Interview Questions (optional)

Practice Quiz, 3 questions

1 point

1.

Merging with smaller auxiliary array. Suppose that the subarray `a[0]` to `a[n − 1]` is sorted and the subarray `a[n]` to `a[2 * n − 1]` is sorted. How can you merge the two subarrays so that `a[0]` to `a[2 * n − 1]` is sorted using an auxiliary array of length n (instead of $2n$)?

Note: these interview questions are ungraded and purely for your own enrichment. To get a hint, submit a solution.

What do you think?

Your answer cannot be more than 10000 characters.

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1 point

2.

Counting inversions. An *inversion* in an array $a[\,]$ is a pair of entries $a[i]$ and $a[j]$ such that $i < j$ but $a[i] > a[j]$. Given an array, design a linearithmic algorithm to count the number of inversions.

Interview Questions (optional)

Practice Quiz, 3 questions

What do you think?

Your answer cannot be more than 10000 characters.

1 point

3.

Shuffling a linked list. Given a singly-linked list containing n items, rearrange the items uniformly at random. Your algorithm should consume a logarithmic (or constant) amount of extra memory and run in time proportional to $n \log n$ in the worst case.

What do you think?

Your answer cannot be more than 10000 characters.

Interview Questions (optional)

Submit Quiz

Practice Quiz, 3 questions