

Sorting Lab10

Objectives:

- Familiarize yourself with the performance difference between 4 of the basic sorting algorithms.

Sorting performance exercise:

Download and import the files found in the Lab10.zip file (available on Canvas). Name your project and/or package whatever you think appropriate and place the data files under the project directory, otherwise they will not be seen.

Run the executable program **SortBenchMarks**. You can see that you may select which file you would like to run through a menu. Run the program with all three files and record the number of swaps below.

You will need to add the code that will also count the number of comparisons (relational expressions) statements and assignments (statements using the =). Do not forget, a swap is three assignments. You should also add the code to display these counts on the same line that the swaps are displayed. So you will have to add the getter method for each of these new counters to each sort class.

When your coding is complete, fill out the appropriate tables below and see if tracking these machine effort metrics in more detail changes the evaluation of which sort is more efficient.

Number of Swaps

File Name	manyNumbers_mixed.csv	manyNumbers_ascending.csv	manyNumbers_descending.csv
Bubble sort			
Selection sort			
Insertion sort			
Quick sort			

Number of Comparisons (including loop tests)

File Name	manyNumbers_mixed.csv	manyNumbers_ascending.csv	manyNumbers_descending.csv
Bubble sort			
Selection sort			
Insertion sort			
Quick sort			

Number of Assignments (count any array data assignment, not looping indices)

File Name	manyNumbers_mixed.csv	manyNumbers_ascending.csv	manyNumbers_descending.csv
Bubble sort			
Selection sort			
Insertion sort			
Quick sort			

Your lab grade is 2 pts. for attendance and 2 pts. for these tables being properly filled out, 2 points for the swap code, 2 points for the comparison code, 2 points for the assignment statement code. Deductions are the same as previous labs.