1. SYSTEM DESCRIPTION

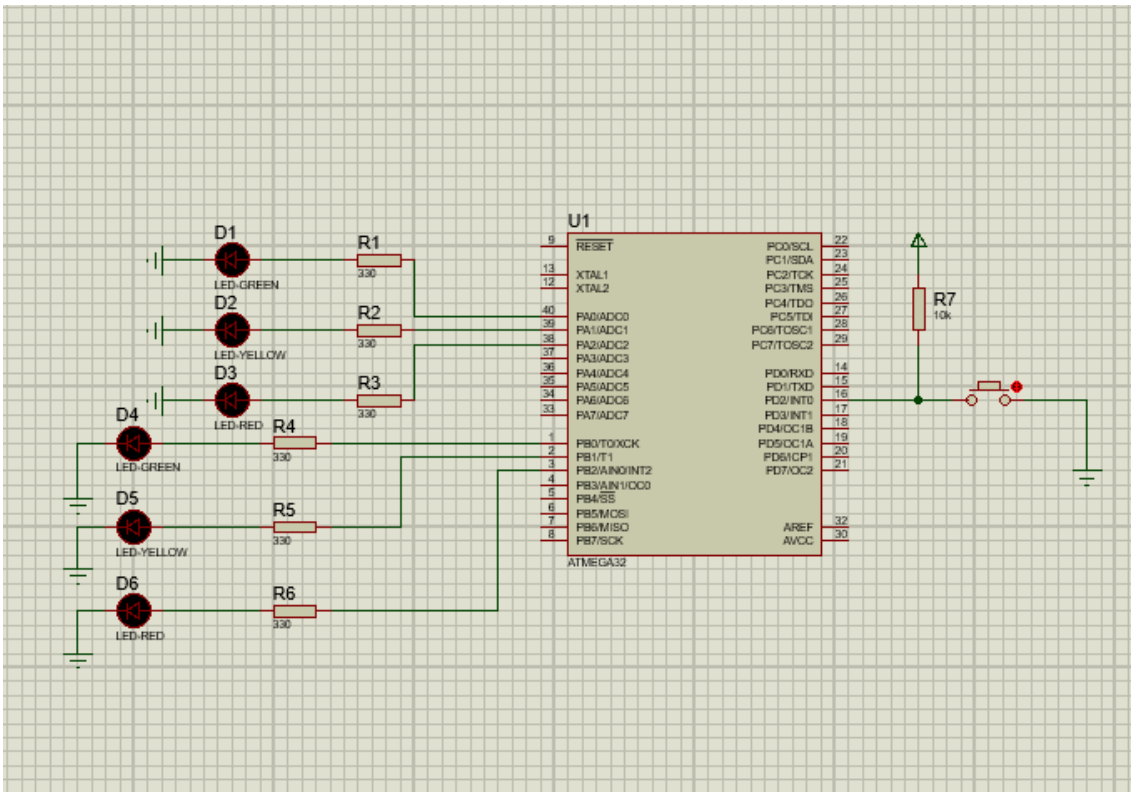
Traffic lights are signaling devices positioned at road intersections, pedestrian crossings, and other locations to control the flow of traffic, Traffic lights normally consist of three signals, transmitting meaning to drivers and riders through colors and symbols. Our system is an on-demand traffic light.

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

Hardware requirements:

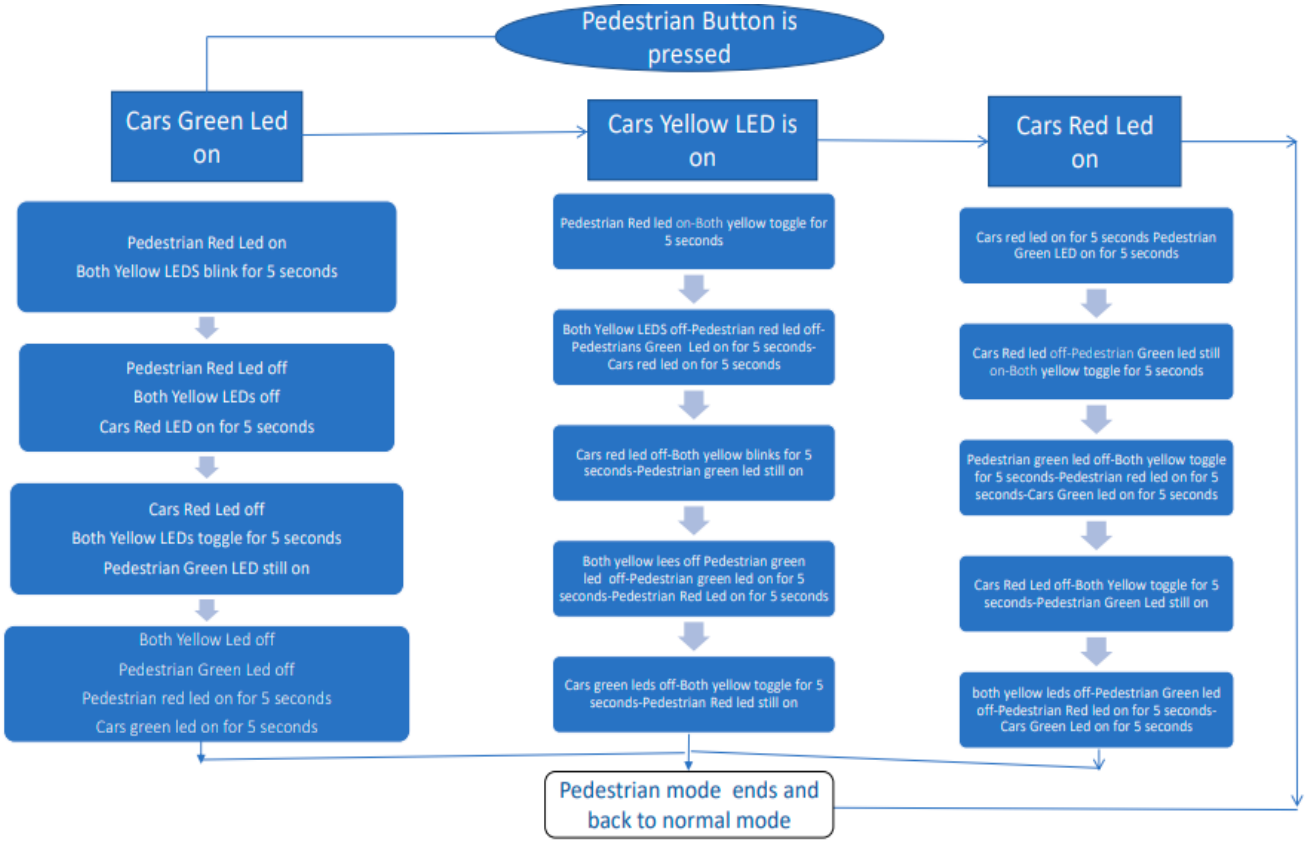
- ATmega32 microcontroller
- One push button connected to INT0 pin for pedestrian
- Three LEDs for cars - Green, Yellow, and Red, connected on port A, pins 0, 1, and 2
- Three LEDs for pedestrians - Green, Yellow, and Red, connected on port B, pins 0, 1, and 2



3. SYSTEM FLOW CHART

3.1 Normal Mode Flow Chart

3.2 Pedestrian Mode Flow Chart



4. SYSTEM CONSTRAINTS

1. if the button was pressed and both yellow leds on ,they will toggle for more 5 seconds.
2. if the button was pressed and cars red led , pedestrian green led are on there is nothing will happen.
3. if there was double press on the button, the first press only will do the action.
4. when the program returns to the main, it will return to the led which was on when the interrupt shows up and waits for the remaining time.