

Up to date (2016-08-22), there are 289 problems on [LintCode Online Judge](#). The number of problems is increasing recently. Here is the classification of all 289 problems. For more problems and solutions, you can see my [LeetCode](#) repository. I'll keep updating for full summary and better solutions. Stay tuned for updates.

Algorithms

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Bit Manipulation

#	Title	Time	Space	Difficulty	Tag	Note
1	<a href="#">A + B Problem</a>	$O(1)$	$O(1)$	Medium		
82	<a href="#">Single Number</a>	$O(n)$	$O(1)$	Easy	LeetCode	
83	<a href="#">Single Number II</a>	$O(n)$	$O(1)$	Easy	LeetCode	

#	Title	Time	Space	Difficulty	Tag	Note
84	<a href="#">Single Number III</a>	$O(n)$	$O(1)$	Medium	CTCI	
142	<a href="#">O(1) Check Power of 2</a>	$O(1)$	$O(1)$	Easy		
179	<a href="#">Update Bits</a>	$O(1)$	$O(1)$	Medium	CTCI	
181	<a href="#">Flip Bits</a>	$O(1)$	$O(1)$	Easy	CTCI	
196	<a href="#">Find the Missing Number</a>	$O(n)$	$O(1)$	Medium		
365	<a href="#">Count 1 in Binary</a>	$O(1)$	$O(1)$	Easy	CTCI	

## Array

#	Title	Time	Space	Difficulty	Tag	Note
6	<a href="#">Merge Sorted Array</a>	$O(m + n)$	$O(1)$	Easy	LeetCode	Two Pointers
8	<a href="#">Rotate String</a>	$O(n)$	$O(1)$	Easy	LeetCode	
9	<a href="#">Fizz Buzz</a>	$O(n)$	$O(1)$	Easy		
30	<a href="#">Insert Interval</a>	$O(n)$	$O(1)$	Easy	LeetCode, EPI	
31	<a href="#">Partition Array</a>	$O(n)$	$O(1)$	Medium		Two Pointers
32	<a href="#">Minimum Window Substring</a>	$O(n)$	$O(1)$	Medium	LeetCode	
38	<a href="#">Search a 2D Matrix II</a>	$O(m + n)$	$O(1)$	Medium	EPI	
39	<a href="#">Recover Rotated Sorted Array</a>	$O(n)$	$O(1)$	Easy		
46	<a href="#">Majority Number</a>	$O(n)$	$O(1)$	Easy	LeetCode	
47	<a href="#">Majority Number II</a>	$O(n)$	$O(1)$	Medium	EPI	
48	<a href="#">Majority Number III</a>	$O(n)$	$O(k)$	Medium	EPI	
49	<a href="#">Sort Letters by Case</a>	$O(n)$	$O(1)$	Medium		Two Pointers
50	<a href="#">Product of Array Exclude Itself</a>	$O(n)$	$O(1)$	Easy		
51	<a href="#">Previous Permutation</a>	$O(n)$	$O(1)$	Medium		
52	<a href="#">Next Permutation</a>	$O(n)$	$O(1)$	Medium	LeetCode	
57	<a href="#">3 Sum</a>	$O(n^2)$	$O(1)$	Medium	LeetCode	Two Pointers, Sort
58	<a href="#">4 Sum</a>	$O(n^3)$	$O(1)$	Medium	LeetCode	Hash
59	<a href="#">3 Sum Closest</a>	$O(n^2)$	$O(1)$	Medium	LeetCode	Two Pointers, Sort
64	<a href="#">Merge Sorted Array II</a>	$O(m + n)$	$O(1)$	Easy	LeetCode	Two Pointers
100	<a href="#">Remove Duplicates from Sorted Array</a>	$O(n)$	$O(1)$	Easy	LeetCode	Two Pointers
101	<a href="#">Remove Duplicates from Sorted Array II</a>	$O(n)$	$O(1)$	Easy	LeetCode	Two Pointers
133	<a href="#">Longest Words</a>	$O(n)$	$O(n)$	Easy		
144	<a href="#">Interleaving Positive and Negative Numbers</a>	$O(n)$	$O(1)$	Medium		Two Pointers
161	<a href="#">Rotate Image</a>	$O(n^2)$	$O(1)$	Medium	LeetCode	

#	Title	Time	Space	Difficulty	Tag	Note
162	Set Matrix Zeroes	$O(m * n)$	$O(1)$	Medium	LeetCode	
172	Remove Element	$O(n)$	$O(1)$	Easy	LeetCode	Two Pointers
185	Matrix Zigzag Traversal	$O(m * n)$	$O(1)$	Easy		
189	First Missing Positive	$O(n)$	$O(1)$	Easy	LeetCode, EPI	Hash
190	Next Permutation II	$O(n)$	$O(1)$	Medium	LeetCode	
200	Longest Palindromic Substring	$O(n)$	$O(n)$	Medium	LeetCode	Manacher's Algorithm
363	Trapping Rain Water	$O(n)$	$O(1)$	Medium	LeetCode	Two Pointers, Tricky
373	Partition Array by Odd and Even	$O(n)$	$O(1)$	Easy		Two Pointers
374	Spiral Matrix	$O(m * n)$	$O(1)$	Medium	LeetCode	
381	Spiral Matrix II	$O(n^2)$	$O(1)$	Medium	LeetCode	
382	Triangle Count	$O(n^2)$	$O(1)$	Medium		Two Pointers
383	Container With Most Water	$O(n)$	$O(1)$	Medium	LeetCode, EPI	Two Pointers
388	Permutation Sequence	$O(n^2)$	$O(n)$	Medium	LeetCode	
389	Valid Sudoku	$O(9^2)$	$O(9)$	Easy	LeetCode	
404	Subarray Sum II	$O(n \log n)$	$O(n)$	Hard		Two Pointers, Binary Search
405	Submatrix Sum	$O(m * n^2)$	$O(m)$	Hard		Hash
406	Minimum Size Subarray Sum	$O(n)$	$O(1)$	Medium	LeetCode	Two Pointers, Binary Search
539	Move Zeroes	$O(n)$	$O(1)$	Easy	LeetCode	Two Pointers

String

#	Title	Time	Space	Difficulty	Tag	Note
13	strStr	$O(n + k)$	$O(k)$	Easy	LeetCode	KMP Algorithm
53	Reverse Words in a String	$O(n)$	$O(1)$	Easy	LeetCode, EPI	
54	String to Integer(atoi)	$O(n)$	$O(1)$	Hard	LeetCode	
55	Compare Strings	$O(n)$	$O(c)$	Easy		
78	Longest Common Prefix	$O(n)$	$O(1)$	Medium		
157	Unique Characters	$O(n)$	$O(1)$	Easy	CTCI	
158	Two Strings Are Anagrams	$O(n)$	$O(1)$	Easy		
171	Anagrams	$O(n * k \log k)$	$O(m)$	Easy	LeetCode, EPI	
212	Space Replacement	$O(n)$	$O(1)$	Easy		
407	Plus One	$O(n)$	$O(1)$	Easy	LeetCode	
408	Add Binary	$O(n)$	$O(1)$	Easy	LeetCode	
415	Valid Palindrome	$O(n)$	$O(1)$	Easy	LeetCode	

#	Title	Time	Space	Difficulty	Tag	Note
417	Valid Number	$O(n)$	$O(1)$	Hard	LeetCode	Automata
420	Count and Say	$O(n * 2^n)$	$O(2^n)$	Easy	LeetCode	
422	Length of Last Word	$O(n)$	$O(1)$	Easy	LeetCode	
524	Left Pad	$O(p + n)$	$O(1)$	Easy	LeetCode	

Linked List

#	Title	Time	Space	Difficulty	Tag	Note
16	Merge Two Sorted Lists	$O(n)$	$O(1)$	Easy	LeetCode, EPI	
35	Reverse Linked List	$O(n)$	$O(1)$	Easy	LeetCode, EPI	
36	Reverse Linked List II	$O(n)$	$O(1)$	Medium	LeetCode, EPI	
96	Partition List	$O(n)$	$O(1)$	Easy	LeetCode	
98	Sort List	$O(n \log n)$	$O(\log n)$	Medium	LeetCode, EPI	
99	Reorder List	$O(n)$	$O(1)$	Medium	LeetCode	
102	Linked List Cycle	$O(n)$	$O(1)$	Medium	LeetCode	
103	Linked List Cycle II	$O(n)$	$O(1)$	Hard	LeetCode	
104	Merge k Sorted Lists	$O(n * \log k)$	$O(1)$	Medium	LeetCode	Heap, Divide and Conquer
105	Copy List with Random Pointer	$O(n)$	$O(1)$	Medium	LeetCode	
106	Convert Sorted List to Binary Search Tree	$O(n)$	$O(\log n)$	Medium	LeetCode, EPI	
112	Remove Duplicates from Sorted List	$O(n)$	$O(1)$	Easy	LeetCode, EPI	
113	Remove Duplicates from Sorted List II	$O(n)$	$O(1)$	Medium	LeetCode, EPI	
166	Nth to Last Node in List	$O(n)$	$O(1)$	Easy	LeetCode	
167	Two Lists Sum	$O(n)$	$O(1)$	Easy	LeetCode	
170	Rotate List	$O(n)$	$O(1)$	Medium	LeetCode	
173	Insertion Sort List	$O(n^2)$	$O(1)$	Easy	LeetCode	
174	Remove Nth Node From End of List	$O(n)$	$O(1)$	Easy	LeetCode	
223	Palindrome Linked List	$O(n)$	$O(1)$	Medium	LeetCode	
372	Delete Node in the Middle of Singly Linked List	$O(1)$	$O(1)$	Easy	CTCI	
380	Intersection of Two Linked Lists	$O(m + n)$	$O(1)$	Easy	LeetCode	
450	Reverse Nodes in k-Group	$O(n)$	$O(1)$	Hard	LeetCode	
451	Swap Nodes in Pairs	$O(n)$	$O(1)$	Easy	LeetCode	
452	Remove Linked List Elements	$O(n)$	$O(1)$	Naive	LeetCode	
511	Swap Two Nodes in Linked List	$O(n)$	$O(1)$	Medium		

## Tree

#	Title	Time	Space	Difficulty	Tag	Note
7	Binary Tree Serialization	$O(n)$	$O(h)$	Medium		
85	Insert Node in a Binary Search Tree	$O(h)$	$O(1)$	Easy		
88	Lowest Common Ancestor	$O(n)$	$O(h)$	Medium	EPI	
175	Invert Binary Tree	$O(n)$	$O(h)$	Easy	LeetCode	
442	Implement Trie	$O(n)$	$O(1)$	Medium	LeetCode	Trie

## Stack

#	Title	Time	Space	Difficulty	Tag	Note
12	Min Stack	$O(n)$	$O(1)$	Medium	LeetCode, EPI	
40	Implement Queue by Two Stacks	$O(1)$ , amortized	$O(n)$	Medium	EPI	
66	Binary Tree Preorder Traversal	$O(n)$	$O(1)$	Easy	LeetCode, EPI	Morris Traversal
67	Binary Tree Inorder Traversal	$O(n)$	$O(1)$	Easy	LeetCode, EPI	Morris Traversal
68	Binary Tree Postorder Traversal	$O(n)$	$O(1)$	Easy	LeetCode, EPI	Morris Traversal
122	Largest Rectangle in Histogram	$O(n)$	$O(n)$	Hard	LeetCode, EPI	Ascending Stack
126	Max Tree	$O(n)$	$O(n)$	Hard		Descending Stack
367	Expression Tree Build	$O(n)$	$O(n)$	Hard		
368	Expression Evaluation	$O(n)$	$O(n)$	Hard		
369	Convert Expression to Polish Notation	$O(n)$	$O(n)$	Hard		
370	Convert Expression to Reverse Polish Notation	$O(n)$	$O(n)$	Hard		
421	Simplify Path	$O(n)$	$O(n)$	Medium	LeetCode	
423	Valid Parentheses	$O(n)$	$O(n)$	Easy	LeetCode	
424	Evaluate Reverse Polish Notation	$O(n)$	$O(n)$	Medium	LeetCode	
473	Add and Search Word	$O(\min(n, h))$	$O(\min(n, h))$	Medium	LeetCode	Trie
510	Maximal Rectangle	$O(m * n)$	$O(n)$	Hard	LeetCode	Ascending Stack
528	Flatten Nested List Iterator	$O(n)$	$O(h)$	Medium	LeetCode	

## Queue

#	Title	Time	Space	Difficulty	Tag	Note
362	Sliding Window Maximum	$O(n)$	$O(k)$	Hard	EPI	Deque, Tricky

## Heap

#	Title	Time	Space	Difficulty	Tag	Note
4	<a href="#">Ugly Number II</a>	$O(n)$	$O(1)$	Medium	CTCI	BST, Heap
81	<a href="#">Data Stream Median</a>	$O(n \log n)$	$O(n)$	Hard	EPI	BST, Heap
130	<a href="#">Heapify</a>	$O(n)$	$O(1)$	Medium		
364	<a href="#">Trapping Rain Water II</a>	$O(m * n * (\log m + \log n))$	$O(m * n)$	Hard		BFS, Heap, Tricky
518	<a href="#">Super Ugly Number</a>	$O(n * k)$	$O(n + k)$	Medium	LeetCode	BST, Heap

## Hash Tables

#	Title	Time	Space	Difficulty	Tag	Note
56	<a href="#">2 Sum</a>	$O(n)$	$O(n)$	Medium	LeetCode	
124	<a href="#">Longest Consecutive Sequence</a>	$O(n)$	$O(n)$	Medium	LeetCode, EPI	
128	<a href="#">Hash Function</a>	$O(n)$	$O(1)$	Easy		
129	<a href="#">Rehashing</a>	$O(n)$	$O(n)$	Medium		
138	<a href="#">Subarray Sum</a>	$O(n)$	$O(n)$	Easy		
186	<a href="#">Max Points on a Line</a>	$O(n^2)$	$O(n)$	Medium	LeetCode	
211	<a href="#">String Permutation</a>	$O(n)$	$O(1)$	Easy		
384	<a href="#">Longest Substring Without Repeating Characters</a>	$O(n)$	$O(1)$	Medium	LeetCode, EPI	
386	<a href="#">Longest Substring with At Most K Distinct Characters</a>	$O(n)$	$O(n)$	Medium		
432	<a href="#">Find the Weak Connected Component in the Directed Graph</a>	$O(n \log n)$	$O(n)$	Medium		Union Find
434	<a href="#">Number of Islands II</a>	$O(k)$	$O(k)$	Hard		Union Find
488	<a href="#">Happy Number</a>	$O(k)$	$O(k)$	Easy	LeetCode	
547	<a href="#">Intersection of Two Arrays</a>	$O(m + n)$	$O(\min(m, n))$	Easy	EPI, LeetCode	Two Pointers, Binary Search
548	<a href="#">Intersection of Two Arrays II</a>	$O(m + n)$	$O(\min(m, n))$	Easy	EPI, LeetCode	Two Pointers, Binary Search

## Data Structure

#	Title	Time	Space	Difficulty	Tag	Note
134	<a href="#">LRU Cache</a>	$O(1)$	$O(k)$	Hard	LeetCode, EPI	List, Hash

## Math

#	Title	Time	Space	Difficulty	Tag	Note
2	<a href="#">Trailing Zeros</a>	$O(1)$	$O(1)$	Easy	LeetCode	
3	<a href="#">Digit Counts</a>	$O(1)$	$O(1)$	Medium	CTCI	

#	Title	Time	Space	Difficulty	Tag	Note
114	Unique Paths	$O(\min(m, n))$	$O(1)$	Easy	LeetCode, CTCI	DP, Math
163	Unique Binary Search Trees	$O(n)$	$O(1)$	Medium	CTCI	DP, Math, Catalan Number
180	Binary Representation	$O(1)$	$O(1)$	Hard	CTCI	
197	Permutation Index	$O(n^2)$	$O(1)$	Easy		
198	Permutation Index II	$O(n^2)$	$O(n)$	Medium		
394	Coins in a Line	$O(1)$	$O(1)$	Easy		
411	Gray Code	$O(2^n)$	$O(1)$	Medium	LeetCode	
413	Reverse Integer	$O(1)$	$O(1)$	Medium	LeetCode	
414	Divide Two Integer	$O(1)$	$O(1)$	Medium	LeetCode	
418	Integer to Roman	$O(n)$	$O(1)$	Medium	LeetCode	
419	Roman to Integer	$O(n)$	$O(1)$	Medium	LeetCode	
428	Pow(x, n)	$O(1)$	$O(1)$	Medium	LeetCode	
445	Cosine Similarity	$O(n)$	$O(1)$	Easy		
517	Ugly Number	$O(1)$	$O(1)$	Easy	CTCI, LeetCode	

Sort

#	Title	Time	Space	Difficulty	Tag	Note
5	Kth Largest Element	$O(n) \sim O(n^2)$	$O(1)$	Medium	EPI	Two Pointers, Quick Sort
80	Median	$O(n)$	$O(1)$	Easy	EPI	
139	Subarray Sum Closest	$O(n \log n)$	$O(n)$	Medium		Sort
143	Sort Colors II	$O(n)$	$O(1)$	Medium		
148	Sort Colors	$O(n)$	$O(1)$	Medium	LeetCode	
156	Merge Intervals	$O(n \log n)$	$O(1)$	Easy	LeetCode, EPI	
184	Largest Number	$O(n \log n)$	$O(1)$	Medium	LeetCode	
366	Fibonacci	$O(n)$	$O(1)$	Easy		
379	Reorder array to construct the minimum number	$O(n \log n)$	$O(1)$	Medium	LeetCode	
387	The Smallest Difference	$O(\max(m, n) * \log(\min(m, n)))$	$O(1)$	Medium		Two Pointers, Binary Search
399	Nuts & Bolts Problem	$O(n \log n)$	$O(\log n)$	Medium		Quick Sort
400	Maximum Gap	$O(n)$	$O(n)$	Hard	LeetCode	Bucket Sort
463	Sort Integers	$O(n^2)$	$O(1)$	Easy		Insertion Sort, Selection Sort, Bubble Sort
464	Sort Integers II	$O(n \log n)$	$O(n)$	Easy		Merge Sort, Heap Sort, Quick Sort

#	Title	Time	Space	Difficulty	Tag	Note
507	Wiggle Sort II	$O(n)$ on average	$O(1)$	Medium	LeetCode	Tri Partition
508	Wiggle Sort	$O(n)$	$O(1)$	Medium	LeetCode	

Recursion

#	Title	Time	Space	Difficulty	Tag	Note
22	Flatten List	$O(n)$	$O(h)$	Easy		
72	Construct Binary Tree from Inorder and Postorder Traversal	$O(n)$	$O(n)$	Medium	LeetCode, EPI	
73	Construct Binary Tree from Preorder and Inorder Traversal	$O(n)$	$O(n)$	Medium	LeetCode, EPI	
93	Balanced Binary Tree	$O(n)$	$O(h)$	Easy	LeetCode	
94	Binary Tree Maximum Path Sum	$O(n)$	$O(h)$	Medium	LeetCode	
95	Validate Binary Search Tree	$O(n)$	$O(h)$	Medium	LeetCode	
97	Maximum Depth of Binary Tree	$O(n)$	$O(h)$	Easy	LeetCode	
131	Building Outline	$O(n\log n)$	$O(n)$	Hard	EPI	Sort, BST
140	Fast Power	$O(\log n)$	$O(1)$	Medium		
155	Minimum Depth of Binary Tree	$O(n)$	$O(h)$	Easy	LeetCode	
164	Unique Binary Search Trees II	$O(n * 4^n / n^{(3/2)})$	$O(n)$	Medium	LeetCode	
177	Convert Sorted Array to Binary Search Tree With Minimal Height	$O(n)$	$O(\log n)$	Easy	LeetCode	
201	Segment Tree Build	$O(n)$	$O(h)$	Medium		Segment Tree, BST
202	Segment Tree Query	$O(h)$	$O(h)$	Medium		Segment Tree, BST
203	Segment Tree Modify	$O(h)$	$O(h)$	Medium		Segment Tree, BST
205	Interval Minimum Number	build tree: $O(n)$ , query: $(h)$	$O(h)$	Hard		Segment Tree, BST
206	Interval Sum	build tree: $O(n)$ , query: $O(\log n)$	$O(n)$	Hard		Segment Tree, BIT
207	Interval Sum II	build tree: $O(n)$ , query: $O(\log n)$ , modify: $O(\log n)$	$O(n)$	Hard		Segment Tree, BIT
245	Subtree	$O(m * n)$	$O(1)$	Easy		Morris Traversal
247	Segment Tree Query II	$O(h)$	$O(h)$	Hard		Segment Tree, BST
248	Count of Smaller Number	build tree: $O(n)$ ,	$O(h)$	Medium		Segment



#	Title	Time	Space	Difficulty	Tag	Note
		query: $O(\log n)$				Tree, BST
371	<a href="#">Print Numbers by Recursion</a>	$O(n)$	$O(n)$	Medium		
375	<a href="#">Clone Binary Tree</a>	$O(n)$	$O(h)$	Easy		
378	<a href="#">Convert Binary Search Tree to Doubly Linked List</a>	$O(n)$	$O(h)$	Medium		
439	<a href="#">Segment Tree Build II</a>	$O(n)$	$O(h)$	Medium		Segment Tree, BST
453	<a href="#">Flatten Binary Tree to Linked List</a>	$O(n)$	$O(h)$	Easy	LeetCode	
469	<a href="#">Identical Binary Tree</a>	$O(n)$	$O(h)$	Easy		
532	<a href="#">Reverse Pairs</a>	$O(n \log n)$	$O(n)$	Medium	variant of <a href="#">Count of Smaller Number before itself</a>	BIT, Merge Sort
535	<a href="#">House Robber III</a>	$O(n)$	$O(h)$	Medium	LeetCode	

### Binary Search

#	Title	Time	Space	Difficulty	Tag	Note
14	<a href="#">First Position of Target</a>	$O(\log n)$	$O(1)$	Easy		
28	<a href="#">Search a 2D Matrix</a>	$O(\log m + \log n)$	$O(1)$	Easy	LeetCode	
60	<a href="#">Search Insert Position</a>	$O(\log n)$	$O(1)$	Easy	LeetCode	
61	<a href="#">Search for a Range</a>	$O(\log n)$	$O(1)$	Medium	LeetCode	
62	<a href="#">Search in Rotated Sorted Array</a>	$O(\log n)$	$O(1)$	Medium	LeetCode	
63	<a href="#">Search in Rotated Sorted Array II</a>	$O(\log n)$	$O(1)$	Medium	LeetCode	
65	<a href="#">Median of two Sorted Arrays</a>	$O(\log(\min(m, n)))$	$O(1)$	Hard	LeetCode, EPI	Tricky
74	<a href="#">First Bad Version</a>	$O(\log n)$	$O(1)$	Medium		
75	<a href="#">Find Peak Element</a>	$O(\log n)$	$O(1)$	Medium	LeetCode	
76	<a href="#">Longest Increasing Subsequence</a>	$O(n \log n)$	$O(n)$	Medium	CTCI	
141	<a href="#">Sqrt(x)</a>	$O(\log n)$	$O(1)$	Easy	LeetCode	
159	<a href="#">Find Minimum in Rotated Sorted Array</a>	$O(\log n)$	$O(1)$	Medium	LeetCode	
160	<a href="#">Find Minimum in Rotated Sorted Array II</a>	$O(\log n)$	$O(1)$	Medium	LeetCode	
183	<a href="#">Wood Cut</a>	$O(n \log L)$	$O(1)$	Medium		
390	<a href="#">Find Peak Element II</a>	$O(m + n)$	$O(1)$	Hard		
437	<a href="#">Copy Books</a>	$O(n \log p)$	$O(1)$	Hard	UVa 714	

### Breadth-First Search

#	Title	Time	Space	Difficulty	Tag	Note
69	Binary Tree Level Order Traversal	$O(n)$	$O(n)$	Medium	LeetCode	BFS
70	Binary Tree Level Order Traversal II	$O(n)$	$O(n)$	Medium	LeetCode	BFS
71	Binary Tree Zigzag Level Order Traversal	$O(n)$	$O(n)$	Medium	LeetCode	BFS
120	Word Ladder	$O(n * d)$	$O(d)$	Medium	LeetCode	BFS
121	Word Ladder II	$O(n * d)$	$O(d)$	Hard	LeetCode	BFS, Back Trace
127	Topological Sorting	$O( V + E )$	$O( E )$	Medium		DFS, BFS
137	Clone Graph	$O( V + E )$	$O( V )$	Medium		BFS
176	Route Between Two Nodes in Graph	$O(n)$	$O(n)$	Medium		DFS, BFS
178	Graph Valid Tree	$O( V  +  E )$	$O( V  +  E )$	Medium	LeetCode	
431	Find the Connected Component in the Undirected Graph	$O(n)$	$O(n)$	Medium		BFS
477	Surrounded Regions	$O(m * n)$	$O(m + n)$	Medium	LeetCode	

### Depth-First Search

#	Title	Time	Space	Difficulty	Tag	Note
90	K Sum II	$O(k * C(n, k))$	$O(k)$	Medium		
376	Binary Tree Path Sum	$O(n)$	$O(h)$	Easy	LeetCode	
433	Number of Islands	$O(m * n)$	$O(m * n)$	Easy	LeetCode	DFS
480	Binary Tree Paths	$O(n * h)$	$O(h)$	Easy	LeetCode	

### Backtracking

#	Title	Time	Space	Difficulty	Tag	Note
15	Permutations	$O(n * n!)$	$O(n)$	Medium	LeetCode, EPI	
16	Permutations II	$O(n * n!)$	$O(n)$	Medium	LeetCode, EPI	
17	Subsets	$O(n * 2^n)$	$O(1)$	Medium	LeetCode	
18	Subsets II	$O(n * 2^n)$	$O(1)$	Medium	LeetCode	
33	N-Queens	$O(n * n!)$	$O(n)$	Medium	LeetCode, EPI	
34	N-Queens II	$O(n * n!)$	$O(n)$	Medium	LeetCode, EPI	
123	Word Search	$O(m * n * l)$	$O(l)$	Medium	LeetCode	
132	Word Search II	$O(m * n * l)$	$O(l)$	Hard		Trie, DFS
135	Combination Sum	$O(k * n^k)$	$O(k)$	Medium	LeetCode	DFS
136	Palindrome Partitioning	$O(2^n)$	$O(n)$	Easy	LeetCode, EPI	
152	Combinations	$O(k * n^k)$	$O(k)$	Medium	LeetCode, EPI	

#	Title	Time	Space	Difficulty	Tag	Note
153	Combination Sum II	$O(k * C(n, k))$	$O(k)$	Medium	LeetCode	DFS
425	Letter Combinations of a Phone Number	$O(n * 4^n)$	$O(n)$	Medium	LeetCode	
426	Restore IP Addresses	$O(1)$	$O(1)$	Medium	LeetCode	
427	Generate Parentheses	$O(4^n / n^{(3/2)})$	$O(n)$	Medium	LeetCode	

Binary Search Trees

#	Title	Time	Space	Difficulty	Tag	Note
11	Search Range in Binary Search Tree	$O(n)$	$O(h)$	Medium	EPI	
86	Binary Search Tree Iterator	$O(1)$	$O(h)$	Hard	LeetCode	
87	Remove Node in Binary Search Tree	$O(h)$	$O(h)$	Hard		
249	Count of Smaller Number before itself	$O(n\log n)$	$O(n)$	Hard		BST, BIT, Divide and Conquer, Merge Sort
360	Sliding Window Median	$O(n\log w)$	$O(w)$	Hard		BST, Tricky
391	Number of Airplanes in the Sky	$O(n\log n)$	$O(n)$	Easy		BST, Heap
401	Kth Smallest Number in Sorted Matrix	$O(k\log(\min(m, n, k)))$	$O(\min(m, n, k))$	Medium		BST, Heap

Dynamic Programming

#	Title	Time	Space	Difficulty	Tag	Note
20	Dices Sum	$O(n^2)$	$O(n)$	Hard		
29	Interleaving String	$O(m * n)$	$O(\min(m, n))$	Medium	EPI	
43	Maximum Subarray III	$O(k * n)$	$O(k * n)$	Hard		
77	Longest Common Subsequence	$O(m * n)$	$O(\min(m, n))$	Medium		
79	Longest Common Substring	$O(m * n)$	$O(\min(m, n))$	Medium		
89	K Sum	$O(k * n * t)$	$O(n * t)$	Hard		
91	Minimum Adjustment Cost	$O(k * n * t)$	$O(k)$	Medium		
92	Backpack	$O(m * n)$	$O(m)$	Easy		
107	Word Break	$O(n * l^2)$	$O(n)$	Medium	LeetCode, EPI	
108	Palindrome Partitioning II	$O(n^2)$	$O(n)$	Medium	LeetCode, EPI	
109	Triangle	$O(n)$	$O(n)$	Easy	LeetCode, EPI	
110	Minimum Path Sum	$O(m * n)$	$O(\min(m, n))$	Easy	LeetCode, EPI	
111	Climbing Stairs	$O(n)$	$O(1)$	Easy	LeetCode	
115	Unique Paths II	$O(m * n)$	$O(\min(m, n))$	Easy	LeetCode,	DP,

#	Title	Time	Space	Difficulty	Tag	Note
					CTCI	Math
118	Distinct Subsequences	$O(m * n)$	$O(m)$	Medium	LeetCode	DP
119	Edit Distance	$O(m * n)$	$O(\min(m, n))$	Medium	LeetCode, CTCI	DP
125	Backpack II	$O(m * n)$	$O(m)$	Medium		
149	Best Time to Buy and Sell Stock	$O(n)$	$O(1)$	Medium	LeetCode, EPI	
150	Best Time to Buy and Sell Stock II	$O(n)$	$O(1)$	Medium	LeetCode, EPI	
151	Best Time to Buy and Sell Stock III	$O(n)$	$O(1)$	Medium	LeetCode, EPI	
154	Regular Expression Matching	$O(m * n)$	$O(m)$	Hard	LeetCode	DP, Recursion
168	Burst Balloons	$O(n^3)$	$O(n^2)$	Medium	LeetCode	
191	Maximum Product Subarray	$O(n)$	$O(1)$	Medium	LeetCode	
392	House Robber	$O(n)$	$O(1)$	Medium	LeetCode	
393	Best Time to Buy and Sell Stock IV	$O(k * n)$	$O(k)$	Hard	LeetCode, EPI	
395	Coins in a Line II	$O(n)$	$O(1)$	Medium		
396	Coins in a Line III	$O(n^2)$	$O(n)$	Hard		
397	Longest Increasing Continuous subsequence	$O(n)$	$O(1)$	Easy		
398	Longest Increasing Continuous subsequence II	$O(m * n)$	$O(m * n)$	Hard		
403	Continuous Subarray Sum II	$O(n)$	$O(1)$	Medium	EPI	
430	Scramble String	$O(n^4)$	$O(n^3)$	Hard	LeetCode	
435	Post Office Problem	$O(k * n^2)$	$O(n)$	Hard	PKU 1160	
436	Maximal Square	$O(m * n)$	$O(n)$	Medium	LeetCode	
512	Decode Ways	$O(n)$	$O(1)$	Medium	LeetCode	
513	Perfect Squares	$O(n * \sqrt{n})$	$O(n)$	Medium	LeetCode	
514	Paint Fence	$O(n)$	$O(1)$	Easy	LeetCode	
515	Paint House	$O(n)$	$O(1)$	Medium	LeetCode	
516	Paint House II	$O(n * k)$	$O(k)$	Hard	LeetCode	
534	House Robber II	$O(n)$	$O(1)$	Medium	LeetCode	
564	Backpack VI	$O(n * t)$	$O(t)$	Medium		

Greedy

#	Title	Time	Space	Difficulty	Tag	Note
41	Maximum Subarray	$O(n)$	$O(1)$	Easy	LeetCode	

#	Title	Time	Space	Difficulty	Tag	Note
42	Maximum Subarray II	$O(n)$	$O(n)$	Medium		
44	Minimum Subarray	$O(n)$	$O(1)$	Easy		
45	Maximum Subarray Difference	$O(n)$	$O(n)$	Medium		
116	Jump Game	$O(n)$	$O(1)$	Medium	LeetCode	
117	Jump Game II	$O(n)$	$O(1)$	Medium	LeetCode	
182	Delete Digits	$O(n)$	$O(n)$	Medium		
187	Gas Station	$O(n)$	$O(1)$	Easy	LeetCode	
192	Wildcard Matching	$O(m + n)$	$O(1)$	Hard	LeetCode	Greedy, DP, Recursion
402	Continuous Subarray Sum	$O(n)$	$O(1)$	Medium	EPI	
412	Candy	$O(n)$	$O(n)$	Hard	LeetCode	Greedy
552	Create Maximum Number	$O(k * (m + n + k)) \sim O(k * (m + n + k^2))$	$O(m + n + k^2)$	Hard	LeetCode	Greedy, DP

OO Design

#	Title	Time	Space	Difficulty	Tag	Note
204	Singleton	$O(1)$	$O(1)$	Easy		
208	Assignment Operator Overloading (C++ Only)	$O(n)$	$O(1)$	Medium		
496	Toy Factory	$O(1)$	$O(1)$	Easy		
497	Shape Factory	$O(1)$	$O(1)$	Easy		
498	Parking Lot	$O(n * m * k)$	$O(n * m * k)$	Hard	CTCI	OO Design, Pimpl Idiom, Smart Pointer

System Design

#	Title	Time	Space	Difficulty	Tag	Note
501	Mini Twitter	$O(k \log u)$	$O(t + f)$	Medium		