

Re: sorting student papers

Source: <http://sci.tech-archive.net/Archive/sci.math/2006-02/msg02224.html>

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 - *Date:* Mon, 13 Feb 2006 19:03:16 -0500
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John H Palmieri wrote:

A silly question for a rainy Monday:

I am teaching a class with roughly 50 students in it. They have quizzes and homework each week, and I end up alphabetizing these papers before I return them to the students. Some of you may be in similar situations. My question: what technique should I use to sort the papers? (Or maybe: what techniques do you use to sort papers in situations like this?)

Notice that I'm not talking about writing computer code to implement Quick Sort or something like that -- I'm talking about shuffling actual pieces of paper around. I also have good information about the keys on which I'm sorting: I can see how they are distributed through the alphabet, for example, so if I want to divide them into two roughly equal stacks, I can make a good guess about how to do that.

For a class of your size or less, what I generally do is start with a pile of papers on my desk and use insertion sort to transfer them into another pile, usually in my lap. The wrinkle is that I keep a finger in the pile in my lap, essentially dividing it into two piles. The finger is placed at the insertion part of the last paper inserted.

In algorithmic terms, I'm essentially keeping a pointer into the list at the location of the last search and doing a linear search to find the next insertion location. I've been doing this for quite a while and always promise myself that I'll do a proper analysis, but of course while I'm grading and sorting, I always have more pressing tasks, so the promise is continually unfulfilled.

As an aside, this is an exercise I sometimes use for a data structures or algorithms class, something like these:

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1. You're grading placement tests. You and two other students have 500 [insert some appropriate number here] tests and have to alphabetize them. You have three desks to work on and a big party to go to in 20 minutes. What strategy do you adopt?

2. You have a box full of broken spaghetti and have to sort the pieces by length. What's the fastest algorithm you can use to do the sorting?

I don't know how useful these sort of things are for the students, but, hey, I'm tenured and can arrange things for my own enjoyment :-)

Regards,

Rick

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