1 System Description
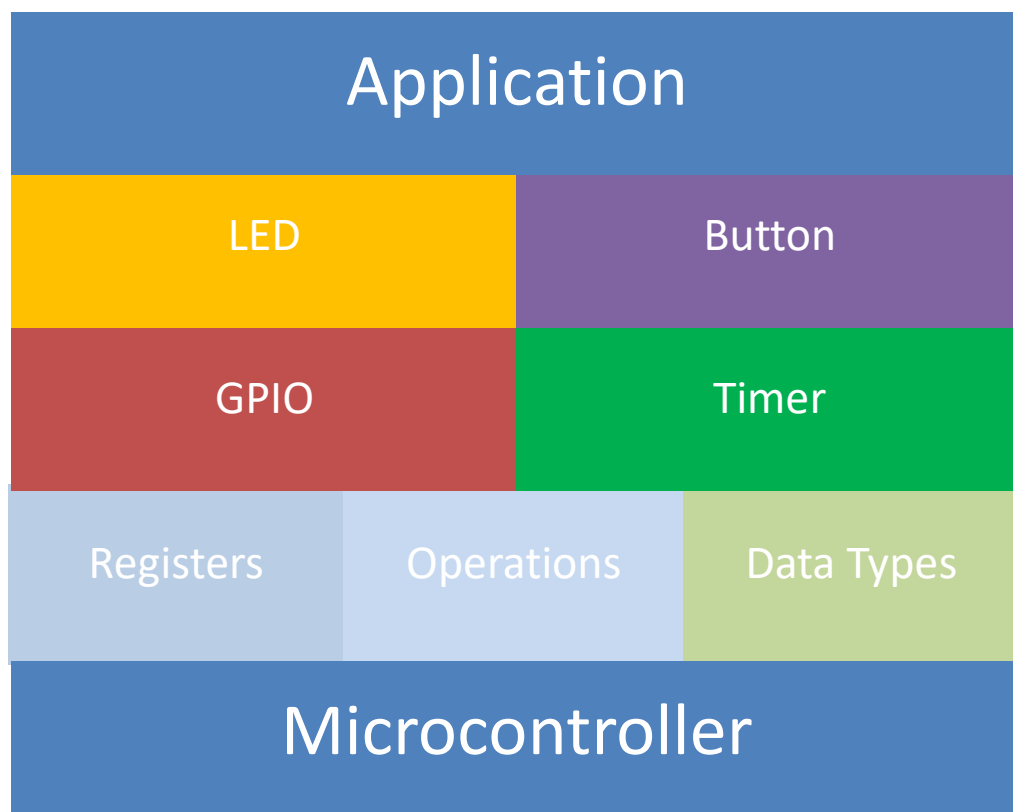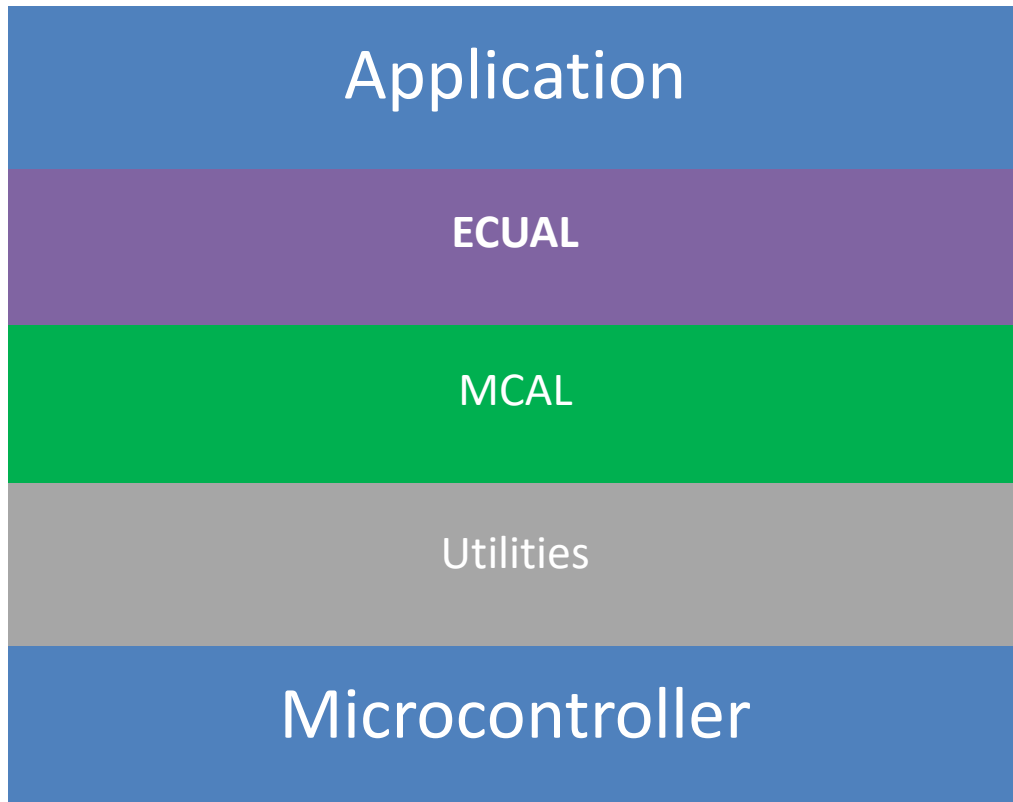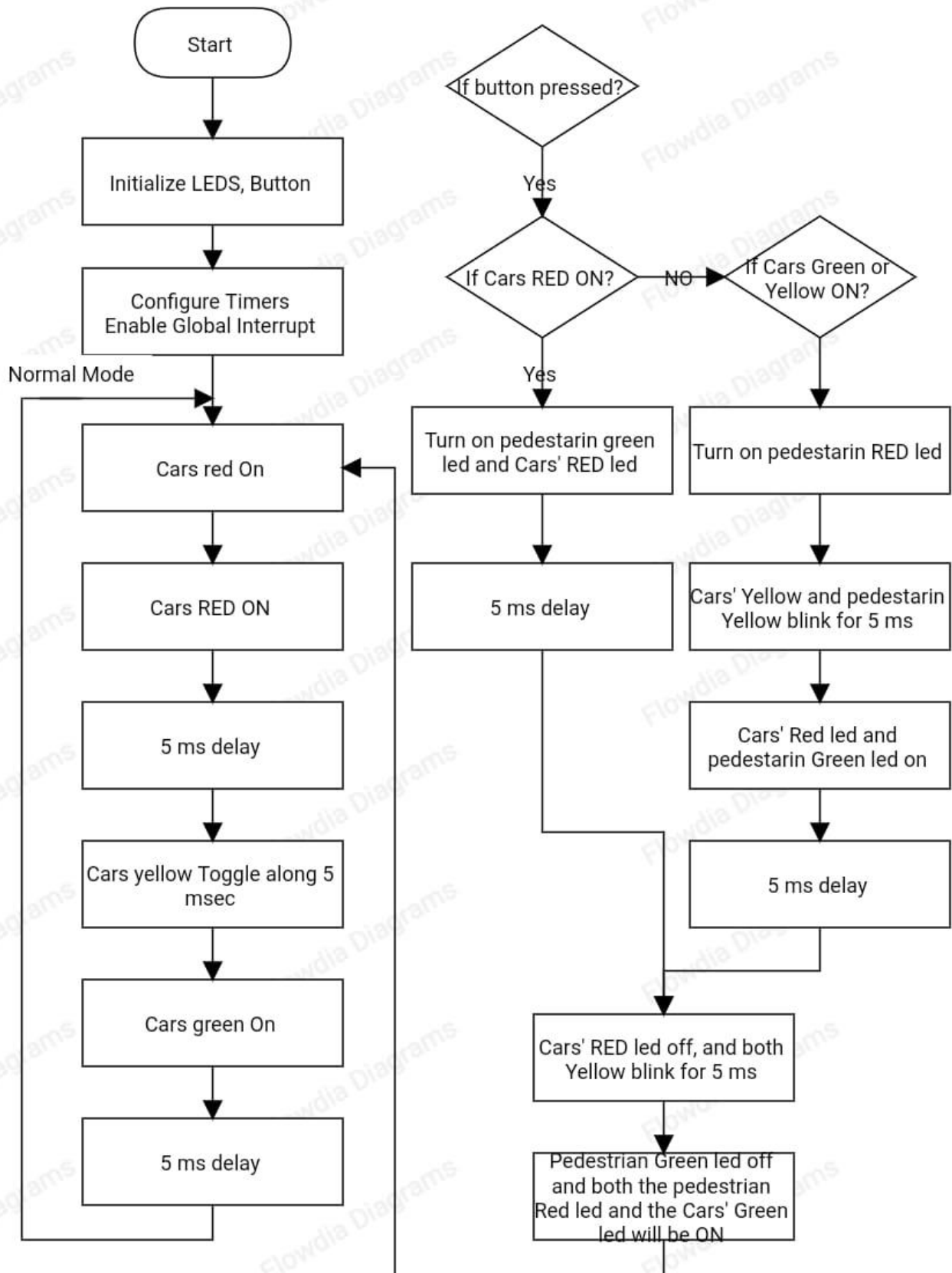
system aim to manage traffic, by using set of leds with specific colors for indecation, so system functionality is if person pressed button traffic ligths changs from normal mode to pedestrian.

2 System Design

Application
ECUAL
MCAL
Utilities
Microcontroller

Application	
LED	Button
GPIO	Timer
Registers	Operations	Data Types
Microcontroller		

3System Flow Chart

Start

Initialize LEDS, Button

Configure Timers
Enable Global Interrupt

Normal Mode

Cars red On

Cars RED ON

5 ms delay

Cars yellow Toggle along 5 msec

Cars green On

5 ms delay

If button pressed?

Yes

If Cars RED ON? — NO → If Cars Green or Yellow ON?

Yes

Turn on pedestarin green led and Cars' RED led

5 ms delay

Turn on pedestarin RED led

Cars' Yellow and pedestarin Yellow blink for 5 ms

Cars' Red led and pedestarin Green led on

5 ms delay

Cars' RED led off, and both Yellow blink for 5 ms

Pedestrian Green led off and both the pedestrian Red led and the Cars' Green led will be ON
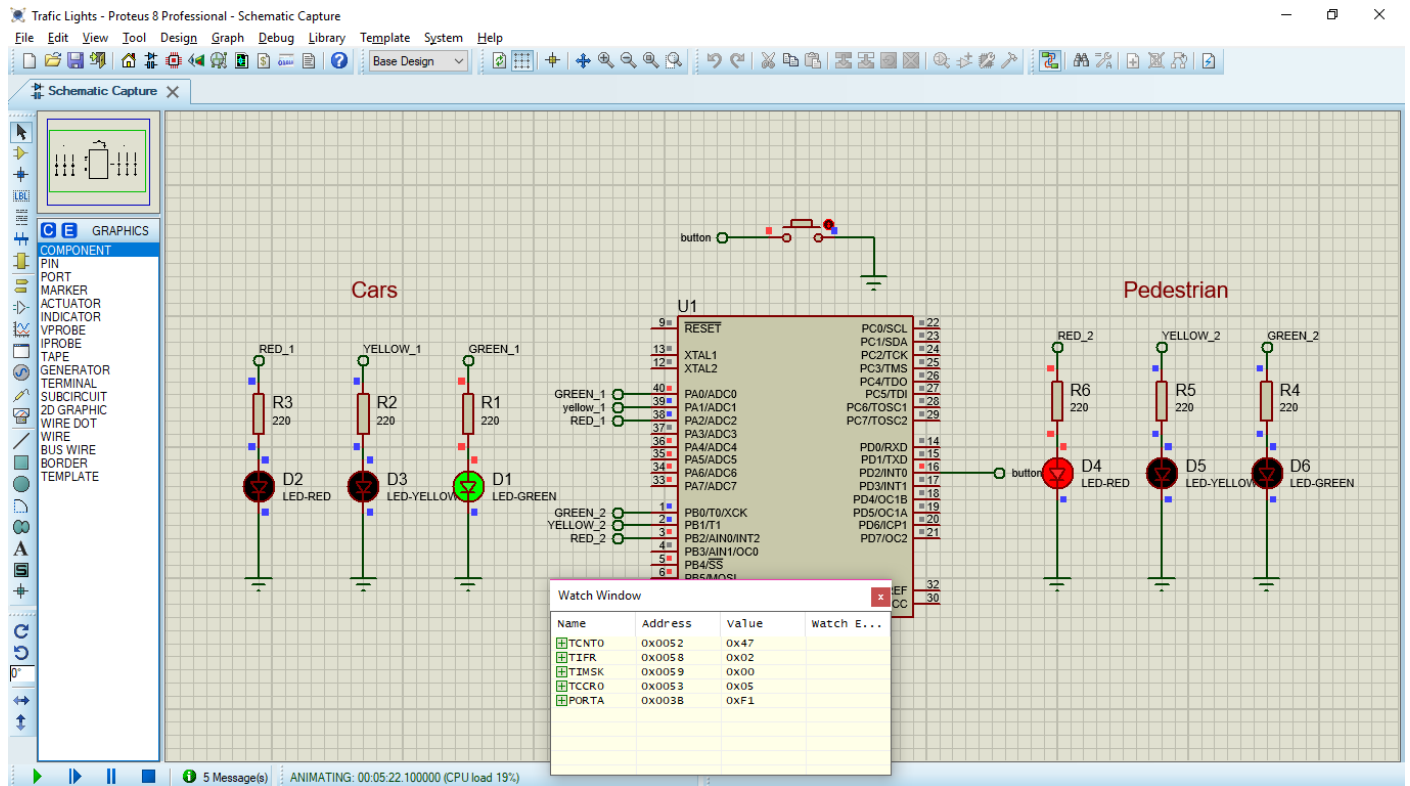
Return to normal mode

5System Constraints

-At long press of button, nothing is done as i used action at rising edge

Long Press

-At double press of button, action taken on;y at first press, and ignored sencond one

6Proteus Simulation

5System Design

HW used

MCU: atmega32

6LEDs for Cars, and pedestrian

Button to change mode of operation