两根指针
Two Pointers

课程版本 v4.2　　主讲 令狐冲

扫描二维码关注微信小程序/公众号
获取第一手求职资料

- 同向双指针

- 相向双指针

- Two Sum

  - 几乎所有 Two Sum 变种

- Partition

  - Quick Select

  - 分成两个部分

  - 分成三个部分

  - 一些你没听过的（但是面试会考的）排序算法

同向双指针

http://www.lintcode.com/problem/window-sum/

http://www.lintcode.com/problem/move-zeroes/

http://www.lintcode.com/problem/remove-duplicate-numbers-in-array/

相向双指针

http://www.lintcode.com/problem/valid-palindrome/

http://www.lintcode.com/problem/rotate-string/

http://www.lintcode.com/en/problem/recover-rotated-sorted-array/

令狐师兄带你敲代码之 Two Sum

http://www.lintcode.com/problem/two-sum/

http://www.jiuzhang.com/solutions/two-sum/

哈希表(HashMap) vs 两根指针(Two Pointers)

只能使用 HashMap：

http://www.lintcode.com/problem/two-sum-data-structure-design/

http://www.jiuzhang.com/solutions/two-sum-data-structure-design/

使用 Two Pointers 会更快：

http://www.lintcode.com/problem/two-sum-input-array-is-sorted/

http://www.jiuzhang.com/solutions/two-sum-input-array-is-sorted/

Two Sum - Unique pairs

http://www.lintcode.com/en/problem/two-sum-unique-pairs/

http://www.jiuzhang.com/solutions/two-sum-unique-pairs/

问：是否可以先去重？

3Sum

http://www.lintcode.com/problem/3sum/

http://www.jiuzhang.com/solutions/3sum/

统计所有的和为 0 的三元组 (Triples)

Triangle Count

http://www.lintcode.com/problem/triangle-count/

http://www.jiuzhang.com/solutions/triangle-count/

独孤九剑 —— 破掌式

对于求 2 个变量如何组合的问题

可以循环其中一个变量，然后研究另外一个变量如何变化

统计所有和 <= target 的配对数

http://www.lintcode.com/problem/two-sum-less-than-or-equal-to-target/

http://www.jiuzhang.com/solutions/two-sum-less-than-or-equal-to-target/

统计所有和 >= target 的配对数

http://www.lintcode.com/en/problem/two-sum-greater-than-target/

http://www.jiuzhang.com/solutions/two-sum-greater-than-target/

Two Sum Closest

http://www.lintcode.com/problem/two-sum-closest-to-target/

http://www.jiuzhang.com/solutions/two-sum-closest/

Follow Up: 3Sum Closest

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

http://www.jiuzhang.com/solutions/3sum-closest/

- **4Sum**

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

- http://www.jiuzhang.com/solutions/4sum/

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- **Two Sum - difference equals to target (同向双指针)**

- http://www.lintcode.com/problem/two-sum-difference-equals-to-target/

- http://www.jiuzhang.com/solutions/two-sum-difference-equals-to-target/

休息5分钟

take a break

令狐师兄带你写代码之 Partition Array

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

http://www.jiuzhang.com/solutions/partition-array/

Quick Select

http://www.lintcode.com/problem/kth-smallest-numbers-in-unsorted-array/

http://www.lintcode.com/problem/kth-largest-element/

小视频：http://www.jiuzhang.com/video/quick-select/

- **Partition Array by Odd and Even**

- http://www.lintcode.com/problem/partition-array-by-odd-and-even/

- http://www.jiuzhang.com/solutions/partition-array-by-odd-and-even/

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- **Interleaving Positive and Negative Numbers**

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

- http://www.jiuzhang.com/solutions/interleaving-positive-and-negative-integers/

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- **Sort Letters by Case**

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

- http://www.jiuzhang.com/solutions/sort-letters-by-case/

Sort Colors

http://www.lintcode.com/problem/sort-colors/

http://www.jiuzhang.com/solutions/sort-colors/

分成两个部分 vs 分成三个部分

🌈 排序 Rainbow Sort

http://www.lintcode.com/en/problem/sort-colors-ii/

http://www.jiuzhang.com/solutions/sort-colors-ii/

问：猜一猜最优的时间复杂度？

烙饼排序 Pancake Sort（有可能会考哦）

https://en.wikipedia.org/wiki/Pancake_sorting

http://www.geeksforgeeks.org/pancake-sorting/

睡眠排序 Sleep Sort

https://rosettacode.org/wiki/Sorting_algorithms/Sleep_sort

面条排序 Spaghetti Sort

https://en.wikipedia.org/wiki/Spaghetti_sort

猴子排序 Bogo Sort

https://en.wikipedia.org/wiki/Bogosort

更多 Two Pointers 的题和知识点

请报名《九章算法强化班》

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- Two Sum
  - = target
  - <= target
  - > target
  - unique pairs
  - closest to target
  - difference = target
- Partition
  - Quick Select
  - 分成两个部分
  - 分成三个部分
- Sort
  - 彩虹排序
  - 烙饼排序
  - （还有前面学的拓扑排序）