31343 Introduction to Programmable logic Controllers
Exercise 11 : “ex11_traffic”

Introduction:
In this exercise you will combine a logic PLC program with a GUI and monitoring facilities in form of alarms.

Task:
The exercise will be based on your solution of ex6_trafficlight, so it is a prerequisite that this has been solved previously. The solution of the exercise should be seen as adding a HMI which is used to monitor and change the running of the traffic light.

In this exercise you should enhance the traffic light solution with the following parts:

- Create a visualisation of the trafficlight that shows the current state of the lights on the two roads. Test that the visualisation is able to run together with your part 3 solution of ex6_trafficlight.
- Add a button, to the visualisation, where you are able to switch between having the trafficlight running its cycle continuously (ex6_trafficlight, part 3) and running in a modes that uses the pedestrian and car sensors (ex6_trafficlight, part 4+5).
- Add visualisation of the tracking data from ex6_trafficlight, part 6. These data should be logged in a file.
- Add alarm functionality to all sensors (pedestrian buttons and car sensors) that triggers an alarm if a sensor is high for an abnormal amount of time (indicating a short-circuit).

Hand in:
The hand in should include the project file (*.pro) of your full solution. The hand in should be uploaded to Campusnet in the usual way.