System Description

This is a Traffic light system that has two moods, the first mood is the normal mood which allows the cars to pass as long as the pedestrian button is not pressed with a delay of 5 seconds between the green, yellow and red lights.

Once the pedestrian button is pressed the system enters the second mood which acts according to which state was the button pressed at.

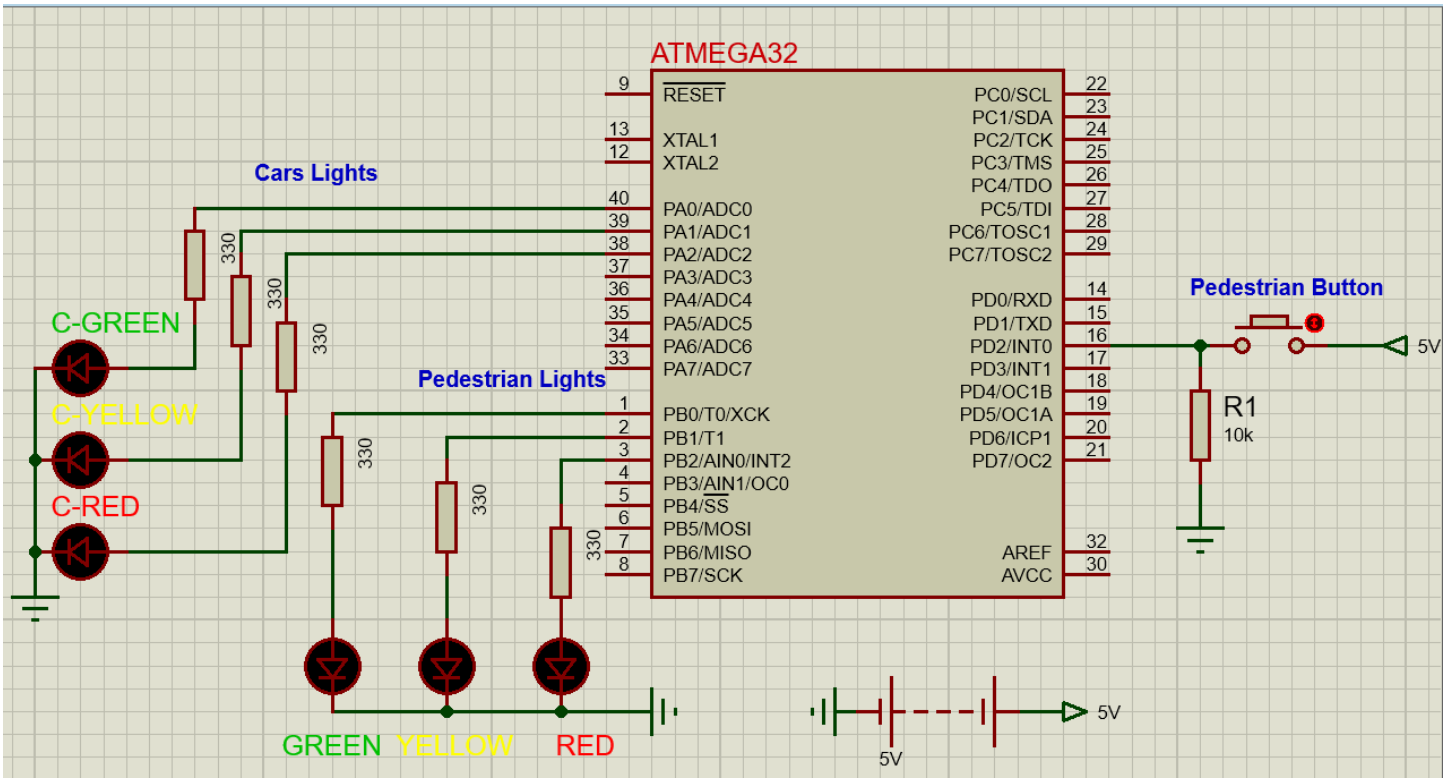
If the button was pressed when the red light was on, the green pedestrian light toggles and the timer resets to count 10 seconds then turning the cars red LED off before shifting to What I call the **(Back to normal sequence)** in which yellow starts blinking on both sides while maintaining the green light for 5 seconds, then killing the yellow lights and the green pedestrian light, at the same time the cars green light toggles back on to reenter the normal mood.

If the button was pressed when the light was yellow or green, the red light of the pedestrian turns on for the rest of the time then:

if it was green: both yellow lights start blinking for 5 secs then turn off, at the same time cars red LED and pedestrian green LED turn on for 5 secs then turning the cars red LED off then the (**Back to normal sequence**).

But if it was yellow: after the pedestrian red LED is off the pedestrian green and the cars red LEDs are on for 5 secs then turning the cars red LED off then the (**Back to normal sequence**).

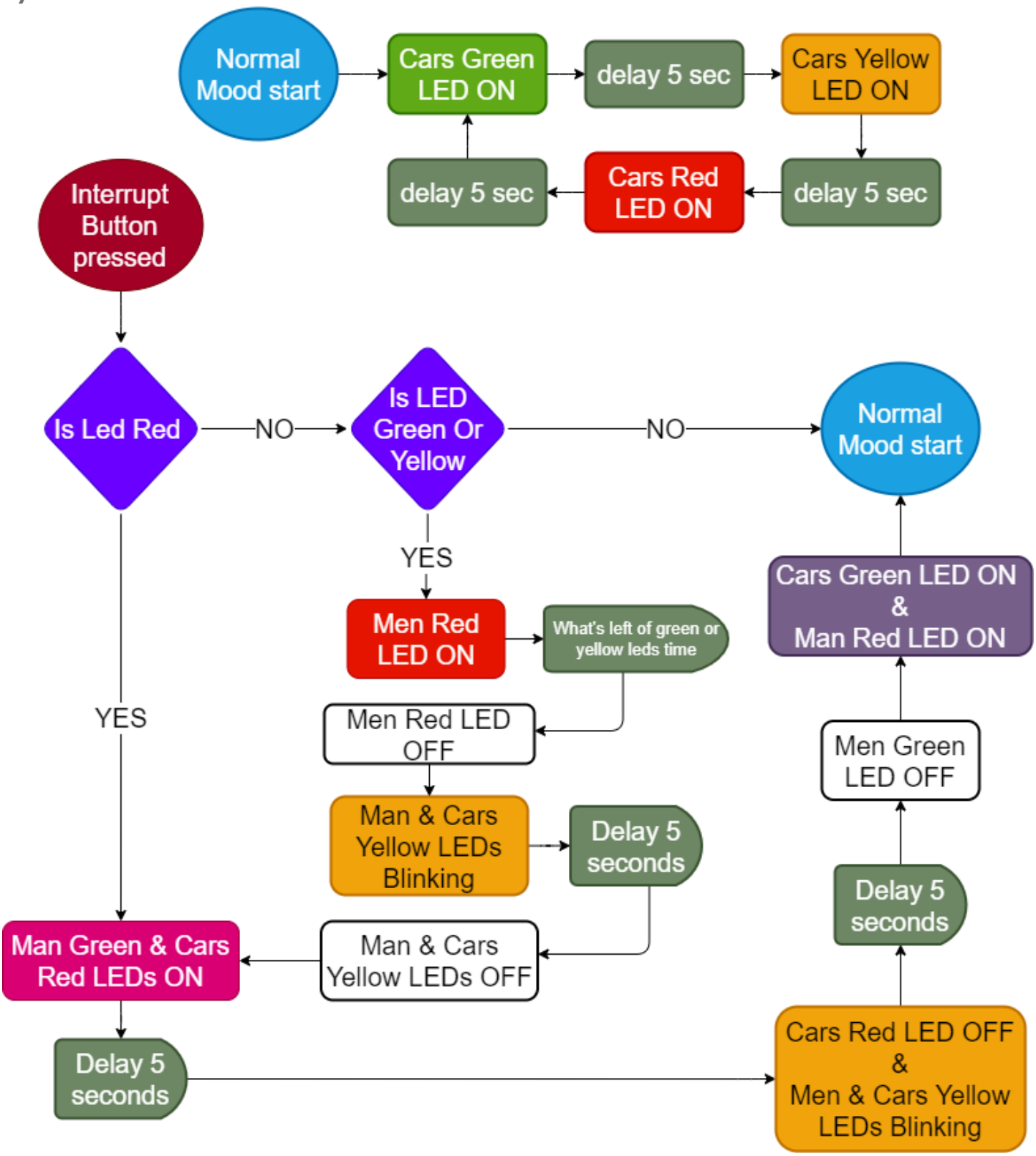
System Design



- ATmega32 microcontroller

- 6 resistors 330 ohm
- 6 LEDs (2 Green, 2 Yellow, 2 Red)
- Push button with a 10KΩ resistor
- 5-volt power source

System Flowchart



System Constraints

no system constraints, the system will always operate as expected