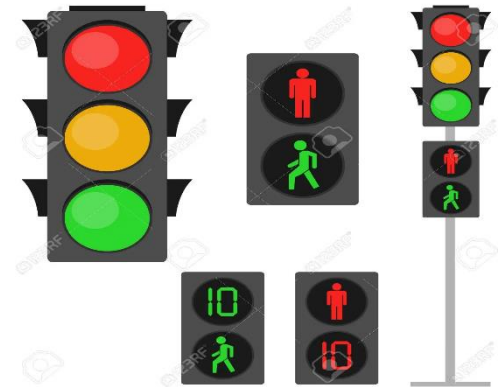


Contents

1. System Description.....	2
2. System Design	2
3. System Flow Chart	3
3.1 Normal Mode	3
3.2 Pedestrian Mode	4
4. System Constraints	5

1. System Description

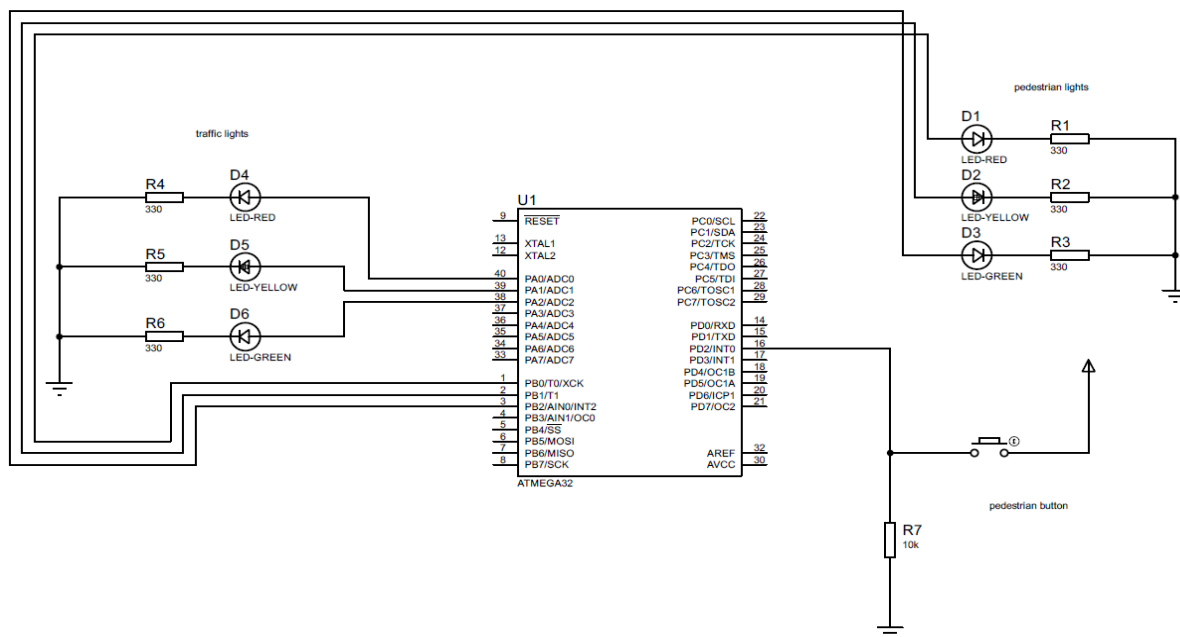
Traffic lights are signaling devices positioned at road intersections, pedestrian crossings, and other locations to control the flow of traffic. Traffic lights normally consist of three signals, transmitting meaning to drivers and riders through colors and symbols. Our system is a on-demand traffic lights. Such systems give the priority to the pedestrians as they can make a request to stop the cars and pass the road whenever they want.



2. System Design

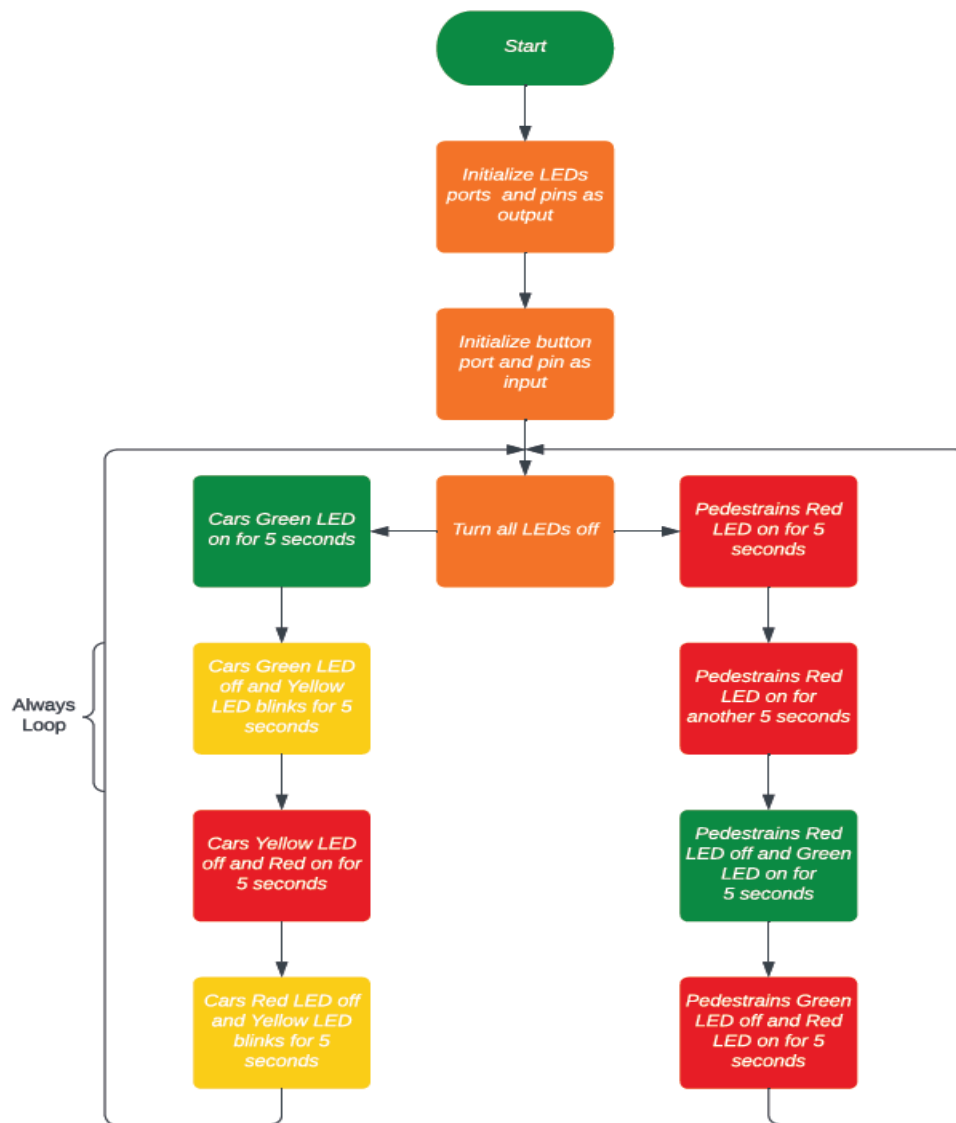
Our system consists of :

- ATmega 32 microcontroller.
- One push button connected to INT0 for pedestrians.
- Three LEDs for cars : Red, green, and yellow.
- Three LEDs for pedestrians : Red, green, and yellow.

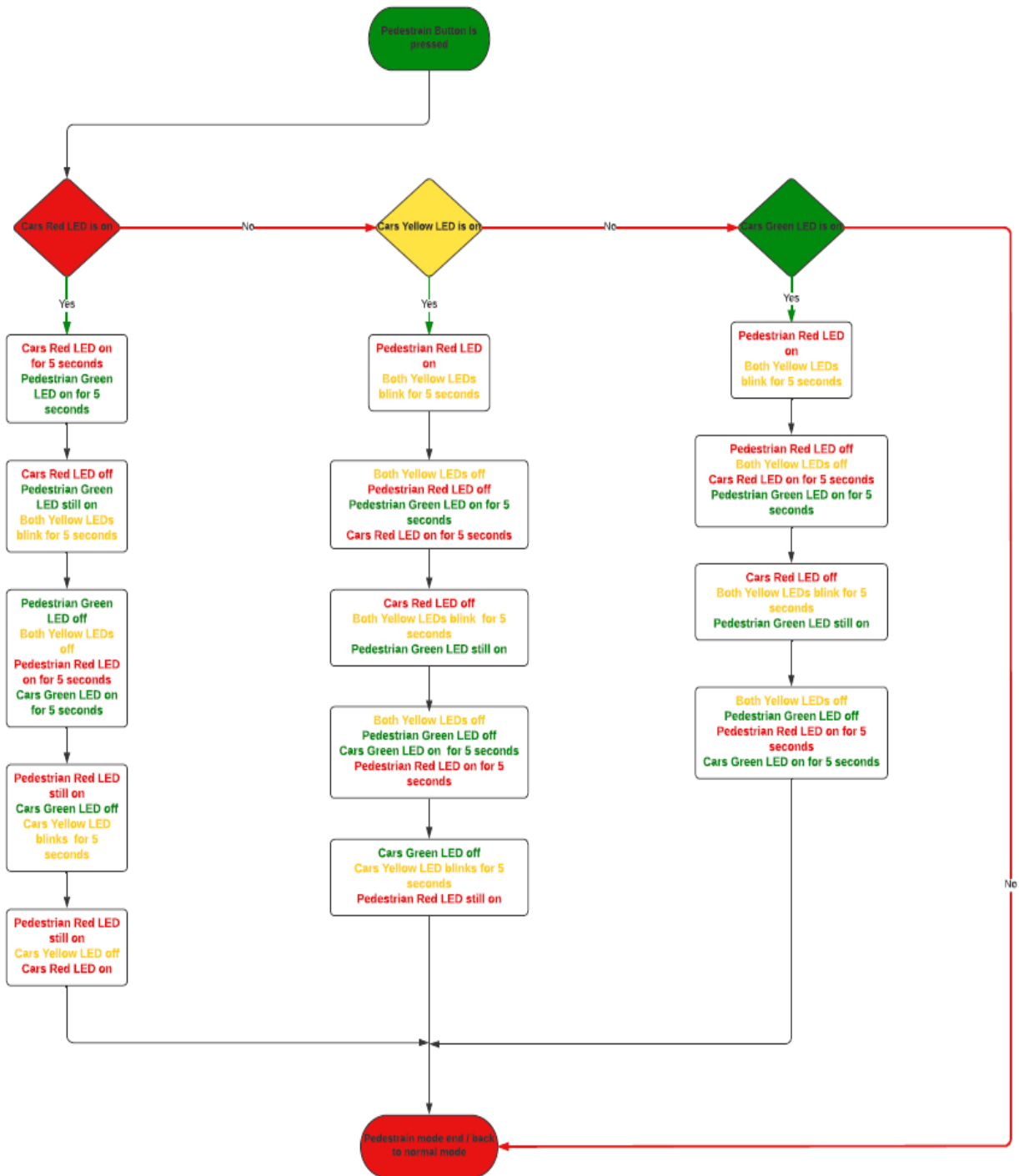


3. System Flow Chart

3.1 Normal Mode



3.2 Pedestrian Mode



4. System Constraints

1. If the button is pressed while cars traffic is red, there is no change happens apparently, but the red cars traffic and green pedestrians' traffic will start count another 5 seconds
2. If the button is pressed while the cars traffic is blinking yellow, both yellow LEDs will start blinking for another 5 seconds.
3. When the program returns to the main context, it will turn on the LED which was on before context switching for its remaining time. EX : if the button is pressed after 2 seconds of LED red turned on, context switching will occur then returns back to the main context and the red LED will be turned on for the rest 3 seconds.
4. The green pedestrian LED will be turned on if and only if the red cars traffic is on.