CS 3500 Section A, Spring 2000

Extra Credit Homework

Turn in by Tuesday, April 25 to receive the extra credit

Problem 1 Exercise 24.1–1, page 503 of CLR.

Problem 2 Exercise 24.2–2, page 510 of CLR.

Problem 3 Exercise 24.2–6, page 510 of CLR.

Problem 4 Exercise 25.2–4, page 531 of CLR.

Problem 5 Exercise 25.2–5, page 532 of CLR.

Extra Credit Programming Assignment #2

Implement (in C, C++, or Java) Dijkstra's shortest path algorithm. To receive the extra credit (up to 5% of the whole grade), you must e-mail your code to `mandoiu@cc` by midnight **Friday, April 28**.

The input is provided in the following format, see also the sample input files `dg1`–`dg3` in `~im7/Pub/3500`. The first line starts with the letter `n` followed by the number of vertices. The second line starts with the letter `m` followed by the number of arcs. The following `m` lines describe the arcs of the graph. Each line starts with letter `a`, folowed by the tail, head, and length of the arc (vertices of the graph are numbered from 0 to $n-1$; the arc length is an integer number). Finally, the input is completed by two lines starting with the words `source` and `sink`, which specify the vertices between which the shortest path is to be computed.

The only required output is the length of the shortest path between the source and the sink.