Embedded Systems Professional Track EgFWD – Udacity

On-demand Traffic Light control

Project Documentation

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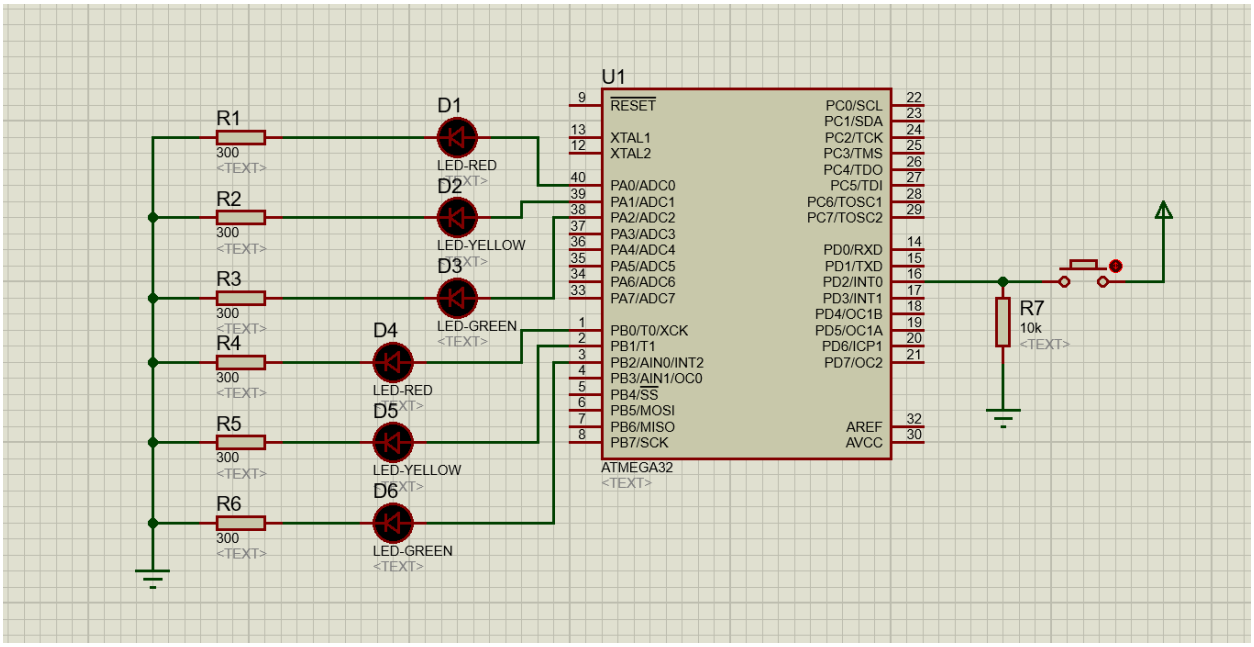
System description:

1- System over view:



This is a system an on-demand traffic control system, which include a button to allow for pedestrians to pass

2- System Functionality:

When the button is pressed, the system can tell. then, based on its situation at that time, would make a decision. It ensures that cars are stopped before allowing pedestrians to cross the street

3- System design:

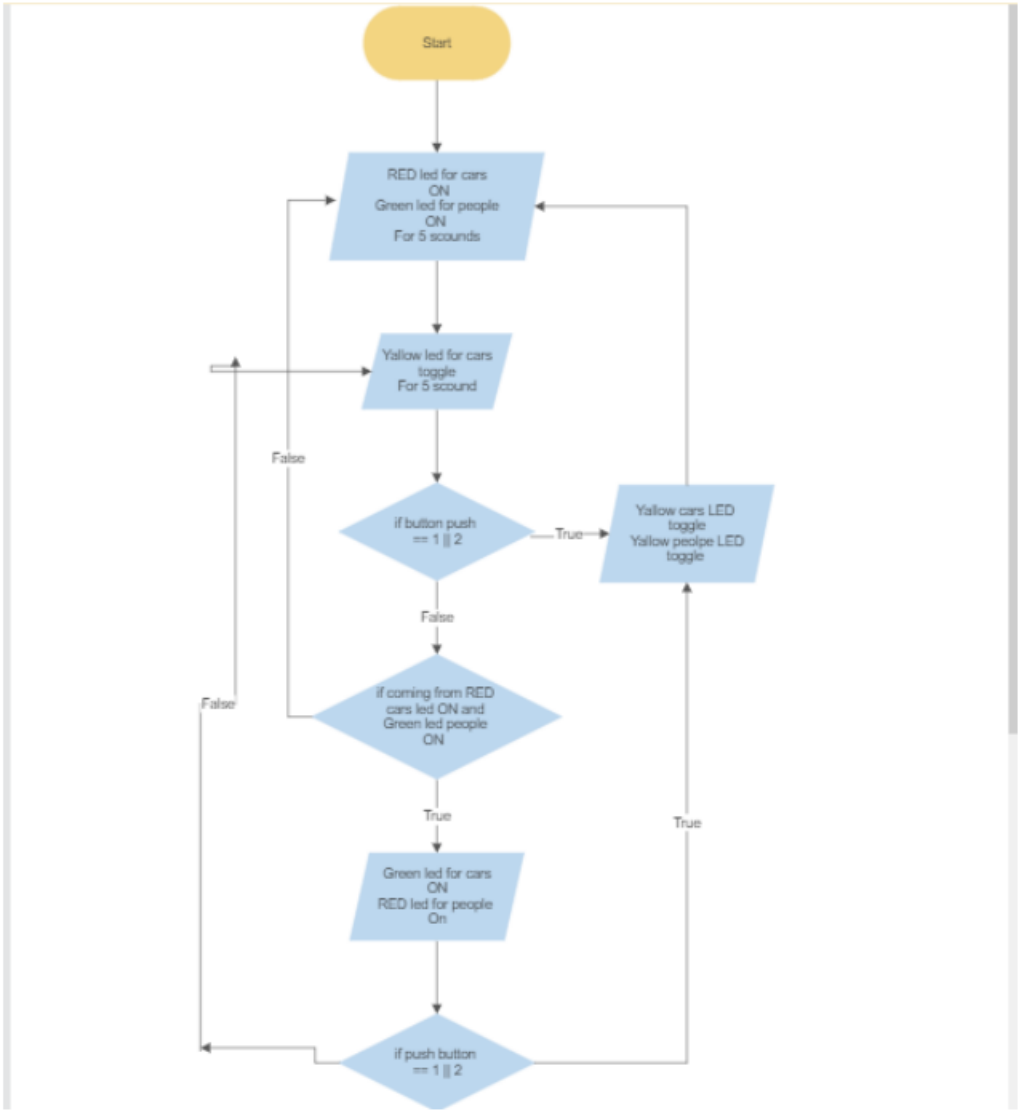
Hardware:

- 2 Green Led
- 2 Red Led
- 2 Yellow Led
- 1 push button

Software:

This system contains 4 folders APPLICATION and ECUAL and MCAL and UTILITES. UTILITES folder contains registers.h which contains all registers definitions and types.h which contains typedef and contains interrupts.h which contains all interrupts definitions. MCAL folder contains DIO Driver which contains port and pin A,B,C, and D initialization, and contain Time Driver which have all time initialization and all its functions. MCAL folder contains Drivers function LED Driver and Button Driver. APPLICATION folder contains application.c which call all functions.

4- System flow chart:



System constraints:

this system only has one constraint which is when pushing the button for long time nothing to be done