

Assignment 4: Graphs!

Due: Nov 19 2004, 4:30 PM

Note: Absolutely no late submissions will be accepted.

This is a somewhat involved assignment, so please start early, and get as much help in the PSOs as you can.

This assignment requires you to do the following:

- Download, compile, and run the Georgia Tech Internet Topology Generator (<http://www.cc.gatech.edu/fac/Ellen.Zegura/graphs.html>). This topology generator can generate internet-like topologies with programmable (realistic) delays on links.
- Use this topology generator to generate networks of various sizes (various numbers of transit-stub graphs and nodes).
- Write a program that reads in the graph generated by the topology generator into an edge list data structure.
- Finally, solve the all-pairs shortest path problem on this graph (i.e., compute the shortest path and associated (minimum) delay from a node to every other node).
- The program should simply print out the length (delays) associated with the various shortest paths (no source or destination node numbers). This is merely for validation purposes.
- Please make sure that your program can read in graphs of various sizes. Your program will be checked on graphs that might not be of the same size as the ones you used for checking your program. In this respect, your program should be able to read in any graph generated from the topology generator.