Assignment1 report - FSM

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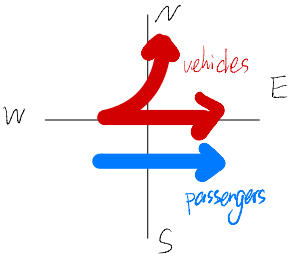
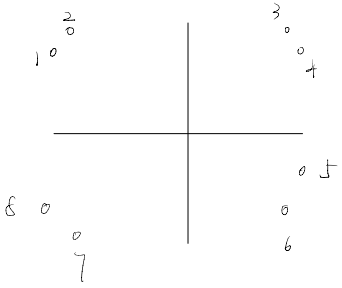
Description

I designed a control system for traffic lights at intersections. The system can be adjusted during the day, night, rush hour and normal periods to choose different diversion schemes. Specifically, at late night for a period of time, all traffic lights will turn red; during daytime, in rush hours, all pedestrian buttons will be disabled, and the entire system will operate in accordance with the logic of each one-way straight and left turn, In the off-peak period, after a pedestrian triggers the button, the pedestrian traffic indicator will change together with the motor vehicle traffic indicator in the corresponding direction. Motor vehicle indicator lights are divided into: green, yellow, red and green for turning left. Pedestrian indicator lights are divided into: white, red countdown, and red. Different combinations of indicator lights correspond to different flag signals, and traffic can be controlled by changing the respective flag signals. The following are some graphic explanations:

Rush hours

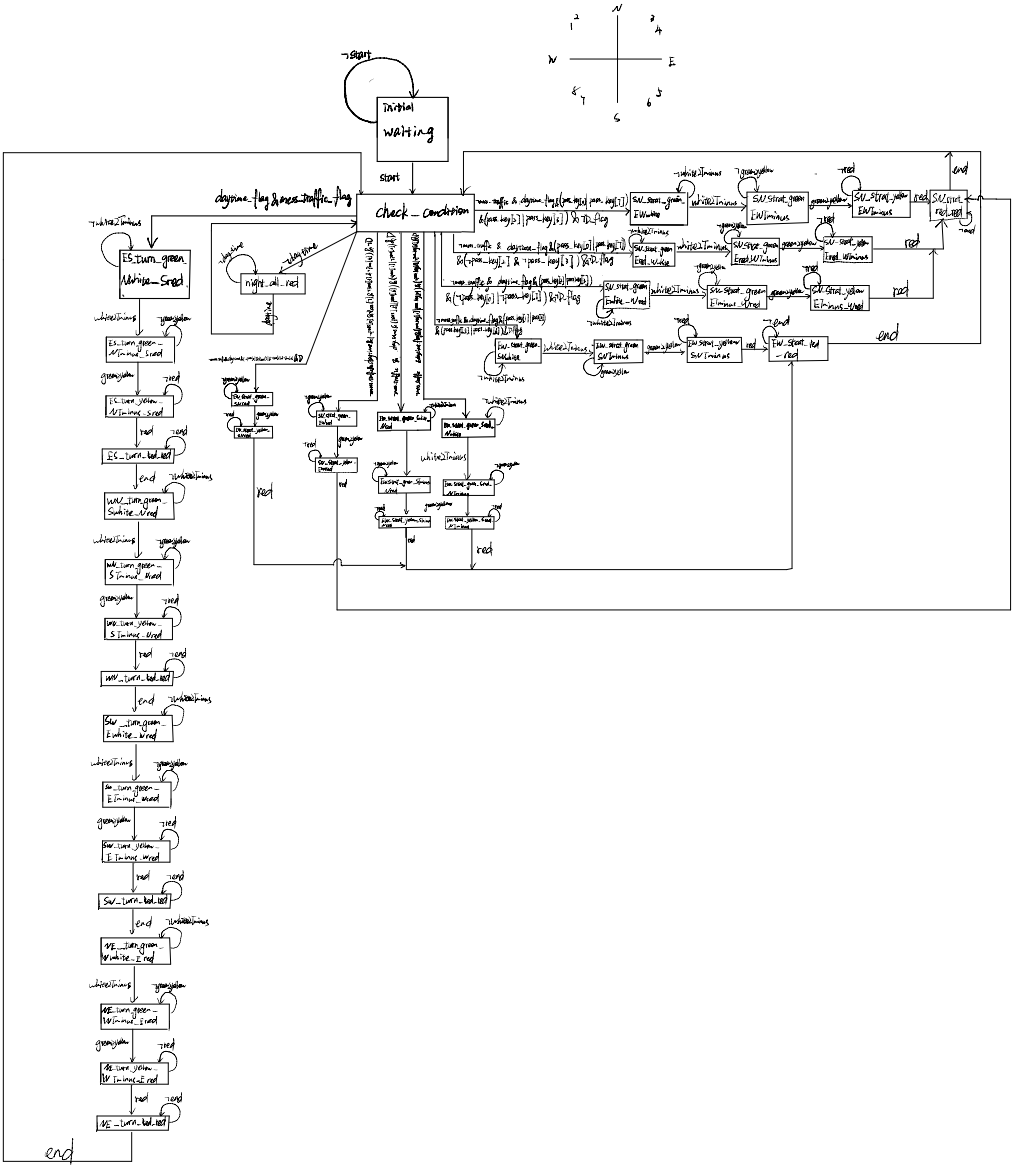


Off-peak

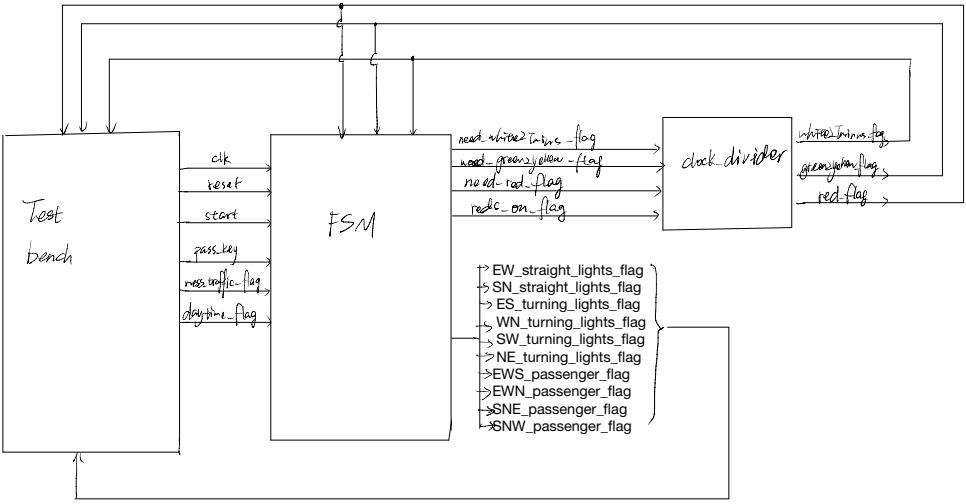


if 4 is actived,
then when S-N start to pass, East side sidewalk light will turn to white, but not west side.

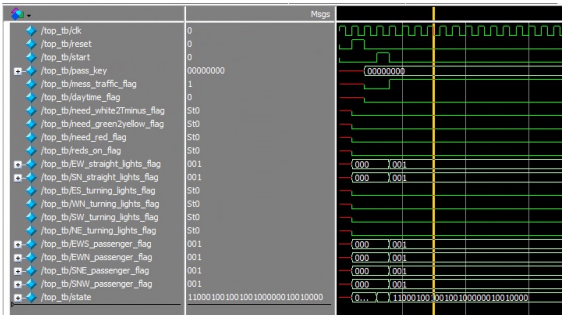
State transition Diagram



Inputs and outputs of modules

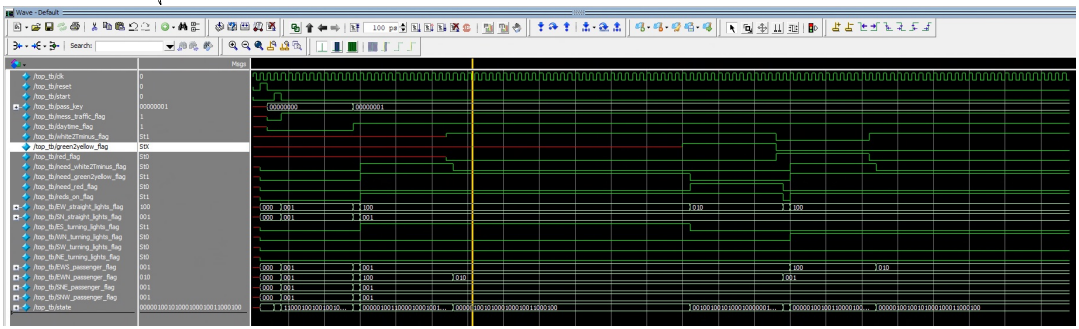


Simulation results



This is for late night all red situation

This is for rush hours



This is off-peak following rush hours.