On-demand Traffic light control

system description: -

The system is a traffic light system that is controlled by pressing a button to stop the traffic lights and give pedestrians an opportunity to cross the road.

The system works automatically, the car's lights work in sync with the pedestrian lights unless someone presses the button.

When the button is pressed, the traffic light system switches from the normal mode to the pedestrian mode.

system design: -

1. ATmega32 microcontroller.

2. One push button connected to INT0 pin for pedestrian.

3. Three LEDs for cars - Green, Yellow, and Red, connected on port A, pins 0, 1, and 2.

4. Three LEDs for pedestrians - Green, Yellow, and Red, connected on port A, pins 3, 4, and 5.

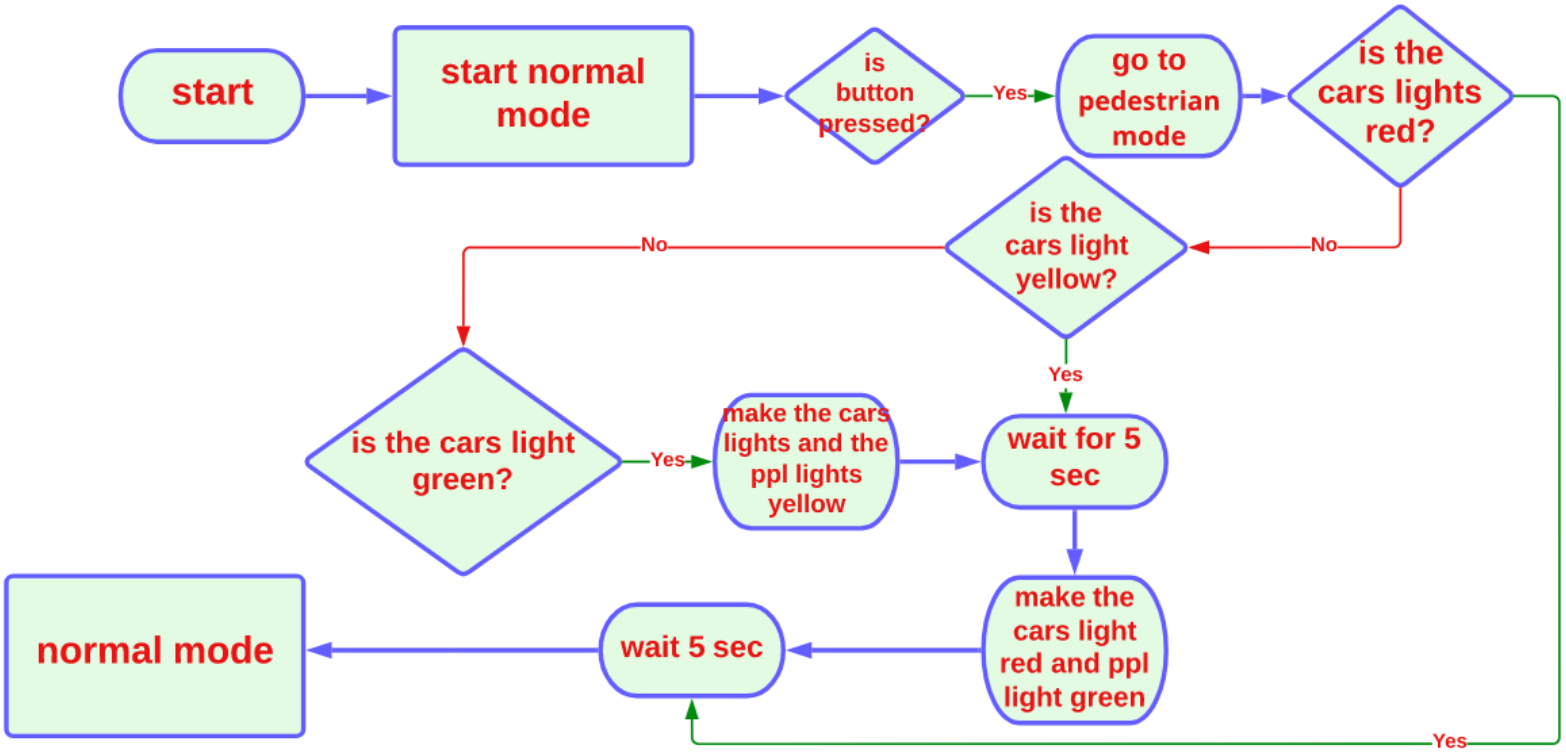
The system works and 2 modes normal mode (cars mode) and pedestrians.

People can switch to pedestrians by pressing a button and the system goes back on its own to normal mode.

It's designed if someone presses the button every half a second.

It's designed to back to the same sequence before the button pressed after switching to normal mode.

system flow chart: -



constraints: -

The system's biggest constraint is that u need to wait for the system to go back to the normal rotation before pressing the button again as the system wouldn't read the press before going back to the normal rotation.

The second constraint is the long press. If the pedestrian pressed the button the microprocessor will take the signal and start the action as pressing long press won't affect the timer on hold it.

The third constraint is double press as the system will take only the first press and switch to the pedestrian mode and any other press won't affect it unless he goes back to the normal mode automatically.