# On-demand Traffic Light control

## 1. System description:

In this system there are two modes. The first mode is normally used car's traffic light. The second mode starts when a pedestrian wants topass the road.

a. Normal mode:

This is a normal car traffic light where it starts with green then yellow then red then red then yellow then repeat this sequence where each state lasts for five seconds. Also, when the car's traffic light is yellow it's not on all the five seconds but instead it blinks.

b. Pedestrian mode:

The pedestrian mode is initiated when the pedestrian's button is pressed. In case the car's traffic light is red, nothing will occur rather than the pedestrian's green traffic light will be on. Otherwise -if car's traffic light is green or yellow-both traffic lights will toggle the yellow light for five seconds then the car's traffic light will switch to red and the same time pedestrian's traffic light will switch to green at the same time; both lights will be on for five seconds. At the end of the pedestrian mode Traffic lights will return to the Normal mode.

## 2. System design:

The hardware used:

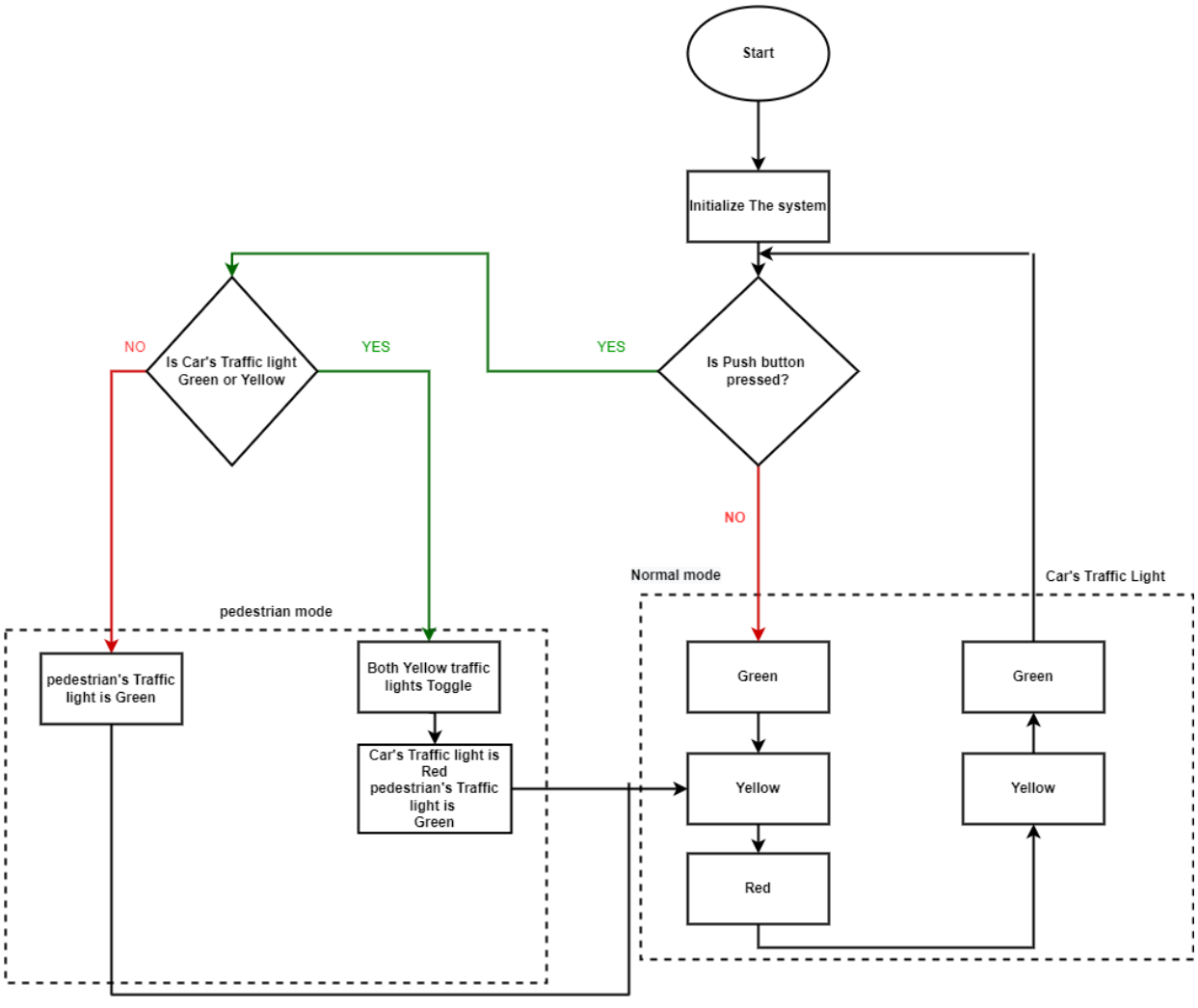
i. Atmega32 microcontroller

ii. One push button connected to INT0

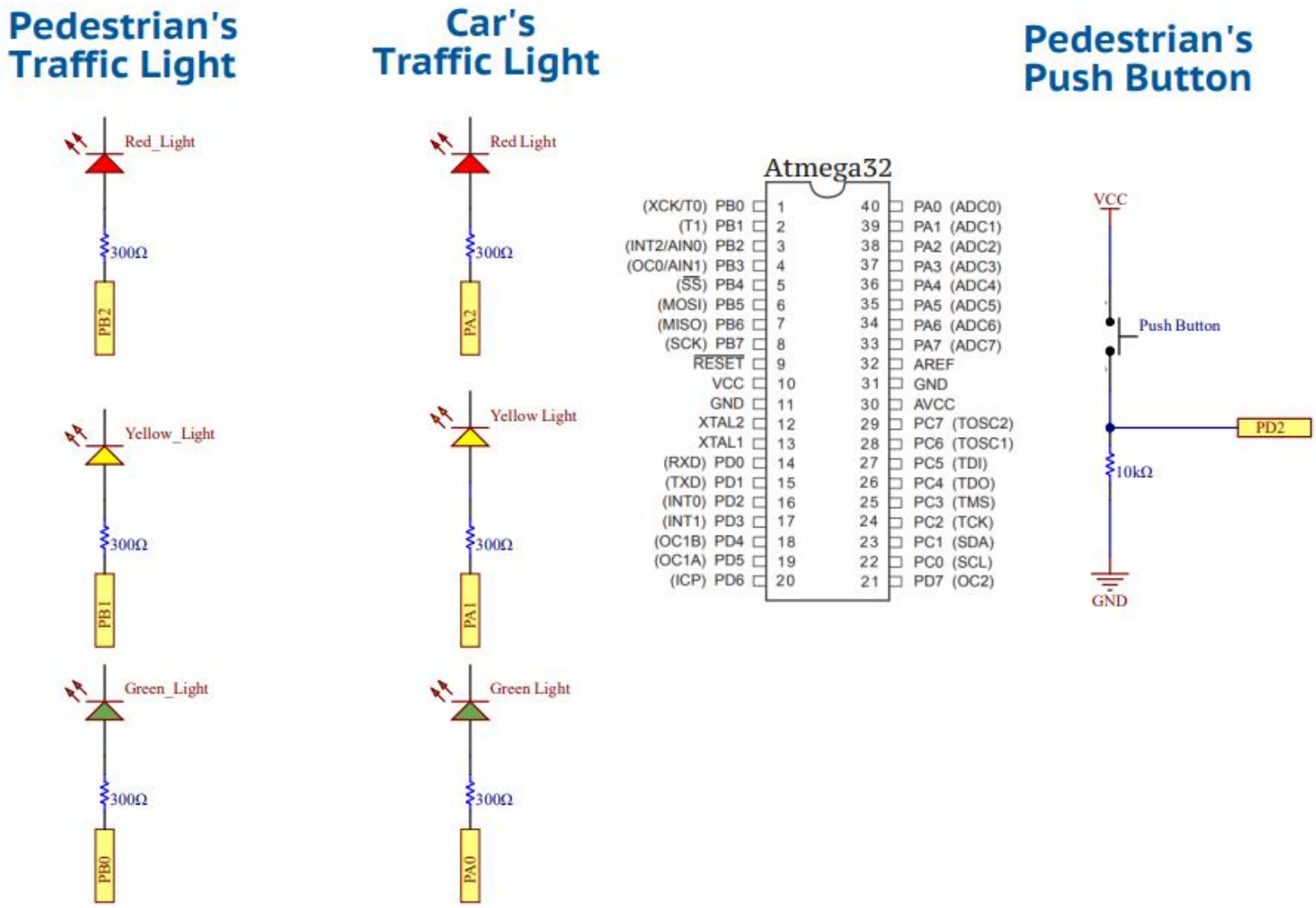
iii. 3 LEDs (green- yellow – red) connected on port A, pin (0,1,2)

iv. 3 LEDs (green- yellow – red) connected on port B, pin (0,1,2)

## 3. System flow chart



## 4. Schematic Diagram



## 5. System constraints

a. Don’t expect anything to be done incase of a long press-more than one sec-.
b. Incase of more than one short press on the first press will do the action.