Final Project - SUMO

REPORT - ADVANCED TRANSPORTATION_20551

KEIVAN JAMALI 403209743
PROFESSOR AMINI

December 23, 2024

Contents

1   Base Scenario

1.1   building Sioux Falls network

I draw the network in the netedit application according to the picture in the PDF. However, there is a slight difference in the PDF picture and some others that I have found.

1.2   Define three type of vehicles

According to the explanation, in the Project_KeivanJamali.rou.xml, I define all types of vehicles.

1.3   Define flows and routs

According to the explanation, in the Project_KeivanJamali.rou.xml, I define all routs and flows. To find the path, i had to look for the name of the edges in the network.

1.4   Define configuration

In the end, by writing the conf file and asking for the output, I got the results.

2 Advanced Scenario

2.1 Define detectors

I write a new file named Project_KeivanJamali.detectors.xml which contains the definition of detectors according to the PDF. This file is also add to the config file.

2.2 TraCI code

Using libraries of traci and sumolib, we define a method to go step by step in the simulation and perform some changes such as changing the lane for red detectors and changing the type of vehicles at blue detectors.

3   Calculation

Using pandas, read the tripinfo file for both scenarios and compare results.

3.1   Results

For base scenario the total travel time is equal to 608815 seconds.

For advanced scenario the total travel time is equal to 607113 seconds.

This result shows that changing the naive cars to rush, makes travel time lower in total. This is logical to real world too.