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COSC 2437 - Data Structures

Assignment 8B

Please use this document to submit your answers (Save As). Make sure you write your name in the designated space in this document.

1. Sort the following list using selection sort. Show the list after each iteration of the outer loop

34, 46, 19, 66, 27, 56, 13, 18

1. 13, 46, 19, 66, 27, 56, 34, 18

2. 13, 18, 19, 66, 27, 56, 34, 46

3. 13, 18, 19, 66, 27, 56, 34, 46

4. 13, 18, 19, 27, 66, 56, 34, 46

5. 13, 18, 19, 27, 34, 56, 66, 46

6. 13, 18, 19, 27, 34, 46, 66, 56

7. 13, 18, 19, 27, 34, 46, 56, 66

1. Sort the following list using insertion sort:

38, 28, 31, 20, 35, 40, 22, 81, 42, 68, 25

Show the resulting list after 6 passes

20, 22, 28, 31, 35, 38, 40, 42, 81, 68, 25

1. Sort the following list using Shellsort:

81, 58, 66, 31, 46, 78, 28, 5, 91, 55, 46, 3, 64, 39, 82, 29, 63.

Use the increment sequence 7, 4, 1. Show the list during each increment. (I did not create any function for this one, I just wrote it on paper with the help of the slides; Each pair of brackets is a sublist.

7: {81,5,82} {58,91,29} {66,55,63} {31,46} {46,3} {78,64} {28,39}

4: {81,46,91,64,63} {58,78,55,39} {66,28,46,82} {31,5,3,29}

1: {81,58,66,31,46,78,28,5,91,55,46,3,64,39,82,29,63}

\*\* Note: increment of one is a standard insertion sort.

1. Consider the following list:

17, 39, 55, 81, 23, 66, 56, 49, 65, 96, 6, 101, 59, 26, 37

This list is to be sorted using quicksort. Use pivot as the **middle** element of the list.

a. Show the resulting list after one call to the partition function.

37, 39, 23, 17, 6, 26, 49, 81, 65, 96, 55, 101, 59, 66, 56

b. Show the resulting list after two calls to the partition function.

6, 17, 23, 39, 37, 26, 49, 81, 65, 96, 55, 101, 59, 66, 56