User Guide for Price Elasticity Simulation

By: Callie Bianco, Tung Dinh, Abdullahi Diriye, Adam Sirkis

Files

Drivers (Note: Independent of each other)

ETL_SIM.py:	Simulates cars and busses on I-405
Price_Elasticity_Model.py:	Simulates the effect of our wanting to move algorithm on amount of traffic and traffic speeds

Drivers Dependencies

car.py:	Represents a car
bus.py:	Represents a bus
highway.py:	Represents a highway
enter.py:	Represents an on ramp
exit.py:	Represents an off ramp
Income_Data.py	Income information

Test Suites

car_move_test.py
tests.py
car_tests.py

How to run Price Elasticity Model

1. Place all files into the same directory
2. Load the file Price_Elasticity_Model.py into the console
3. Run the speeds_changes() method.
    a. Specify “South” or “North” for the direction
    b. If you want to print a graph of speeds at every toll price, set show_all_graphs to True. Default is False. The simulation will print a graph of average speeds at varying toll prices at the end regardless.
    c. Leave “changes” at the default 0 value.
    d. Default number of simulations is 1. Results do not change much with more simulations, but it is free to change.

How to run I-405 Traffic Animation

1. Place all files into the same directory
2. Run the file ETL_SIM.py

How to perform sensitivity analysis

1. Place all files into the same directory
2. Load the file Price_Elasticity_Model.py into the console
3. Run the following methods speed_sensitivity(), price_sensitivity(), speed_price_sensitivity(), and speed_change_sensitivity() to perform sensitivity analysis on the speed, price, speed X price, and how number of cars affect the speed respectively.

How to run test suites

1. Load all files into the same directory
2. Run any test suite (all have their own main methods)