CS 758/858 Homework 18: More Shortest Paths

for Tue Nov 10 2026

These are some suggestions to help you prepare for quiz 17.

1. Parts a and b of Problem 25–1 in CLRS.
2. Part a of problem 22–3 in CLRS.
3. Show that the problem of finding the best sequence of trades from currency 1 to currency n in the arbitrage problem of the previous question exhibits optimal substructure.
4. (Those in 858 only) Like the previous question, but show that, if there exists a schedule of fees such that c_k is the fee for making k trades, the problem does not necessarily exhibit optimal substructure.
5. Exercise 23.2–4 in CLRS.
6. Given a graph $\langle V, E \rangle$, design an algorithm to count the number of shortest paths between each pair of vertices and analyze its running time.