<h1 style="text-align:center">NetSim Mobility File Generation</h1>

Software Recommended: NetSim Academic/Standard/Pro (32/64 bit), Python 3.7

Project Download Link:

https://github.com/NetSim-TETCOS/Mobility_Script_project/archive/refs/heads/main.zip

Introduction

Mobility python script allows user to automatically generate the mobility.txt file without the need for manually writing from GUI. Mobility python script meets the user requirements which involves changing the value of time and distance co-ordinates.
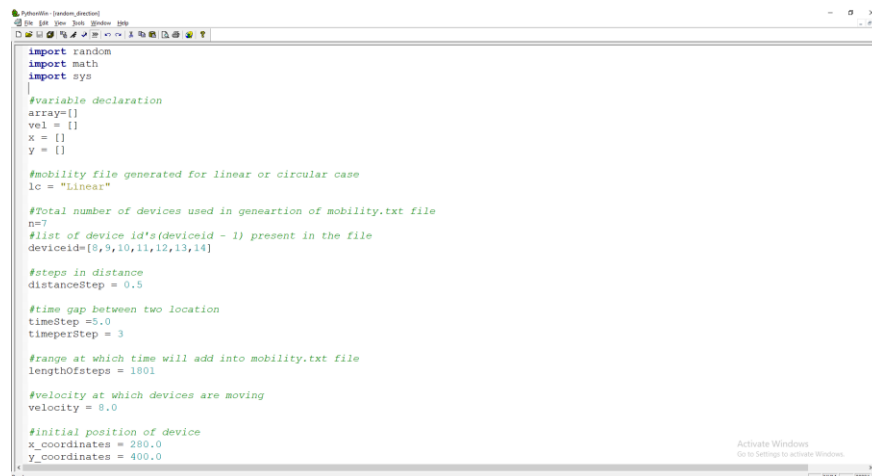
Variables used in the python script for generating mobility input to NetSim

1. lc – This is used to get either linear or circular form of mobility file.
2. n - Total number of devices in which file-based mobility is enabled.
3. deviceid – list of device id's that user wants to add into the mobility file.
4. vel - Velocity at which device will moves from one point to another.
5. x_coordinate –Initial position of device.
6. y_coordinate –Initial position of device.
7. distancestep – It is used in finding the next location for each device.
8. timeperStep – Time gap between two location.
9. timeStep – It is used along with timeperStep to get the time value for node to move.
10. lengthOfsteps - Range in which, time value will add into mobility file.

How to generate Mobility.txt file

Case 1: Mobility file for uniform straight-line motion

1. Open the random.py script in python IDE.
2. User can modify parameters like lc, n, distancestep, timeperStep, timeStep, vel and x, y coordinates
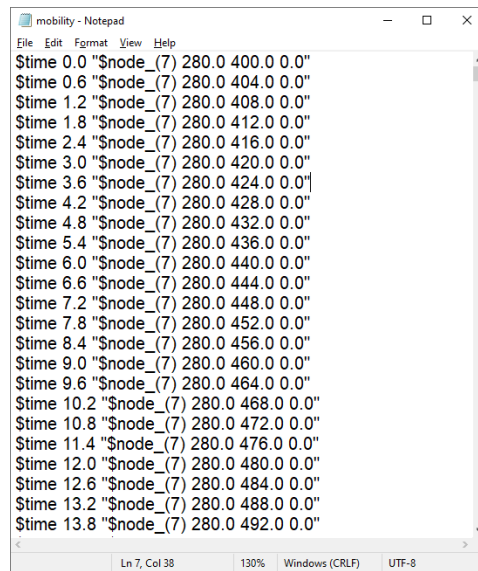

3. Generating Mobility file is started by opening command prompt in the directory of the Mobility script project and starting the python script as shown below.
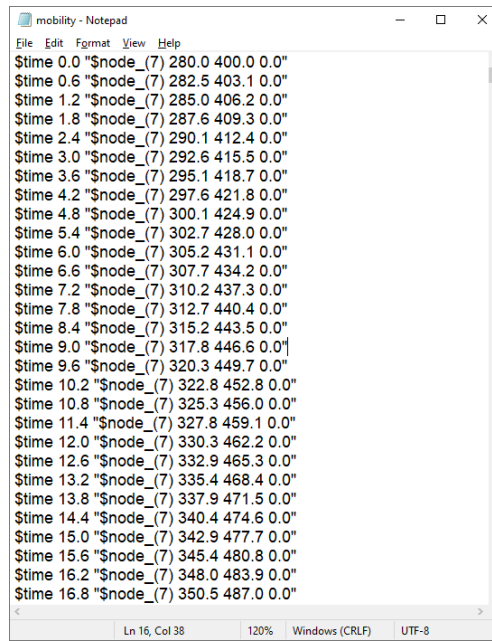
4. After executing the command mobility.txt file will be created in the same folder that contains the random.py python script.
5. A sample uniform straight line mobility file generated using this script is shown below.

Case 2: Mobility file for uniform circular motion

1. Users need to set lc = "Circular" and other steps are similar as above.
2. A sample uniform circular mobility file generated using this script is shown below.

mobility - Notepad

File Edit Format View Help

```
$time 0.0 "$node_(7) 280.0 400.0 0.0"
$time 0.6 "$node_(7) 282.5 403.1 0.0"
$time 1.2 "$node_(7) 285.0 406.2 0.0"
$time 1.8 "$node_(7) 287.6 409.3 0.0"
$time 2.4 "$node_(7) 290.1 412.4 0.0"
$time 3.0 "$node_(7) 292.6 415.5 0.0"
$time 3.6 "$node_(7) 295.1 418.7 0.0"
$time 4.2 "$node_(7) 297.6 421.8 0.0"
$time 4.8 "$node_(7) 300.1 424.9 0.0"
$time 5.4 "$node_(7) 302.7 428.0 0.0"
$time 6.0 "$node_(7) 305.2 431.1 0.0"
$time 6.6 "$node_(7) 307.7 434.2 0.0"
$time 7.2 "$node_(7) 310.2 437.3 0.0"
$time 7.8 "$node_(7) 312.7 440.4 0.0"
$time 8.4 "$node_(7) 315.2 443.5 0.0"
$time 9.0 "$node_(7) 317.8 446.6 0.0"
$time 9.6 "$node_(7) 320.3 449.7 0.0"
$time 10.2 "$node_(7) 322.8 452.8 0.0"
$time 10.8 "$node_(7) 325.3 456.0 0.0"
$time 11.4 "$node_(7) 327.8 459.1 0.0"
$time 12.0 "$node_(7) 330.3 462.2 0.0"
$time 12.6 "$node_(7) 332.9 465.3 0.0"
$time 13.2 "$node_(7) 335.4 468.4 0.0"
$time 13.8 "$node_(7) 337.9 471.5 0.0"
$time 14.4 "$node_(7) 340.4 474.6 0.0"
$time 15.0 "$node_(7) 342.9 477.7 0.0"
$time 15.6 "$node_(7) 345.4 480.8 0.0"
$time 16.2 "$node_(7) 348.0 483.9 0.0"
$time 16.8 "$node_(7) 350.5 487.0 0.0"
```

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The script can be modified to generate mobility patterns in addition to those that are supported currently.