

Sorting

- Importance of sorting
- Quicksort
- Lower bounds for comparison-based methods
- Heapsort
- Non-comparison based sorting

Why don't CS profs *ever* stop talking about sorting?!

- Computers spend more time sorting than anything else, historically 25% on mainframes.
- Sorting is the best studied problem in computer science, with a variety of different algorithms known.
- Most of the interesting ideas we encounter in the course are taught in the context of sorting, such as divide-and-conquer, randomized algorithms, and lower bounds.

You should have seen most of the algorithms - we will concentrate on the analysis

Applications of Sorting

- Closest Pair
- Element Uniqueness
- Frequency Distribution
- Selection of Kth largest element
- Convex Hulls
 - See next slide!