CS 260 100P
Sorting

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Topics to learn

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- $O(n^2)$ sorts
- $O(n \log n)$ sorts

Tasks to perform

Implement the following sorts (ascending order):

- selection
- insertion
- merge
- quick

Compare the runtime behavior of your sorts on two types of input data, sorted and unsorted. Thus, you should be creating eight plots in total. Your main function should work in a similar fashion to that of the searching task, producing a gnu-plot file. In addition, it should write the sorted code out to a file named *sorted.dat*. As always, use your dynamic array class to read in the data from the

files given as command-line arguments.

As a group project, write a program that tests whether or not the data in a given file is sorted in ascending order. This program may be shared.

Generating test data

To test your sorts, use the *makeIntegers* program from the previous task.

Other requirements

Be able to describe to your mentor the complexity of each operation in the public interface of your classes using order notation.