Leetcode 分类顺序表第一版

前言

这本书是根据我个人的理解，对Leetcode（https://leetcode.com/） 这个网站中的算法题目重新进行分类划分，并以**先易后难**的顺序重新进行排序。旨在为大家节省时间，可以更好更有效率的做题。

网页版链接：https://cspiration.com/leetcodeClassification

背景

在如今的计算机行业领域，无论是在校学生参加计算机算法编程竞赛ACM，还是对于求职找工作的毕业生，甚至在职跳槽的计算机从业工作者，都逃不开"刷题"这座大山。尤其是在北美，Google，Facebook，Microsoft，Amazon 等等大公司，无一不考刷题，以算法面试为主。而无论是北美留学生，还是工作几年的上班族，想进大公司，唯一的出路就是刷题。同样，在国内，也已经逐渐向北美靠近，很多大公司也在招人面试中加入算法面试。而Leetcode这个算法题目网站，已经是目前为止最贴近大公司算法面试题目的网站。全世界的学生，在职人员，都以Leetcode为主，无论每个人的初衷是什么，我们都要在此挑战一件事——刷题！

关于我

我自己在16年初来到美国，本科是Software Engineering，研究生是Computer Science。在北美留学两年时间里，除了上课可以说刷题这件事陪伴了我整个两年多的留学生涯。16年秋季找实习17年秋季找全职，从15年前辈那里知道了CS专业的当年形式一片大好，到自己亲历16年的急转直下：各大公司提前招满，有的甚至12月不到就已经停止招人，17年更是每况愈下。但即使形式再差，CS也依旧算是北美第一专业。

所以整个北美对于刷题一事，是人人逃不过的大山，但现在来说，刷题最重要的资源Leetcode网站，并没有一个非常好的分类顺序。Leetcode本身的分类做的的确不错，但对于题目的顺序并没有给出，而且有的分类并不是非常好。所以我根据我自己的刷题经验总结，对Leetcode这个网站的题目重新进行分类划分，并按照先易后难的顺序，针对每个分类下面，进行排序。旨在让从来没有刷过题的人，可以有一个系统性的参考。

我个人本身两年来刷题3000多，对Leetcode中大多数题目可以说了如指掌，并且把Leetcode 800道题每道题，进行一题多解 + 最优解，思路解法步骤，时间空间复杂度的讲解，录成视频（现以更新完前400道）。我自己创业，现已经有了自己的团队，也有各种 Google Facebook 等诸多大公司的人员加入。也曾有像是Leetcode的员工，在我的公众号问我是否想加入Leetcode团队。所以我想通过我自己对于题目的理解，通过我们的努力，给大家提供一个刷Leetcode的解决方案。

致所有本书使用者

 本书以先易后难 + 分类而成。如果是第一次刷题的小伙伴，最好以本书的顺序为主，可以减少很多刷题的负担。对于类别的先后顺序我并没有给，这个我自己正在总结。因为现阶段我自己开算法直播课为一部分人讲解北美算法基础 + 面试，也在自己做这个对于分类的顺序，所以会在第二版或者第三版出这个顺序。现在的这个顺序是包括了Leetcode前400题（除去16到SQL题目）。

 然后很多小伙伴问我刷400道够不够的问题，我的回答是完全够的，只要能每一道题理解到位，400题已经足以应付公司面试题。Leetcode在16年末也仅仅只有400题，800是近一年才涨出来的。做完400道基本就需要3个月的时间了，慢一点4个月也是有可能的。所以我建议大家不要多刷，精刷 + 总结更重要。

网站

 如果有小伙伴想看我录的前400道题目的解法视频，请到Cspiration（https://cspiration.com/） 购买观看，我还会持续更新把后400题更新完毕，并会出更多的课程帮助大家。

北美刷题找工实习微信群

 如果你是一个人刷题想认识更多来自五湖四海的小伙伴，我们有免费的微信群可以加入，旨在让每个人不是孤军奋战，同胞间相互帮助分享资源，为大家排忧解难。当然，如果你对刷题或者找工有什么疑问，出现瓶颈，可以咨询我，如果我能帮到的我都会尽量给解答。

 个人微信号：cspiration（加我拉你入群～）

 微信公众号：cspiration（没错，和个人微信一样的～）

 本书完全是由我个人编写而成，所以文中所有讲解，分类等，我尽量以客观公正的态度写。而且这个版本我会不断更新，局部很多会在以后有改动，请大家敬请期待。如有意见和建议，请微信或者邮箱联系我：admin@cspiration.com
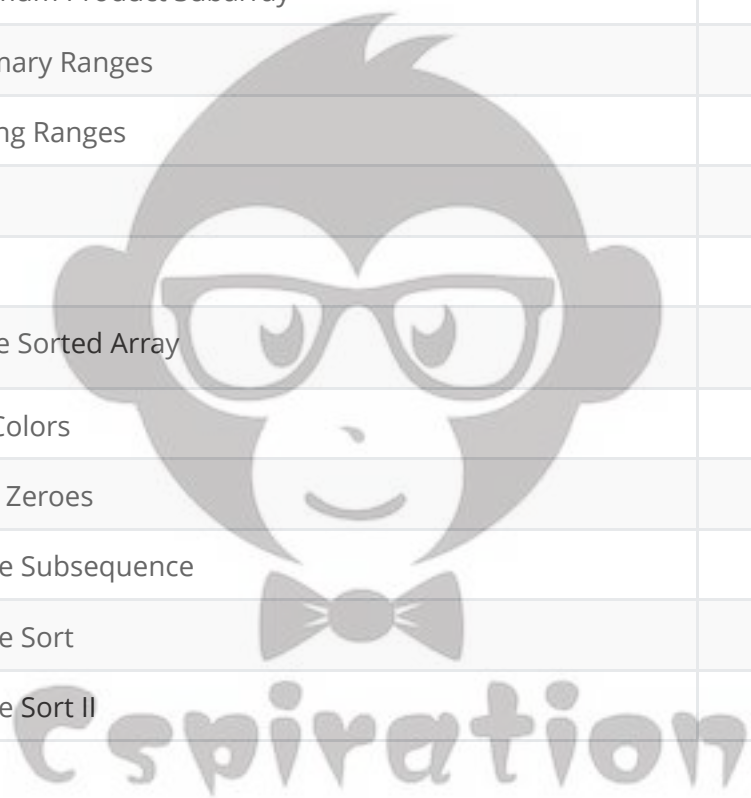
2018.6.19

Edward Shi

Leetcode 分类顺序

Array

基础		
27	Remove Element	
26	Remove Duplicates from Sorted Array	
80	Remove Duplicates from Sorted Array II	
277	Find the Celebrity	
189	Rotate Array	
41	First Missing Positive	
299	Bulls and Cows	
134	Gas Station	
118	Pascal's Triangle	很少考
119	Pascal's Triangle II	很少考
169	Majority Element	很少考
229	Majority Element II	很少考
274	H-Index	
275	H-Index II	Binary Search
243	Shortest Word Distance	
244	Shortest Word Distance II	
245	Shortest Word Distance III	
217	Contains Duplicate	
219	Contains Duplicate II	很少考
220	Contains Duplicate III	很少考
55	Jump Game	
45	Jump Game II	

121	Best Time to Buy and Sell Stock	
122	Best Time to Buy and Sell Stock II	
123	Best Time to Buy and Sell Stock III	
188	Best Time to Buy and Sell Stock IV	
309	Best Time to Buy and Sell Stock with Cooldown	
11	Container With Most Water	
42	Trapping Rain Water	
334	Increasing Triplet Subsequence	
128	Longest Consecutive Sequence	
164	Maximum Gap	Bucket
287	Find the Duplicate Number	
135	Candy	很少考
330	Patching Array	很少考
提高		
4	Median of Two Sorted Arrays	
321	Create Maximum Number	很少考
327	Count of Range Sum	很少考
289	Game of Life	
Interval		
57	Insert Interval	
56	Merge Intervals	
252	Meeting Rooms	
253	Meeting Rooms II	
352	Data Stream as Disjoint Intervals	TreeMap

Counter	
239	Sliding Window Maximum
295	Find Median from Data Stream
53	Maximum Subarray
325	Maximum Size Subarray Sum Equals k
209	Minimum Size Subarray Sum
238	Product of Array Except Self
152	Maximum Product Subarray
228	Summary Ranges
163	Missing Ranges
Sort	
88	Merge Sorted Array
75	Sort Colors
283	Move Zeroes
376	Wiggle Subsequence
280	Wiggle Sort
324	Wiggle Sort II

String

基础		
28	Implement strStr()	
14	Longest Common Prefix	
58	Length of Last Word	
387	First Unique Character in a String	
383	Ransom Note	
344	Reverse String	
151	Reverse Words in a String	
186	Reverse Words in a String II	
345	Reverse Vowels of a String	
205	Isomorphic Strings	
293	Flip Game	
294	Flip Game II	
290	Word Pattern	
242	Valid Anagram	
49	Group Anagrams	
249	Group Shifted Strings	
87	Scramble String	
179	Largest Number	很少考
6	ZigZag Conversion	很少考
161	One Edit Distance	
38	Count and Say	
358	Rearrange String k Distance Apart	
316	Remove Duplicate Letters	
271	Encode and Decode Strings	

168	Excel Sheet Column Title	
171	Excel Sheet Column Number	
13	Roman to Integer	
12	Integer to Roman	
273	Integer to English Words	
246	Strobogrammatic Number	
247	Strobogrammatic Number II	
248	Strobogrammatic Number III	很少考
提高		
68	Text Justification	
65	Valid Number	
157	Read N Characters Given Read4	
158	Read N Characters Given Read4 II - Call multiple times	
Substring		
76	Minimum Window Substring	Sliding Window
30	Substring with Concatenation of All Words	Sliding Window
3	Longest Substring Without Repeating Characters	Sliding Window
340	Longest Substring with At Most K Distinct Characters	Sliding Window
395	Longest Substring with At Least K Repeating Characters	Sliding Window
159	Longest Substring with At Most Two Distinct Characters	Sliding Window
Palindrome		
125	Valid Palindrome	
266	Palindrome Permutation	

5	Longest Palindromic Substring	
9	Palindrome Number	
214	Shortest Palindrome	
336	Palindrome Pairs	
131	Palindrome Partitioning	
132	Palindrome Partitioning II	
267	Palindrome Permutation II	
Parentheses		
20	Valid Parentheses	
22	Generate Parentheses	
32	Longest Valid Parentheses	
241	Different Ways to Add Parentheses	
301	Remove Invalid Parentheses	
Subsequence		
392	Is Subsequence	
115	Distinct Subsequences	
187	Repeated DNA Sequences	很少考

Math

基础		
7	Reverse Integer	
165	Compare Version Numbers	
66	Plus One	
8	String to Integer (atoi)	
258	Add Digits	
67	Add Binary	
43	Multiply Strings	
29	Divide Two Integers	
69	Sqrt(x)	
50	Pow(x, n)	
367	Valid Perfect Square	
365	Water and Jug Problem	
204	Count Primes	
Sum		
1	Two Sum	
167	Two Sum II - Input array is sorted	
15	3Sum	
16	3Sum Closest	很少考
259	3Sum Smaller	很少考
18	4Sum	
很少考		
231	Power of Two	

326	Power of Three	
342	Power of Four	
372	Super Pow	
233	Number of Digit One	
319	Bulb Switcher	
292	Nim Game	
202	Happy Number	
400	Nth Digit	
263	Ugly Number	
264	Ugly Number II	
306	Additive Number	
172	Factorial Trailing Zeroes	
343	Integer Break	
396	Rotate Function	
390	Elimination Game	
386	Lexicographical Numbers	
357	Count Numbers with Unique Digits	
360	Sort Transformed Array	
397	Integer Replacement	
368	Largest Divisible Subset	

Tree

基础		
144	Binary Tree Preorder Traversal	preorder
94	Binary Tree Inorder Traversal	Inorder
145	Binary Tree Postorder Traversal	postorder
102	Binary Tree Level Order Traversal	DFS + BFS
Preorder		
100	Same Tree	preorder
101	Symmetric Tree	preorder
226	Invert Binary Tree	preorder + BFS
257	Binary Tree Paths	preorder
112	Path Sum	preorder
113	Path Sum II	preorder
129	Sum Root to Leaf Numbers	preorder
298	Binary Tree Longest Consecutive Sequence	preorder
111	Minimum Depth of Binary Tree	preorder
Postorder		
104	Maximum Depth of Binary Tree	postorder
110	Balanced Binary Tree	postorder
124	Binary Tree Maximum Path Sum	postorder
250	Count Univalue Subtrees	postorder
366	Find Leaves of Binary Tree	postorder
337	House Robber III	postorder + preorder

BFS		
107	Binary Tree Level Order Traversal II	BFS
103	Binary Tree Zigzag Level Order Traversal	BFS
199	Binary Tree Right Side View	BFS + preorder
BST		
98	Validate Binary Search Tree	preorder
235	Lowest Common Ancestor of a Binary Search Tree	preorder
236	Lowest Common Ancestor of a Binary Tree	postorder
108	Convert Sorted Array to Binary Search Tree	binary search
109	Convert Sorted List to Binary Search Tree	binary search
173	Binary Search Tree Iterator	inorder
230	Kth Smallest Element in a BST	inorder
297	Serialize and Deserialize Binary Tree	BFS
285	Inorder Successor in BST	inorder
270	Closest Binary Search Tree Value	preorder
272	Closest Binary Search Tree Value II	inorder
99	Recover Binary Search Tree	inorder
重要程度		
156	Binary Tree Upside Down	很少考
114	Flatten Binary Tree to Linked List	很少考
255	Verify Preorder Sequence in Binary Search Tree	很少考
333	Largest BST Subtree	很少考
222	Count Complete Tree Nodes	很少考

105	Construct Binary Tree from Preorder and Inorder Traversal	很少考
106	Construct Binary Tree from Inorder and Postorder Traversal	很少考
116	Populating Next Right Pointers in Each Node	重要
117	Populating Next Right Pointers in Each Node II	重要
314	Binary Tree Vertical Order Traversal	重要
96	Unique Binary Search Trees	重要
95	Unique Binary Search Trees II	很少考
331	Verify Preorder Serialization of a Binary Tree	很少考

Backtracking

基础		
78	Subsets	
90	Subsets II	
77	Combinations	
39	Combination Sum	
40	Combination Sum II	
216	Combination Sum III	
377	Combination Sum IV	Dynamic Programming
254	Factor Combinations	
46	Permutations	
47	Permutations II	
31	Next Permutation	String
60	Permutation Sequence	String
291	Word Pattern II	
Enumeration		
17	Letter Combinations of a Phone Number	
320	Generalized Abbreviation	要重录
93	Restore IP Addresses	很少考
282	Expression Add Operators	
140	Word Break II	
351	Android Unlock Patterns	

Dynamic Programming

一维		
70	Climbing Stairs	
62	Unique Paths	
63	Unique Paths II	
120	Triangle	很少考
279	Perfect Squares	
139	Word Break	
375	Guess Number Higher or Lower II	
312	Burst Balloons	
322	Coin Change	
二维		
256	Paint House	
265	Paint House II	
64	Minimum Path Sum	
72	Edit Distance	
97	Interleaving String	
174	Dungeon Game	
221	Maximal Square	
85	Maximal Rectangle	
363	Max Sum of Rectangle No Larger Than K	TreeSet
化简		
198	House Robber	
213	House Robber II	

276	Paint Fence	
91	Decode Ways	
10	Regular Expression Matching	
44	Wildcard Matching	

LinkedList

基础	
206	Reverse Linked List
141	Linked List Cycle
24	Swap Nodes in Pairs
328	Odd Even Linked List
92	Reverse Linked List II
237	Delete Node in a Linked List
19	Remove Nth Node From End of List
83	Remove Duplicates from Sorted List
203	Remove Linked List Elements
82	Remove Duplicates from Sorted List II
369	Plus One Linked List
2	Add Two Numbers
160	Intersection of Two Linked Lists
21	Merge Two Sorted Lists
提高	
234	Palindrome Linked List
143	Reorder List
142	Linked List Cycle II
148	Sort List
25	Reverse Nodes in k-Group
61	Rotate List
86	Partition List
23	Merge k Sorted Lists
147	Insertion Sort List

Binary Search

基础	
278	First Bad Version
35	Search Insert Position
33	Search in Rotated Sorted Array
81	Search in Rotated Sorted Array II
153	Find Minimum in Rotated Sorted Array
154	Find Minimum in Rotated Sorted Array II
162	Find Peak Element
374	Guess Number Higher or Lower
34	Search for a Range
349	Intersection of Two Arrays
350	Intersection of Two Arrays II
315	Count of Smaller Numbers After Self
300	Longest Increasing Subsequence
354	Russian Doll Envelopes

Matrix

48	Rotate Image
54	Spiral Matrix
59	Spiral Matrix II
73	Set Matrix Zeroes
311	Sparse Matrix Multiplication
329	Longest Increasing Path in a Matrix
378	Kth Smallest Element in a Sorted Matrix
74	Search a 2D Matrix
240	Search a 2D Matrix II
370	Range Addition
79	Word Search
296	Best Meeting Point
361	Bomb Enemy
317	Shortest Distance from All Buildings
302	Smallest Rectangle Enclosing Black Pixels
36	Valid Sudoku
37	Sudoku Solver

DFS & BFS

基础		
200	Number of Islands	
286	Walls and Gates	
130	Surrounded Regions	
339	Nested List Weight Sum	
364	Nested List Weight Sum II	
127	Word Ladder	
51	N-Queens	
52	N-Queens II	
126	Word Ladder II	

Stack & PriorityQueue

Stack		
155	Min Stack	
232	Implement Queue using Stacks	
225	Implement Stack using Queues	
150	Evaluate Reverse Polish Notation	
71	Simplify Path	
388	Longest Absolute File Path	
394	Decode String	
224	Basic Calculator	
227	Basic Calculator II	
385	Mini Parser	
84	Largest Rectangle in Histogram	
PriorityQueue		
215	Kth Largest Element in an Array	
347	Top K Frequent Elements	
313	Super Ugly Number	很少考
373	Find K Pairs with Smallest Sums	很少考
218	The Skyline Problem	
332	Reconstruct Itinerary	
341	Flatten Nested List Iterator	

Bit Manipulation

基础	
389	Find the Difference
136	Single Number
318	Maximum Product of Word Lengths
很少考	
393	UTF-8 Validation
201	Bitwise AND of Numbers Range
371	Sum of Two Integers
338	Counting Bits
89	Gray Code
268	Missing Number
191	Number of 1 Bits
190	Reverse Bits
137	Single Number II
260	Single Number III

Topological Sort

基础	
207	Course Schedule
210	Course Schedule II
269	Alien Dictionary

Random

基础	
模板	Reservoir Sampling
384	Shuffle an Array
398	Random Pick Index
382	Linked List Random Node
380	Insert Delete GetRandom O(1)
381	Insert Delete GetRandom O(1) - Duplicates allowed
138	Copy List with Random Pointer

Graph

基础		
133	Clone Graph	
399	Evaluate Division	
310	Minimum Height Trees	
图形学		
335	Self Crossing	很少考
149	Max Points on a Line	
356	Line Reflection	很少考
391	Perfect Rectangle	很少考
223	Rectangle Area	很少考

Union FInd

基础	
261	Graph Valid Tree
323	Number of Connected Components in an Undirected Graph
305	Number of Islands II

Trie

基础	
211	Add and Search Word - Data structure design
208	Implement Trie (Prefix Tree)
212	Word Search II

Design

基础		
359	Logger Rate Limiter	
346	Moving Average from Data Stream	Sliding Window
362	Design Hit Counter	
281	Zigzag Iterator	
284	Peeking Iterator	
251	Flatten 2D Vector	
288	Unique Word Abbreviation	
170	Two Sum III - Data structure design	
348	Design Tic-Tac-Toe	
379	Design Phone Directory	
353	Design Snake Game	
146	LRU Cache	
355	Design Twitter	
303	Range Sum Query - Immutable	
304	Range Sum Query 2D - Immutable	
307	Range Sum Query - Mutable	Binary Index Tree
308	Range Sum Query 2D - Mutable	Binary Index Tree

参考网站

https://leetcode.com/

Leetcode 题目视频讲解

https://cspiration.com/course/leetcodeVideo

微信公众号

个人微信号