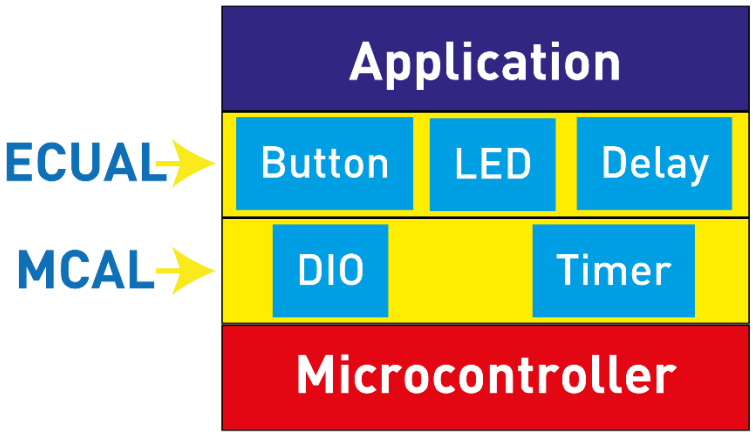
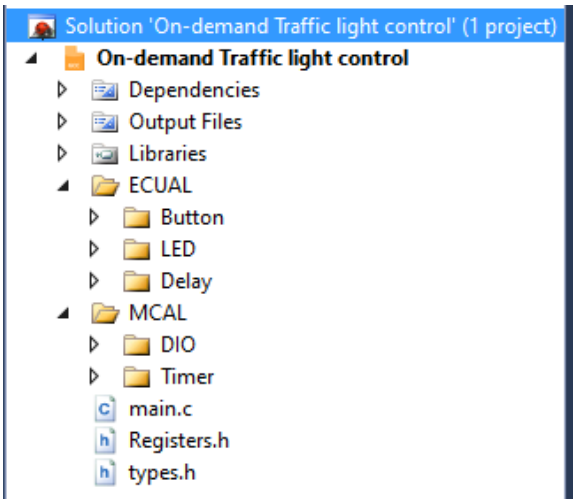
Project 2: On-demand Traffic light control

System Design:

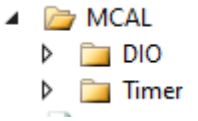
The system consists of two traffic light modes. The normal mode in which cars move on green and stops on red, each light stays for five seconds starting from green through yellow to red and returning to green through red. The second mode is for pedestrian, in which when a pedestrian presses a button, the normal mode stopes and the system switches to pedestrian mode which allows passengers to walk on green and stop on red.

System Layers:

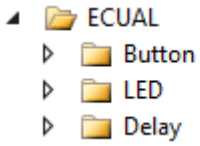




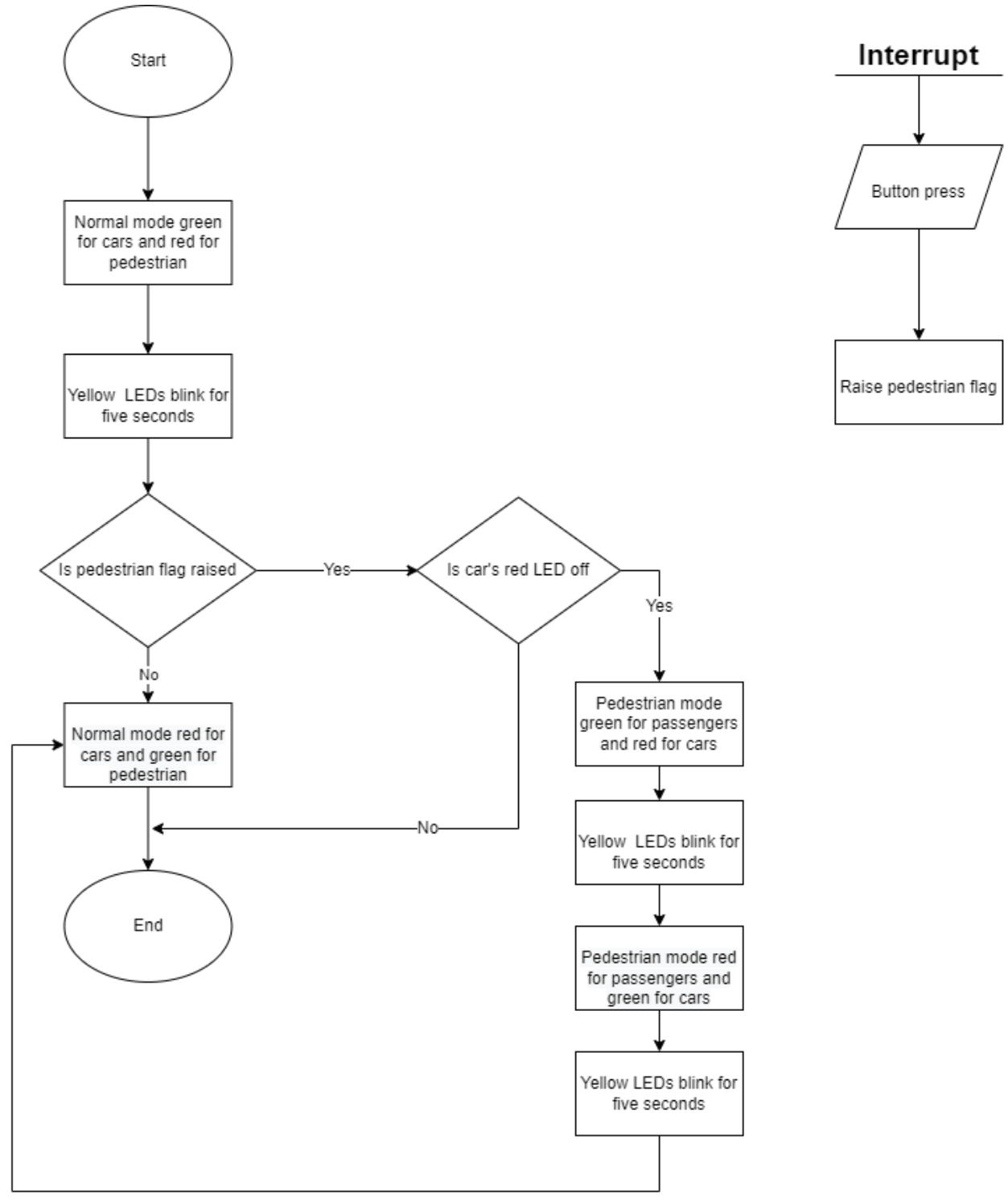
MCAL:



ECAUL:



Flowchart:


Start
Normal mode green for cars and red for pedestrian
Yellow LEDs blink for five seconds
Is pedestrian flag raised
Yes
Is car's red LED off
Yes
No
Normal mode red for cars and green for pedestrian
No
End
Pedestrian mode green for passengers and red for cars
Yellow LEDs blink for five seconds
Pedestrian mode red for passengers and green for cars
Yellow LEDs blink for five seconds
Interrupt
Button press
Raise pedestrian flag