SWE-424

Assignment-01

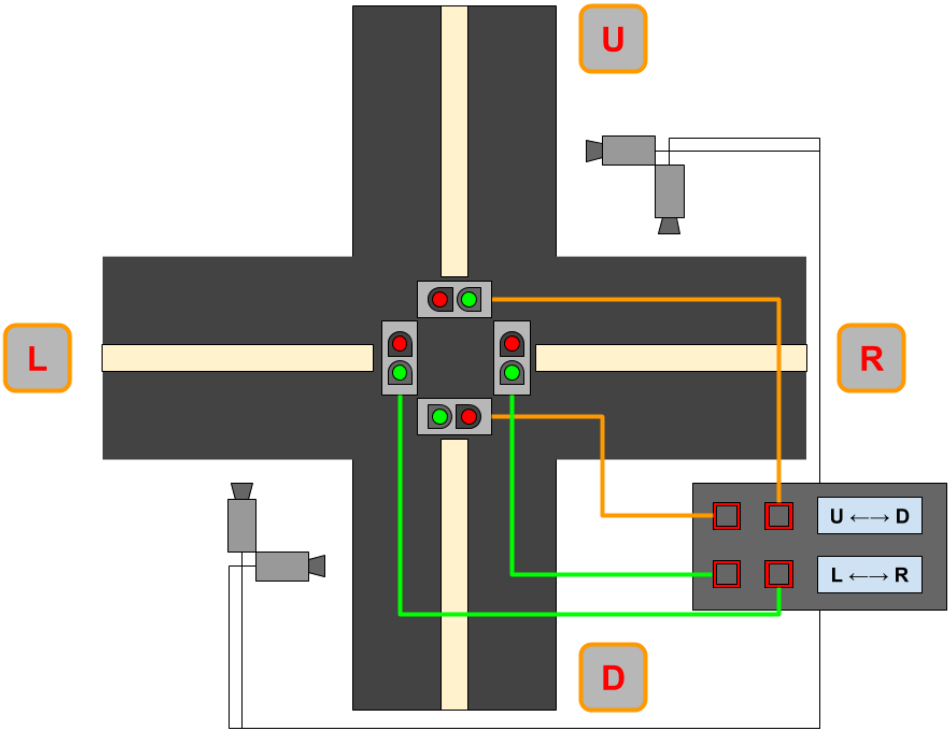
Design a “**Traffic Signal Controller**” based on simple reflex agent

Directions

This assignment is designed to assess your ability to design a Simple Reflex Agent for following Task Environment.

Task Environment

Environment: Road inter-cross of 2 bi-directional motor-way. Up and Down or Left and Right bidirectional traffic flow is permitted but all kind of Left/Right turning is prohibited.



Sensor: CCTV Camera based **Traffic Congestion Detection System (TCDS)**, which generates "**CONGEST_ALERT**" when a traffic reached predefined threshold level and it also signals "**NO_CONGESTION**" when traffic flow reached its minima.

Actuator: Traffic flow is controlled through 4 **Traffic Light Post (TLP)** in the middle of the intersection. Each Traffic light consist of 2 lights, one **RED** for Stopping the traffic and another one is **GREEN** for let go the waiting traffic.

Performance: Performance measurement should consider **Safety**, **Optimization** and **Comfort** of transport occupants (peoples on their vehicles) .

Agent: **Traffic Signal Controller (TSC)** is simple reflex agent which gets Traffic Congestion trigger from **TCDS** and controls the traffic flow using 2 pair of **TLP** for Up-Down and Left-Right traffics.

Deliverables

1. Write down the "Percepts" and "Actions" for **TSC** agent.
2. Draw the whole Decision Tree for **TSC**.
3. Create a Performance Measurement System for **TSC**.
4. Write the pseudocode for **getTSCActions** function which will return the proper **Action** for each percept.