SYSTEM DESIGN

System description :

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

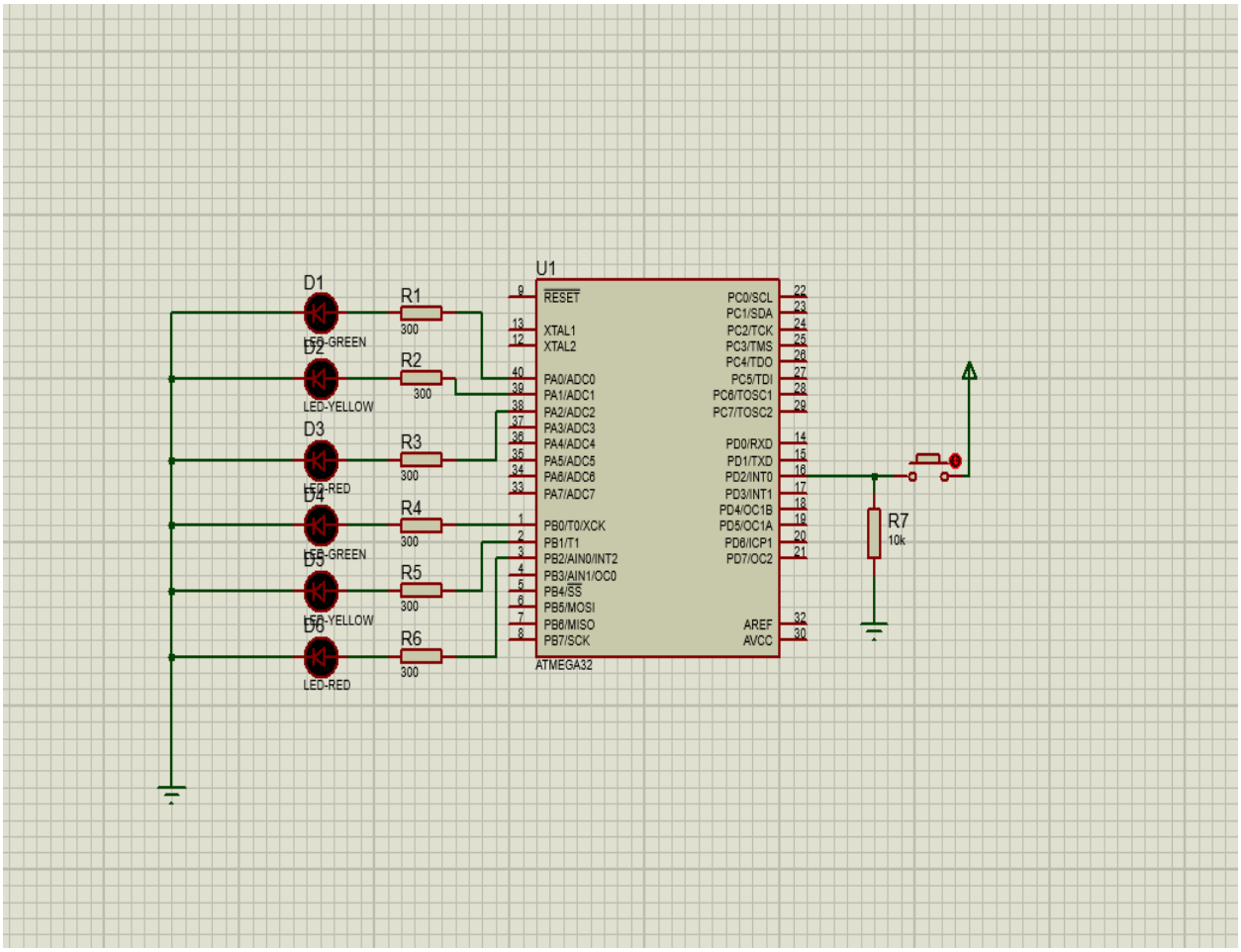
Traffic lights normally consist of three signals, transmitting meaning to drivers and riders through colors and symbols including arrows and bicycles.

The regular traffic light colors are red, yellow, and green arranged vertically or horizontally in that order.

Although this is internationally standardized, variations exist on national and local scales as to traffic light sequences and laws.

You are required to implement a traffic lights system with an on-demand crosswalk button.

Crosswalk buttons let the signal operations know that someone is planning to cross the street, so the light adjusts, giving the pedestrian enough time to get across.


U1
D1
LED-GREEN
D2
LED-YELLOW
D3
LED-RED
D4
LED-GREEN
D5
LED-YELLOW
D6
LED-RED
R1
300
R2
300
R3
300
R4
300
R5
300
R6
300
R7
10k
RESET
XTAL1
XTAL2
PA0/ADC0
PA1/ADC1
PA2/ADC2
PA3/ADC3
PA4/ADC4
PA5/ADC5
PA6/ADC6
PA7/ADC7
PB0/T0/XCK
PB1/T1
PB2/AIN0/INT2
PB3/AIN1/OC0
PB4/SS
PB5/MOSI
PB6/MISO
PB7/SCK
PC0/SCL
PC1/SDA
PC2/TCK
PC3/TMS
PC4/TDO
PC5/TDI
PC6/TOSC1
PC7/TOSC2
PD0/RXD
PD1/TXD
PD2/INT0
PD3/INT1
PD4/OC1B
PD5/OC1A
PD6/ICP1
PD7/OC2
AREF
AVCC
ATMEGA32

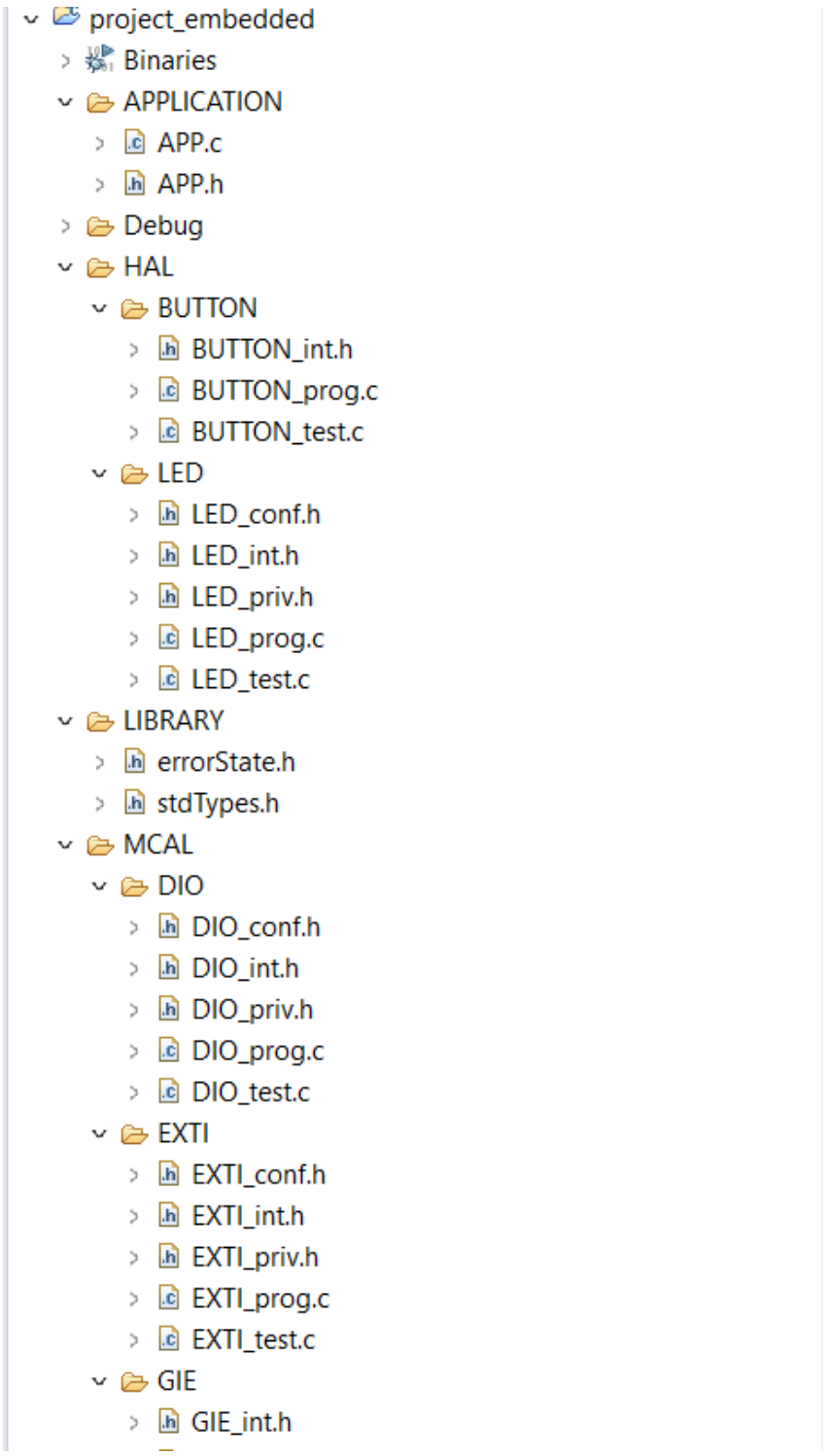
SYSTEM DESIGN :

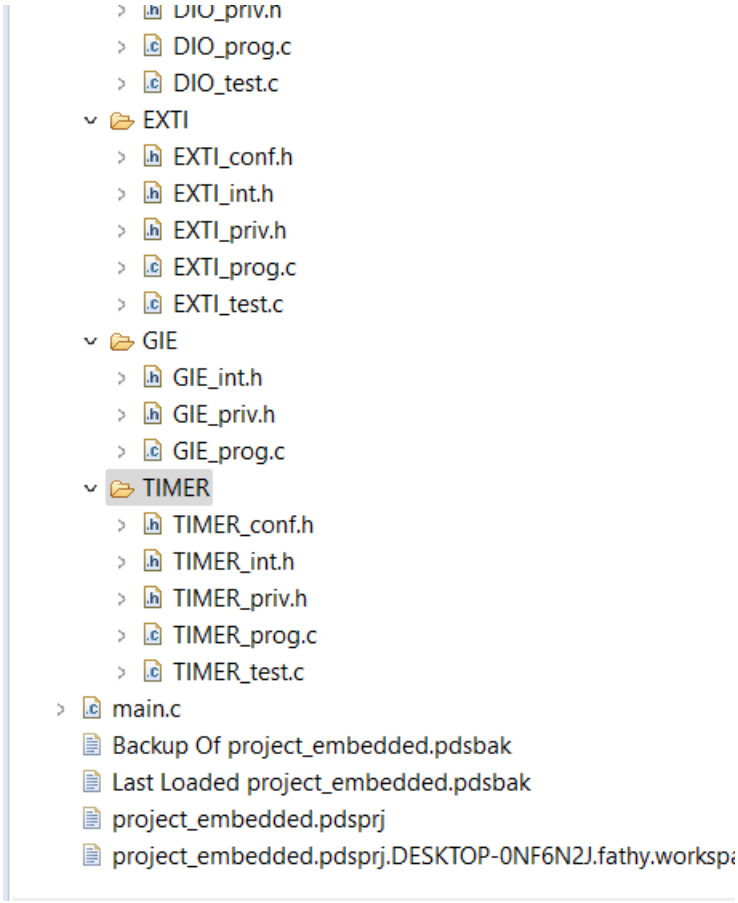
Comoenents :

1- Atmedga 32 as microcontroller.
2- 6 leds

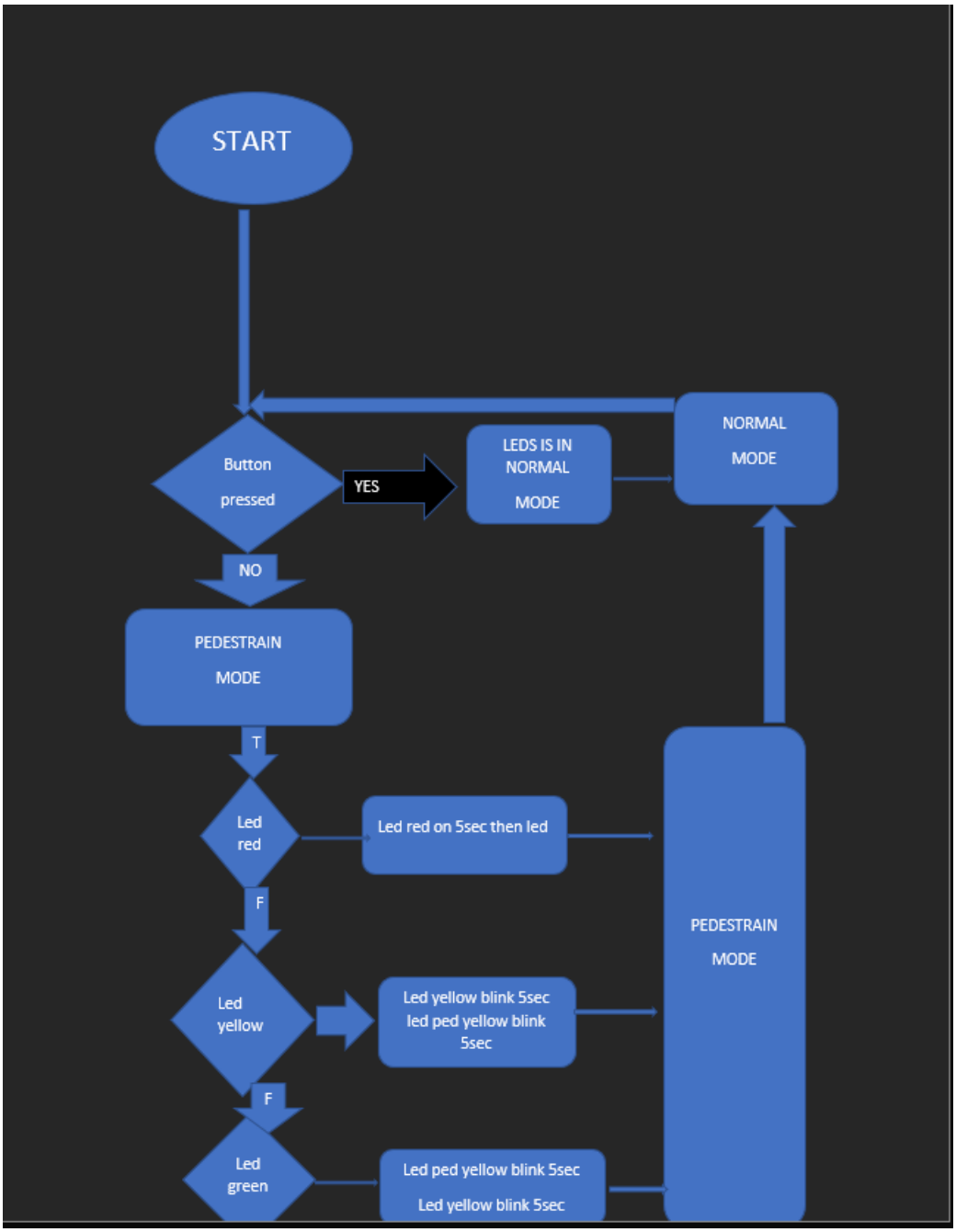
3 for cars and 3 for pedestrian

3- Switch used for interrupt


project_embedded
Binaries
APPLICATION
APP.c
APP.h
Debug
HAL
BUTTON
BUTTON_int.h
BUTTON_prog.c
BUTTON_test.c
LED
LED_conf.h
LED_int.h
LED_priv.h
LED_prog.c
LED_test.c
LIBRARY
errorState.h
stdTypes.h
MCAL
DIO
DIO_conf.h
DIO_int.h
DIO_priv.h
DIO_prog.c
DIO_test.c
EXTI
EXTI_conf.h
EXTI_int.h
EXTI_priv.h
EXTI_prog.c
EXTI_test.c
GIE
GIE_int.h



There are System architecture .


START
Button pressed
YES
LEDS IS IN NORMAL MODE
NORMAL MODE
NO
PEDESTRAIN MODE
T
Led red
Led red on 5sec then led
F
Led yellow
Led yellow blink 5sec led ped yellow blink 5sec
PEDESTRAIN MODE
F
Led green
Led ped yellow blink 5sec
Led yellow blink 5sec