**Importing SUMO data from OSM**

**Video Reference**: <https://www.youtube.com/watch?v=xZOFUqrV9hk>

**Requirements:**

* A text editor (E.g. Notepad++)
* Python 2.7.9
* SUMO 0.23
* Copy of additional polygons (<http://sumo.dlr.de/wiki/Networks/Import/OpenStreetMap>)

**Prior to starting:**

* Choose the desired road network from OpenStreetMap
  + Press “Export” to download map.osm
* In the additional polygons file
  + Remove the polygonType line named power
  + Rename the file “typemap.xml” and place it in the same directory as map.osm
  + Once complete, this polygons file no longer needs to be altered for all future simulations.

**Commands:**

* The following must be done for every new simulation made
* Open and direct a command line to the SUMO directory “sumo-0.23.0/bin”

|  |
| --- |
| Enter: start-command-line |

* Now direct the command line to the location of map.osm

|  |
| --- |
| Enter: netconvert --osm-files map.osm -o map.net.xml |

* Wait for the previous command to finish

|  |
| --- |
| Enter:  polyconvert --net-file map.net.xml --osm-files map.osm --type-file typemap.xml -o map.poly.xml |

* The next two commands are python, meant to create the random car paths from randomTrips.py located in the SUMO software directory

|  |
| --- |
| Enter the 2 commands:  python C:/Users/Andrew/Downloads/sumo/sumo-0.23.0/tools/trip/randomTrips.py -n map.net.xml -e 100 –l  python C:/Users/Andrew/Downloads/sumo/sumo-0.23.0/tools/trip/randomTrips.py -n map.net.xml -r map.rou.xml -e 100 –l |

**Final steps:**

* Once the previous commands have been successful, locate test.sumo
  + Located in the SUMO directory “sumo\sumo-0.23.0\tools\contributed\traci4j\test\sumo\_maps\variable\_speed\_signs”
* Copy this file to the same directory of map.osm and rename it to “map.sumo”
* Open the newly renamed map.sumo and alter the input nodes as so:

|  |
| --- |
| <input>  <net-file value="**map.net.xml**"/>  <route-files value="**map.rou.xml**"/>  <additional-files value="**map.poly.xml**"/>  </input> |

* This step only needs to be done once as long as each of the files are named map…
* To validate if everything was successful, you should now be able to run the simulation
  + sumo-gui map.sumo.cfg

**Getting the Data**

* Only one command is needed to get the car positions and information out of the simulation for Unity
  + sumo –c map.sumo.cfg --fcd-output carData
  + “carData” being the name of the file you wish to hold the data