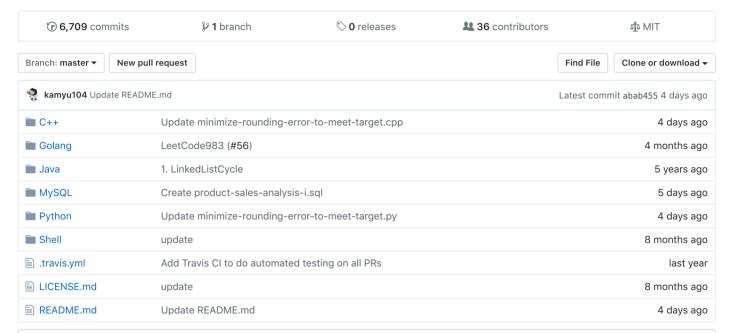
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#### **Algorithms**

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Dismiss

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#### **Database**

• SQL

#### Shell

• Shell Script

#### Reference

- C++
  - STL Time Complexity (Detailed)
  - STL Time Complexity (Summary)
  - Data Structure and Algorithms Cheat Sheet
- Pvthon
  - Time Complexity

### **Bit Manipulation**

#	Title	Solution	Time	Space	Difficulty	Tag	Note
0136	Single Number	C++ Python	O(n)	O(1)	Easy		
0137	Single Number II	C++ Python	O(n)	O(1)	Medium		
0190	Reverse Bits	C++ Python	O(1)	O(1)	Easy		
0191	Number of 1 Bits	C++ Python	O(1)	O(1)	Easy		
0201	Bitwise AND of Numbers Range	C++ Python	O(1)	O(1)	Medium		
0231	Power of Two	C++ Python	O(1)	O(1)	Easy	LintCode	
0260	Single Number III	C++ Python	O(n)	O(1)	Medium		
0268	Missing Number	C++ Python	O(n)	O(1)	Medium	LintCode	

#	Title	Solution	Time	Space	Difficulty	Tag	Note
0318	Maximum Product of Word Lengths	C++ Python	O(n) ~ O(n^2)	O(n)	Medium		Bit Manipulation, Counting Sort, Pruning
0342	Power of Four	C++ Python	O(1)	O(1)	Easy		
0371	Sum of Two Integers	C++ Python	O(1)	O(1)	Easy	LintCode	
0389	Find the Difference	C++ Python	O(n)	O(1)	Easy		
0393	UTF-8 Validation	C++ Python	O(n)	O(1)	Medium		
0401	Binary Watch	C++ Python	O(1)	O(1)	Easy		
0411	Minimum Unique Word Abbreviation	C++ Python	O(2^n)	O(n)	Hard		
0421	Maximum XOR of Two Numbers in an Array	C++ Python	O(n)	O(n)	Medium		
0461	Hamming Distance	C++ Python	O(1)	O(1)	Easy		
0462	Minimum Moves to Equal Array Elements II	C++ Python	O(n) on average	O(1)	Medium		
0477	Total Hamming Distance	C++ Python	O(n)	O(1)	Medium		
0645	Set Mismatch	C++ Python	O(n)	O(1)	Easy		
0693	Binary Number with Alternating Bits	C++ Python	O(1)	O(1)	Easy		
0762	Prime Number of Set Bits in Binary Representation	C++ Python	O(1)	O(1)	Easy		
0868	Binary Gap	C++ Python	O(1)	O(1)	Easy		
0898	Bitwise ORs of Subarrays	C++ Python	O(n)	O(1)	Medium		

# Array

#	Title	Solution	Time	Space	Difficulty	Tag	Note
0015	3 Sum	C++ Python	O(n^2)	O(1)	Medium		Two Pointers
0016	3 Sum Closest	C++ Python	O(n^2)	O(1)	Medium		Two Pointers
0018	4 Sum	C++ Python	O(n^3)	O(1)	Medium		Two Pointers
0026	Remove Duplicates from Sorted Array	C++ Python	O(n)	O(1)	Easy		Two Pointers

#	Title	Solution	Time	Space	Difficulty	Tag	Note
0027	Remove Element	C++ Python	O(n)	O(1)	Easy		
0031	Next Permutation	C++ Python	O(n)	O(1)	Medium		Tricky
0041	First Missing Positive	C++ Python	O(n)	O(1)	Hard		Tricky
0048	Rotate Image	C++ Python	O(n^2)	O(1)	Medium		
0054	Spiral Matrix	C++ Python	O(m * n)	O(1)	Medium		
0059	Spiral Matrix II	C++ Python	O(n^2)	O(1)	Medium		
0066	Plus One	C++ Python	O(n)	O(1)	Easy		
0073	Set Matrix Zeroes	C++ Python	O(m * n)	O(1)	Medium		
0800	Remove Duplicates from Sorted Array II	C++ Python	O(n)	O(1)	Medium		Two Pointers
0118	Pascal's Triangle	C++ Python	O(n^2)	O(1)	Easy		
0119	Pascal's Triangle II	C++ Python	O(n^2)	O(1)	Easy		
0121	Best Time to Buy and Sell Stock	C++ Python	O(n)	O(1)	Easy		
0128	Longest Consecutive Sequence	C++ Python	O(n)	O(n)	Hard		Tricky
0157	Read N Characters Given Read4	C++ Python	O(n)	O(1)	Easy		
0158	Read N Characters Given Read4 II - Call multiple times	C++ Python	O(n)	O(1)	Hard		
0163	Missing Ranges	C++ Python	O(n)	O(1)	Medium		
0169	Majority Element	C++ Python	O(n)	O(1)	Easy		
0189	Rotate Array	C++ Python	O(n)	O(1)	Easy		
0209	Minimum Size Subarray Sum	C++ Python	O(n)	O(1)	Medium		Binary Search
0215	Kth Largest Element in an Array	C++ Python	O(n) ~ O(n^2)	O(1)	Medium	EPI	
0228	Summary Ranges	C++ Python	O(n)	O(1)	Medium		
0229	Majority Element II	C++ Python	O(n)	O(1)	Medium		
0238	Product of Array Except Self	C++ Python	O(n)	O(1)	Medium	LintCode	

#	Title	Solution	Time	Space	Difficulty	Tag	Note
0240	Search a 2D Matrix II	C++ Python	O(m + n)	O(1)	Medium	EPI, LintCode	
0243	Shortest Word Distance	C++ Python	O(n)	O(1)	Easy		
0245	Shortest Word Distance III	C++ Python	O(n)	O(1)	Medium		
0251	Flatten 2D Vector	C++ Python	O(1)	O(1)	Medium		
0277	Find the Celebrity	C++ Python	O(n)	O(1)	Medium	🔒 , EPI	
0289	Game of Life	C++ Python	O(m * n)	O(1)	Medium		
0293	Flip Game	C++ Python	O(n * (c+1))	O(1)	Easy		
0296	Best Meeting Point	C++ Python	O(m * n)	O(m + n)	Hard		
0311	Sparse Matrix Multiplication	C++ Python	O(m * n * I)	O(m * I)	Medium		
0334	Increasing Triplet Subsequence	C++ Python	O(n)	O(1)	Medium		
0370	Range Addition	C++ Python	O(k + n)	O(1)	Medium		
0384	Shuffle an Array	C++ Python	O(n)	O(n)	Medium	EPI	
0396	Rotate Function	C++ Python	O(n)	O(1)	Easy		
0412	Fizz Buzz	C++ Python	O(n)	O(1)	Easy		
0414	Third Maximum Number	C++ Python	O(n)	O(1)	Easy		
0419	Battleships in a Board	C++ Python	O(m * n)	O(1)	Medium		
0422	Valid Word Square	C++ Python	O(m * n)	O(1)	Easy		
0442	Find All Duplicates in an Array	C++ Python	O(n)	O(1)	Medium		
0448	Find All Numbers Disappeared in an Array	C++ Python	O(n)	O(1)	Easy		
0531	Lonely Pixel I	C++ Python	O(m * n)	O(m + n)	Medium		
0533	Lonely Pixel II	C++ Python	O(m * n)	O(m * n)	Medium		
0565	Array Nesting	C++ Python	O(n)	O(1)	Medium		
0566	Reshape the Matrix	C++ Python	O(m * n)	O(m * n)	Easy		

#	Title	Solution	Time	Space	Difficulty	Tag	Note
0581	Shortest Unsorted Continuous Subarray	C++ Python	O(n)	O(1)	Easy		
0605	Can Place Flowers	C++ Python	O(n)	O(1)	Easy		
0624	Maximum Distance in Arrays	C++ Python	O(n)	O(1)	Easy		
0643	Maximum Average Subarray I	C++ Python	O(n)	O(1)	Easy		Math
0644	Maximum Average Subarray II	C++ Python	O(n)	O(n)	Hard		Math
0661	Image Smoother	C++ Python	O(m * n)	O(1)	Easy		
0665	Non-decreasing Array	C++ Python	O(n)	O(1)	Easy		
0667	Beautiful Arrangement II	C++ Python	O(n)	O(1)	Medium		
0670	Maximum Swap	C++ Python	O(logn)	O(logn)	Medium		
0674	Longest Continuous Increasing Subsequence	C++ Python	O(n)	O(1)	Easy		
0683	K Empty Slots	C++ Python	O(n)	O(n)	Hard		
0697	Degree of an Array	C++ Python	O(n)	O(n)	Easy		
0713	Subarray Product Less Than K	C++ Python	O(n)	O(1)	Medium		
0717	1-bit and 2-bit Characters	C++ Python	O(n)	O(1)	Easy		Greedy
0723	Candy Crush	C++ Python	O((R * C)^2)	O(1)	Medium		
0724	Find Pivot Index	C++ Python	O(n)	O(1)	Easy		
0729	My Calendar I	C++ Python	O(nlogn)	O(n)	Medium		
0731	My Calendar II	C++ Python	O(n^2)	O(n)	Medium		
0732	My Calendar III	C++ Python	O(n^2)	O(n)	Hard		
0747	Largest Number At Least Twice of Others	C++ Python	O(n)	O(1)	Easy		
0755	Pour Water	C++ Python	O(v * n)	O(1)	Medium		
0766	Toeplitz Matrix	C++ Python	O(m * n)	O(1)	Easy		
0768	Max Chunks To Make Sorted II	C++ Python	O(nlogn)	O(n)	Hard		

#	Title	Solution	Time	Space	Difficulty	Tag	Note
0769	Max Chunks To Make Sorted	C++ Python	O(n)	O(1)	Medium		
0778	Swim in Rising Water	C++ Python	O(n^2)	O(n^2)	Hard		Union Find
0792	Number of Matching Subsequences	C++ Python	O(n + w)	O(k)	Medium		
0794	Valid Tic-Tac-Toe State	C++ Python	O(1)	O(1)	Medium		
0795	Number of Subarrays with Bounded Maximum	C++ Python	O(n)	O(1)	Medium		
0803	Bricks Falling When Hit	C++ Python	O(r * c)	O(r * c)	Hard		Union Find
0807	Max Increase to Keep City Skyline	C++ Python	O(n^2)	O(n)	Medium		
0821	Shortest Distance to a Character	C++ Python	O(n)	O(1)	Easy		
0830	Positions of Large Groups	C++ Python	O(n)	O(1)	Easy		
0832	Flipping an Image	C++ Python	O(n^2)	O(1)	Easy		
0835	Image Overlap	C++ Python	O(n^4)	O(n^2)	Medium		
0840	Magic Squares In Grid	C++ Python	O(m * n)	O(1)	Easy		
0842	Split Array into Fibonacci Sequence	C++ Python	O(n^3)	O(n)	Medium		
0845	Longest Mountain in Array	C++ Python	O(n)	O(1)	Medium		
0849	Maximize Distance to Closest Person	C++ Python	O(n)	O(1)	Easy		
0860	Lemonade Change	C++ Python	O(n)	O(1)	Easy		
0868	Transpose Matrix	C++ Python	O(r * c)	O(1)	Easy		
0885	Spiral Matrix III	C++ Python	O(max(m, n)^2)	O(1)	Medium		
0888	Fair Candy Swap	C++ Python	O(m + n)	O(m + n)	Easy		
0896	Monotonic Array	C++ Python	O(n)	O(1)	Easy		
0905	Sort Array By Parity	C++ Python	O(n)	O(1)	Easy		
0909	Snakes and Ladders	C++ Python	O(n^2)	O(n^2)	Medium		
0915	Partition Array into Disjoint Intervals	C++ Python	O(n)	O(n)	Medium		

#	Title	Solution	Time	Space	Difficulty	Tag	Note
0918	Maximum Sum Circular Subarray	C++ Python	O(n)	O(1)	Medium		
0922	Sort Array By Parity II	C++ Python	O(n)	O(1)	Easy		
0923	3Sum With Multiplicity	C++ Python	O(n^2)	O(n)	Medium		
0927	Three Equal Parts	C++ Python	O(n)	O(1)	Hard		
0932	Beautiful Array	C++ Python	O(n)	O(n)	Medium		
0941	Valid Mountain Array	C++ Python	O(n)	O(1)	Easy		
0945	Minimum Increment to Make Array Unique	C++ Python	O(nlogn)	O(n)	Medium		
0947	Most Stones Removed with Same Row or Column	C++ Python	O(n)	O(n)	Medium		Union Find
0949	Largest Time for Given Digits	C++ Python	O(1)	O(1)	Easy		
0950	Reveal Cards In Increasing Order	C++ Python	O(n)	O(n)	Medium		
0952	Largest Component Size by Common Factor	C++ Python	O(f * n)	O(p + n)	Hard		Union Find
0954	Array of Doubled Pairs	C++ Python	O(n + klogk)	O(k)	Medium		
0961	N-Repeated Element in Size 2N Array	C++ Python	O(n)	O(1)	Easy		
0978	Longest Turbulent Subarray	C++ Python	O(n)	O(1)	Medium		
0985	Sum of Even Numbers After Queries	C++ Python	O(n + q)	O(1)	Easy		
0989	Add to Array-Form of Integer	C++ Python	O(n + logk)	O(1)	Easy		
0997	Find the Town Judge	C++ Python	O(t + n)	O(n)	Easy		
0999	Available Captures for Rook	C++ Python	O(1)	O(1)	Easy		
1002	Find Common Characters	C++ Python	O(n * l)	O(1)	Easy		
1007	Minimum Domino Rotations For Equal Row	C++ Python	O(n)	O(1)	Medium		
1013	Pairs of Songs With Total Durations Divisible by 60	C++ Python	O(n)	O(1)	Easy		
1014	Best Sightseeing Pair	C++ Python	O(n)	O(1)	Medium		
1018	Binary Prefix Divisible By 5	C++ Python	O(n)	O(1)	Easy		

#	Title	Solution	Time	Space	Difficulty	Tag	Note
1020	Partition Array Into Three Parts With Equal Sum	C++ Python	O(n)	O(1)	Easy		
1030	Matrix Cells in Distance Order	C++ Python	O(m * n)	O(1)	Easy		
1031	Maximum Sum of Two Non- Overlapping Subarrays	C++ Python	O(n)	O(1)	Medium		
1051	Height Checker	C++ Python	O(nlogn)	O(n)	Easy		
1052	Grumpy Bookstore Owner	C++ Python	O(n)	O(1)	Medium		
1072	Flip Columns For Maximum Number of Equal Rows	C++ Python	O(m * n)	O(m * n)	Medium		
1074	Number of Submatrices That Sum to Target	C++ Python	O(m^2 * n)	O(n)	Hard		

# String

#	Title	Solution	Time	Space	Difficulty	Tag	Note
0005	Longest Palindromic Substring	C++ Python	O(n)	O(n)	Medium		Manacher's Algorithm
0006	ZigZag Conversion	C++ Python	O(n)	O(1)	Easy		
8000	String to Integer (atoi)	C++ Python	O(n)	O(1)	Easy		
0014	Longest Common Prefix	C++ Python	O(n * k)	O(1)	Easy		
0028	Implement strStr()	C++ Python	O(n + k)	O(k)	Easy		KMP Algorithm
0038	Count and Say	C++ Python	O(n * 2^n)	O(2^n)	Easy		
0043	Multiply Strings	C++ Python	O(m * n)	O(m + n)	Medium		
0058	Length of Last Word	C++ Python	O(n)	O(1)	Easy		
0067	Add Binary	C++ Python	O(n)	O(1)	Easy		
0068	Text Justification	C++ Python	O(n)	O(1)	Hard		
0125	Valid Palindrome	C++ Python	O(n)	O(1)	Easy		
0151	Reverse Words in a String	C++ Python	O(n)	O(1)	Medium		
0161	One Edit Distance	C++ Python	O(m + n)	O(1)	Medium		
0165	Compare Version Numbers	C++ Python	O(n)	O(1)	Easy		

#	Title	Solution	Time	Space	Difficulty	Tag	Note
0186	Reverse Words in a String II	C++ Python	O(n)	O(1)	Medium		
0214	Shortest Palindrome	C++ Python	O(n)	O(n)	Hard		KMP Algorithm Manacher's Algorithm
0242	Valid Anagram	C++ Python	O(n)	O(1)	Easy	LintCode	
0271	Encode and Decode Strings	C++ Python	O(n)	O(1)	Medium		
0273	Integer to English Words	C++ Python	O(1)	O(1)	Hard		
0306	Addictive Number	C++ Python	O(n^3)	O(n)	Medium		
0383	Ransom Note	C++ Python	O(n)	O(1)	Easy	EPI	
0405	Convert a Number to Hexadecimal	C++ Python	O(n)	O(1)	Easy		
0408	Valid Word Abbreviation	C++ Python	O(n)	O(1)	Easy		
0415	Add Strings	C++ Python	O(n)	O(1)	Easy		
0420	Strong Password Checker	C++ Python	O(n)	O(1)	Hard		
0434	Number of Segments in a String	C++ Python	O(n)	O(1)	Easy		
0443	String Compression	C++ Python	O(n)	O(1)	Easy		
0459	Repeated Substring Pattern	C++ Python	O(n)	O(n)	Easy		KMP Algorithm
0468	Validate IP Address	C++ Python	O(1)	O(1)	Medium		
0482	License Key Formatting	C++ Python	O(n)	O(1)	Easy		
0520	Detect Capital	C++ Python	O(I)	O(1)	Easy		
0521	Longest Uncommon Subsequence I	C++ Python	O(min(a, b))	O(1)	Easy		
0522	Longest Uncommon Subsequence II	C++ Python	O(l * n^2)	O(1)	Medium		Sort
0524	Longest Word in Dictionary through Deleting	C++ Python	O((d * l) * logd)	O(1)	Medium		Sort
0527	Word Abbreviation	C++ Python	O(n * I) ~ O(n^2 * I^2)	O(n * I)	Hard		

#	Title	Solution	Time	Space	Difficulty	Tag	Note
0539	Minimum Time Difference	C++ Python	O(nlogn)	O(n)	Medium		
0541	Reverse String II	C++ Python	O(n)	O(1)	Easy		
0551	Student Attendance Record I	C++ Python	O(n)	O(1)	Easy		
0556	Next Greater Element III	C++ Python	O(1)	O(1)	Medium		
0557	Reverse Words in a String III	C++ Python	O(n)	O(1)	Easy		
0564	Find the Closest Palindrome	C++ Python	O(I)	O(l)	Hard		
0591	Tag Validator	C++ Python	O(n)	O(n)	Hard		
0616	Add Bold Tag in String	C++ Python	O(n * d * I)	O(n)	Medium		
0647	Palindromic Substrings	C++ Python	O(n)	O(n)	Medium		Manacher's Algorithm
0648	Replace Words	C++ Python	O(n)	O(t)	Medium		Trie
0657	Judge Route Circle	C++ Python	O(n)	O(1)	Easy		
0678	Valid Parenthesis String	C++ Python	O(n)	O(1)	Medium		
0680	Valid Palindrome II	C++ Python	O(n)	O(1)	Easy		
0681	Next Closest Time	C++ Python	O(1)	O(1)	Medium		
0686	Repeated String Match	C++ Python	O(n + m)	O(1)	Easy		Rabin-Karp Algorithm
0696	Count Binary Substrings	C++ Python	O(n)	O(1)	Easy		
0720	Longest Word in Dictionary	C++ Python	O(n)	O(t)	Easy		Trie
0722	Remove Comments	C++ Python	O(n)	O(k)	Medium		
0751	IP to CIDR	C++ Python	O(n)	O(1)	Medium		
0758	Bold Words in String	C++ Python	O(n * l)	O(t)	Easy	, variant of Add Bold Tag in String	
0791	Custom Sort String	C++ Python	O(n)	O(1)	Medium		

#	Title	Solution	Time	Space	Difficulty	Tag	Note
0796	Rotate String	C++ Python	O(n)	O(1)	Easy		KMP Algorithm Rabin-Karp Algorithm
0804	Unique Morse Code Words	C++ Python	O(n)	O(n)	Easy		
0806	Number of Lines To Write String	C++ Python	O(n)	O(1)	Easy		
0809	Expressive Words	C++ Python	O(n + s)	O(l + s)	Medium		
0816	Ambiguous Coordinates	C++ Python	O(n^4)	O(n)	Medium		
0819	Most Common Word	C++ Python	O(m + n)	O(m + n)	Easy		
0820	Short Encoding of Words	C++ Python	O(n)	O(t)	Medium		Trie
0824	Goat Latin	C++ Python	O(n + w^2)	O(I)	Easy		
0831	Masking Personal Information	C++ Python	O(1)	O(1)	Medium		
0833	Find And Replace in String	C++ Python	O(n + m)	O(n)	Medium		
0839	Similar String Groups	C++ Python	O(n^2 * I)	O(n)	Hard		Union Find
0848	Shifting Letters	C++ Python	O(n)	O(1)	Medium		
0859	Buddy Strings	C++ Python	O(n)	O(1)	Easy		
0880	Decoded String at Index	C++ Python	O(n)	O(1)	Medium		
0884	Uncommon Words from Two Sentences	C++ Python	O(m + n)	O(m + n)	Easy		
0890	Find and Replace Pattern	C++ Python	O(n * l)	O(1)	Medium		
0893	Groups of Special- Equivalent Strings	C++ Python	O(n * l)	O(n)	Easy		
0916	Word Subsets	C++ Python	O(m + n)	O(1)	Medium		
0917	Reverse Only Letters	C++ Python	O(n)	O(1)	Easy		
0925	Long Pressed Name	C++ Python	O(n)	O(1)	Easy		
0929	Unique Email Addresses	C++ Python	O(n * l)	O(n * I)	Easy		
0939	Minimum Area Rectangle	C++ Python	O(n^1.5) on average	O(n)	Medium		

#	Title	Solution	Time	Space	Difficulty	Tag	Note
0942	DI String Match	C++ Python	O(n)	O(1)	Easy		
0944	Delete Columns to Make Sorted	C++ Python	O(n * l)	O(1)	Medium		
0953	Verifying an Alien Dictionary	C++ Python	O(n * l)	O(1)	Easy		
0955	Delete Columns to Make Sorted II	C++ Python	O(n * l)	O(n)	Medium		
1016	Binary String With Substrings Representing 1 To N	C++ Python	O(n^2)	O(1)	Medium		
1023	Camelcase Matching	C++ Python	O(n * l)	O(1)	Medium		
1061	Lexicographically Smallest Equivalent String	C++ Python	O(n)	O(n)	Medium		Union Find
1056	Confusing Number	C++ Python	O(logn)	O(1)	Easy		
1071	Greatest Common Divisor of Strings	C++ Python	O(m + n)	O(1)	Easy		

# **Linked List**

#	Title	Solution	Time	Space	Difficulty	Tag	Note
0002	Add Two Numbers	C++ Python	O(n)	O(1)	Medium		
0021	Merge Two Sorted Lists	C++ Python	O(n)	O(1)	Easy		
0023	Merge k Sorted Lists	C++ Python	O(nlogk)	O(1)	Hard		Heap, Divide and Conquer
0024	Swap Nodes in Pairs	C++ Python	O(n)	O(1)	Easy		
0025	Reverse Nodes in k-Group	C++ Python	O(n)	O(1)	Hard		
0061	Rotate List	C++ Python	O(n)	O(1)	Medium		
0082	Remove Duplicates from Sorted List II	C++ Python	O(n)	O(1)	Medium		
0083	Remove Duplicates from Sorted List	C++ Python	O(n)	O(1)	Easy		
0092	Reverse Linked List II	C++ Python	O(n)	O(1)	Medium		
0138	Copy List with Random Pointer	C++ Python	O(n)	O(1)	Medium		
0160	Intersection of Two Linked Lists	C++ Python	O(m + n)	O(1)	Easy		

#	Title	Solution	Time	Space	Difficulty	Tag	Note
0203	Remove Linked List Elements	C++ Python	O(n)	O(1)	Easy		
0206	Reverse Linked List	C++ Python	O(n)	O(1)	Easy		
0234	Palindrome Linked List	C++ Python	O(n)	O(1)	Easy		
0237	Delete Node in a Linked List	C++ Python	O(1)	O(1)	Easy	LintCode	
0328	Odd Even Linked List	C++ Python	O(n)	O(1)	Medium		
0369	Plus One Linked List	C++ Python	O(n)	O(1)	Medium		Two Pointers
0445	Add Two Numbers II	C++ Python	O(m + n)	O(m + n)	Medium		
0725	Split Linked List in Parts	C++ Python	O(n + k)	O(1)	Medium		
0817	Linked List Components	C++ Python	O(m + n)	O(m)	Medium		
0986	Interval List Intersections	C++ Python	O(m + n)	O(1)	Medium		

## Stack

#	Title	Solution	Time	Space	Difficulty	Tag	Note
0020	Valid Parentheses	C++ Python	O(n)	O(n)	Easy		
0032	Longest Valid Parentheses	C++ Python	O(n)	O(1)	Hard		
0071	Simplify Path	C++ Python	O(n)	O(n)	Medium		
0084	Largest Rectangle in Histogram	C++ Python	O(n)	O(n)	Hard		Mono Stack, DP
0085	Maximal Rectangle	C++ Python	O(m * n)	O(n)	Hard	EPI	Mono Stack
0101	Symmetric Tree	C++ Python	O(n)	O(h)	Easy		
0150	Evaluate Reverse Polish Notation	C++ Python	O(n)	O(n)	Medium		
0155	Min Stack	C++ Python	O(n)	O(1)	Easy		
0173	Binary Search Tree Iterator	C++ Python	O(1)	O(h)	Medium		
0224	Basic Calculator	C++ Python	O(n)	O(n)	Hard		
0227	Basic Calculator II	C++ Python	O(n)	O(n)	Medium		

#	Title	Solution	Time	Space	Difficulty	Tag	Note
0232	Implement Queue using Stacks	C++ Python	O(1), amortized	O(n)	Easy	EPI, LintCode	
0255	Verify Preorder Sequence in Binary Search Tree	C++ Python	O(n)	O(1)	Medium		
0272	Closest Binary Search Tree Value II	C++ Python	O(h + k)	O(h)	Hard		
0331	Verify Preorder Serialization of a Binary Tree	C++ Python	O(n)	O(1)	Medium		
0341	Flatten Nested List Iterator	C++ Python	O(n)	O(h)	Medium		Iterator
0385	Mini Parser	C++ Python	O(n)	O(h)	Medium		
0394	Decode String	C++ Python	O(n)	O(n)	Medium		
0439	Ternary Expression Parser	C++ Python	O(n)	O(1)	Medium		
0456	132 Pattern	C++ Python	O(n)	O(n)	Medium		
0636	Exclusive Time of Functions	C++ Python	O(n)	O(n)	Medium		
0682	Baseball Game	C++ Python	O(n)	O(n)	Easy		
0726	Number of Atoms	C++ Python	O(n)	O(n)	Hard		
0735	Asteroid Collision	C++ Python	O(n)	O(n)	Medium		
0736	Parse Lisp Expression	C++ Python	O(n^2)	O(n^2)	Hard		
0739	Daily Temperatures	C++ Python	O(n)	O(n)	Medium		
0770	Basic Calculator IV	C++ Python	add: O(d * t) sub: O(d * t) mul: O(d * t^2) eval: O(d * t) to_list: O(d * tlogt)	O(e + d * t)	Hard		
0772	Basic Calculator III	C++ Python	O(n)	O(n)	Hard		
0853	Car Fleet	C++ Python	O(nlogn)	O(n)	Medium		
0856	Score of Parentheses	C++ Python	O(n)	O(1)	Medium		
0872	Leaf-Similar Trees	C++ Python	O(n)	O(h)	Easy		

#	Title	Solution	Time	Space	Difficulty	Tag	Note
0895	Maximum Frequency Stack	C++ Python	O(1)	O(n)	Hard		Hash
0901	Online Stock Span	C++ Python	O(n)	O(n)	Medium		
0921	Minimum Add to Make Parentheses Valid	C++ Python	O(n)	O(1)	Medium		
0946	Validate Stack Sequences	C++ Python	O(n)	O(n)	Medium		
1003	Check If Word Is Valid After Substitutions	C++ Python	O(n)	O(n)	Medium		
1019	Next Greater Node In Linked List	C++ Python	O(n)	O(n)	Medium		Mono Stack
1021	Remove Outermost Parentheses	C++ Python	O(n)	O(1)	Easy		
1047	Remove All Adjacent Duplicates In String	C++ Python	O(n)	O(n)	Easy		
1063	Number of Valid Subarrays	C++ Python	O(n)	O(n)	Hard		Mono Stack

## Queue

#	Title	Solution	Time	Space	Difficulty	Tag	Note
0239	Sliding Window Maximum	C++ Python	O(n)	O(k)	Hard	EPI, LintCode	
0281	Zigzag Iterator	C++ Python	O(n)	O(k)	Medium		
0346	Moving Average from Data Stream	C++ Python	O(1)	O(w)	Easy		
0862	Shortest Subarray with Sum at Least K	C++ Python	O(n)	O(n)	Hard		
0933	Number of Recent Calls	C++ Python	O(1) on average	O(w)	Easy		

## Heap

#	Title	Solution	Time	Space	Difficulty	Tag	Note
0264	Ugly Number II	C++ Python	O(n)	O(1)	Medium	CTCI, LintCode	BST, Heap
0295	Find Median from Data Stream	C++ Python	O(nlogn)	O(n)	Hard	EPI, LintCode	BST, Heap
0313	Super Ugly Number	C++ Python	O(n * k)	O(n + k)	Medium		BST, Heap
0358	Rearrange String k Distance Apart	C++ Python	O(n)	O(n)	Hard		Greedy, Heap
0373	Find K Pairs with Smallest Sums	C++ Python	O(k * log(min(n, m, k)))	O(min(n, m, k))	Medium		

#	Title	Solution	Time	Space	Difficulty	Tag	Note
0378	Kth Smallest Element in a Sorted Matrix	C++ Python	O(k * log(min(n, m, k)))	O(min(n, m, k))	Medium	LintCode	
0407	Trapping Rain Water II	C++ Python	O(m * n * (logm + logn))	O(m * n)	Hard	LintCode	
0632	Smallest Range	C++ Python	O(nlogk)	O(k)	Hard		
0703	Kth Largest Element in a Stream	C++ Python	O(nlogk)	O(k)	Easy		
0846	Hand of Straights	C++ Python	O(nlogn)	O(n)	Medium		
0855	Exam Room	C++ Python	seat: O(logn) leave: O(logn)	O(n)	Medium		BST, Hash
0857	Minimum Cost to Hire K Workers	C++ Python	O(nlogn)	O(n)	Hard		Sort
0871	Minimum Number of Refueling Stops	C++ Python	O(nlogn)	O(n)	Hard		Sort
1046	Last Stone Weight	C++ Python	O(nlogn)	O(n)	Easy		
1057	Campus Bikes	C++ Python	O((w * b) * log(w * b))	O(w * b)	Medium		

## Tree

#	Title	Solution	Time	Space	Difficulty	Tag	Note
0094	Binary Tree Inorder Traversal	C++ Python	O(n)	O(1)	Medium		Morris Traversal
0099	Recover Binary Search Tree	C++ Python	O(n)	O(1)	Hard		Morris Traversal
0144	Binary Tree Preorder Traversal	C++ Python	O(n)	O(1)	Medium		Morris Traversal
0145	Binary Tree Postorder Traversal	C++ Python	O(n)	O(1)	Hard		Morris Traversal
0208	Implement Trie (Prefix Tree)	C++ Python	O(n)	O(1)	Medium		Trie
0211	Add and Search Word - Data structure design	C++ Python	O(min(n, h))	O(min(n, h))	Medium		Trie, DFS
0226	Invert Binary Tree	C++ Python	O(n)	O(h), O(w)	Easy		
0297	Serialize and Deserialize Binary Tree	C++ Python	O(n)	O(h)	Hard	LintCode	DFS
0307	Range Sum Query - Mutable	C++ Python	ctor: O(n), update: O(logn), query: O(logn)	O(n)	Medium	LintCode	DFS, Segment Tree, BIT

#	Title	Solution	Time	Space	Difficulty	Tag	Note
0308	Range Sum Query 2D - Mutable	C++ Python	ctor: O(m * n), update: O(logm + logn), query: O(logm + logn)	O(m * n)	Hard		DFS, Segment Tree, BIT
0315	Count of Smaller Numbers After Self	C++ Python	O(nlogn)	O(n)	Hard	LintCode	BST, BIT, Divide and Conquer
0525	Contiguous Array	C++ Python	O(n)	O(n)	Medium		
0529	Minesweeper	C++ Python	O(m * n)	O(m + n)	Medium		
0536	Construct Binary Tree from String	C++ Python	O(n)	O(h)	Medium		
0538	Convert BST to Greater Tree	C++ Python	O(n)	O(h)	Easy		
0543	Diameter of Binary Tree	C++ Python	O(n)	O(h)	Easy		
0545	Boundary of Binary Tree	C++ Python	O(n)	O(h)	Medium		
0548	Split Array with Equal Sum	C++ Python	O(n^2)	O(n)	Medium		
0563	Binary Tree Tilt	C++ Python	O(n)	O(n)	Easy		
0572	Subtree of Another Tree	C++ Python	O(m * n)	O(h)	Easy		
0606	Construct String from Binary Tree	C++ Python	O(n)	O(h)	Easy		
0617	Merge Two Binary Trees	C++ Python	O(n)	O(h)	Easy		
0623	Add One Row to Tree	C++ Python	O(n)	O(h)	Medium		
0637	Average of Levels in Binary Tree	C++ Python	O(n)	O(h)	Easy		
0652	Find Duplicate Subtrees	C++ Python	O(n)	O(n)	Medium		DFS, Hash
0653	Two Sum IV - Input is a BST	C++ Python	O(n)	O(h)	Easy		Two Pointers
0654	Maximum Binary Tree	C++ Python	O(n)	O(n)	Medium	LintCode	Mono Stack
0655	Print Binary Tree	C++ Python	O(n)	O(h)	Medium		
0662	Maximum Width of Binary Tree	C++ Python	O(n)	O(h)	Medium		DFS
0663	Equal Tree Partition	C++ Python	O(n)	O(n)	Medium		Hash
0677	Map Sum Pairs	C++ Python	O(n)	O(t)	Medium		Trie

#	Title	Solution	Time	Space	Difficulty	Tag	Note
0684	Redundant Connection	C++ Python	O(n)	O(n)	Medium		Union Find
0685	Redundant Connection II	C++ Python	O(n)	O(n)	Hard		Union Find
0687	Longest Univalue Path	C++ Python	O(n)	O(h)	Easy		
0699	Falling Squares	C++ Python	O(nlogn)	O(n)	Hard		Segment Tree
0814	Binary Tree Pruning	C++ Python	O(n)	O(h)	Medium		DFS
0850	Rectangle Area II	C++ Python	O(nlogn)	O(n)	Hard		Segment Tree
0863	All Nodes Distance K in Binary Tree	C++ Python	O(n)	O(n)	Medium		DFS + BFS
0866	Smallest Subtree with all the Deepest Nodes	C++ Python	O(n)	O(h)	Medium		DFS
0889	Construct Binary Tree from Preorder and Postorder Traversal	C++ Python	O(n)	O(h)	Medium		DFS, stack
0897	Increasing Order Search Tree	C++ Python	O(n)	O(h)	Easy		DFS
0919	Complete Binary Tree Inserter	C++ Python	ctor: O(n) insert: O(1) get_root: O(1)	O(n)	Medium		
0938	Range Sum of BST	C++ Python	O(n)	O(h)	Medium		DFS
0951	Flip Equivalent Binary Trees	C++ Python	O(n)	O(h)	Medium		DFS
0958	Check Completeness of a Binary Tree	C++ Python	O(n)	O(w)	Medium		BFS
0965	Univalued Binary Tree	C++ Python	O(n)	O(h)	Easy		DFS
0971	Flip Binary Tree To Match Preorder Traversal	C++ Python	O(n)	O(h)	Medium		DFS
0979	Distribute Coins in Binary Tree	C++ Python	O(n)	O(h)	Medium		DFS
0987	Vertical Order Traversal of a Binary Tree	C++ Python	O(nlogn)	O(n)	Medium		DFS
0988	Smallest String Starting From Leaf	C++ Python	O(n + l * h)	O(h)	Medium		DFS
0993	Cousins in Binary Tree	C++ Python	O(n)	O(h)	Easy		DFS

#	Title	Solution	Time	Space	Difficulty	Tag	Note
0998	Maximum Binary Tree II	C++ Python	O(h)	O(1)	Medium		
1008	Construct Binary Search Tree from Preorder Traversal	C++ Python	O(n)	O(h)	Medium		
1022	Sum of Root To Leaf Binary Numbers	C++ Python	O(n)	O(h)	Easy		
1026	Maximum Difference Between Node and Ancestor	C++ Python	O(n)	O(h)	Medium		DFS
1028	Recover a Tree From Preorder Traversal	C++ Python	O(n)	O(h)	Hard		DFS
1032	Stream of Characters	C++ C++ Python Python	ctor: <i>O(n)</i> query: <i>O(m)</i>	O(t)	Hard		Aho- Corasick Automata, Trie
1038	Binary Search Tree to Greater Sum Tree	C++ Python	O(n)	O(h)	Medium		DFS
1065	Index Pairs of a String	C++ Python	O(n + m + z)	O(t)	Easy		Aho- Corasick Automata, Trie

## **Hash Table**

#	Title	Solution	Time	Space	Difficulty	Tag	Note
0001	Two Sum	C++ Python	O(n)	O(n)	Easy		
0003	Longest Substring Without Repeating Characters	C++ Python	O(n)	O(1)	Medium		
0030	Substring with Concatenation of All Words	C++ Python	O((m + n) * k)	O(n * k)	Hard		
0036	Valid Sudoku	C++ Python	O(9^2)	0(9)	Easy		
0049	Group Anagrams	C++ Python	O(n * glogg)	O(n)	Medium		
0076	Minimum Window Substring	C++ Python	O(n)	O(k)	Hard		
0149	Max Points on a Line	C++ Python	O(n^2)	O(n)	Hard		
0159	Longest Substring with At Most Two Distinct Characters	C++ Python	O(n)	O(1)	Hard		
0170	Two Sum III - Data structure design	C++ Python	O(n)	O(n)	Easy		
0187	Repeated DNA Sequences	Python	O(n)	O(n)	Medium		

#	Title	Solution	Time	Space	Difficulty	Tag	Note
0202	Happy Number	C++ Python	O(k)	O(k)	Easy		
0204	Count Primes	C++ Python	O(n)	O(n)	Easy		
0205	Isomorphic Strings	C++ Python	O(n)	O(1)	Easy		
0217	Contains Duplicate	C++ Python	O(n)	O(n)	Easy		
0219	Contains Duplicate II	C++ Python	O(n)	O(n)	Easy		
0244	Shortest Word Distance II	C++ Python	ctor: O(n), lookup: O(a + b)	O(n)	Medium		
0246	Strobogrammatic Number	C++ Python	O(n)	O(1)	Easy		
0249	Group Shifted Strings	C++ Python	O(nlogn)	O(n)	Easy		
0266	Palindrome Permutation	C++ Python	O(n)	O(1)	Easy		
0288	Unique Word Abbreviation	C++ Python	ctor: O(n), lookup: O(1)	O(k)	Easy		
0290	Word Pattern	C++ Python	O(n)	O(c)	Easy	variant of Isomorphic Strings	
0299	Bulls and Cows	C++ Python	O(n)	O(1)	Easy		
0305	Number of Islands II	C++ Python	O(k)	O(k)	Hard	LintCode,	Union Find
0314	Binary Tree Vertical Order Traversal	C++ Python	O(n)	O(n)	Medium		BFS
0323	Number of Connected Components in an Undirected Graph	C++ Python	O(n)	O(n)	Medium		Union Find
0325	Maximum Size Subarray Sum Equals k	C++ Python	O(n)	O(n)	Medium		
0336	Palindrome Pairs	C++ Python	O(n * k^2)	O(n * k)	Hard		
0340	Longest Substring with At Most K Distinct Characters	C++ Python	O(n)	O(1)	Hard		
0356	Line Reflection	C++ Python	O(n)	O(n)	Medium		Hash, Two Pointers
0387	First Unique Character in a String	C++ Python	O(n)	O(n)	Easy		
0388	Longest Absolute File Path	C++ Python	O(n)	O(d)	Medium		Stack

#	Title	Solution	Time	Space	Difficulty	Tag	Note
0409	Longest Palindrome	C++ Python	O(n)	O(1)	Easy		
0424	Longest Repeating Character Replacement	C++ Python	O(n)	O(1)	Medium		
0438	Find All Anagrams in a String	C++ Python	O(n)	O(1)	Easy		
0447	Number of Boomerangs	C++ Python	O(n^2)	O(n)	Easy		
0454	4Sum II	C++ Python	O(n^2)	O(n^2)	Medium		
0470	Implement Rand10() Using Rand7()	C++ Python	O(1)	O(1)	Medium		
0473	Matchsticks to Square	C++ Python	O(n * s * 2^n)	O(n * (2^n + s))	Medium		
0523	Continuous Subarray Sum	C++ Python	O(n)	O(k)	Medium		
0532	K-diff Pairs in an Array	C++ Python	O(n)	O(n)	Easy		
0554	Brick Wall	C++ Python	O(n)	O(m)	Medium		
0560	Subarray Sum Equals K	C++ Python	O(n)	O(n)	Medium		
0561	Array Partition I	C++ Python	O(r)	O(r)	Easy		
0575	Distribute Candies	C++ Python	O(n)	O(n)	Easy		
0594	Longest Harmonious Subsequence	C++ Python	O(n)	O(n)	Easy		
0599	Minimum Index Sum of Two Lists	C++ Python	O((m + n) * l)	O(m * I)	Easy		
0609	Find Duplicate File in System	C++ Python	O(n * l)	O(n * I)	Medium		
0721	Accounts Merge	C++ Python	O(nlogn)	O(n)	Medium		Union Find
0734	Sentence Similarity	C++ Python	O(n + p)	O(p)	Easy		
0737	Sentence Similarity II	C++ Python	O(n + p)	O(p)	Medium		Union Find
0748	Shortest Completing Word	C++ Python	O(n)	O(1)	Easy		
0760	Find Anagram Mappings	C++ Python	O(n)	O(n)	Easy		
0771	Jewels and Stones	C++ Python	O(m + n)	O(n)	Easy		
0811	Subdomain Visit Count	C++ Python	O(n)	O(n)	Easy		

#	Title	Solution	Time	Space	Difficulty	Tag	Note
0822	Card Flipping Game	C++ Python	O(n)	O(n)	Medium		
0825	Friends Of Appropriate Ages	C++ Python	O(a^2 + n)	O(a)	Medium		
0869	Reordered Power of 2	C++ Python	O(1)	O(1)	Medium		
0873	Length of Longest Fibonacci Subsequence	C++ Python	O(n^2)	O(n)	Medium		
0957	Prison Cells After N Days	C++ Python	O(1)	O(1)	Medium		
0966	Vowel Spellchecker	C++ Python	O(n)	O(w)	Medium		
0974	Subarray Sums Divisible by K	C++ Python	O(n)	O(k)	Medium	variant of Subarray Sum Equals K	
0982	Triples with Bitwise AND Equal To Zero	C++ Python	O(nlogn)	O(n)	Hard		Math, Fast Wavelet Transform (FWT)
0992	Subarrays with K Different Integers	C++ Python	O(n)	O(k)	Hard		Two Pointers
1001	Grid Illumination	C++ Python	O(l + q)	O(I)	Hard		

### Math

#	Title	Solution	Time	Space	Difficulty	Tag	Note
0007	Reverse Integer	C++ Python	O(1)	O(1)	Easy		
0009	Palindrome Number	C++ Python	O(1)	O(1)	Easy		
0012	Integer to Roman	C++ Python	O(n)	O(1)	Medium		
0013	Roman to Integer	C++ Python	O(n)	O(1)	Easy		
0029	Divide Two Integers	C++ Python	O(1)	O(1)	Medium		
0050	Pow(x, n)	C++ Python	O(1)	O(1)	Medium		
0060	Permutation Sequence	C++ Python	O(n^2)	O(n)	Medium		Cantor Ordering
0065	Valid Number	C++ Python	O(n)	O(1)	Hard		Automata
0089	Gray Code	C++ Python	O(2^n)	O(1)	Medium		

#	Title	Solution	Time	Space	Difficulty	Tag	Note
0166	Fraction to Recurring Decimal	C++ Python	O(logn)	O(1)	Medium		
0168	Excel Sheet Column Title	C++ Python	O(logn)	O(1)	Easy		
0171	Excel Sheet Column Number	C++ Python	O(n)	O(1)	Easy		
0172	Factorial Trailing Zeroes	C++ Python	O(1)	O(1)	Easy		
0223	Rectangle Area	C++ Python	O(1)	O(1)	Easy		
0233	Number of Digit One	C++ Python	O(1)	O(1)	Hard	CTCI, LintCode	
0248	Strobogrammatic Number III	C++ Python	O(5^(n/2))	O(n)	Hard		
0258	Add Digits	C++ Python	O(1)	O(1)	Easy		
0263	Ugly Number	C++ Python	O(1)	O(1)	Easy		
0292	Nim Game	C++ Python	O(1)	O(1)	Easy	LintCode	
0319	Bulb Switcher	C++ Python	O(1)	O(1)	Medium		
0326	Power of Three	C++ Python	O(1)	O(1)	Easy		
0335	Self Crossing	C++ Python	O(n)	O(1)	Hard		
0338	Counting Bits	C++ Python	O(n)	O(n)	Medium		
0343	Integer Break	C++ Python	O(logn)	O(1)	Medium		Tricky, DP
0365	Water and Jug Problem	C++ Python	O(logn)	O(1)	Medium		Bézout's identity
0372	Super Pow	C++ Python	O(n)	O(1)	Medium		
0382	Linked List Random Node	C++ Python	O(n)	O(1)	Medium		Reservoir Sampling
0386	Lexicographical Numbers	C++ Python	O(n)	O(1)	Medium		
0390	Elimination Game	C++ Python	O(logn)	O(1)	Medium		
0391	Perfect Rectangle	C++ Python	O(n)	O(n)	Hard		
0398	Random Pick Index	C++ Python	O(n)	O(1)	Medium		Reservoir Sampling
0400	Nth Digit	C++ Python	O(logn)	O(1)	Easy		

#	Title	Solution	Time	Space	Difficulty	Tag	Note
0413	Arithmetic Slices	C++ Python	O(n)	O(1)	Medium		
0423	Reconstruct Original Digits from English	C++ Python	O(n)	O(1)	Medium	GCJ2016 - Round 1B	
0441	Arranging Coins	C++ Python	O(nlogn)	O(1)	Easy		Binary Search
0453	Minimum Moves to Equal Array Elements	C++ Python	O(n)	O(1)	Easy		
0458	Poor Pigs	C++ Python	O(n)	O(1)	Easy		
0469	Convex Polygon	C++ Python	O(n)	O(1)	Medium		
0470	Implement Rand10() Using Rand7()	C++ Python	O(1)	O(1)	Medium		
0478	Generate Random Point in a Circle	C++ Python	O(1)	O(1)	Medium		
0497	Random Point in Non- overlapping Rectangles	C++ Python	ctor: O(n) pick: O(logn)	O(n)	Medium		
0517	Super Washing Machines	C++ Python	O(n)	O(1)	Hard		
0519	Random Flip Matrix	C++ Python	ctor: <i>O(1)</i> pick: <i>O(1)</i> reset: <i>O(n)</i>	O(n)	Medium		
0528	Random Pick with Weight	C++ Python	ctor: O(n) pick: O(logn)	O(n)	Medium		
0537	Complex Number Multiplication	C++ Python	O(1)	O(1)	Medium		
0553	Optimal Division	C++ Python	O(n)	O(1)	Medium		
0573	Squirrel Simulation	C++ Python	O(n)	O(1)	Medium		
0592	Fraction Addition and Subtraction	C++ Python	O(nlogx)	O(n)	Medium		
0593	Valid Square	C++ Python	O(1)	O(1)	Medium		
0598	Range Addition II	C++ Python	O(p)	O(1)	Easy		
0625	Minimum Factorization	C++ Python	O(loga)	O(1)	Medium		
0628	Maximum Product of Three Numbers	C++ Python	O(n)	O(1)	Easy		
0633	Sum of Square Numbers	C++ Python	O(sqrt(c) * logc)	O(1)	Easy		
0634	Find the Derangement of An Array	C++ Python	O(n)	O(1)	Medium		

#	Title	Solution	Time	Space	Difficulty	Tag	Note
0640	Solve the Equation	C++ Python	O(n)	O(n)	Medium		
0651	4 Keys Keyboard	C++ Python	O(1)	O(1)	Medium		Math, DP
0660	Remove 9	C++ Python	O(logn)	O(1)	Hard		
0672	Bulb Switcher II	C++ Python	O(1)	O(1)	Medium		
0728	Self Dividing Numbers	C++ Python	O(n)	O(1)	Medium		
0754	Reach a Number	C++ Python	O(logn)	O(1)	Medium		
0775	Global and Local Inversions	C++ Python	O(n)	O(1)	Medium		
0779	K-th Symbol in Grammar	C++ Python	O(1)	O(1)	Medium		
0780	Reaching Points	C++ Python	O(log(max(m, n)))	O(1)	Hard		
0781	Rabbits in Forest	C++ Python	O(n)	O(n)	Medium		
0782	Transform to Chessboard	C++ Python	O(n^2)	O(n)	Hard		
0789	Escape The Ghosts	C++ Python	O(n)	O(1)	Medium		
0800	Similar RGB Color	C++ Python	O(1)	O(1)	Easy		
0810	Chalkboard XOR Game	C++ Python	O(1)	O(1)	Hard		
0812	Largest Triangle Area	C++ Python	O(n^3)	O(1)	Easy		
0829	Consecutive Numbers Sum	C++ Python	O(sqrt(n))	O(1)	Medium		
0836	Rectangle Overlap	C++ Python	O(1)	O(1)	Easy		
0858	Mirror Reflection	C++ Python	O(1)	O(1)	Medium		
0867	Prime Palindrome	C++ Python	O(n^(1/2) * (logn + n^(1/2)))	O(logn)	Medium		
0883	Projection Area of 3D Shapes	C++ Python	O(n^2)	O(1)	Easy		
0887	Super Egg Drop	C++ Python	O(klogn)	O(1)	Hard		
0891	Sum of Subsequence Widths	C++ Python	O(n)	O(1)	Hard		
0899	Orderly Queue	C++ Python	O(n^2)	O(n)	Hard		

#	Title	Solution	Time	Space	Difficulty	Tag	Note
0902	Numbers At Most N Given Digit Set	C++ Python	O(logn)	O(logn)	Hard		
0906	Super Palindromes	C++ Python	O(n^0.25 * logn)	O(logn)	Hard		
0907	Sum of Subarray Minimums	C++ Python	O(n)	O(n)	Medium		Mono Stack
0908	Smallest Range I	C++ Python	O(n)	O(1)	Easy		
0910	Smallest Range II	C++ Python	O(nlogn)	O(1)	Medium		
0914	X of a Kind in a Deck of Cards	C++ Python	O(n * (logn)^2)	O(n)	Easy		
0963	Minimum Area Rectangle II	C++ Python	O(n^2) ~ O(n^3)	O(n^2)	Medium		
0970	Powerful Integers	C++ Python	O((logn)^2)	O(r)	Easy		
0972	Equal Rational Numbers	C++ Python	O(1)	O(1)	Hard		
1006	Clumsy Factorial	C++ Python	O(1)	O(1)	Medium		
1009	Complement of Base 10 Integer	C++ Python	O(logn)	O(1)	Easy		
1012	Numbers With Repeated Digits	C++ Python	O(logn)	O(logn)	Hard		
1015	Smallest Integer Divisible by K	C++ Python	O(k)	O(1)	Medium		
1017	Convert to Base -2	C++ Python	O(logn)	O(1)	Medium		
1025	Divisor Game	C++ Python	O(1)	O(1)	Easy		DP
1037	Valid Boomerang	C++ Python	O(1)	O(1)	Easy		
1041	Robot Bounded In Circle	C++ Python	O(n)	O(1)	Easy		
1067	Digit Count in Range	C++ Python	O(logn)	O(1)	Hard	, variant of Number of Digit One	
1073	Adding Two Negabinary Numbers	C++ Python	O(n)	O(n)	Medium		

### Sort

#	Title	Solution	Time	Space	Difficulty	Tag	Note
0056	Merge Intervals	C++ Python	O(nlogn)	O(1)	Hard		

#	Title	Solution	Time	Space	Difficulty	Tag	Note
0057	Insert Interval	C++ Python	O(n)	O(1)	Hard		
0075	Sort Colors	C++ Python	O(n)	O(1)	Medium		Tri Partition
0088	Merge Sorted Array	C++ Python	O(n)	O(1)	Easy		
0147	Insertion Sort List	C++ Python	O(n^2)	O(1)	Medium		
0148	Sort List	C++ Python	O(nlogn)	O(logn)	Medium		
0164	Maximum Gap	C++ Python	O(n)	O(n)	Hard		Tricky
0179	Largest Number	C++ Python	O(nlogn)	O(1)	Medium		
0218	The Skyline Problem	C++ Python	O(nlogn)	O(n)	Hard		Sort, BST
0252	Meeting Rooms	C++ Python	O(nlogn)	O(n)	Easy		
0253	Meeting Rooms II	C++ Python	O(nlogn)	O(n)	Medium		
0274	H-Index	C++ Python	O(n)	O(n)	Medium		Counting Sort
0280	Wiggle Sort	C++ Python	O(n)	O(1)	Medium		
0324	Wiggle Sort II	C++ Python	O(n) on average	O(1)	Medium	variant of Sort Colors	Tri Partition
0347	Top K Frequent Elements	C++ Python	O(n)	O(n)	Medium		Quick Select, Heap, Bucket Sort
0406	Queue Reconstruction by Height	C++ Python	O(n * sqrt(n))	O(n)	Medium		Tricky
0451	Sort Characters By Frequency	C++ Python	O(n)	O(n)	Medium		
0692	Top K Frequent Words	C++ Python	O(n + klogk) on average	O(n)	Medium		Quick Select, Heap, Bucket Sort
0912	Sort an Array	C++ Python	O(nlogn)	O(n)	Medium		Merge Sort, Quick Sort
0937	Reorder Log Files	C++ Python	O(nlogn * l)	O(I)	Easy		
0969	Pancake Sorting	C++ Python	O(n^2)	O(I)	Medium		
0973	K Closest Points to Origin	C++ Python	O(n) on average	O(1)	Easy		Quick Select, Heap

#	Title	Solution	Time	Space	Difficulty	Tag	Note
0976	Largest Perimeter Triangle	C++ Python	O(nlogn)	O(1)	Easy		
1054	Distant Barcodes	C++ Python	O(klogk)	O(k)	Medium	variant of Rearrange String k Distance Apart	

#### **Two Pointers**

#	Title	Solution	Time	Space	Difficulty	Tag	Note
0019	Remove Nth Node From End of List	C++ Python	O(n)	O(1)	Medium		
0086	Partition List	C++ Python	O(n)	O(1)	Medium		
0141	Linked List Cycle	C++ Python	O(n)	O(1)	Easy		
0142	Linked List Cycle II	C++ Python	O(n)	O(1)	Medium		
0143	Reorder List	C++ Python	O(n)	O(1)	Medium		
0167	Two Sum II - Input array is sorted	C++ Python	O(n)	O(1)	Medium		
0259	3Sum Smaller	C++ Python	O(n^2)	O(1)	Medium	, LintCode	
0283	Move Zeroes	C++ Python	O(n)	O(1)	Easy		
0287	Find the Duplicate Number	C++ Python	O(n)	O(1)	Hard		Binary Search, Two Pointers
0344	Reverse String	C++ Python	O(n)	O(1)	Easy		
0345	Reverse Vowels of a String	C++ Python	O(n)	O(1)	Easy		
0349	Intersection of Two Arrays	C++ Python	O(m + n)	O(min(m, n))	Easy	EPI	Hash, Binary Search
0350	Intersection of Two Arrays II	C++ Python	O(m + n)	O(1)	Easy	EPI	Hash, Binary Search
0360	Sort Transformed Array	C++ Python	O(n)	O(1)	Medium		
0457	Circular Array Loop	C++ Python	O(n)	O(1)	Medium		
0567	Permutation in String	C++ Python	O(n)	O(1)	Medium		
0611	Valid Triangle Number	C++ Python	O(n^2)	O(1)	Medium		
0777	Swap Adjacent in LR String	C++ Python	O(n)	O(1)	Medium		

#	Title	Solution	Time	Space	Difficulty	Tag	Note
0826	Most Profit Assigning Work	C++ Python	O(mlogm + nlogn)	O(n)	Medium		
0828	Unique Letter String	C++ Python	O(n)	O(1)	Hard		
0844	Backspace String Compare	C++ Python	O(m + n)	O(1)	Easy		
0876	Middle of the Linked List	C++ Python	O(n)	O(1)	Easy		
0904	Fruit Into Baskets	C++ Python	O(n)	O(1)	Medium		
0930	Binary Subarrays With Sum	C++ Python	O(n)	O(1)	Medium		
0977	Squares of a Sorted Array	C++ Python	O(n)	O(1)	Easy		
1004	Max Consecutive Ones	C++ Python	O(n)	O(1)	Medium		
1033	Moving Stones Until Consecutive	C++ Python	O(1)	O(1)	Easy		
1040	Moving Stones Until Consecutive II	C++ Python	O(nlogn)	O(1)	Medium		

## Recursion

#	Title	Solution	Time	Space	Difficulty	Tag	Note
0095	Unique Binary Search Trees II	C++ Python	O(4^n / n^(3/2)	O(4^n / n^(3/2)	Medium		
0098	Validate Binary Search Tree	C++ Python	O(n)	O(1)	Medium		
0100	Same Tree	C+ Python	O(n)	O(h)	Easy		
0104	Maximum Depth of Binary Tree	C++ Python	O(n)	O(h)	Easy		
0105	Construct Binary Tree from Preorder and Inorder Traversal	C++ Python	O(n)	O(n)	Medium		
0106	Construct Binary Tree from Inorder and Postorder Traversal	C++ Python	O(n)	O(n)	Medium		
0108	Convert Sorted Array to Binary Search Tree	C++ Python	O(n)	O(logn)	Medium		
0109	Convert Sorted List to Binary Search Tree	C++ Python	O(n)	O(logn)	Medium		
0110	Balanced Binary Tree	Python	O(n)	O(h)	Easy		
0111	Minimum Depth of Binary Tree	Python	O(n)	O(h)	Easy		
0114	Flatten Binary Tree to Linked List	Python	O(n)	O(h)	Medium		
0116	Populating Next Right Pointers in Each Node	Python	O(n)	O(1)	Medium		
0124	Binary Tree Maximum Path Sum	Python	O(n)	O(h)	Hard		

#	Title	Solution	Time	Space	Difficulty	Tag	Note
0129	Sum Root to Leaf Numbers	Python	O(n)	O(h)	Medium		
0156	Binary Tree Upside Down	Python	O(n)	O(1)	Medium		
0241	Different Ways to Add Parentheses	C++ Python	O(n * 4^n / n^(3/2))	O(n * 4^n / n^(3/2))	Medium		
0298	Binary Tree Longest Consecutive Sequence	C++ Python	O(n)	O(h)	Medium		
0327	Count of Range Sum	C++ Python	O(nlogn)	O(n)	Hard		
0333	Largest BST Subtree	C++ Python	O(n)	O(h)	Medium		
0337	House Robber III	C++ Python	O(n)	O(h)	Medium		
0395	Longest Substring with At Least K Repeating Characters	C++ Python	O(n)	O(1)	Medium		
0404	Sum of Left Leaves	C++ Python	O(n)	O(h)	Easy		
0437	Path Sum III	C++ Python	O(n)	O(h)	Easy		
0544	Output Contest Matches	C++ Python	O(n)	O(n)	Medium		
0549	Binary Tree Longest Consecutive Sequence II	C++ Python	O(n)	O(h)	Medium		
0669	Trim a Binary Search Tree	C++ Python	O(n)	O(h)	Easy		
0671	Second Minimum Node In a Binary Tree	C++ Python	O(n)	O(h)	Easy		
0761	Special Binary String	C++ Python	O(n^2)	O(n)	Hard		

# **Binary Search**

#	Title	Solution	Time	Space	Difficulty	Tag	Note
0004	Median of Two Sorted Arrays	C++ Python	O(log(min(m, n)))	O(1)	Hard		
0033	Search in Rotated Sorted Array	C++ Python	O(logn)	O(1)	Hard		
0034	Search for a Range	C++ Python	O(logn)	O(1)	Medium		
0035	Search Insert Position	C++ Python	O(logn)	O(1)	Medium		
0069	Sqrt(x)	C++ Python	O(logn)	O(1)	Medium		
0074	Search a 2D Matrix	C++ Python	O(logm + logn)	O(1)	Medium		
0081	Search in Rotated Sorted Array II	C++ Python	O(logn)	O(1)	Medium		

#	Title	Solution	Time	Space	Difficulty	Tag	Note
0153	Find Minimum in Rotated Sorted Array	C++ Python	O(logn)	O(1)	Medium		
0154	Find Minimum in Rotated Sorted Array II	C++ Python	O(logn) ~ O(n)	O(1)	Hard		
0162	Find Peak Element	C++ Python	O(logn)	O(1)	Medium		
0222	Count Complete Tree Nodes	C++ Python	O((logn)^2)	O(1)	Medium		
0275	H-Index II	C++ Python	O(logn)	O(1)	Medium		Binary Search
0278	First Bad Version	C++ Python	O(logn)	O(1)	Easy	LintCode	
0300	Longest Increasing Subsequence	C++ Python	O(nlogn)	O(n)	Medium	CTCI, LintCode	Binary Search, DP
0302	Smallest Rectangle Enclosing Black Pixels	C++ Python	O(nlogn)	O(1)	Hard		
0354	Russian Doll Envelopes	C++ Python	O(nlogn)	O(1)	Hard		
0363	Max Sum of Rectangle No Larger Than K	C++ Python	O(min(m, n)^2 * max(m, n) * logn(max(m, n)))	O(max(m, n))	Hard		
0367	Valid Perfect Square	C++ Python	O(logn)	O(1)	Medium		
0374	Guess Number Higher or Lower	C++ Python	O(logn)	O(1)	Easy		
0410	Split Array Largest Sum	C++ Python	O(nlogs)	O(1)	Hard		
0436	Find Right Interval	C++ Python	O(nlogn)	O(n)	Medium		
0475	Heaters	C++ Python	O((m + n) * logn)	O(1)	Easy		
0540	Single Element in a Sorted Array	C++ Python	O(logn)	O(1)	Medium		
0658	Find K Closest Elements	C++ Python	O(logn + k)	O(1)	Medium		
0668	Kth Smallest Number in Multiplication Table	C++ Python	O(m * log(m * n))	O(1)	Hard		
0719	Find K-th Smallest Pair Distance	C++ Python	O(nlogn + nlogw)	O(1)	Hard		

#	Title	Solution	Time	Space	Difficulty	Tag	Note
0744	Find Smallest Letter Greater Than Target	C++ Python	O(logn)	O(1)	Easy		
0774	Minimize Max Distance to Gas Station	C++ Python	O(nlogr)	O(1)	Hard		
0786	K-th Smallest Prime Fraction	C++ Python	O(nlogr)	O(1)	Hard		
0793	Preimage Size of Factorial Zeroes Function	C++ Python	O((logn)^2)	O(1)	Hard		
0852	Peak Index in a Mountain Array	C++ Python	O(logn)	O(1)	Easy		
0864	Random Pick with Blacklist	C++ Python	ctor: <i>O(b)</i> pick: <i>O(1)</i>	O(b)	Hard		
0875	Koko Eating Bananas	C++ Python	O(nlogr)	O(1)	Medium		
0878	Nth Magical Number	C++ Python	O(logn)	O(1)	Hard		
0894	All Possible Full Binary Trees	C++ Python	O(n * 4^n / n^(3/2))	O(n * 4^n / n^(3/2))	Medium		
0911	Online Election	C++ Python	ctor: O(n) query : O(logn)	O(n)	Medium		
0981	Time Based Key- Value Store	C++ Python	set: O(1) get : O(logn)	O(n)	Medium		
1011	Capacity To Ship Packages Within D Days	C++ Python	O(nlogr)	O(1)	Medium		
1044	Longest Duplicate Substring	C++ Python	O(nlogn)	O(n)	Hard		Rabin- Karp Algorithm
1060	Missing Element in Sorted Array	C++ Python	O(logn)	0(1)	Medium		
1062	Longest Repeating Substring	C++ Python	O(nlogn)	O(n)	Medium		Rabin- Karp Algorithm
1064	Fixed Point	C++ Python	O(logn)	0(1)	Easy		

# **Binary Search Tree**

#	Title	Solution	Time	Space	Difficulty	Tag	Note
0220	Contains Duplicate III	C++ Python	O(nlogk)	O(k)	Medium		
0230	Kth Smallest Element in a BST	C++ Python	O(max(h, k))	O(min(h, k))	Medium		
0235	Lowest Common Ancestor of a Binary Search Tree	C++ Python	O(h)	O(1)	Easy	EPI	

#	Title	Solution	Time	Space	Difficulty	Tag	Note
0270	Closest Binary Search Tree Value	C++ Python	O(h)	O(1)	Easy		
0285	Inorder Successor in BST	C++ Python	O(h)	O(1)	Medium		
0352	Data Stream as Disjoint Intervals	C++ Python	O(logn)	O(n)	Hard		
0449	Serialize and Deserialize BST	C++ Python	O(n)	O(h)	Medium		
0450	Delete Node in a BST	C++ Python	O(h)	O(h)	Medium		
0530	Minimum Absolute Difference in BST	C++ Python	O(n)	O(h)	Easy		
0776	Split BST	C++ Python	O(n)	O(h)	Medium		
0783	Minimum Distance Between BST Nodes	C++ Python	O(n)	O(h)	Easy		
0510	Inorder Successor in BST II	C++ Python	O(h)	O(1)	Medium		

#### **Breadth-First Search**

#	Title	Solution	Time	Space	Difficulty	Tag	Note
0102	Binary Tree Level Order Traversal	C++ Python	O(n)	O(n)	Easy		
0107	Binary Tree Level Order Traversal II	C++ Python	O(n)	O(n)	Easy		
0103	Binary Tree Zigzag Level Order Traversal	Python	O(n)	O(n)	Medium		
0117	Populating Next Right Pointers in Each Node II	Python	O(n)	O(1)	Hard		
0127	Word Ladder	Python	O(n * d)	O(d)	Medium		
0130	Surrounded Regions	C++ Python	O(m * n)	O(m + n)	Medium		
0133	Clone Graph	Python	O(n)	O(n)	Medium		
0207	Course Schedule	Python	O( V  +  E )	O( E )	Medium		Topological Sort
0210	Course Schedule II	Python	O( V  +  E )	O( E )	Medium		Topological Sort
0261	Graph Valid Tree	C++ Python	O( V  +  E )	O( V  +  E )	Medium		
0269	Alien Dictionary	C++ Python	O(n)	O(1)	Hard		Topological Sort, BFS, DFS
0286	Walls and Gates	C++ Python	O(m * n)	O(g)	Medium		

#	Title	Solution	Time	Space	Difficulty	Tag	Note
0310	Minimum Height Trees	C++ Python	O(n)	O(n)	Medium		
0317	Shortest Distance from All Buildings	C++ Python	O(k * m * n)	O(m * n)	Hard		
0433	Minimum Genetic Mutation	C++ Python	O(n * b)	O(b)	Medium		
0444	Sequence Reconstruction	C++ Python	O(n * s)	O(n)	Medium		Topological Sort
0490	The Maze	C++ Python	O(max(r, c) * w)	O(w)	Medium		
0499	The Maze III	C++ Python	O(max(r, c) * wlogw)	O(w^2)	Hard		
0505	The Maze II	C++ Python	O(max(r, c) * wlogw)	O(w)	Medium		
0542	01 Matrix	C++ Python	O(m * n)	O(m * n)	Medium		DP
0666	Path Sum IV	C++ Python	O(n)	O(w)	Medium		Topological Sort
0675	Cut Off Trees for Golf Event	C++ Python	O(t * m * n)	O(m * n)	Hard		A* Search Algorithm
0742	Closest Leaf in a Binary Tree	C++ Python	O(n)	O(n)	Medium		
0743	Network Delay Time	C++ Python	O( E  * log V )	O( E )	Medium		Dijkstra's algorithm
0752	Open the Lock	C++ Python	O(k * n^k + d)	O(k * n^k + d)	Medium		
0773	Sliding Puzzle	C++ Python	O((m * n) * (m * n)!)	O((m * n) * (m * n)!)	Hard		A* Search Algorithm
0787	Cheapest Flights Within K Stops	C++ Python	O( E  * log V )	O( E )	Medium		Dijkstra's algorithm
0815	Bus Routes	C++ Python	O( E  +  V )	O( E  +  V )	Hard		
0854	K-Similar Strings	C++ Python	O(n * n!/(c_a!**c_z!))	O(n * n!/(c_a!**c_z!))	Hard		
0865	Shortest Path to Get All Keys	C++ Python	O(k * r * c + k^3*2^k)	O(k*2^k)	Hard		Dijkstra's algorithm
0882	Reachable Nodes In Subdivided Graph	C++ Python	O( E  * log V )	O( E )	Hard		Dijkstra's algorithm
0886	Possible Bipartition	C++ Python	O( V  +  E )	O( V  +  E )	Medium		
0934	Shortest Bridge	C++ Python	O(n^2)	O(n^2)	Medium		BFS, DFS
0967	Numbers With Same Consecutive Differences	C++ Python	O(2^n)	O(2^n)	Medium		

#	Title	Solution	Time	Space	Difficulty	Tag	Note
0994	Rotting Oranges	C++ Python	O(m * n)	O(m * n)	Easy		
1034	Coloring A Border	C++ Python	O(m * n)	O(m + n)	Medium		
1036	Escape a Large Maze	C++ Python	O(n^2)	O(n)	Hard		

## **Depth-First Search**

#	Title	Solution	Time	Space	Difficulty	Tag	Note
0112	Path Sum	Python	O(n)	O(h)	Easy		
0113	Path Sum II	Python	O(n)	O(h)	Medium		
0199	D199 Binary Tree Right Side View		O(n)	O(h)	Medium		
0200	Number of Islands	Python	O(m * n)	O(m * n)	Medium		
0236	Lowest Common Ancestor of a Binary Tree	C++ Python	O(n)	O(h)	Medium	EPI	
0247	Strobogrammatic Number II	C++ Python	O(n^2 * 5^(n/2))	O(n)	Medium		
0250	Count Univalue Subtrees	C++ Python	O(n)	O(h)	Medium		
0257	Binary Tree Paths	C++ Python	O(n * h)	O(h)	Easy		
0282	Expression Add Operators	C++ Python	O(4^n)	O(n)	Hard		
0301	Remove Invalid Parentheses	C++ Python	O(C(n, c))	O(c)	Hard		
0329	Longest Increasing Path in a Matrix	C++ Python	O(m * n)	O(m * n)	Hard		
0332	Reconstruct Itinerary	C++ Python	O(t! / (n1! * n2! * nk!))	O(t)	Medium		
0339	Nested List Weight Sum	C++ Python	O(n)	O(h)	Easy		
0364	Nested List Weight Sum II	C++ Python	O(n)	O(h)	Medium		
0366	Find Leaves of Binary Tree	C++ Python	O(n)	O(h)	Medium		
0399	Evaluate Division	C++ Python	O(q *  V !)	O(e)	Medium		
0417	Pacific Atlantic Water Flow	C++ Python	O(m * n)	O(m * n)	Medium		
0440	K-th Smallest in Lexicographical Order	C++ Python	O(logn)	O(logn)	Hard		
0464	Can I Win	C++ Python	O(n!)	O(n)	Medium		

#	Title	Solution	Time	Space	Difficulty	Tag	Note
0515	Find Largest Value in Each Tree Row	C++ Python	O(n)	O(h)	Medium		
0547	Friend Circles	C++ Python	O(n^2)	O(n)	Medium		Union Find
0582	Kill Process	C++ Python	O(n)	O(n)	Medium		DFS, BFS
0638	Shopping Offers	C++ Python	O(n * 2^n)	O(n)	Medium		
0690	Employee Importance	C++ Python	O(n)	O(h)	Easy		DFS, BFS
0694	Number of Distinct Islands	C++ Python	O(m * n)	O(m * n)	Medium		
0695	Max Area of Island	C++ Python	O(m * n)	O(m * n)	Easy		
0711	Number of Distinct Islands	C++ Python	O((m * n) * log(m * n))	O(m * n)	Hard		Hash
0733	Max Area of Island	C++ Python	O(m * n)	O(m * n)	Easy		
0749	Contain Virus	C++ Python	O((m * n)^(4/3))	O(m * n)	Hard		Simulation
0753	Cracking the Safe	C++ Python	O(k^n)	O(k^n)	Hard		de Bruijn sequences, Lyndon word
0756	Pyramid Transition Matrix	C++ Python	O(a^b)	O(a^b)	Medium		
0785	Is Graph Bipartite?	C++ Python	O( V  +  E )	O( V )	Medium		
0797	All Paths From Source to Target	C++ Python	O(p + r * n)	O(n)	Medium		
0802	Find Eventual Safe States	C++ Python	O( V  +  E )	O( V )	Medium		
0827	Making A Large Island	C++ Python	O(n^2)	O(n^2)	Hard		
0834	Sum of Distances in Tree	C++ Python	O(n)	O(n)	Hard		
0841	Keys and Rooms	C++ Python	O(n!)	O(n)	Medium		
0851	Loud and Rich	C++ Python	O(q + r)	O(q + r)	Medium		
0913	Cat and Mouse	C++ Python	O(n^3)	O(n^2)	Hard		
1020	Number of Enclaves	C++ Python	O(m * n)	O(m * n)	Medium		
1059	All Paths from Source Lead to Destination	C++ Python	O(n + e)	O(n + e)	Medium		

### Backtracking

#	Title	Solution	Time	Space	Difficulty	Tag	Note
0017	Letter Combinations of a Phone Number	Python	O(n * 4^n)	O(n)	Medium		
0022	Generate Parentheses	Python	O(4^n / n^(3/2))	O(n)	Medium		
0037	Sudoku Solver	Python	O((9!)^9)	O(1)	Hard		
0039	Combination Sum	Python	O(k * n^k)	O(k)	Medium		
0040	Combination Sum II	Python	O(k * C(n, k))	O(k)	Medium		
0046	Permutations	Python	O(n * n!)	O(n)	Medium		
0047	Permutations II	Python	O(n * n!)	O(n)	Medium		
0051	N-Queens	Python	O(n!)	O(n)	Hard		
0052	N-Queens-II	Python	O(n!)	O(n)	Hard		
0077	Combinations	Python	O(O(k * C(n, k)))	O(k)	Medium		
0079	Word Search	Python	O(m * n * l)	O(I)	Medium		
0093	Restore IP Addresses	Python	O(1)	O(1)	Medium		
0078	Subsets	C++ Python	O(n * 2^n)	O(1)	Medium		
0090	Subsets II	C++ Python	O(n * 2^n)	O(1)	Medium		
0126	Word Ladder II	Python	O(n * d)	O(d)	Hard		
0131	Palindrome Partitioning	Python	O(n^2) ~ O(2^n)	O(n^2)	Medium		
0140	Word Break II	C++ Python	O(n * l^2 + n * r)	O(n^2)	Hard		
0212	Word Search II	C++ Python	O(m * n * l)	O(I)	Hard	LintCode	Trie, DFS
0216	Combination Sum III	C++ Python	O(k * C(n, k))	O(k)	Medium		
0254	Factor Combinations	C++ Python	O(nlogn)	O(logn)	Medium		
0267	Palindrome Permutation	C++ Python	O(n * n!)	O(n)	Medium		
0291	Word Pattern II	C++ Python	O(n * C(n - 1, c - 1))	O(n + c)	Hard		
0294	Flip Game II	C++ Python	O(n + c^2)	O(c)	Medium		DP, Hash
0320	Generalized Abbreviation	C++ Python	O(n * 2^n)	O(n)	Medium		
0425	Word Squares	C++ Python	O(n^2 * n!)	O(n^2)	Hard		
0526	Beautiful Arrangement	C++ Python	O(n!)	O(n)	Medium		
0676	Implement Magic Dictionary	C++ Python	O(n)	O(d)	Medium		Trie, DFS

#	Title	Solution	Time	Space	Difficulty	Tag	Note
0679	24 Game	C++ Python	O(1)	O(1)	Hard		DFS
0698	Partition to K Equal Sum Subsets	C++ Python	O(n * 2^n)	O(2^n)	Medium		DFS, DP, Memoization
0718	Maximum Length of Repeated Subarray	C++ Python	O(m * n)	O(min(m, n))	Medium		DP, Hash, Binary Search
0784	Letter Case Permutation	C++ Python	O(n * 2^n)	O(1)	Easy		
0996	Number of Squareful Arrays	C++ Python	O(n!)	O(n^2)	Hard		

# **Dynamic Programming**

#	Title	Solution	Time	Space	Difficulty	Tag	Note
0010	Regular Expression Matching	Python	O(m * n)	O(n)	Hard		
0044	Wildcard Matching	Python	O(m * n)	O(1)	Hard		Greedy
0053	Maximum Subarray	C++ Python	O(n)	O(1)	Medium		
0062	Unique Paths	Python	O(m * n)	O(m + n)	Medium		
0063	Unique Paths II	Python	O(m * n)	O(m + n)	Medium		
0064	Minimum Path Sum	Python	O(m * n)	O(m + n)	Medium		
0070	Climbing Stairs	C++ Python	O(logn)	O(1)	Easy		Matrix Exponentiation
0072	Edit Distance	Python	O(m * n)	O(m + n)	Hard		
0087	Scramble String	Python	O(n^4)	O(n^3)	Hard		
0091	Decode Ways	C++ Python	O(n)	O(1)	Medium		
0096	Unique Binary Search Trees	Python	O(n)	O(1)	Medium		Math
0097	Interleaving String	Python	O(m * n)	O(m + n)	Hard		
0115	Distinct Subsequences	Python	O(n^2)	O(n)	Hard		
0120	Triangle	Python	O(m * n)	O(n)	Medium		
0123	Best Time to Buy and Sell Stock III	Python	O(n)	O(1)	Hard		
0132	Palindrome Partitioning II	Python	O(n^2)	O(n^2)	Hard		
0139	Word Break	C++ Python	O(n * l^2)	O(n)	Medium		
0152	Maximum Product Subarray	Python	O(n)	O(1)	Medium		
0174	Dungeon Game	Python	O(m * n)	O(m + n)	Hard		

#	Title	Solution	Time	Space	Difficulty	Tag	Note
0188	Best Time to Buy and Sell Stock IV	Python	O(k * n)	O(k)	Hard		
0198	House Robber	C++ Python	O(n)	O(1)	Easy		
0213	House Robber II	C++ Python	O(n)	O(1)	Medium		
0221	Maximal Square	C++ Python	O(n^2)	O(n)	Medium	EPI	
0256	Paint House	C++ Python	O(n)	O(1)	Medium		
0265	Paint House II	C++ Python	O(n * k)	O(k)	Hard		
0276	Paint Fence	C++ Python	O(n)	O(1)	Easy		
0279	Perfect Squares	C++ Python	O(n * sqrt(n))	O(n)	Medium		Hash
0303	Range Sum Query - Immutable	C++ Python	ctor: O(n), lookup: O(1)	O(n)	Easy		
0304	Range Sum Query 2D - Immutable	C++ Python	ctor: <i>O(m * n)</i> , lookup: <i>O(1)</i>	O(m * n)	Medium		
0309	Best Time to Buy and Sell Stock with Cooldown	C++ Python	O(n)	O(1)	Medium		
0312	Burst Balloons	C++ Python	O(n^3)	O(n^2)	Hard		
0322	Coin Change	C++ Python	O(n * k)	O(k)	Medium		
0351	Android Unlock Patterns	C++ Python	O(9^2 * 2^9)	0(9 * 2^9)	Medium		Backtracking
0357	Count Numbers with Unique Digits	C++ Python	O(n)	O(1)	Medium		Backtracking, Math
0361	Bomb Enemy	C++ Python	O(m * n)	O(m * n)	Medium		
0368	Largest Divisible Subset	C++ Python	O(n^2)	O(n)	Medium		
0375	Guess Number Higher or Lower II	C++ Python	O(n^2)	O(n^2)	Medium		
0377	Combination Sum IV	C++ Python	O(nlogn + n * t)	O(t)	Medium		
0403	Frog Jump	C++ Python	O(n)	O(n) ~ O(n^2)	Hard		
0416	Partition Equal Subset Sum	C++ Python	O(n * s)	O(s)	Medium		
0418	Sentence Screen Fitting	C++ Python	O(r + n * c)	O(n)	Medium		

#	Title	Solution	Time	Space	Difficulty	Tag	Note
0446	Arithmetic Slices II - Subsequence	C++ Python	O(n^2)	O(n * d)	Hard		
0465	Optimal Account Balancing	C++ Python	O(n * 2^n)	O(2^n)	Hard		
0466	Count The Repetitions	C++ Python	O(s1 * min(s2, n1))	O(s2)	Hard		
0467	Unique Substrings in Wraparound String	C++ Python	O(n)	O(1)	Medium		
0471	Encode String with Shortest Length	C++ Python	O(n^3) on average	O(n^2)	Medium		
0472	Concatenated Words	C++ Python	O(n * l^2)	O(n * l)	Medium		
0474	Ones and Zeroes	C++ Python	O(s * m * n)	O(m * n)	Medium		
0486	Predict the Winner	C++ Python	O(n^2)	O(n)	Medium		
0509	Fibonacci Number	C++ Python	O(logn)	O(1)	Easy	variant of Climbing Stairs	Matrix Exponentiation
0514	Freedom Trail	C++ Python	O(k) ~ O(k * r^2)	O(r)	Hard		
0516	Longest Palindromic Subsequence	C++ Python	O(n^2)	O(n)	Medium		
0546	Remove Boxes	C++ Python	O(n^3) ~ O(n^4)	O(n^3)	Hard		
0552	Student Attendance Record II	C++ Python	O(n)	O(1)	Hard		
0562	Longest Line of Consecutive One in Matrix	C++ Python	O(m * n)	O(n)	Medium		
0568	Maximum Vacation Days	C++ Python	O(n^2 * k)	O(k)	Hard		
0576	Out of Boundary Paths	C++ Python	O(N * m * n)	O(m * n)	Medium		
0583	Delete Operation for Two Strings	C++ Python	O(m * n)	O(n)	Medium		
0600	Non-negative Integers without Consecutive Ones	C++ Python	O(1)	O(1)	Hard		
0629	K Inverse Pairs Array	C++ Python	O(n * k)	O(k)	Hard		
0639	Decode Ways II	C++ Python	O(n)	O(1)	Hard		
0650	2 Keys Keyboard	C++ Python	O(sqrt(n))	O(1)	Medium		

#	Title	Solution	Time	Space	Difficulty	Tag	Note
0656	Coin Path	C++ Python	O(n * B)	O(n)	Hard		
0664	Strange Printer	C++ Python	O(n^3)	O(n^2)	Hard		
0673	Number of Longest Increasing Subsequence	C++ Python	O(n^2)	O(n)	Medium		
0688	Knight Probability in Chessboard	C++ Python	O(k * n^2)	O(n^2)	Medium		
0689	Maximum Sum of 3 Non-Overlapping Subarrays	C++ Python	O(n)	O(n)	Hard		
0691	Stickers to Spell Word	C++ Python	O(T * S^T)	O(T * S^T)	Hard		Backtracking, Memoization
0712	Minimum ASCII Delete Sum for Two Strings	C++ Python	O(m * n)	O(n)	Medium		
0714	Best Time to Buy and Sell Stock with Transaction Fee	C++ Python	O(n)	O(1)	Medium		
0727	Minimum Window Subsequence	C++ Python	O(s * t)	O(s)	Hard		
0730	Count Different Palindromic Subsequences	C++ Python	O(n^2)	O(n)	Hard		
0740	Delete and Earn	C++ Python	O(n)	O(1)	Medium		
0741	Cherry Pickup	C++ Python	O(n^3)	O(n^2)	Hard		
0746	Min Cost Climbing Stairs	C++ Python	O(n)	O(1)	Easy		
0750	Number Of Corner Rectangles	C++ Python	O(n * m^2)	O(n * m)	Medium		
0764	Largest Plus Sign	C++ Python	O(n^2)	O(n^2)	Medium		
0788	Rotated Digits	C++ Python	O(logn)	O(logn)	Easy		Memoization
0790	Domino and Tromino Tiling	C++ Python	O(logn)	O(1)	Medium		Matrix Exponentiation
0799	Champagne Tower	C++ Python	O(n^2)	O(n)	Medium		
0801	Minimum Swaps To Make Sequences Increasing	C++ Python	O(n)	O(1)	Medium		
0805	Split Array With Same Average	C++ Python	O(n^4)	O(n^3)	Hard		
0808	Soup Servings	C++ Python	O(1)	O(1)	Medium		Memoization

#	Title	Solution	Time	Space	Difficulty	Tag	Note
0813	Largest Sum of Averages	C++ Python	O(k * n^2)	O(n)	Medium		
0818	Race Car	C++ Python	O(nlogn)	O(n)	Hard		
0823	Binary Trees With Factors	C++ Python	O(n^2)	O(n)	Medium		
0837	New 21 Game	C++ Python	O(n)	O(n)	Medium		
0838	Push Dominoes	C++ Python	O(n)	O(n)	Medium		
0847	Shortest Path Visiting All Nodes	C++ Python	O(n *2^n)	O(n * 2^n)	Hard		BFS
0877	Stone Game	C++ Python	O(n^2)	O(n)	Medium	variant of Predict the Winner	
0879	Profitable Schemes	C++ Python	O(n * p * g)	O(p * g)	Hard		
0903	Valid Permutations for DI Sequence	C++ Python	O(n^2)	O(n)	Hard		
0920	Number of Music Playlists	C++ Python	O(n * l)	O(I)	Hard		
0926	Flip String to Monotone Increasing	C++ Python	O(n)	O(1)	Medium		
0931	Minimum Falling Path Sum	C++ Python	O(n^2)	O(1)	Medium		
0935	Knight Dialer	C++ Python	O(logn)	O(1)	Medium		Matrix Exponentiation
0940	Distinct Subsequences II	C++ Python	O(n)	O(1)	Hard		
0943	Find the Shortest Superstring	C++ Python	O(n^2 * (l^2 + 2^n))	O(n^2)	Hard		
0956	Tallest Billboard	C++ Python	O(n * 3^(n/2))	O(3^(n/2))	Hard		
0960	Delete Columns to Make Sorted III	C++ Python	O(n * I^2)	O(I)	Hard		
0964	Least Operators to Express Number	C++ Python	O(logn / logx)	O(logn)	Hard		Math
0975	Odd Even Jump	C++ Python	O(nlogn)	O(n)	Hard		Mono Stack, BST
0980	Unique Paths III	C++ Python	O((m * n) * 2^(m * n))	O((m * n) * 2^(m * n))	Hard		
0983	Minimum Cost For Tickets	C++ Python	O(n)	O(1)	Medium		

#	Title	Solution	Time	Space	Difficulty	Tag	Note
1000	Minimum Cost to Merge Stones	C++ Python	O(n^3)	O(n^3)	Hard		Memoization
1027	Longest Arithmetic Sequence	C++ Python	O(n^2)	O(n^2)	Medium		
1035	Uncrossed Lines	C++ Python	O(m * n)	O(min(m, n))	Medium		
1039	Minimum Score Triangulation of Polygon	C++ Python	O(n^3)	O(n^2)	Medium		
1043	Partition Array for Maximum Sum	C++ Python	O(n * k)	O(k)	Medium		
1048	Longest String Chain	C++ Python	O(n * I^2)	O(n * l)	Medium		
1049	Last Stone Weight II	C++ Python	O(2^n)	O(2^n)	Medium		
1066	Campus Bikes II	C++ Python	O(w * b * 2^b)	O(w * b * 2^b)	Medium		

# Greedy

#	Title	Solution	Time	Space	Difficulty	Tag	Note
0011	Container With Most Water	C++ Python	O(n)	O(1)	Medium		
0042	Trapping Rain Water	C++ Python	O(n)	O(1)	Hard		Tricky
0045	Jump Game II	Python	O(n)	O(1)	Hard		
0055	Jump Game	Python	O(n)	O(1)	Medium		
0122	Best Time to Buy and Sell Stock II	C++ Python	O(n)	O(1)	Easy		
0134	Gas Station	Python	O(n)	O(1)	Medium		
0135	Candy	C++ Python	O(n)	O(n)	Hard		
0316	Remove Duplicate Letters	C++ Python	O(n)	O(k)	Hard		Mono Stack
0321	Create Maximum Number	C++ Python	O(k * (m + n + k)) ~ O(k * (m + n + k^2))	O(m + n + k^2)	Hard	variant of Delete Digits	Greedy,
0330	Patching Array	C++ Python	O(s + logn)	O(1)	Hard		
0376	Wiggle Subsequence	C++ Python	O(n)	O(1)	Medium		
0392	Is Subsequence	C++ Python	O(n)	O(1)	Medium		
0397	Integer Replacement	C++ Python	O(n)	O(1)	Medium		Math
0402	Remove K Digits	C++ Python	O(n)	O(n)	Medium	LintCode	

#	Title	Solution	Time	Space	Difficulty	Tag	Note
0435	Non-overlapping Intervals	C++ Python	O(nlogn)	O(1)	Medium		Line Sweep
0452	Minimum Number of Arrows to Burst Balloons	C++ Python	O(nlogn)	O(1)	Medium		
0455	Assign Cookies	C++ Python	O(nlogn)	O(1)	Easy		
0621	Task Scheduler	C++ Python	O(n)	O(1)	Medium		
0630	Course Schedule III	C++ Python	O(nlogn)	O(k)	Hard		
0646	Maximum Length of Pair Chain	C++ Python	O(nlogn)	O(1)	Medium	variant of Non- overlapping Intervals	Line Sweep
0649	Dota2 Senate	C++ Python	O(n)	O(n)	Medium		
0659	Split Array into Consecutive Subsequences	C++ Python	O(n)	O(1)	Medium		
0738	Monotone Increasing Digits	C++ Python	O(1)	O(1)	Medium		
0757	Set Intersection Size At Least Two	C++ Python	O(nlogn)	O(n)	Hard		
0759	Employee Free Time	C++ Python	O(m * logn)	O(n)	Hard		
0763	Partition Labels	C++ Python	O(n)	O(n)	Medium		
0767	Reorganize String	C++ Python	O(n)	O(1)	Medium		
0798	Smallest Rotation with Highest Score	C++ Python	O(n)	O(1)	Hard		
0843	Guess the Word	C++ Python	O(n^2)	O(n)	Hard		MinMax
0861	Score After Flipping Matrix	C++ Python	O(r * c)	O(1)	Medium		
0870	Advantage Shuffle	C++ Python	O(nlogn)	O(n)	Medium		
0881	Boats to Save People	C++ Python	O(nlogn)	O(n)	Medium		
0936	Stamping The Sequence	C++ Python	O((n - m) * m)	O((n - m) * m)	Hard		
0948	Bag of Tokens	C++ Python	O(nlogn)	O(1)	Medium		Two Pointers
0962	Maximum Width Ramp	C++ Python	O(n)	O(n)	Medium		Mono Stack

#	Title	Solution	Time	Space	Difficulty	Tag	Note
0968	Binary Tree Cameras	C++ Python	O(n)	O(h)	Hard		DFS
0984	String Without AAA or BBB	C++ Python	O(a + b)	O(1)	Easy		
0991	Broken Calculator	C++ Python	O(logn)	O(1)	Medium		
0995	Minimum Number of K Consecutive Bit Flips	C++ Python	O(n)	O(1)	Hard		
1005	Maximize Sum Of Array After K Negations	C++ Python	O(n) on average	O(1)	Easy		Quick Select
1024	Video Stitching	C++ Python	O(nlogn)	O(1)	Medium	variant of Jump Game II	
1029	Two City Scheduling	C++ Python	O(n) on average	O(1)	Easy		Quick Select
1053	Previous Permutation With One Swap	C++ Python	O(n)	O(1)	Medium		
1055	Shortest Way to Form String	C++ Python	O(m + n)	O(m)	Medium	, variant of Minimum Window Subsequence	
1058	Minimize Rounding Error to Meet Target	C++ Python	O(n) on average	O(n)	Medium		Quick Select

### Graph

#	Title	Solution	Time	Space	Difficulty	Tag	Note
0765	Couples Holding Hands	C++ Python	O(n)	O(n)	Hard		
0924	Minimize Malware Spread	C++ Python	O(n^2)	O(n)	Hard		Union Find
0928	Minimize Malware Spread II	C++ Python	O(n^2)	O(n)	Hard		Union Find
0959	Regions Cut By Slashes	C++ Python	O(n^2)	O(n^2)	Medium		Union Find
0990	Satisfiability of Equality Equations	C++ Python	O(n)	O(1)	Medium		Union Find
1042	Flower Planting With No Adjacent	C++ Python	O(n)	O(n)	Easy		

### Geometry

#	Title	Solution	Time	Space	Difficulty	Tag	Note
0587	Erect the Fence	C++ Python	O(nlogn)	O(n)	Hard		Monotone Chain
0892	Surface Area of 3D Shapes	C++ Python	O(n^2)	O(1)	Easy		

#### Simulation

#	Title	Solution	Time	Space	Difficulty	Tag	Note
0874	Walking Robot Simulation	C++ Python	O(n + k)	O(k)	Easy		

## Design

#	Title	Solution	Time	Space	Difficulty	Tag	Note
0146	LRU Cache	C++ Python	O(1)	O(k)	Hard		
0225	Implement Stack using Queues	C++ Python	push: <i>O(n)</i> , pop: <i>O(1)</i> , top: <i>O(1)</i>	O(n)	Easy		
0284	Peeking Iterator	C++ Python	O(1)	O(1)	Medium		
0348	Design Tic-Tac-Toe	C++ Python	O(1)	O(n^2)	Medium		
0353	Design Snake Game	C++ Python	O(1)	O(s)	Medium		Deque
0355	Design Twitter	C++ Python	O(klogu)	O(t + f)	Medium	LintCode	Неар
0359	Logger Rate Limiter	C++ Python	O(1), amortized	O(k)	Easy		Deque
0362	Design Hit Counter	C++ Python	O(1), amortized	O(k)	Medium		Deque
0379	Design Phone Directory	C++ Python	O(1)	O(n)	Medium		
0380	Insert Delete GetRandom O(1)	C++ Python	O(1)	O(n)	Hard		
0381	Insert Delete GetRandom O(1) - Duplicates allowed	C++ Python	O(1)	O(n)	Hard		
0432	All O`one Data Structure	C++ Python	O(1)	O(n)	Hard		
0460	LFU Cache	C++ Python	O(1)	O(k)	Hard		
0535	Encode and Decode TinyURL	C++ Python	O(1)	O(n)	Medium		
0588	Design In-Memory File System	C++ Python	ls: O(l + klogk) mkdir: O(l) addContentToFile: O(l + c) readContentFromFile: O(l + c)	O(n + s)	Hard		
0604	Design Compressed String Iterator	C++ Python	O(1)	O(1)	Easy		
0631	Design Excel Sum Formula	C++ Python	set: O((r * c)^2) get: O(1) sum: O((r * c)^2)	O(r * c)	Hard		
0635	Design Log Storage System	C++ Python	put: O(1) retrieve: O(n + dlogd)	O(n)	Medium		
0642	Design Search Autocomplete System	C++ Python	O(p^2)	O(p * t + s)	Hard		

#	Title	Solution	Time	Space	Difficulty	Tag	Note
0715	Range Module	C++ Python	add: O(n) remove: O(n) query: O(logn)	O(n)	Hard		
0716	Max Stack	C++ Python	push: O(logn) pop: O(logn) popMax: O(logn) top: O(1) peekMax: O(1)	O(n)	Easy		
0745	Prefix and Suffix Search	C++ Python	ctor: <i>O(w * l^2)</i> search : <i>O(p + s)</i>	O(t)	Hard		Trie
0900	RLE Iterator	C++ Python	O(n)	O(1)	Medium		

#### SQL

#	Title	Solution	Time	Space	Difficulty	Tag	Note
0175	Combine Two Tables	MySQL	O(m + n)	O(m + n)	Easy		
0176	Second Highest Salary	MySQL	O(n)	O(1)	Easy		
0177	Nth Highest Salary	MySQL	O(n^2)	O(n)	Medium		
0178	Rank Scores	MySQL	O(n^2)	O(n)	Medium		
0180	Consecutive Numbers	MySQL	O(n)	O(n)	Medium		
0181	Employees Earning More Than Their Managers	MySQL	O(n^2)	O(1)	Easy		
0182	Duplicate Emails	MySQL	O(n^2)	O(n)	Easy		
0183	Customers Who Never Order	MySQL	O(n^2)	O(1)	Easy		
0184	Department Highest Salary	MySQL	O(n^2)	O(n)	Medium		
0185	Department Top Three Salaries	MySQL	O(n^2)	O(n)	Hard		
0196	Delete Duplicate Emails	MySQL	O(n^2)	O(n)	Easy		
0197	Rising Temperature	MySQL	O(n^2)	O(n)	Easy		
0262	Trips and Users	MySQL	O((t * u) + tlogt)	O(t)	Hard		
1045	Customers Who Bought All Products	MySQL	O(n + k)	O(n + k)	Medium		
1050	Actors and Directors Who Cooperated At Least Three Times	MySQL	O(n)	O(n)	Easy		
1068	Product Sales Analysis I	MySQL	O(m + n)	O(m + n)	Easy		
1069	Product Sales Analysis II	MySQL	O(n)	O(n)	Easy		
1070	Product Sales Analysis III	MySQL	O(n)	O(n)	Medium		

# Shell Script

#	Title	Solution	Time	Space	Difficulty	Tag	Note
0192	Word Frequency	Shell	O(n)	O(k)	Medium		

#	Title	Solution	Time	Space	Difficulty	Tag	Note
0193	Valid Phone Numbers	Shell	O(n)	O(1)	Easy		
0194	Transpose File	Shell	O(n^2)	O(n^2)	Medium		
0195	Tenth Line	Shell	O(n)	O(1)	Easy		