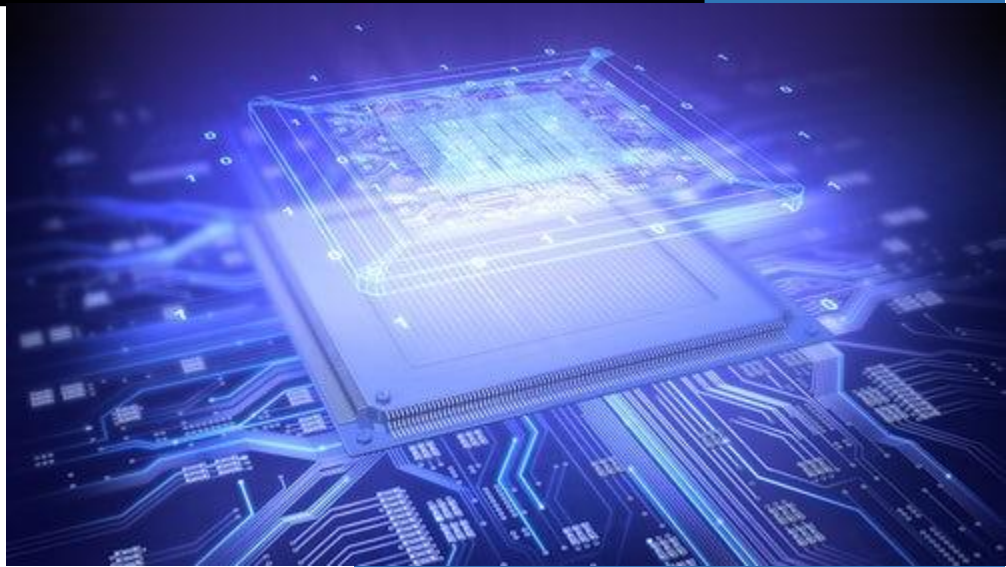


2022

TRAFFIC LIGHT MCU PROJECT



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UDACITY AND EGYFWD

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INTRODUCTION

Traffic lights consist normally of three signals, transmitting meaningful information to drivers and riders through colours and symbols including arrows and bicycles. The regular traffic light colours are red, yellow and green, arranged vertically or horizontally in that order.

Although this is internationally standardized

Traffic lights are signaling devices positioned at road intersections, pedestrian crossings, and other locations to control the flow of traffic.

Traffic lights normally consist of three signals, transmitting meaning to drivers and riders through colors and symbols including arrows and bicycles.

SYSTEM DESCRIPTION

In our system we have 2 traffic lights :

1. Cars traffic light
2. Pedestrian traffic light

Generally the cars traffic light is always working in a sequential order.

The pedestrian traffic light must be initialized by a civilian who wants to pass the street,using the button this can happen.

The interaction of this push button should interfere the car traffic light as it will be illustrated in the SYSTEM DESIGN section.

Each traffic light is connected to the main and only micro controller.

SYSTEM DESIGN

So as illustrated before the car traffic lights are always working so if the civilian pressed the push button this will give the priority to the civilian to pass rather than the cars although it wont stop the cars immediately.

As examples there are multiple cases like

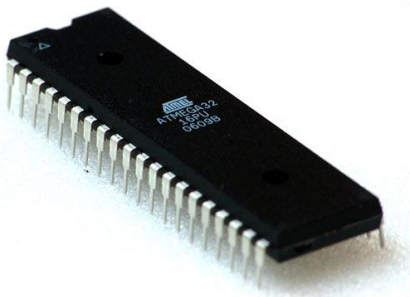

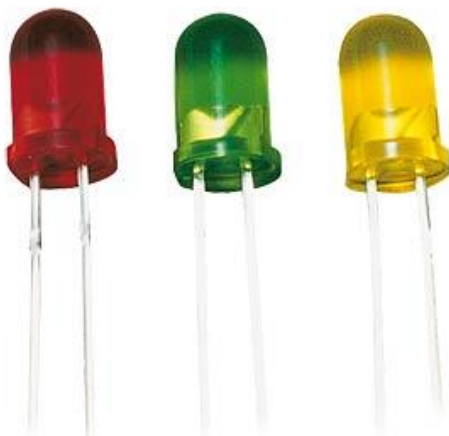
- ✚the button was pressed while the car RED LED was ON
- ✚the button was pressed while the car YELLOW LED was ON
- ✚the button was pressed while the car GREEN LED was ON

In each case the pedestrian traffic system will react differently.

This will be illustrated in the Flow chart section that will be have a map stating each case and its reaction et cetera.

SYSTEM COMPONENTS

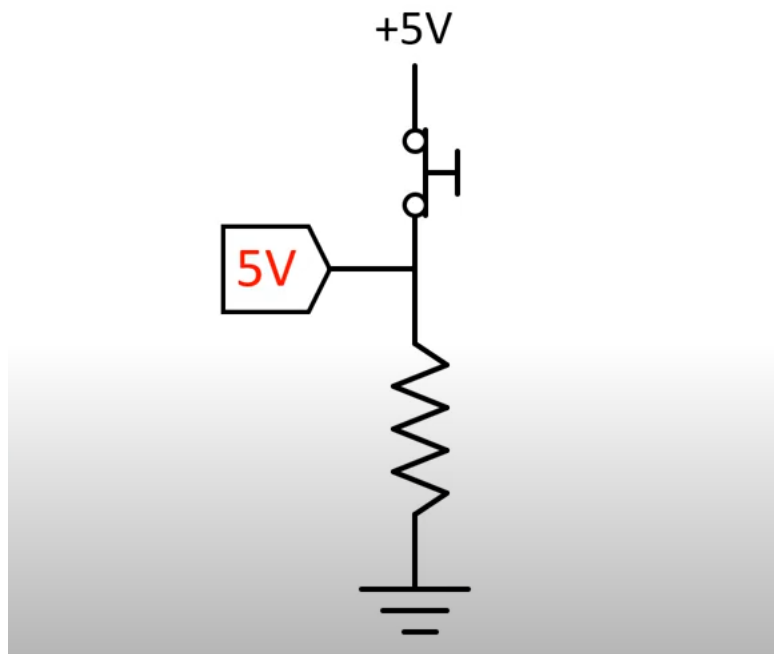
The system components will be illustrated in the opposite table:

MCU : atmega 32	
RESISTORS: 340 ohms was used As well 250 ohms too	
ACTIVE LEDS: 2 RED LEDS 2 YELLOW LEDS 2 GREEN LEDS	

PUSH BUTTON :

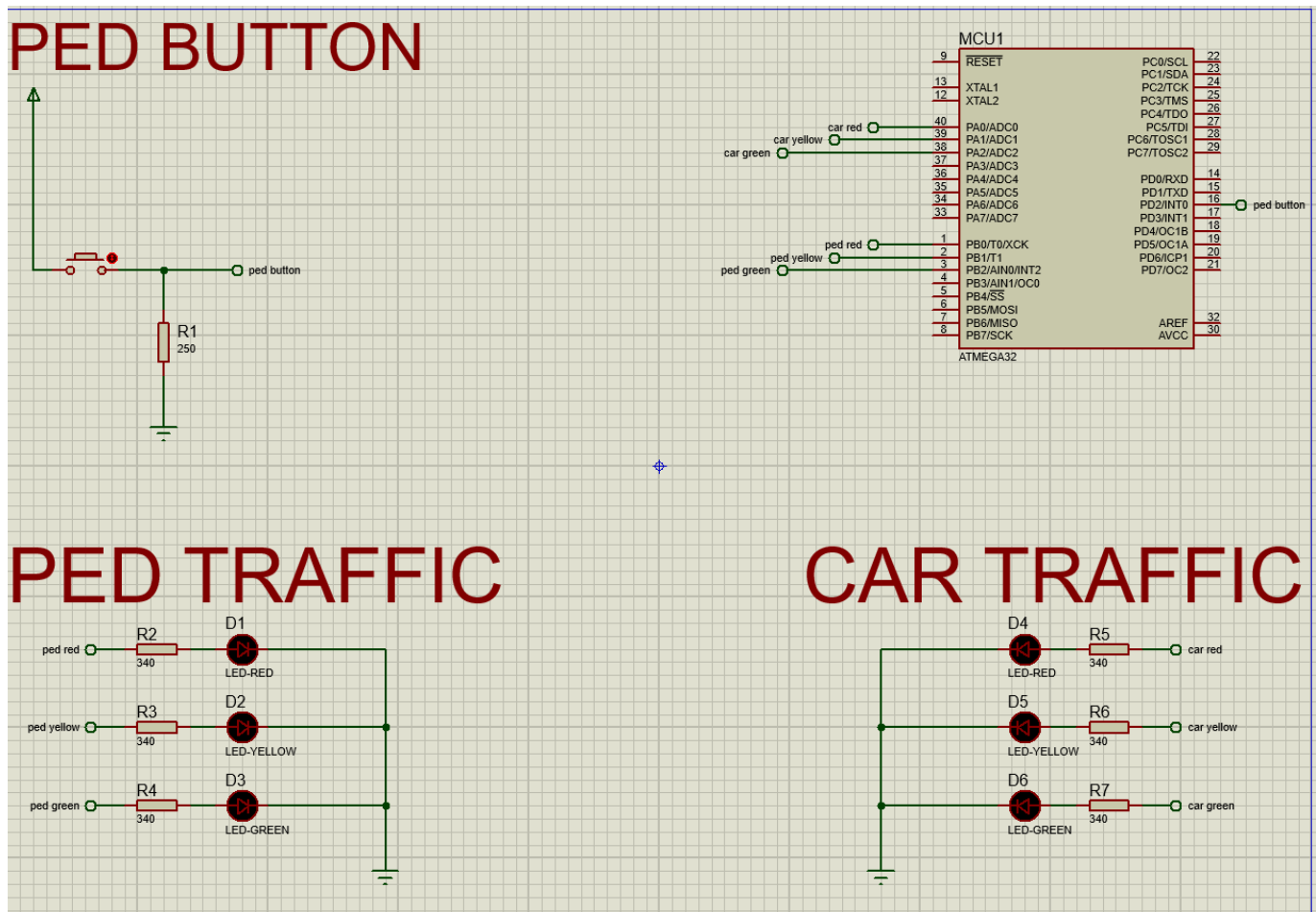
1 PUSH
BUTTON
WAS USED

And the
connection was
a pull down
connection



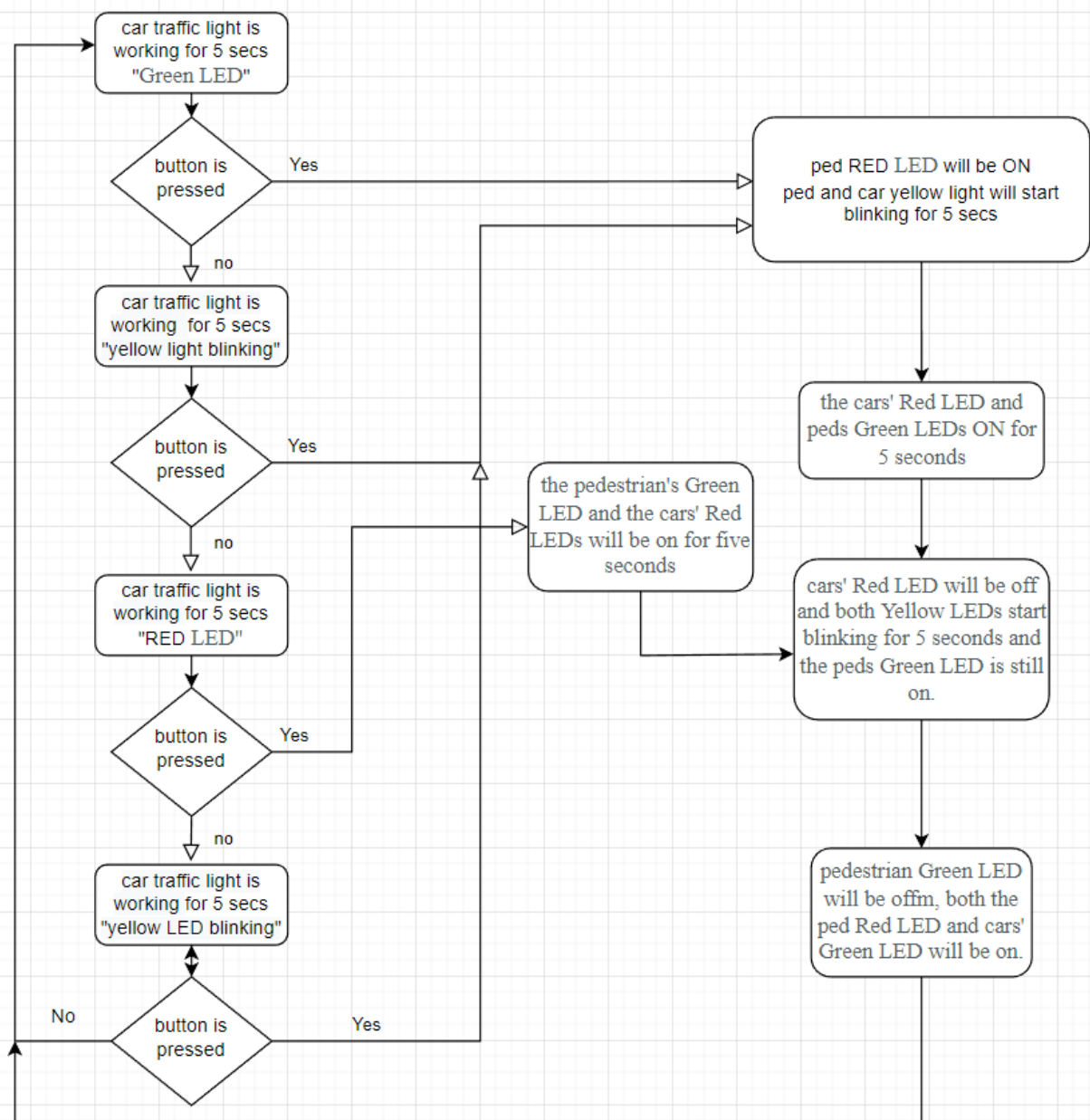
SYSTEM SCHEMATIC

In the opposite figure a schematic design for the system using proteus



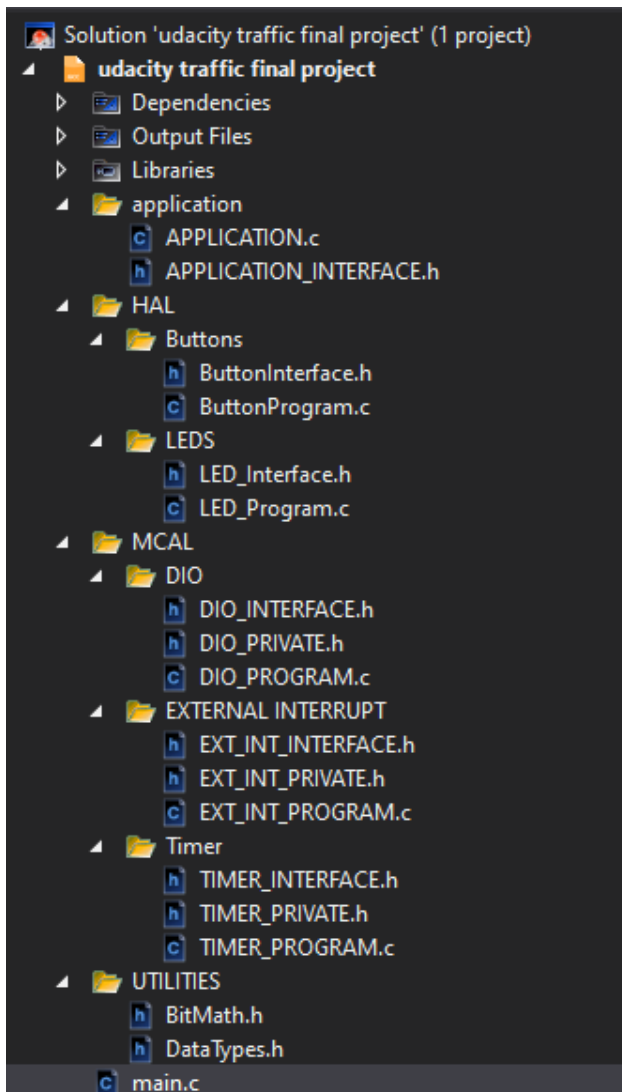
SYSTEM FLOW CHART

In the opposite figure a flow chart is illustrating the flow of the system and the program how is it working sequentially.



PROGRAM DOCUMENTATION

The layers documentation will be shown in this section with all the folders and files regarding the system:



And the link for the repository of the system is :

<https://github.com/Mohyeldean11/TRAFFIC-LIGHT-SYSTEM>