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CE 2336.002

Homework 9

Rank of sorts (Slowest to fastest): Bubble sort, selection sort, insertion sort, merge sort, quick sort

Bubble sort – For every item in the list, it must compare every item or element with the next and swap depending on sort. – worst case is O(n2) best case is O(n) but on average is worst sort (makes ton of comaprisons).

Selection sort – For every iteration, the minimum element from the unsorted subarray is picked and moved to the sorted subarray. – worst case is O(n2) best case is O(n2) but on average is faster than bubble sort.

Insertion sort – Takes maximum time (O(n2)) to sort if elements are sorted in reverse order. And it takes minimum time (Order of n) when elements are already sorted.

Merge sort – Divide and conquer algorithm. Divides array in half and recursively calls itself then merges the two sorted halves. Best and worst time is O(nlogn).

Quick sort – Divide and conquer algorithm, also recursive Best case is O(nlogn) worst case is O(n2). Preferred over merge sort due to low overhead compared to merge sort.