environment

The program has been tested on Proteus simulator provided by LabCenter.

Modules Classification





You can check the full source code with the flow chart on Repo or Google Drive.

Videos are too large for GitHub.