

Internal sorts you should know already:

- bubblesort
- selection sort
- insertion sort
- merge sort
- quicksort

External sorts:

How do you sort more data than fits in memory?

Adaptive sort

lecture notes file attached at end of this section

Sort Merge

balanced two-way sort merge

replacement selection strategy

priority queue

(min)heap - leftist, minimum height, binary tree that is heap-ordered

heapsort

balanced k-way sort merge

polyphase sort merge

lecture notes file at end of this section

Some large text files for testing: Moby Dick and Brown Corpus large text files included below

Some other interesting sorts:

shellsort (also called diminishing increment sort) - exploits insertion sort's tendency towards linear time when data is partly sorted and/or when number of data is small. Divide  $n$  data into  $n/k$  subsets that are interleaved. Sort each subset using insertion sort, then decrement  $k$ . Iterate until  $k=1$ .

Shell's diminishing increment sequence:  $n/2, n/4, n/8, \dots, n/n$

Hibbard's sequence (in reverse order):  $2^1-1, 2^2-1, 2^3-1, 2^4-1 \dots 2^k-1$ .

Fibonacci sequence: Start at first Fibonacci number less than  $n$ , and work back through the series to 1.

bucket sort

radix sort