

CSCI-2300

Lab 7

March 21, 2007

This lab is about sorting, and is taken from Problem 7.43. You are given two files: lab7.cpp and timer.h. Get help from the TAs if you are stuck. After you have completed each of the four programs, ask a TA for input sequences to test the correctness of your program. Present your completed work to a TA to get your full credit for the lab.

1. Write a C++ program to take an array of N elements and calculate the number of inversions in the array.
2. Write a C++ program to implement Shell's sort with Shell's original increments. Your program should record the total number of element comparisons that have been performed.
3. Repeat 2 using Hibbard's increments.
4. Repeat 2 using Knuth's increments: $h_i = (3^i + 1)/2$.