Contents:

1- System description

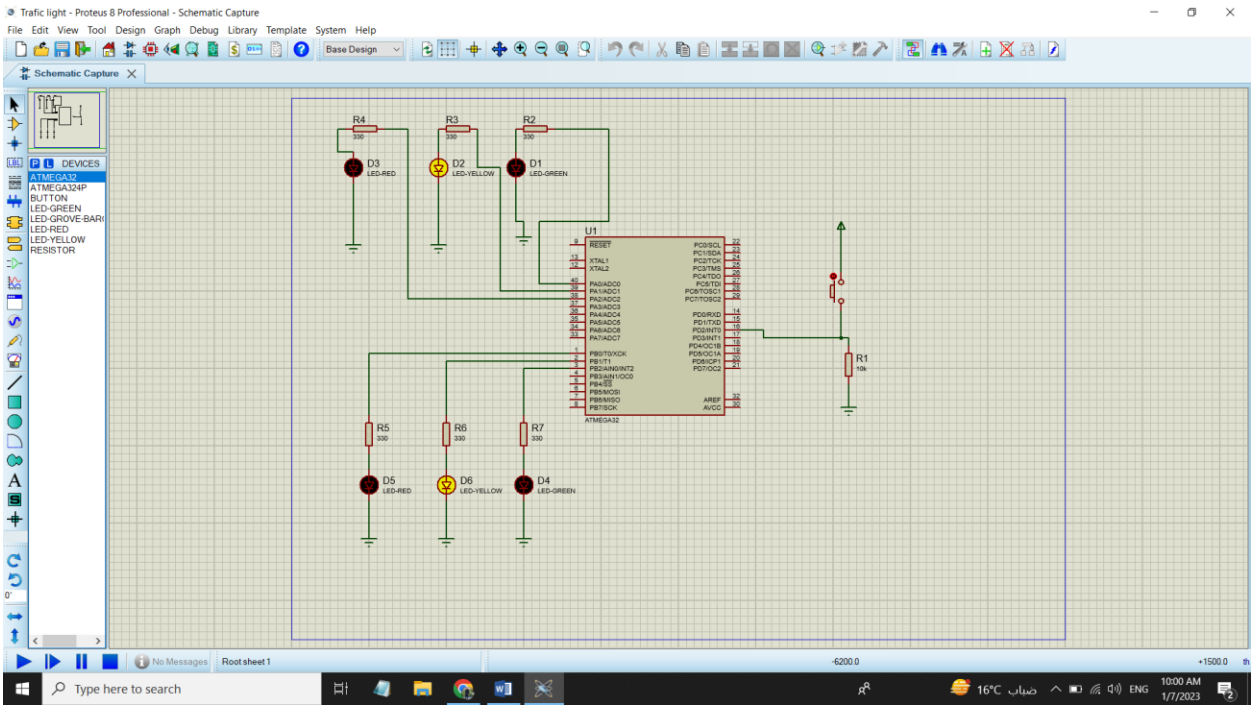
This system is a traffic light system that works to balance between cars & pedestrian.
It has 2 modes:

- First mode: it's the normal mode that balance between cars road & pedestrian crossing.
- Second mode: it's for an urgent pedestrian that's want to cross the road now … so there are a button they could press on it to stop cars and pedestrians could cross the road.

2- System design

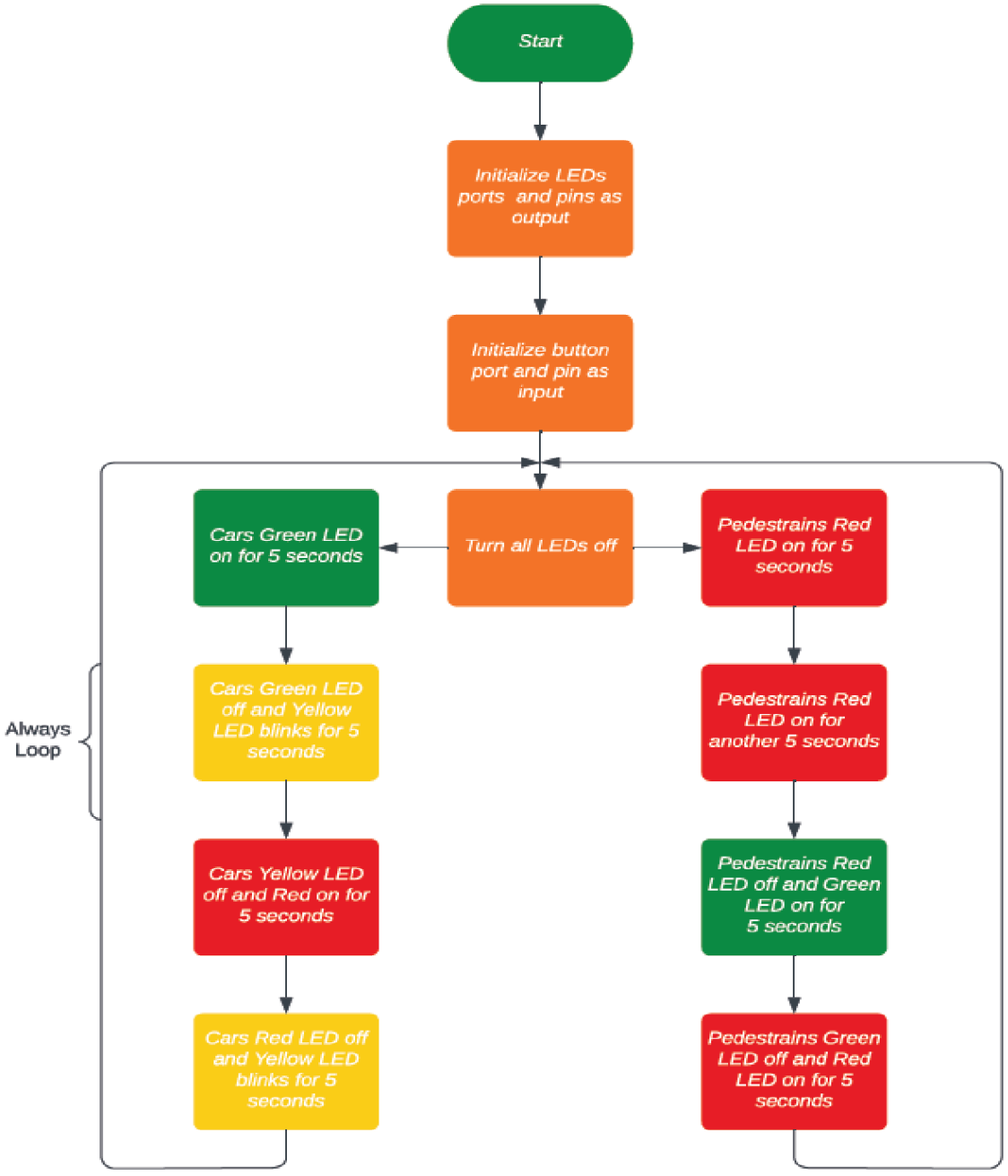
Our system consists of:

- Microcontroller ATMEGA 32
- Three LEDs (for cars) : (RED , GREEN , YELLOW)
- Three LEDs (for pedestrians) : (RED , GREEN , YELLOW)
- One push button (for urgent crossing road)

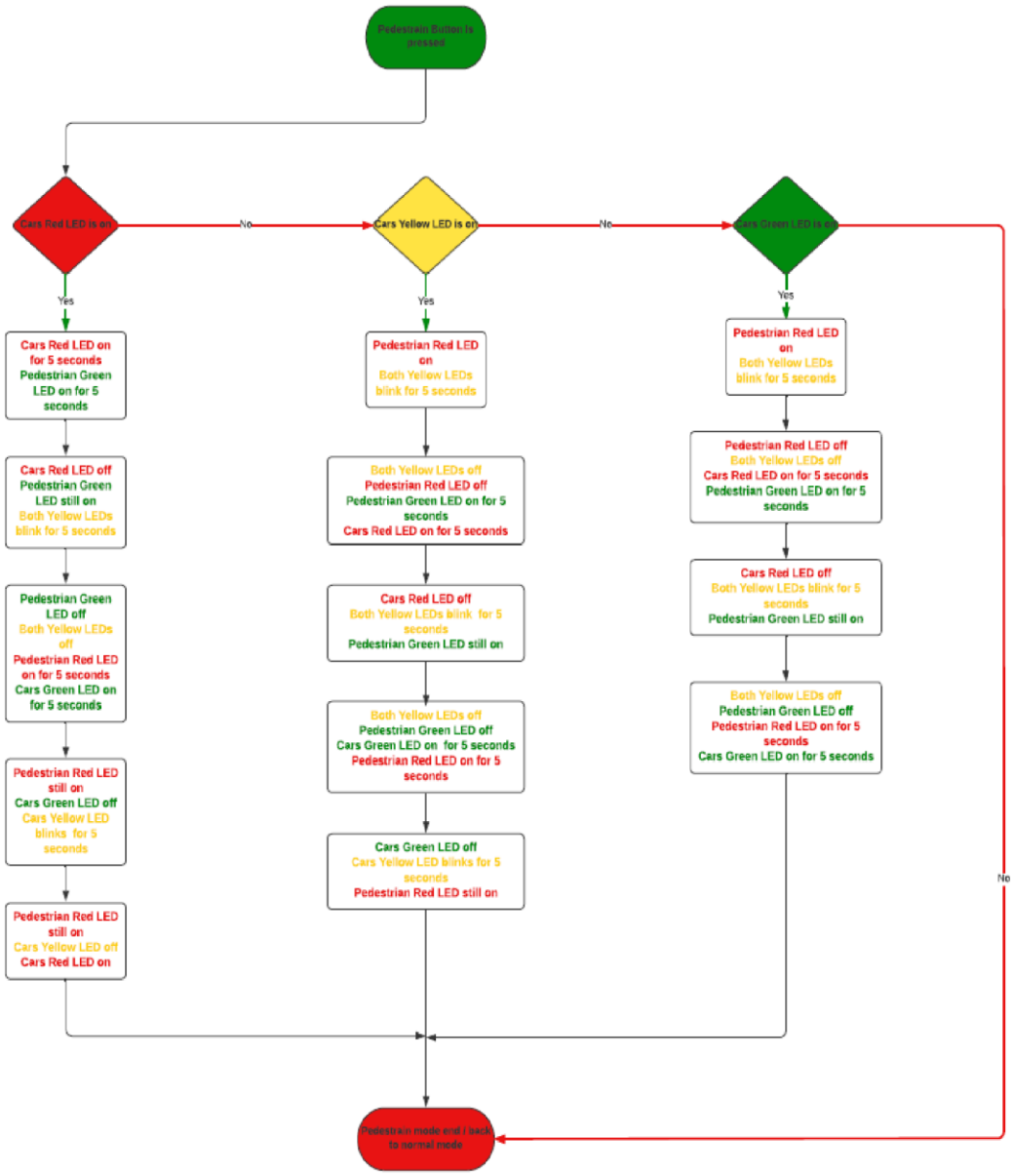


3- System flow chart

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.

4. The green pedestrian LED will be turned on if and only if the red cars traffic is on.