Traffic light system using atmega32

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System Description

System is considered a simulation of a real traffic light system with pedestrian mode option. Mostly, the system priorities people to cross the road on pushing the button.

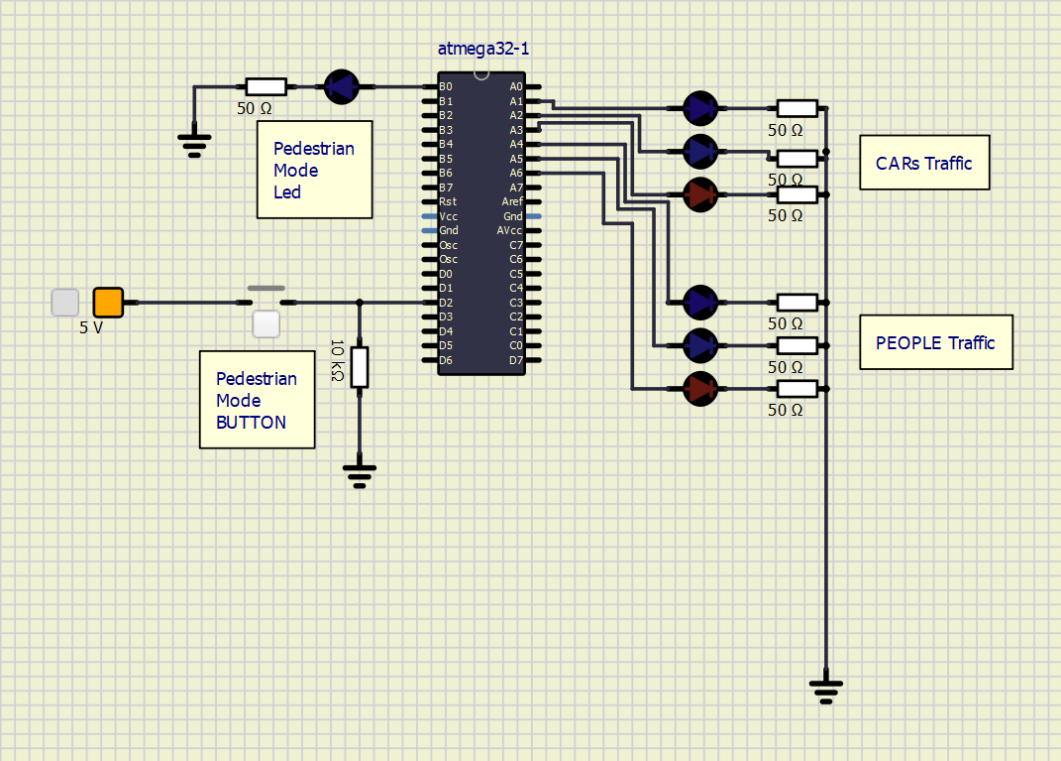
Modes:

1- **Normal mode:** in which lights changes from (red) to yellow blinking then to green and vise-versa for car LEDs. On the other hand, people LEDs operates in the opposite logic of car ones.

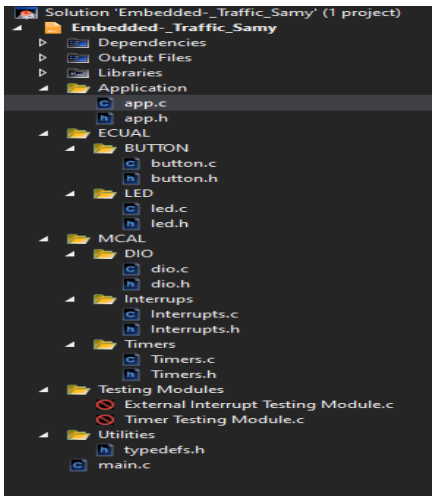
2- **Pedestrian mode:** in which the system gives priority to people who wants to cross the road by accelerating the traffic light logic forward to let them pass on their green light.

System design

Hardware:


atmega32-1
50 Ω
Pedestrian Mode Led
5 V
Pedestrian Mode BUTTON
10 KΩ
50 Ω
50 Ω
50 Ω
CARs Traffic
50 Ω
50 Ω
50 Ω
PEOPLE Traffic

Software:


Solution 'Embedded-_Traffic_Samy' (1 project)
Embedded-_Traffic_Samy
Dependencies
Output Files
Libraries
Application
app.c
app.h
ECUAL
BUTTON
button.c
button.h
LED
led.c
led.h
MCAL
DIO
dio.c
dio.h
Interrups
Interrupts.c
Interrupts.h
Timers
Timers.c
Timers.h
Testing Modules
External Interrupt Testing Module.c
Timer Testing Module.c
Utilities
typedefs.h
main.c

System state machine

I recorded video to describe this table which represent different states of the system.

Video name:

04 App Start() Function Code Flow Logic 1.m4v