

语法入门题目列表：

因为Leetcode没太多基础的题，所以这个章节基本用的是Lintcode上的Naive。

这些题主要是帮助熟悉语法，所以没有用特别高的优先级。

Lint-37. Reverse 3-digit Integer

<https://www.lintcode.com/problem/reverse-3-digit-integer/>

Lint-214. Max of Array

<https://www.lintcode.com/problem/max-of-array/>

Lint-283. Max of 3 Numbers

<https://www.lintcode.com/problem/max-of-3-numbers/>

Lint-146. Lower to uppercase II

<https://www.lintcode.com/problem/convert-to-lowercase-ii/>

Lint-241. String to Integer

<https://www.lintcode.com/problem/string-to-integer/>

Lint-449. Char to Integer

<https://www.lintcode.com/problem/char-to-integer/>

Lint-463. Sort Integers

<https://www.lintcode.com/problem/sort-integers/>

Lint-484. Swap Two Integers in Array

<https://www.lintcode.com/problem/swap-two-integers-in-an-array/>

Lint-485. Generate ArrayList with Given Size

<https://www.lintcode.com/problem/generate-an-arraylist-with-a-given-size/>

Lint-225. Find Node in Linked List

<https://www.lintcode.com/problem/find-node-in-linked-list/>

Lint-466. Count Linked List Nodes

<https://www.lintcode.com/problem/count-nodes-in-linked-list/>

Lint-483. Convert Linked List to Array List

<https://www.lintcode.com/problem/convert-linked-list-to-array-list/>

Lint-454. Rectangle Area

<https://www.lintcode.com/problem/rectangle-area/>

Lint-478. Simple Calculator

<https://www.lintcode.com/problem/simple-calculator/>

Lint-366. Fibonacci

<https://www.lintcode.com/problem/fibonacci/>

Lint-632. Binary Tree Maximum Node

<https://www.lintcode.com/problem/binary-tree-maximum-node/>

Lint-40. Implement Queue by Two Stacks

<https://www.lintcode.com/problem/implement-queue-by-two-stacks/>

Lint-492. Implement Queue by Linked List

<https://www.lintcode.com/problem ... ed-list/description>

Lint-494. Implement Stack by Two Queues

<https://www.lintcode.com/problem ... -queues/description>

Lint-495. Implement Stack

<https://www.lintcode.com/problem/implement-stack/description>

○ 评分

参与人数 **14**

大米 **+40**

理由

收起 ▲

 Marcella	+ 2	给你点个赞！
 zk_shadow	+ 1	给你点个赞！
 rainORshine	+ 2	给你点个赞！
 批杷批杷	+ 1	给你点个赞！
 Queenie_盛	+ 1	给你点个赞！
 Zasdvc	+ 1	给你点个赞！
 scion12345	+ 1	很有用的信息！
 RichelieuRosa	+ 1	很有用的信息！

[查看全部评分](#)



楼主 | 胖头龙 2020-12-5 17:26:25 | 只看该作者



2
主题 | 29
帖子 | 1048
积分

本楼: 100% (10) 0% (0)
全局: 99% (649) 0% (3)

发消息

第六章 多指针

基本问题:

- (1) 多指针是一个非常广泛的概念，并不是一个固定的算法。但基本上是通过一些变量的控制与循环把问题的复杂度控制在一两层for循环之内。可以用在数组、链表、区间、滑动窗口、流、回文串、和差问题等多个场景。（前项和其实并不完全是指针问题，但也归并在这里）。
- (2) Quick Sort和Merge Sort的基本原理与实现，排序的稳定性问题
- (3) Quick Select的实现与复杂度
- (4) 同向指针与相向指针的使用场景
- (5) 不同场景下循环终止条件？
- (6) 两数之和，之差，特定条件下（小于某值等）的计数问题
- (7) 三数或三数以上之和的通用写法（两数之和+搜索）
- (8) 数组有没有排序？是否需要排序？
- (9) 数组有没有去重？是否需要去重？
- (10) 离线数据（内存中，有限长）还是在线数据（无法放入内存，长度未知）？
- (11) 链表操作中dummy node与previous node的使用技巧
- (12) 链表的中点，判断是否有环，寻找环的交叉点

多指针题目列表:

（必背：紫色；核心：蓝色；重点：绿色；普通：黄色；默认是LeetCode，如果是LintCode会以Lint开头）

数组:

912. Sort an Array (Quick Sort and Merge Sort)

<https://leetcode.com/problems/sort-an-array/>

75. Sort Colors

<https://leetcode.com/problems/sort-colors/>

26. Remove Duplicates from Sorted Array

<https://leetcode.com/problems/remove-duplicates-from-sorted-array/>

80. Remove Duplicates from Sorted Array II

<https://leetcode.com/problems/remove-duplicates-from-sorted-array-ii/>

88. Merge Sorted Array

<https://leetcode.com/problems/merge-sorted-array/>

283. Move Zeroes

[https://leetcode.com/problems/movezeroes/](https://leetcode.com/problems/move-zeroes/)

215. Kth Largest Element in an Array

<https://leetcode.com/problems/kth-largest-element-in-an-array/>

347. Top K Frequent Elements

<https://leetcode.com/problems/top-k-frequent-elements/>

349. Intersection of Two Arrays

<https://leetcode.com/problems/intersection-of-two-arrays/>

350. Intersection of Two Arrays II

<https://leetcode.com/problems/intersection-of-two-arrays-ii/>

845. Longest Mountain in Array

<https://leetcode.com/problems/longest-mountain-in-array/>

42. Trapping Rain Water

<https://leetcode.com/problems/trapping-rain-water/>

43. Multiply Strings

<https://leetcode.com/problems/multiply-strings/>

969. Pancake Sorting

<https://leetcode.com/problems/pancake-sorting/>

Lint-31. Partition Array

<https://www.lintcode.com/problem/partition-array/description>

Lint-625. Partition Array II

<https://www.lintcode.com/problem/partition-array-ii/description>

Lint-143. Sort Color II

<https://www.lintcode.com/problem/sort-colors-ii/description>

Lint-461. Kth Smallest Numbers in Unsorted Array

<https://www.lintcode.com/problem/kth-smallest-number-in-unsorted-array/description>

Lint-544. Top k Largest Numbers

<https://www.lintcode.com/problem/find-k-largest-numbers/description>

链表：

21. Merge Two Sorted Lists

<https://leetcode.com/problems/merge-two-sorted-lists/>

86. Partition List

<https://leetcode.com/problems/partition-list/>

141. Linked List Cycle

<https://leetcode.com/problems/linked-list-cycle/>

160. Intersection of Two Linked Lists

<https://leetcode.com/problems/intersection-of-two-linked-lists/>

234. Palindrome Linked List

<https://leetcode.com/problems/palindrome-linked-list/>

328. Odd Even Linked List

<https://leetcode.com/problems/odd-even-linked-list/>

142. Linked List Cycle II

<https://leetcode.com/problems/linked-list-cycle-ii/>

287. Find the Duplicate Number

<https://leetcode.com/problems/find-the-duplicate-number/>

876. Middle of the Linked List

<https://leetcode.com/problems/middle-of-the-linked-list/>

区间：

Lint-391. Number of Airplanes in the Sky

<https://www.lintcode.com/problem/number-of-airplanes-in-the-sky/>

56. Merge Intervals

<https://leetcode.com/problems/merge-intervals/>

57. Insert Interval

<https://leetcode.com/problems/insert-interval/>

252. Meeting Rooms

<https://leetcode.com/problems/meeting-rooms/>

253. Meeting Rooms II

<https://leetcode.com/problems/meeting-rooms-ii/>

986. Interval List Intersections

<https://leetcode.com/problems/interval-list-intersections/>

回文串：

5. Longest Palindromic Substring

<https://leetcode.com/problems/longest-palindromic-substring/>

345. Reverse Vowels of a String

<https://leetcode.com/problems/reverse-vowels-of-a-string/>

680. Valid Palindrome II

<https://leetcode.com/problems/valid-palindrome-ii/>

125. Valid Palindrome

<https://leetcode.com/problems/valid-palindrome/>

滑动窗口：

3. Longest Substring Without Repeating Characters

<https://leetcode.com/problems/longest-substring-without-repeating-characters/>

11. Container With Most Water

<https://leetcode.com/problems/container-with-most-water/>

76. Minimum Window Substring

<https://leetcode.com/problems/minimum-window-substring/>

209. Minimum Size Subarray Sum

<https://leetcode.com/problems/minimum-size-subarray-sum/>

239. Sliding Window Maximum

<https://leetcode.com/problems/sliding-window-maximum/>

713. Subarray Product Less Than K

<https://leetcode.com/problems/subarray-product-less-than-k/>

395. Longest Substring with At Least K Repeating Characters

<https://leetcode.com/problems/longest-substring-with-at-least-k-repeating-characters/>

480. Sliding Window Median

<https://leetcode.com/problems/sliding-window-median/>

567. Permutation in String

<https://leetcode.com/problems/permutation-in-string/>

727. Minimum Window Subsequence

<https://leetcode.com/problems/minimum-window-subsequence/>

Lint-604. Window Sum

<https://www.lintcode.com/problem/window-sum/description>

流：

295. Find Median from Data Stream

<https://leetcode.com/problems/find-median-from-data-stream/>

346. Moving Average from Data Stream

<https://leetcode.com/problems/moving-average-from-data-stream/>

352. Data Stream as Disjoint Intervals

<https://leetcode.com/problems/data-stream-as-disjoint-intervals/>

703. Kth Largest Element in a Stream

<https://leetcode.com/problems/kth-largest-element-in-a-stream/>

前项和：

53. Maximum Subarray

<https://leetcode.com/problems/maximum-subarray/>

238. Product of Array Except Self

<https://leetcode.com/problems/product-of-array-except-self/>

303. Range Sum Query - Immutable

<https://leetcode.com/problems/range-sum-query-immutable/>

325. Maximum Size Subarray Sum Equals k

<https://leetcode.com/problems/maximum-size-subarray-sum-equals-k/>

528. Random Pick with Weight

<https://leetcode.com/problems/random-pick-with-weight/>

560. Subarray Sum Equals K

<https://leetcode.com/problems/subarray-sum-equals-k/>

和差问题：

1. Two Sum

<https://leetcode.com/problems/two-sum/>

15. 3Sum

<https://leetcode.com/problems/3sum/>

18. 4Sum

<https://leetcode.com/problems/4sum/>

Lint-382. Triangle Count

<https://www.lintcode.com/problem/triangle-count/description>

167. Two Sum II - Input array is sorted

<https://leetcode.com/problems/two-sum-ii-input-array-is-sorted/>

170. Two Sum III - Data structure design

<https://leetcode.com/problems/two-sum-iii-data-structure-design/>

653. Two Sum IV - Input is a BST

<https://leetcode.com/problems/two-sum-iv-input-is-a-bst/>

1099. Two Sum Less Than K

<https://leetcode.com/problems/two-sum-less-than-k/>

259. 3Sum Smaller

<https://leetcode.com/problems/3sum-smaller/>

Lint-57. 3Sum Closest

<https://www.lintcode.com/problem/3sum-closest/description>

Lint-443. Two Sum - Greater than target

<https://www.lintcode.com/problem/...-target/description>

Lint-533. Two Sum - Closet to target

<https://www.lintcode.com/problem/...-target/description>

Lint-587. Two Sum - Unique pairs

<https://www.lintcode.com/problem/two-sum-unique-pairs/description>

Lint-609. Two Sum - Less than or equals to target

<https://www.lintcode.com/problem/...-target/description>

Lint-610. Two Sum - Difference equals to target

<https://www.lintcode.com/problem/...rget/my-submissions>

○ 评分

以Lint开头)

朴素二分法：

704. Binary Search

<https://leetcode.com/problems/binary-search/>

34. Find First and Last Position of Element in Sorted Array

<https://leetcode.com/problems/find-first-and-last-position-of-key/>

702. Search in a Sorted Array of Unknown Size

<https://leetcode.com/problems/search-in-sorted-array-of-unknown-size/>

153. Find Minimum in Rotated Sorted Array

<https://leetcode.com/problems/find-minimum-in-rotated-sorted-array/>

154. Find Minimum in Rotated Sorted Array II

<https://leetcode.com/problems/find-minimum-in-rotated-sorted-array-ii/>

278. First Bad Version

<https://leetcode.com/problems/first-bad-version/>

658. Find K Closest Elements

<https://leetcode.com/problems/find-k-closest-elements/>

条件二分法：

33. Search in Rotated Sorted Array

(81. Search in Rotated Sorted Array II, follow up)

<https://leetcode.com/problems/search-in-rotated-sorted-array/>

<https://leetcode.com/problems/search-in-rotated-sorted-array-ii/>

4. Median of Two Sorted Arrays

<https://leetcode.com/problems/median-of-two-sorted-arrays/>

74. Search a 2D Matrix

<https://leetcode.com/problems/search-a-2d-matrix/>

162. Find Peak Element

<https://leetcode.com/problems/find-peak-element/>

302. Smallest Rectangle Enclosing Black Pixels

<https://leetcode.com/problems/smallest-rectangle-enclosing-black-pixels/>

852. Peak Index in a Mountain Array

<https://leetcode.com/problems/peak-index-in-a-mountain-array/>

答案二分法：

875. Koko Eating Bananas

<https://leetcode.com/problems/koko-eating-bananas/>

1283. Find the Smallest Divisor Given a Threshold

<https://leetcode.com/problems/find-smallest-divisor-given-threshold/>

69. Sqrt(x)

(Lint-586. Sqrt(x) II, follow up)

<https://leetcode.com/problems/sqrtx/>

<https://www.lintcode.com/problem/sqrtx-ii/description>

Lint-183. Wood Cut

<https://www.lintcode.com/problem/wood-cut/description>

Lint-437. Copy Books

<https://www.lintcode.com/problem/copy-books/description>

Lint-438. Copy Books II

<https://www.lintcode.com/problem/copy-books-ii/description>

○ 评分



楼主 | 胖头龙 2020-12-30 19:41:30 | 只看该作者

♂

2
主题 | 29
帖子 | 1048
积分

发消息

本楼: 100% (5) 0% (0)
全局: 99% (649) 0% (3)

第七章 宽度优先搜索

基本问题:

- (1) 如果复杂程度类似, 面试中尽量优先使用BFS
- (2) BFS主要几种场景: 层级遍历, 拓扑排序, 图上搜索 (包括二叉树, 矩阵)
- (3) Queue的使用技巧, BFS的终止条件?
- (4) 什么时候使用分层? 什么时候不需要? 实现的时候的区别在哪里?
- (5) 拓扑排序的概念? 如何判断是否存在拓扑排序? 是否存在唯一的拓扑排序? 找到所有拓扑排序?
- (6) 什么时候需要使用set记录访问过的节点? (为什么二叉树上的BFS往往不需要set?) 什么时候需要map记录到达过的节点距离?
- (7) 如何在矩阵中遍历下一步的所有节点? 如果每次可能走不止一步怎么办 (Maze II)?
- (8) 为什么BFS解决的基本都是简单图 (边长为1) 问题? 如果边长不为1, 该怎么办?
- (9) BFS的时空复杂度估算?
- (10) 如何使用双向BFS进行优化?

BFS题目列表:

(必背: 紫色; 核心: 蓝色; 重点: 绿色; 普通: 黄色; 默认是LeetCode, 如果是LintCode会以Lint开头)

二叉树:

297. Serialize and Deserialize Binary Tree

<https://leetcode.com/problems/serialize-and-deserialize-binary-tree/>

102. Binary Tree Level Order Traversal

<https://leetcode.com/problems/binary-tree-level-order-traversal/>

103. Binary Tree Zigzag Level Order Traversal

<https://leetcode.com/problems/binary-tree-zigzag-level-order-traversal/>

107. Binary Tree Level Order Traversal II

<https://leetcode.com/problems/binary-tree-level-order-traversal-ii/>

513. Find Bottom Left Tree Value

<https://leetcode.com/problems/find-bottom-left-tree-value/>

Lint-242. Convert Binary Tree to Linked Lists by Depth

<https://www.lintcode.com/problem/convert-binary-tree-to-linked-lists-by-depth/>

拓扑排序:

Lint-127. Topological Sorting

<https://www.lintcode.com/problem/topological-sorting/>

207. Course Schedule

<https://leetcode.com/problems/course-schedule/>

210. Course Schedule II

<https://leetcode.com/problems/course-schedule-ii/>

269. Alien Dictionary

<https://leetcode.com/problems/alien-dictionary/>

444. Sequence Reconstruction

<https://leetcode.com/problems/sequence-reconstruction/>

矩阵:

200. Number of Islands

<https://leetcode.com/problems/number-of-islands/>

490. The Maze

<https://leetcode.com/problems/the-maze/>

505. The Maze II

<https://leetcode.com/problems/the-maze-ii/>

542. 01 Matrix

<https://leetcode.com/problems/01-matrix/>

733. Flood Fill

<https://leetcode.com/problems/flood-fill/>

994. Rotting Oranges

<https://leetcode.com/problems/rotting-oranges/>

305. Number of Islands II

<https://leetcode.com/problems/number-of-islands-ii/>

773. Sliding Puzzle

<https://leetcode.com/problems/sliding-puzzle/>

Lint-573. Build Post Office II

<https://www.lintcode.com/problem/build-post-office-ii/description>

Lint-598. Zombie in Matrix

<https://www.lintcode.com/problem/zombie-in-matrix/description>

Lint-611. Knight Shortest Path

<https://www.lintcode.com/problem/knight-shortest-path/description>

Lint-794. Sliding Puzzle II

<https://www.lintcode.com/problem/sliding-puzzle-ii/description>

图:

133. Clone Graph

<https://leetcode.com/problems/clone-graph/>

127. Word Ladder

<https://leetcode.com/problems/word-ladder/>

261. Graph Valid Tree

<https://leetcode.com/problems/graph-valid-tree/>

841. Keys and Rooms

<https://leetcode.com/problems/keys-and-rooms/>

323. Number of Connected Components in an Undirected Graph

<https://leetcode.com/problems/nu...n-undirected-graph/>

1306. Jump Game III

<https://leetcode.com/problems/jump-game-iii/>

Lint-531. Six Degree

<https://www.lintcode.com/problem/six-degrees/description>

Lint-618. Search Graph Nodes

<https://www.lintcode.com/problem/search-graph-nodes/description>

Lint-624. Remove Substrings

<https://www.lintcode.com/problem/remove-substrings/description>



楼主 | 胖头龙 2021-1-17 16:45:48 | 只看该作者

2 | 29 | 1048
主题 | 帖子 | 积分

发消息

本楼: 100% (1) 0% (0)
全局: 99% (649) 0% (3)



第八章 二叉树与递归

基本问题：

- (1) 理解二叉树、平衡二叉树、二叉搜索树的关系和概念。
- (2) 理解递归的概念和方法，递归三要素。
- (3) 在解决递归问题的时候，有时可以返回多个值（Python），或者用一个额外的class包装多个值（Java）。
- (4) 熟练掌握用递归和非递归的方式分别前序、中序、后序遍历二叉树的方法。
- (5) 理解掌握分治和遍历的区别和联系。
- (6) 理解掌握top-down, bottom-up的思路。
- (7) 理解掌握二叉树上的Iterator。

二叉树与递归 题目列表：

(必背：紫色；核心：蓝色；重点：绿色；普通：黄色；默认是LeetCode，如果是LintCode会以Lint开头)

因为二叉树上的递归很多时候既可以用分治，也可以用遍历，并不是哪一种方法总能最优。

所以我们按相似题目分类，而不是按解法分类。

二叉树前中后序遍历（需要熟练掌握非递归方式）：

94. Binary Tree Inorder Traversal

<https://leetcode.com/problems/binary-tree-inorder-traversal/>

144. Binary Tree Preorder Traversal

<https://leetcode.com/problems/binary-tree-preorder-traversal/>

145. Binary Tree Postorder Traversal

<https://leetcode.com/problems/binary-tree-postorder-traversal/>

反向复原二叉树：

105. Construct Binary Tree from Preorder and Inorder Traversal

<https://leetcode.com/problems/construct-binary-tree-from-preorder-and-inorder-traversal/>

106. Construct Binary Tree from Inorder and Postorder Traversal

<https://leetcode.com/problems/construct-binary-tree-from-inorder-and-postorder-traversal/>

889. Construct Binary Tree from Preorder and Postorder Traversal

<https://leetcode.com/problems/construct-binary-tree-from-preorder-and-postorder-traversal/>

Iterator相关：

173. Binary Search Tree Iterator

<https://leetcode.com/problems/binary-search-tree-iterator/>

230. Kth Smallest Element in a BST

<https://leetcode.com/problems/kth-smallest-element-in-a-bst/>

285. Inorder Successor in BST

<https://leetcode.com/problems/inorder-successor-in-bst/>

270. Closest Binary Search Tree Value

<https://leetcode.com/problems/closest-binary-search-tree-value/>

272. Closest Binary Search Tree Value II

<https://leetcode.com/problems/cl ... arch-tree-value-ii/>

510. Inorder Successor in BST II

<https://leetcode.com/problems/inorder-successor-in-bst-ii/>

Lint-915. Inorder Predecessor in BST II

<https://www.lintcode.com/problem ... -in-bst/description>

判断树的形态：

98. Validate Binary Search Tree

<https://leetcode.com/problems/validate-binary-search-tree/>

100. Same Tree

<https://leetcode.com/problems/same-tree/>

101. Symmetric Tree

<https://leetcode.com/problems/symmetric-tree/>

110. Balanced Binary Tree

<https://leetcode.com/problems/balanced-binary-tree/>

子树相关问题：

111. Minimum Depth of Binary Tree

<https://leetcode.com/problems/minimum-depth-of-binary-tree/>

104. Maximum Depth of Binary Tree

<https://leetcode.com/problems/maximum-depth-of-binary-tree/>

333. Largest BST Subtree

<https://leetcode.com/problems/largest-bst-subtree/>

Lint-596. Minimum Subtree

<https://www.lintcode.com/problem/minimum-subtree/description>

Lint-597. Subtree with Maximum Average

<https://www.lintcode.com/problem ... average/description>

路径相关问题：

112. Path Sum

<https://leetcode.com/problems/path-sum/>

113. Path Sum II

<https://leetcode.com/problems/path-sum-ii/>

124. Binary Tree Maximum Path Sum

<https://leetcode.com/problems/binary-tree-maximum-path-sum/>

Lint-475. Binary Tree Maximum Path Sum II

<https://www.lintcode.com/problem ... -sum-ii/description>

298. Binary Tree Longest Consecutive Sequence

<https://leetcode.com/problems/binary-tree-longest-consecutive-sequence/>

549. Binary Tree Longest Consecutive Sequence II

<https://leetcode.com/problems/binary-tree-longest-consecutive-sequence-ii/>

Lint-619. Binary Tree Longest Consecutive Sequence III

<https://www.lintcode.com/problem/binary-tree-longest-consecutive-sequence-iii/>

LCA问题：

236. Lowest Common Ancestor of a Binary Tree

<https://leetcode.com/problems/lowest-common-ancestor-of-a-binary-tree/>

Lint-474. Lowest Common Ancestor II

<https://www.lintcode.com/problem/lowest-common-ancestor-ii/>

Lint-578. Lowest Common Ancestor III

<https://www.lintcode.com/problem/lowest-common-ancestor-iii/>

其他：

199. Binary Tree Right Side View

<https://leetcode.com/problems/binary-tree-right-side-view/>

513. Find Bottom Left Tree Value

<https://leetcode.com/problems/find-bottom-left-tree-value/>

331. Verify Preorder Serialization of a Binary Tree

<https://leetcode.com/problems/verify-preorder-serialization-of-a-binary-tree/>

449. Serialize and Deserialize BST

<https://leetcode.com/problems/serialize-and-deserialize-bst/>

114. Flatten Binary Tree to Linked List

<https://leetcode.com/problems/flatten-binary-tree-to-linked-list/>

○ 评分

参与人数 12 大米 +22 理由 收起 ▲

 zk_shadow	+ 1	给你点个赞！
 wj340120	+ 2	很有用的信息！
 zeroreh	+ 2	给你点个赞！
 kj2500	+ 1	很有用的信息！
 EasonY	+ 2	给你点个赞！
 hsyfo	+ 2	给你点个赞！
 zyou327	+ 2	哇 期待下次更新！！
 Olivia0624	+ 2	给你点个赞！

[查看全部评分](#)

 回复

举报



楼主 | 胖头龙 2021-2-3 16:10:14 | 只看该作者



2
主题 | 29
帖子 | 1048
积分

本楼: 100% (2) 0% (0)
全局: 99% (649) 0% (3)

本帖最后由 胖头龙 于 2021-2-4 06:16 编辑

发消息

第 9 章 深度优先搜索

基本问题:

- (1) DFS中递归的基本要素
- (2) 终止条件的选择; 回溯; 剪枝
- (3) 什么时候需要排序?
- (4) 如何去除重复元素? 一个元素允许使用多次的情况?
- (6) 在图上进行DFS如何避免回到重复节点
- (5) 识别一个隐式图, 并使用DFS
- (6) 在某些情况下, 利用记忆化搜索进行优化

深度优先搜索 题目列表:

(必背: 紫色; 核心: 蓝色; 重点: 绿色; 普通: 黄色; 默认是LeetCode, 如果是Lint会以Lint开头)

排列组合:

39. Combination Sum

<https://leetcode.com/problems/combination-sum/>

40. Combination Sum II

<https://leetcode.com/problems/combination-sum-ii/>

46. Permutations

<https://leetcode.com/problems/permutations/>

47. Permutations II

<https://leetcode.com/problems/permutations-ii/>

77. Combinations

<https://leetcode.com/problems/combinations/>

78. Subsets

<https://leetcode.com/problems/subsets/>

90. Subsets II

<https://leetcode.com/problems/subsets-ii/>

17. Letter Combinations of a Phone Number

<https://leetcode.com/problems/letter-combinations-of-a-phone-number/>

22. Generate Parentheses

<https://leetcode.com/problems/generate-parentheses/>

51. N-Queens

<https://leetcode.com/problems/n-queens/>

254. Factor Combinations

<https://leetcode.com/problems/factor-combinations/>

301. Remove Invalid Parentheses

<https://leetcode.com/problems/remove-invalid-parentheses/>

491. Increasing Subsequences

<https://leetcode.com/problems/increasing-subsequences/>

37. Sudoku Solver

<https://leetcode.com/problems/sudoku-solver/>

52. N-Queens II

<https://leetcode.com/problems/n-queens-ii/>

93. Restore IP Addresses

<https://leetcode.com/problems/restore-ip-addresses/>

131. Palindrome Partitioning

<https://leetcode.com/problems/palindrome-partitioning/>

Lint-10. String Permutation II

<https://www.lintcode.com/problem ... tion-ii/description>

Lint-570. Find the Missing Number II

<https://www.lintcode.com/problem ... mber-ii/description>

Lint-680. Split String

<https://www.lintcode.com/problem/split-string/description>

二叉树：

113. Path Sum II

<https://leetcode.com/problems/path-sum-ii/>

257. Binary Tree Paths

<https://leetcode.com/problems/binary-tree-paths/>

Lint-246. Binary Tree Path Sum II

<https://www.lintcode.com/problem/binary-tree-path-sum-ii/solution>

Lint-376. Binary Tree Path Sum

<https://www.lintcode.com/problem/binary-tree-path-sum/solution>

Lint-472. Binary Tree Path Sum III

<https://www.lintcode.com/problem ... sum-iii/description>

图：

140. Word Break II

<https://leetcode.com/problems/word-break-ii/>

494. Target Sum

<https://leetcode.com/problems/target-sum/>

1192. Critical Connections in a Network

<https://leetcode.com/problems/critical-connections-in-a-network/>

126. Word Ladder II

<https://leetcode.com/problems/word-ladder-ii/>

290. Word Pattern

<https://leetcode.com/problems/word-pattern/>

291. Word Pattern II

<https://leetcode.com/problems/word-pattern-ii/>

○ 评分

参与人数 10 大米 +14 理由 收起 ▲

 Chianti13	+ 1	给你点个赞！
 zk_shadow	+ 1	给你点个赞！
 zeroreh	+ 2	给你点个赞！
 kj2500	+ 1	很有用的信息！
 eeeenchanted	+ 1	给你点个赞！
 Olivia0624	+ 2	给你点个赞！
 gracefuljelly	+ 1	给你点个赞！
 yeetatbig4	+ 2	居然错过了更新！来补上

[查看全部评分](#)

 回复

举报



楼主 | 胖头龙 2021-2-20 21:42:40 | 只看该作者

2 主题 | 29 帖子 | 1048 积分

发消息

本楼: 100% (2) 0% (0) 0%
全局: 99% (649) 0% (3) 0%

本帖最后由 胖头龙 于 2021-2-21 11:45 编辑

第十章 数据结构

基本问题:

(1) 本章按照数据结构分类一些问题，和之前按算法分类的题目相比可能会有重复，因为一道题可能有多个标签。

(2) 对于每种数据结构，需要先学习掌握其基本原理，优缺点，复杂度，和对应语言中的API用法。对于其基本的实现方式也要了解。

(3) Array, Matrix, String, Hash都是一些常用的数据结构，一般在各种题里都会用到，这里主要列举一些没有涉及到其他算法的题目。

(4) Linked List往往自成一类，会涉及到一些pointer操作，需要细心。

(5) Queue一般用在BFS里面比较多，这里不单独列举了。

(6) Heap, Stack往往和其他知识点混用，但自己单独出题也可以。

(7) Trie, Union Find, Sweep Line的套路比较明显，需要记住模板。

(8) Binary Index Tree 和Segment Tree涉及到的题目有限，需要记住模板。Segment Tree解法一般来说可以覆盖BIT能解决的问题，但是BIT写起来短一些。

(9) 复合数据结构里面LRU和LFU相对比较重要。其他的在掌握基本数据结构即复杂度之后，可以随机应变。

数据结构 题目列表:

(必背: 紫色; 核心: 蓝色; 重点: 绿色; 普通: 黄色; 默认是LeetCode, 如果是LintCode会以Lint开头)

Array & Matrix:

442. Find All Duplicates in an Array

<https://leetcode.com/problems/find-all-duplicates-in-an-array/>

48. Rotate Image

<https://leetcode.com/problems/rotate-image/>

54. Spiral Matrix

<https://leetcode.com/problems/spiral-matrix/>

73. Set Matrix Zeroes

<https://leetcode.com/problems/set-matrix-zeroes/>

289. Game of Life

<https://leetcode.com/problems/game-of-life/>

String:

6. ZigZag Conversion

<https://leetcode.com/problems/zigzag-conversion/>

13. Roman to Integer

<https://leetcode.com/problems/roman-to-integer/>

14. Longest Common Prefix

- 美国养老问题：各州政策、医疗保险、养老金
[【超全】美国妈妈必备母婴用品（中篇）！睡](#)
- 最新美国F1学生签证申请指南
[美国护照怎么申请中国签证](#)
- 最新|美国考驾照流程、换驾照攻略
[最新|美国考驾照流程、换驾照攻略](#)

HostGator
Launch yoursit.
No regrets.
If you don't love our hosting, we'll give you a refund.
Get started

<https://leetcode.com/problems/longest-common-prefix/>

68. Text Justification

<https://leetcode.com/problems/text-justification/>

443. String Compression

<https://leetcode.com/problems/string-compression/>

Linked List:

2. Add Two Numbers

<https://leetcode.com/problems/add-two-numbers/>

21. Merge Two Sorted Lists

<https://leetcode.com/problems/merge-two-sorted-lists/>

25. Reverse Nodes in k-Group

<https://leetcode.com/problems/reverse-nodes-in-k-group/>

82. Remove Duplicates from Sorted List II

<https://leetcode.com/problems/remove-duplicates-from-sorted-list-ii/>

83. Remove Duplicates from Sorted List

<https://leetcode.com/problems/remove-duplicates-from-sorted-list/>

86. Partition List

<https://leetcode.com/problems/partition-list/>

92. Reverse Linked List II

<https://leetcode.com/problems/reverse-linked-list-ii/>

138. Copy List with Random Pointer

<https://leetcode.com/problems/copy-list-with-random-pointer/>

141. Linked List Cycle

<https://leetcode.com/problems/linked-list-cycle/>

148. Sort List

<https://leetcode.com/problems/sort-list/>

160. Intersection of Two Linked Lists

<https://leetcode.com/problems/intersection-of-two-linked-lists/>

203. Remove Linked List Elements

<https://leetcode.com/problems/remove-linked-list-elements/>

206. Reverse Linked List

<https://leetcode.com/problems/reverse-linked-list/>

234. Palindrome Linked List

<https://leetcode.com/problems/palindrome-linked-list/>

328. Odd Even Linked List

<https://leetcode.com/problems/odd-even-linked-list/>

445. Add Two Numbers II

<https://leetcode.com/problems/add-two-numbers-ii/>

142. Linked List Cycle II

<https://leetcode.com/problems/linked-list-cycle-ii/>

876. Middle of the Linked List

<https://leetcode.com/problems/middle-of-the-linked-list/>

Hash:

706. Design HashMap

<https://leetcode.com/problems/design-hashmap/>

49. Group Anagrams

<https://leetcode.com/problems/group-anagrams/>

128. Longest Consecutive Sequence

<https://leetcode.com/problems/longest-consecutive-sequence/>

560. Subarray Sum Equals K

<https://leetcode.com/problems/subarray-sum-equals-k/>

953. Verifying an Alien Dictionary

<https://leetcode.com/problems/verifying-an-alien-dictionary/>

290. Word Pattern

<https://leetcode.com/problems/word-pattern/>

Heap:

23. Merge k Sorted Lists

<https://leetcode.com/problems/merge-k-sorted-lists/>

295. Find Median from Data Stream

<https://leetcode.com/problems/find-median-from-data-stream/>

347. Top K Frequent Elements

<https://leetcode.com/problems/top-k-frequent-elements/>

692. Top K Frequent Words

<https://leetcode.com/problems/top-k-frequent-words/>

767. Reorganize String

<https://leetcode.com/problems/reorganize-string/>

973. K Closest Points to Origin

<https://leetcode.com/problems/k-closest-points-to-origin/>

480. Sliding Window Median

<https://leetcode.com/problems/sliding-window-median/>

703. Kth Largest Element in a Stream

<https://leetcode.com/problems/kth-largest-element-in-a-stream/>

Stack:

155. Min Stack

<https://leetcode.com/problems/min-stack/>

20. Valid Parentheses

<https://leetcode.com/problems/valid-parentheses/>

85. Maximal Rectangle

<https://leetcode.com/problems/maximal-rectangle/>

224. Basic Calculator

<https://leetcode.com/problems/basic-calculator/>

227. Basic Calculator II

<https://leetcode.com/problems/basic-calculator-ii/>

394. Decode String

<https://leetcode.com/problems/decode-string/>

1249. Minimum Remove to Make Valid Parentheses

<https://leetcode.com/problems/mi...-valid-parentheses/>

Monotonic Stack:

300. Longest Increasing Subsequence (Patience Sort)

<https://leetcode.com/problems/longest-increasing-subsequence/>

84. Largest Rectangle in Histogram

<https://leetcode.com/problems/largest-rectangle-in-histogram/>

239. Sliding Window Maximum

<https://leetcode.com/problems/sliding-window-maximum/>

1019. Next Greater Node In Linked List

<https://leetcode.com/problems/next-greater-node-in-linked-list/>

Trie:

208. Implement Trie (Prefix Tree)

<https://leetcode.com/problems/implement-trie-prefix-tree/>

211. Design Add and Search Words Data Structure

<https://leetcode.com/problems/de...rds-data-structure/>

1032. Stream of Characters

<https://leetcode.com/problems/stream-of-characters/>

Union Find:

200. Number of Islands

<https://leetcode.com/problems/number-of-islands/>

305. Number of Islands II

<https://leetcode.com/problems/number-of-islands-ii/>

323. Number of Connected Components in an Undirected Graph

<https://leetcode.com/problems/nu...n-undirected-graph/>

Sweep Line:

Lint-391. Number of Airplanes in the Sky

<https://www.lintcode.com/problem...the-sky/description>

252. Meeting Rooms

<https://leetcode.com/problems/meeting-rooms/>

253. Meeting Rooms II

<https://leetcode.com/problems/meeting-rooms-ii/>

Binary Index Tree & Segment Tree:

307. Range Sum Query - Mutable

<https://leetcode.com/problems/range-sum-query-mutable/>

327. Count of Range Sum

<https://leetcode.com/problems/count-of-range-sum/>

715. Range Module

<https://leetcode.com/problems/range-module/>

315. Count of Smaller Numbers After Self

<https://leetcode.com/problems/count-of-smaller-numbers-after-self/>

493. Reverse Pairs

<https://leetcode.com/problems/reverse-pairs/>

Complex Data Structure:

146. LRU Cache

<https://leetcode.com/problems/lru-cache/>

460. LFU Cache

<https://leetcode.com/problems/lfu-cache/>

211. Design Add and Search Words Data Structure

<https://leetcode.com/problems/design-add-and-search-words-data-structure/>

380. Insert Delete GetRandom O(1)

<https://leetcode.com/problems/insert-delete-getrandom-o1/>

528. Random Pick with Weight

<https://leetcode.com/problems/random-pick-with-weight/>

588. Design In-Memory File System

<https://leetcode.com/problems/design-in-memory-file-system/>

981. Time Based Key-Value Store

<https://leetcode.com/problems/time-based-key-value-store/>

1396. Design Underground System

<https://leetcode.com/problems/design-underground-system/>

○ 评分

参与人数	大米	理由	收起 ^
EasonY	+ 1	给你点个赞！	
walleisea	+ 1	很有用的信息！	
ml3749963	+ 1	很有用的信息！	
zk_shadow	+ 1	给你点个赞！	
kj2500	+ 1	给你点个赞！	



eeeenchanted + 1

给你点个赞！



hellocici + 2

给你点个赞！



hsyfo + 2

给你点个赞！

[查看全部评分](#)

回复

举报



楼主 | 胖头龙 2021-3-13 17:25:16 | 只看该作者

2 主题 | 29 帖子 | 1048 积分

发消息

第十一章 动态规划

基本问题：

(1) 动态规划更准确的说是一种数学思想，而不是一种算法。学习曲线相对于前面的算法会比较陡峭，如果是天赋的大佬，可能可以很快领悟。但是对于大部分平均水平的同学，可能需要前后间隔几个礼拜甚至几个月，反复思考两三遍才能顿悟并运用。所以作为初学者，一时半会想不明白没关系，隔几天回来再多看几次就能渐渐理解了。

(2) 不过针对目前的面试，除了少数那几家公司之外，动态规划的出现频率其实没有那么高，而且主要也都是中等难度的题目。所以如果准备时间有限，建议优先把时间放在前面的算法上，动态规划可以先看几道中等难度经典题，其他的题目后面有时间再看。

(3) 关于一道题是用动态规划还是用贪心法，一般来说时间复杂度类似的时候优先用动态规划，因为通用性、可解释性都比较强。而自己凭空想出来的贪心法，不但不容易解释，而且很容易是错的，面试风险相对比较高。不过有一些题目确实是贪心法最优，作者在后面也列出了几题，如果碰到原题或者类似题，可以参考。

(4) 对于新手而言，在学习动态规划的时候，看懂题目在问什么之后就可以在网上找答案了，别自己瞎折腾。网上各种大佬的博客有详细的图文解释，慢慢揣摩理解。

(5) 动态规划的一般思路是数学归纳法，就是用递推的方式把大问题（最终问题）分解为小问题（前置问题），然后一路倒推到边界；在边界附近计算出初始状态后，再原路反向回计算，最后得到所求解。所以对于绝大部分题目，都需要遵循：分解子问题，写出转移方程，描述边界条件，计算出最终解这几个步骤。

(6) 有些动态规划问题，可以通过滚动数组的方式优化空间复杂度，一般可以降一个维度。但是要注意运算的方向，需要避免前序的结果在被用到之前就被覆盖掉的情况。

(7) 大部分动态规划都是求解“可行性”，“最值”问题，如果有些题目要求输出结果，也可以考虑用“打印路径”的方式。

(8) 很多问题，通过细微的改一些条件，就会变成另外一道题，解法思路会产生明显差异，所以审题要小心。比如背包类问题，是否可以重复选同一个物品，是否有重复物品，求解最大重量还是最大价值，背后的原理可能会产生变化。有时候是组合问题，有时候是排列问题，还叠加了是否可以重复的情况，需要透彻的理解。另外在解法上，比如说，正着走一遍循环和倒着走一遍循环可能代表的是两种不同的思考方式，这些往往需要反复细致的理解才能完善自己的思维体系。

(9) 有些问题需要求“所有可行解”，这时候往往会使用搜索（DFS，BFS）的方法。但为了进行时空优化，记忆化搜索也会常常被用到。其实DFS记忆化搜索和常规动态规划写法常常是一个思维的两种实现方式，在不同的题目中各有优劣。

(10) 在面试动态规划的时候，重点在于能够比较清晰地画图描述并解释清楚所写的动态方程，让面试官理解你的思路，注意初始化以及for循环的起始条件。至于代码本身，往往是for循环为主，一般也不长。

动态规划 题目列表：

(必背：紫色；核心：蓝色；重点：绿色；普通：黄色；默认是LeetCode，如果是LintCode会以Lint开头)

Backpack:

Lint-92. Backpack

<https://www.lintcode.com/problem/backpack/description>

Lint-125. Backpack II

<https://www.lintcode.com/problem/backpack-ii/description>

Lint-440. Backpack III

<https://www.lintcode.com/problem/backpack-iii/description>

Lint-562. Backpack IV

EasyWP™

生活攻略 查看更多 >>

美国养老问题：各州政策、医疗保险、养老机

【超全】美国妈妈必备母婴用品（中篇）！睡

最新美国F1学生签证申请指南

美国护照怎么申请中国签证

最新美国考驾照流程、换驾照攻略

HostGator

Still need hosting?

Save 60% now.

Start today!



<https://www.lintcode.com/problem/backpack-iv/description>

Lint-563. Backpack V

<https://www.lintcode.com/problem/backpack-v/description>

Lint-564. Backpack VI (Combination Sum IV)

<https://www.lintcode.com/problem/combination-sum-iv/description>

Lint-971. Surplus Value Backpack

<https://www.lintcode.com/problem/surplus-value-backpack/description>

474. Ones and Zeroes

<https://leetcode.com/problems/ones-and-zeroes/>

Single Sequence:

139. Word Break

<https://leetcode.com/problems/word-break/>

121. Best Time to Buy and Sell Stock

<https://leetcode.com/problems/best-time-to-buy-and-sell-stock/>

122. Best Time to Buy and Sell Stock II

<https://leetcode.com/problems/best-time-to-buy-and-sell-stock-ii/>

123. Best Time to Buy and Sell Stock III

<https://leetcode.com/problems/best-time-to-buy-and-sell-stock-iii/>

188. Best Time to Buy and Sell Stock IV

<https://leetcode.com/problems/best-time-to-buy-and-sell-stock-iv/>

256. Paint House

<https://leetcode.com/problems/paint-house/>

285. Paint House II

<https://leetcode.com/problems/paint-house-ii/>

Lint-843. Digital Flip

<https://www.lintcode.com/problem/digital-flip/description>

Double Sequences:

10. Regular Expression Matching

<https://leetcode.com/problems/regular-expression-matching/>

44. Wildcard Matching

<https://leetcode.com/problems/wildcard-matching/>

72. Edit Distance

<https://leetcode.com/problems/edit-distance/>

97. Interleaving String

<https://leetcode.com/problems/interleaving-string/>

115. Distinct Subsequences

<https://leetcode.com/problems/distinct-subsequences/>

1143. Longest Common Subsequence

<https://leetcode.com/problems/longest-common-subsequence/>

Sections:

312. Burst Balloons

<https://leetcode.com/problems/burst-balloons/>

516. Longest Palindromic Subsequence

<https://leetcode.com/problems/longest-palindromic-subsequence/>

87. Scramble String

<https://leetcode.com/problems/scramble-string/>

Matrix:

62. Unique Paths

<https://leetcode.com/problems/unique-paths/>

63. Unique Paths II

<https://leetcode.com/problems/unique-paths-ii/>

64. Minimum Path Sum

<https://leetcode.com/problems/minimum-path-sum/>

85. Maximal Rectangle

<https://leetcode.com/problems/maximal-rectangle/>

221. Maximal Square

<https://leetcode.com/problems/maximal-square/>

361. Bomb Enemy

<https://leetcode.com/problems/bomb-enemy/>

Others:

91. Decode Ways

<https://leetcode.com/problems/decode-ways/>

Lint-394. Coins in a Line

<https://www.lintcode.com/problem/coins-in-a-line/description>

132. Palindrome Partitioning II

<https://leetcode.com/problems/palindrome-partitioning-ii/>

279. Perfect Squares

<https://leetcode.com/problems/perfect-squares/>

639. Decode Ways II

<https://leetcode.com/problems/decode-ways-ii/>

Lint-395. Coins in a Line II

<https://www.lintcode.com/problem/coins-in-a-line-ii/description>

Lint-396. Coins in a Line III

<https://www.lintcode.com/problem/coins-in-a-line-iii/description>

Greedy:

55. Jump Game

<https://leetcode.com/problems/jump-game/>

45. Jump Game II

<https://leetcode.com/problems/jump-game-ii/>

763. Partition Labels

<https://leetcode.com/problems/partition-labels/>

○ 评分

参与人数 10 大米 +15 理由

收起 ▲

 zk_shadow + 1 很有用的信息!

 tbt1 + 2 很有用的信息!

 doudoujiejie + 1 赞一个

 jessicac1 + 1 赞一个

 zeroreh + 2 给你点个赞!

 PerkyLucky + 1 给你点个赞!

 kj2500 + 1 给你点个赞!

 hellocici + 2 给你点个赞!

[查看全部评分](#)