9. High Frequency

九章算法IT求职面试培训 第9章
www.ninechapter.com

Outline

1. Single Number I, II, III
2. Majority Number I, II, III
3. Best Time to Buy and Sale Stock I, II, II
4. Subarray I, II, III, IV
5. 2-Sum, 3-Sum, 4-Sum, k-Sum, 3-Sum Closest
6. Quick Questions
7. Partition Array

Single Number

http://lintcode.com/zh-cn/problem/single-number/
http://www.ninechapter.com/solutions/single-number/

Single Number II

http://www.lintcode.com/en/problem/single-number-ii/

http://www.ninechapter.com/solutions/single-number-ii/

Single Number III

http://www.lintcode.com/en/problem/single-number-iii/

Majority Number

http://lintcode.com/en/problem/majority-number/

Majority Number II

http://lintcode.com/en/problem/majority-number-ii/

Majority Number III

http://lintcode.com/en/problem/majority-number-iii/

Best Time to Buy and Sell Stock

http://www.lintcode.com/en/problem/best-time-to-buy-and-sell-stock/
http://www.ninechapter.com/solutions/best-time-to-buy-and-sell-stock/

Best Time to Buy and Sell Stock II

http://www.lintcode.com/en/problem/best-time-to-buy-and-sell-stock-ii/

http://www.ninechapter.com/solutions/best-time-to-buy-and-sell-stock-ii/

Best Time to Buy and Sell Stock III

http://www.lintcode.com/en/problem/best-time-to-buy-and-sell-stock-iii/

http://www.ninechapter.com/solutions/best-time-to-buy-and-sell-stock-iii/

Best Time to Buy and Sell Stock IV

k transcations

state: f[i][j]表示前i天进行j次交易，能够获得的最大收益

function: f[i][j] = max{f[x][j-1] + profit(x+1, i)}

answer: f[n][k]

intialize: f[i][0] = 0, f[0][i] = -MAXINT (i>0)

Subarray

http://lintcode.com/en/problem/maximum-subarray/
http://lintcode.com/en/problem/maximum-subarray-ii/
http://lintcode.com/en/problem/maximum-subarray-iii/

Subarray II

http://lintcode.com/en/problem/minimum-subarray/

Subarray III

http://lintcode.com/en/problem/maximum-subarray-difference/

Subarray IV

http://www.lintcode.com/en/problem/subarray-sum/

http://www.lintcode.com/en/problem/subarray-sum-closest/

2-Sum

http://lintcode.com/en/problem/2-sum/

3-Sum

http://lintcode.com/en/problem/3-sum/

3-Sum Closest

http://lintcode.com/en/problem/3-sum-closest/

4-Sum

http://lintcode.com/en/problem/4-sum/

k-Sum

http://www.lintcode.com/en/problem/k-sum/

Quick Questions

- Power(x, n)
    - x^n = (x^(n/2))^2 快速幂 →O(logn)
    - http://www.lintcode.com/en/problem/fast-power/
- Sqrt(x)
    - Magic Number 0x5f3759df
    - http://www.lintcode.com/en/problem/sqrtx/
- Trailing Number of zeros in n!
    - http://www.lintcode.com/en/problem/trailing-zeros/
- O(1) Check Power of 2
    - (x-1) & x == 0 → x是2的某次幂
    - http://www.lintcode.com/problem/o1-check-power-of-2/

Partition Array

http://lintcode.com/en/problem/partition-array/

Sort Letters by Case

http://lintcode.com/en/problem/sort-letters-by-case/

Sort Colors

http://lintcode.com/zh-cn/problem/sort-colors/

Interleaving Negative & Positive numbers

[1,2,-1,3,4,-5,-6] => [1,-1,2,-5,3,-6,4]

http://lintcode.com/zh-cn/problem/interleaving-positive-and-negative-numbers/