CS-1181 Lab Problem 11: Sort Trace

PURPOSE: To practice with sorting algorithms

DIRECTIONS:

Part A (Due by end of first lab session)

Trace the steps of the BubbleSort algorithm by writing out the contents of the input array (below) after each pass of the algorithm. Show your trace to the lab TA for credit.

Input array: `{6, 3, 11, 4, 9, 8, 17, 7}`

Part B

Trace each pass of selection sort, insertion sort, and quick sort for the list of values in Part A. For quick sort, assume that the pivot is the middle value in the portion of the array to be sorted. If there are an even number of items in the unsorted part of the list, so that two values "tie" for the middle value, pick the one on the left as the pivot.

You may turn in your work as a text file, a PDF, or a scan/image of a hand-written page.

RUBRIC:

[1pt] Documentation
[1pt] Part A correct
[1pt] Part B correct

First Pass {6 3 11 4 9 8 17 7}

{3 6 11 4 9 8 17 7}

{3 6 11 4 9 8 17 7}

{3 6 4 11 9 8 17 7}

{3 6 4 9 11 8 17 7}

{3 6 4 9 8 11 17 7}

{3 6 4 9 8 11 17 7}

Second Pass

{3 6 4 9 8 11 7 17}

{3 6 4 9 8 11 7 17}

{3 4 6 9 8 11 7 17}

{3 4 6 9 8 11 7 17}

{3 4 6 8 9 11 7 17}

{3 4 6 8 9 11 7 17}

{3 4 6 8 9 7 11 17}

Third Pass

{3 4 6 8 9 7 11 17}

{3 4 6 8 9 7 11 17}

{3 4 6 8 9 7 11 17}

{3 4 6 8 9 7 11 17}

{3 4 6 8 9 7 11 17}

{3 4 6 8 7 9 11 17}

{3 4 6 8 7 9 11 17}

Fourth Pass

{3 4 6 8 7 9 11 17}

{3 4 6 8 7 9 11 17}

{3 4 6 8 7 9 11 17}

{3 4 6 8 7 9 11 17}

{3 4 6 7 8 9 11 17}

{3 4 6 7 8 9 11 17}

{3 4 6 7 8 9 11 17}