Arizona State University

Traffic Simulator User Specification

Team 8

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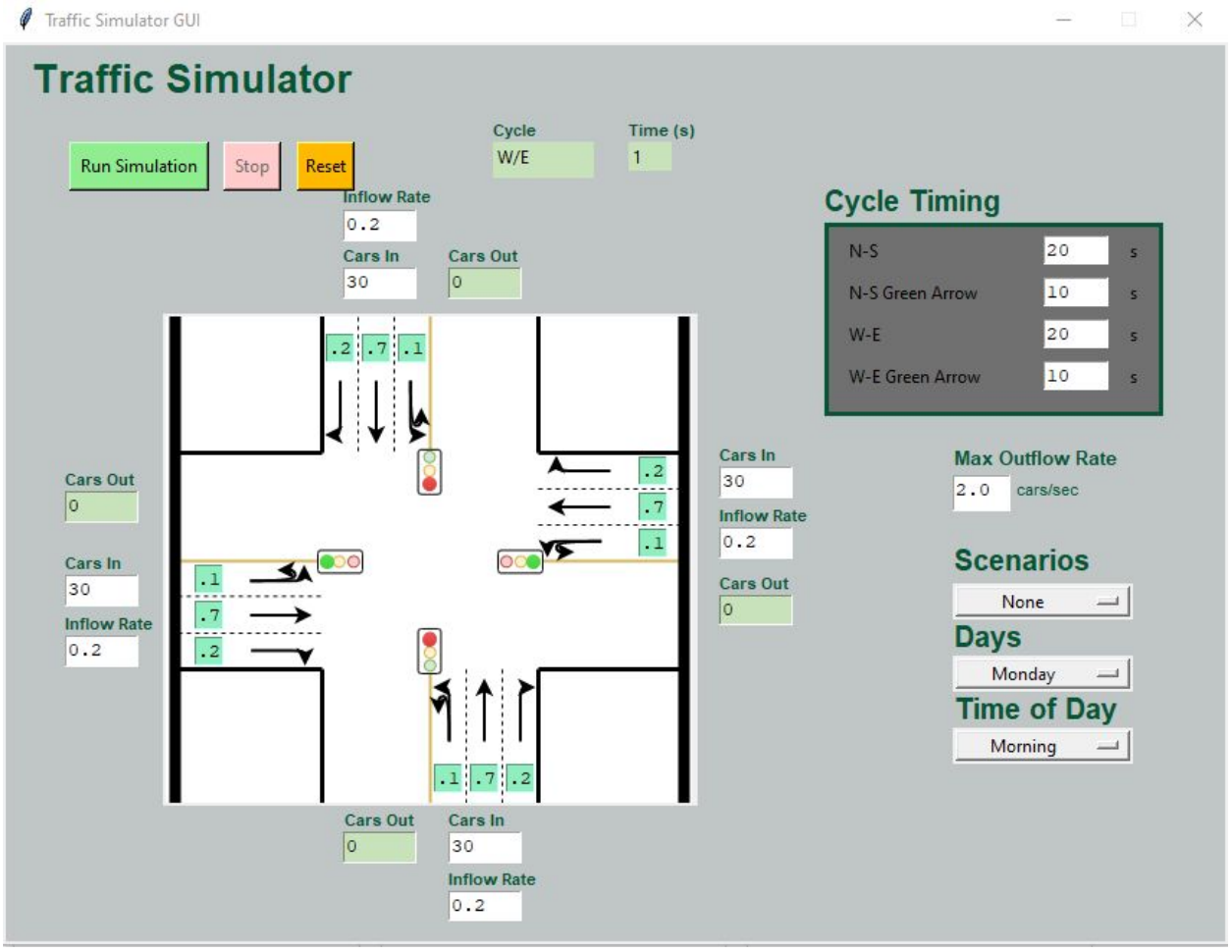
Start Up

For start up download the executable, and run the executable. The executable is found in the root project directory: /TrafficSimulator.exe.

User Interface



After startup, each of the fields is filled in with a default variable. All available text fields are editable except for the ‘Cycle’ and ‘Time’ fields. These fields are not editable since they are the outputs. Each of the inflow rates are editable, require doubles, and affect how fast each of the lanes gains cars per second. Adjacent to the inflow rates there is a text field that requires integers for ‘Cars In’ which modifying changes the initial amount of cars, be aware that this will change while the program is running. Each of the lanes have a green box, which requires doubles, that determines what percentage of cars use that lane. For ideal situations, the 3 green

text fields in the 3 lanes should add up to 1. In the cycle timing window, there are 4 text fields where the user can input integers that determines for how many seconds to determine how long the cycle occurs. ‘Max Outflow Rate’ allows a double to be entered and limits how many cars per second travel every second.

Pushing the button ‘Run Simulation’ starts the simulation, with the previously discussed settings. Changing the ‘Cars In’ and the ‘Cars Out’ being updated every second. The ‘Stop’ button halts the simulation while sustaining the current state of the program. Pushing the ‘Reset’ button resets the cars in and cars out to the default value.

Special Scenarios

The following scenarios are selected from the ‘Scenarios’ dropdown in the simulator GUI.

None

The user selects the scenario: ‘None’. This is the default case and has no effect on the flow rate.

Construction

The user selects the scenario: ‘Construction’. This action halves the current flow rate.

Rainy Weather

The user selects the scenario: ‘Rainy Weather’. This action multiplies current flow rate by .85.

Accident

The user selects the scenario: ‘Accident’. Multiplies the current flow rate by .4.

Day of week Scenarios

The following scenarios are selected from the ‘Days’ dropdown in the simulator GUI.

Monday, Wednesday, Friday

The user selects the scenarios: ‘Monday’, ‘Wednesday’, or ‘Friday’. This action has no effect on the flow rate.

Tuesday and Thursday

The user selects the scenarios: ‘Tuesday’ or ‘Thursday’. This action multiplies current flow rate by .6.

Saturday and Sunday

The user selects the scenarios: ‘Saturday’ or ‘Sunday’. This action multiplies current flow rate by 1.2.

Time of day Scenarios

The following scenarios are selected from the ‘Time of Day’ dropdown in the simulator GUI.

Morning and Evening

The user selects the scenarios: ‘Morning’ or ‘Evening’. This action halves the current flow rate.

Afternoon

The user selects the scenario: ‘Afternoon’. This action has no effect on the flow rate.

Night

The user selects the scenario: ‘Night’. This action multiplies current flow rate by 1.5.