

Heapsort Functional Specification

Write a program that uses a heapsort.

Write a program that uses a bubblesort.

Compare the sort programs with the following criteria:

- Number of transfers (a transfer is when an item is shifted from one location to another)

- Total time to sort a small dataset (less than 200 items)

- Total time to sort a large dataset (more than 10,000 items)

- Compare the source code between the programs using simple source code metrics (lines of code, number of conditional statements)

Things to consider:

- Does the type of 'item' that you are sorting matter? Will it make a difference if the item is an integer, or a string, or a complex data type?

- What happens if the dataset is already sorted? Does this change the speed of the program?

- What happens if the dataset is sorted in the opposite order? (ascending rather than descending)