Lecture 24

CSE 331
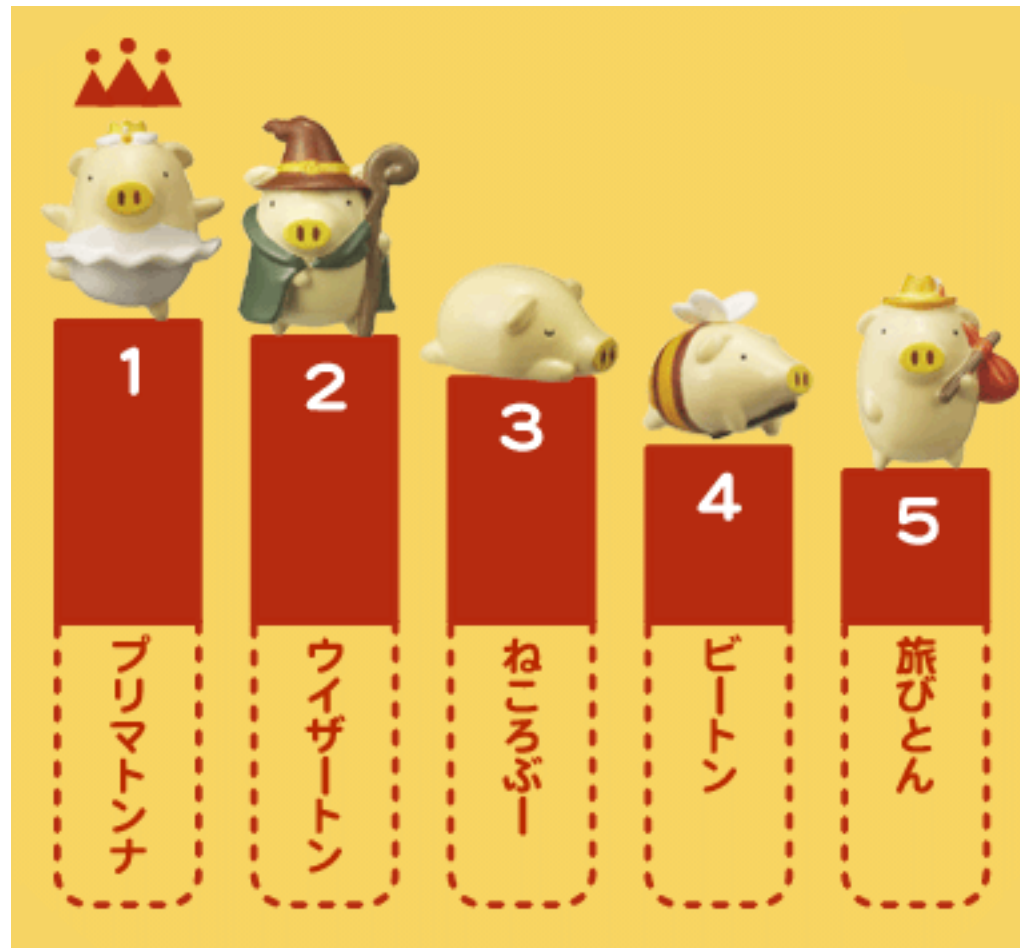
MergeSort
Runtime analysis on the board…

Comments on Sorting Algorithms…

- Any comparison-based algorithm needs to make $\Omega(n \log n)$ comparisons.

- $O(n \log n)$ is the best known upper bound on general, comparison-based sorting algorithms.

- Can sort faster (i.e., $O(n)$) if domain of the elements a_i is of size $O(n)$ (e.g., T/F poll #1 where $a_i \in \{0, 1\}$) .

- Can run faster if the input is almost "sorted".

Rankings

How close are two rankings?

Collaborative Filtering

Rest of today's agenda

Formal problem: Counting inversions

Divide and Conquer algorithm