Computer Science 2300: Homework 4

Due: March 28, 2012 in Lecture

Note: Please use rigorous, formal arguments. If you are asked to provide an algorithm then you may either write pseudocode similar to the pseudocode in the DPV text, or provide a clear description in English. You **must** also provide an argument for why the algorithm is correct. We encourage you to collaborate with other students, while respecting the collaboration policy. Please write the names of all the other students you collaborated with on the homework.

1. (10 points) DPV Problem 4.1 (run Dijkstra's algorithm)

2. (10 points) DPV Problem 4.8 (Prof. F. Lake's algorithm)

3. (10 points) DPV Problem 4.19 (generalized shortest paths)

4. (10 points) DPV Problem 4.20 (road network)

5. (10 points) DPV Problem 5.2 (run Prim's and Kruskal's algorithms)

6. (20 points) DPV Problem 5.9 (10 statements: proof or counterexample)

7. (10 points) DPV Problem 5.24 (light spanning trees)