

“OnDemand Traffic Light Control Project”

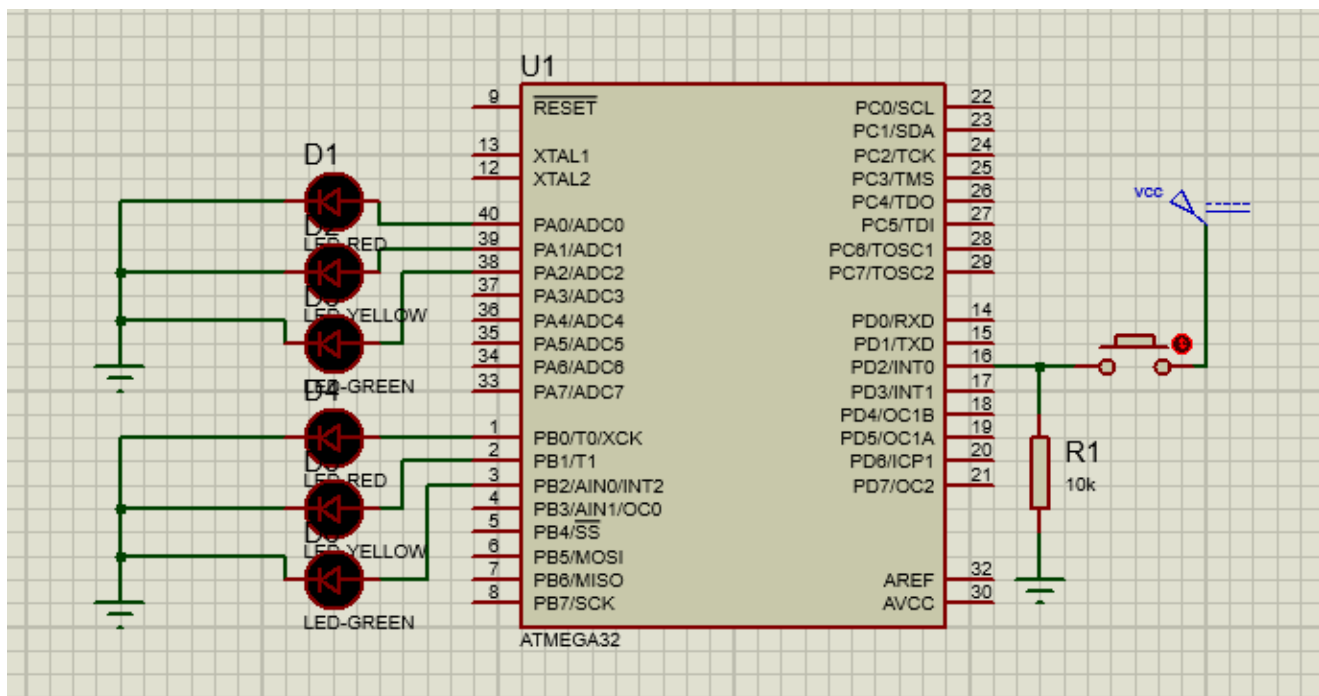
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1-System Description:

A traffic light system that works on two modes the normal mode as a regular traffic light and the other mode is the pedestrian which have a higher priority compared to the normal one, where the pedestrian can switch to the pedestrian mode through a button.

2-System Design:

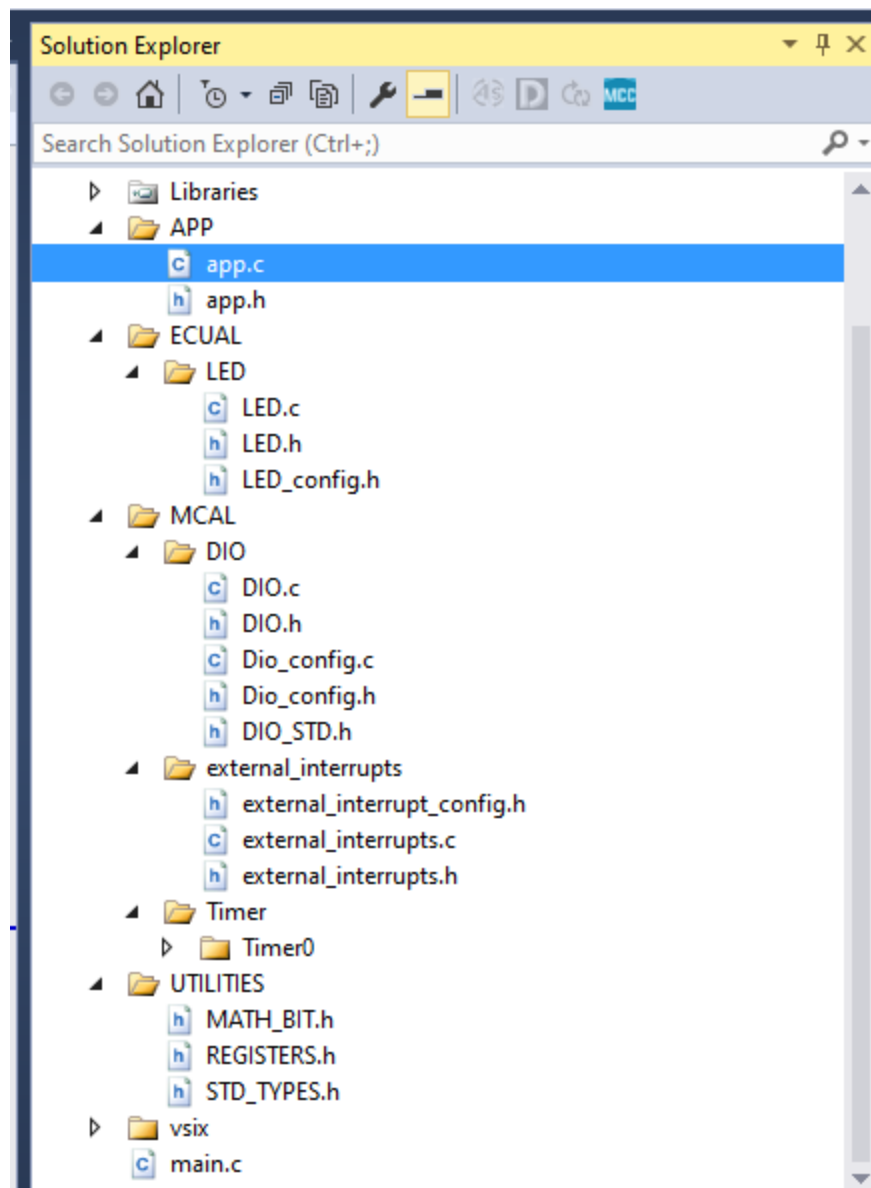
The system is designed to operate in one of the two modes, normal or pedestrian mode. The system consists of a push button for switching the normal mode, and 3 LEDs red, green and yellow for the normal mode and another 3 LEDs for the pedestrian mode as well. The system has been tested in Proteus simulation for the purpose of checking the functionality of it as shown in the figure bellow.



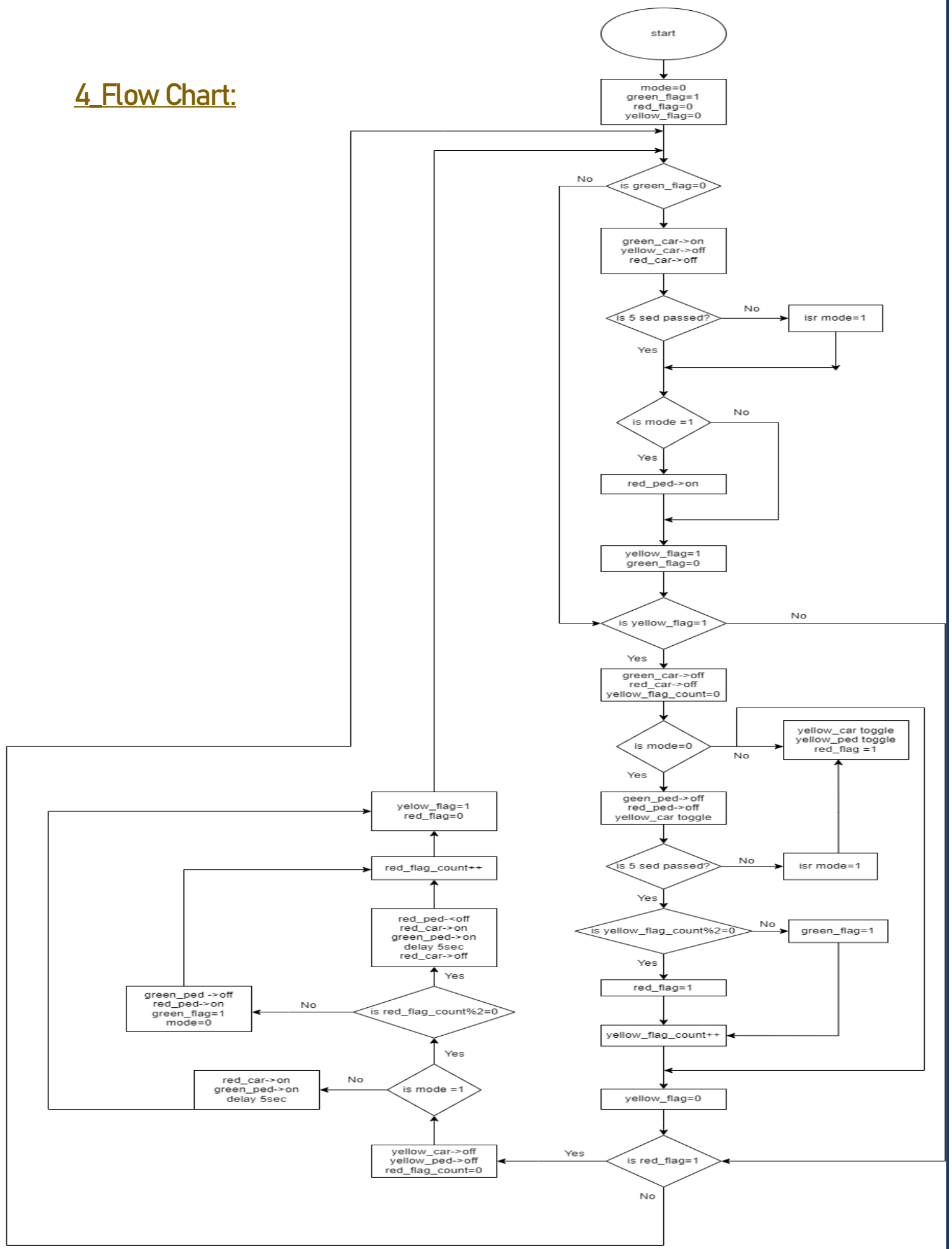
System cases:

- 1- The normal case where no pedestrians are crossing the street, so the traffic light is working in the normal mode green, yellow, red then yellow and keeps repeated.
- 2- If pedestrian press the button while the traffic light is red and the pedestrian traffic light is green so nothing is expected to happen, and the pedestrian can cross the street.
- 3- If pedestrian press the button while the traffic light is green or yellow, then both yellow LEDs for pedestrians and cars will blink and after 5 sec the car red light will be on and the green pedestrian light will be on so pedestrian can cross the street. After 5 sec yellow LEDs will start blinking again and the traffic light will be green and the pedestrians are no more allowed to cross the street.

3-Solution Explorer:



4_Flow Chart:



5-System Constraints:

Some of the system constraints that the using the same traffic lights for both cars and pedestrians could be confusing for the pedestrians so we may use different colors for the pedestrians traffic light.

Not to mention that we need to have two pedestrians traffic lights with two buttons at both sides of the road.

Also, we can skip the part that the long press doesn't take any action cause some pedestrians do a long press including me :)

Finally it could be more useful for the pedestrians if only use two light one that indicate that its allowed for the pedestrian to cross the street and the other indicated that it is not without using the third confusing led.