Wireless Sensor Networks (CSD337) Lab 3

Instructions

- For this lab, you will simulate wired & wireless networks; and analyse trace files & generate output graphs using them.
- For reference: http://www.isi.edu/nsnam/ns/tutorial/index.html ; http://nile.wpi.edu/NS/

Due Date: February 6, 2017 (5 pm)

Submission

- Put the code and paste screenshots (topology & data flow, graphs) for the given simulation scenario.
- Name the document as GLA1_WSN2017_John_Doe.pdf in case your name is John Doe.
- Upload this document by the due date and time.

Grading Criteria

- This assignment has **05 points** (with **weightage of 5%** in your overall 100 points).

Questions:

1. ***(Graded Question)*** Simulate a wired network scenario as explained in the class.
   - **a)** Determine the number of packets dropped. Plot throughput vs time.
   - **b)** Introduce an error model (packet error rate of 10%) at backbone link (N3-N4) and plot throughput vs time.
   - **c)** Plot congestion window for N0 (source) and N4 (destination) - TCP Reno and TCP Tahoe. Compare both graphs.
   - **d)** Add N5, N6 and N7 to the above network and simulate an Ethernet LAN with N4, N5, N6 and N7 using CSMA/CD as MAC protocol. Take bandwidth = 0.5 Mbps, delay = 40 ms.

2. ***(Practice Question)*** Simulate a wireless scenario where nodes (numbered from N0 to N10) having following locations are deployed in a 100*100 area; nodes are static and have random locations.