

# CE 657: Modeling and Analysis of Computer Networks Homework Assignment #2 (revised)

## Assignment Overview

The purpose of this assignment is to familiarize you with the NS-2 network simulation package. To complete this assignment, you must have the NS-2 package successfully installed.

This assignment has two goals. The first goal is that you learn how to write some scenario with TCL and the second goal is that you learn how to change and recompile the source code of NS-2

1. You should look at the mobile node source code and determine which of the mobility models it supports.
2. You simulate a scenario and obtain its result with mobility model that exists
3. You should change that mobility model to another one.
4. You simulate your scenario again with this new mobility model and compare the results of this with previous ones.

Please note that the scenario is the same as scenario of the HW1 but with the following change:

- Mobility Max Speed values are 5,10,20,30,50

### Hint:

- You must generate two files, one traffic file and one mobility file and call them in a tcl script that you can find examples in the folder ns-2.x/tcl/ex (for example wireless.tcl).
- 1. Go in the folder ../ns-2.x/indep-utils/cmu-scen-gen and use **ns cbrgen.tcl** for generating cbr traffic file.
- 2. Go in the folder ../ns-2.x/indep-utils/cmu-scen-gen/setdest and use **./setdest** for generating mobility file.  
Then use the two files in your script tcl like in the example Wireless.tcl.
- Wireless Transmission range is 250m by default, so you don't need to change the values. (if you are interested to check or even change the transmission range, run the program ../ns-2.x/indep-utils/propagation/threshold.cc)
- At the end of the simulation run, trace-output file (\*.tr for wireless simulations) is created and can be used for further analysis.

\*Please refer to the course website for the protocol assignment and further documentation\*

### Turn-in

The homework is due by 3pm on Tuesday December 26th (5 Day). The turn-in consists of your result files, your mobility model implementation file and diagrams that show the result of simulation on two mobility models.

Please send your documents to: [m.hasanlou@ce.sharif.edu](mailto:m.hasanlou@ce.sharif.edu) with (your name&family-your student ID – HW2) in the subject of your email.