



CS167 - Intro Programming

Albert Schueller

Spring 2016, 10TThF, Olin 165

[home](#)
[syllabus](#)
[video](#)
[grades](#)
[in-class examples](#)
[upload](#)
[presentations](#)

Homework 06: Sort and Search (due Mar 01, 2016)

1. Sort and Search. Write a program that requests the name of a file containing a list of floating point numbers from the user. The program will then request a floating point number from the user and report its rank in the ascending list of numbers from the file. As a service to the user, the program will also create a new file called `sorted.dat` that contains the original list of numbers sorted in ascending order (smallest to largest).

For example, suppose the file contains the following 10 numbers:

Original		Sorted
16.238		3.198
10.530		4.349
17.886		7.322
7.322		9.208
16.624	Ascending Sort →	10.530
3.198		15.600
4.349		16.238
9.208		16.624
19.964		17.886
15.600		19.964

and suppose the user enters 16.5. In the ascending sorted list of numbers 16.6 would appear after line 7 of 10 lines. The program would report a rank of 70% for 16.5.

There are a few special cases to consider. If the number the user enters is the smallest number relative to the list, then the program should report a rank of 0%. If it is the largest, then report 100%. If it is an exact match for one of the numbers, then report the rank using the line number of the exact match.

The program should keep asking the user for numbers and report rank until the user enters an empty response, i.e. just hits enter without typing a value.

Be sure to include an Above & Beyond element (and a comment describing the A&B element).

Homework 06 Pairings:

```
[ 'Ashley, George', 'Bruns, Adam' ]
[ 'Blausapp, Yarden', 'Over, Clayton' ]
[ 'Chun, Catie', 'Mueller, Spencer' ]
[ 'Eastland-Fruit, Ridley', 'Stanley, Jenna' ]
[ 'Fernandez Orozco, Pablo', 'Anderson, Alec' ]
[ 'Hayes, Nelson', 'Clark, Zachary' ]
[ 'Hochfeld, Nick', 'Mullins, Will' ]
[ 'Jarriel, Kaylin', 'Coutret, Eloise' ]
[ 'Novak, Hannah', 'Salkind, Quinn' ]
[ 'Obey, Kevin', 'Brothers, Robby', 'Robinson, Nick' ]
[ 'Valence, Jini', 'Klein, Emily' ]
[ 'Walker, Stanley', 'Donner, Eliza' ]
[ 'Wang, Jingyuan', 'Warren, Tyler' ]
```