		#	Might be able to solve without looking at the solution		
Group	Tag	#		Acceptance	Difficulty
N-Sum	hashtable	1	Two Sum		
	two pointers, hashtable	532	K-diff Pairs in an Array		
	two pointers	167	Two Sum II - Input array is sorted		
	hashtable	170	Two Sum III - Data structure design		
	two pointers, hashtable	15	3Sum		
	two pointers	16	3Sum Closest		
	two pointers	259	3Sum Smaller		
	two pointers	611	Valid Triangle Number		
	two pointers, hashtable	18	4Sum		
	hashtable	454	4Sum II		
Fixed Length Sliding Window	queue	346	Moving Average from Data Stream		
	two pointer	643	Maximum Average Subarray I		
	heap, deque	239	Sliding Window Maximum		
	heap, median	295	Find Median from Data Stream		
	heap, median	480	Sliding Window Median		
	two pointers, hashmap	438	Find All Anagrams in a String		
	two pointers, hashmap	567	Permutation in String		
	two pointers, hashmap	30	Substring with Concatenation of All Words		
variant length sliding window	two pointers, hashmap	3	Longest Substring Without Repeating Characters		
	regular expression	395	Longest Substring with At Least K Repeating Characters		
	two pointers	159	Longest Substring with At Most Two Distinct Characters		
	two pointers	340	Longest Substring with At Most K Distinct Characters		
	two pointers	424	Longest Repeating Character Replacement		
	two pointers, subsequence	524	Longest Word in Dictionary through Deleting		
	two pointers	76	Minimum Window Substring		
	two pointers	209	Minimum Size Subarray Sum		
subarray sum	hashmap	325	Maximum Size Subarray Sum Equals k		
	hashmap	525	Contiguous Array		
	hashmap	523	Continuous Subarray Sum		
	hashmap	560	Subarray Sum Equals K		
Array Organization	two pointers	26	Remove Duplicates from Sorted Array		
	two pointers	80	Remove Duplicates from Sorted Array II		
	two pointers	27	Remove Element		
	two pointers	283	Move Zeroes		
	two pointers	88	Merge Sorted Array		
	pointers, counting	75	Sort Colors		
Water Catch	two pointers	11	Container With Most Water		
	two pointers	42	Trapping Rain Water		
	stack	84	Largest Rectangle in Histogram		
	stack	85	Maximal Rectangle		
	heap	407	Trapping Rain Water II		
Circle	fast and slow	141	Linked List Cycle		
	fast and slow	142	Linked List Cycle II		
	fast and slow	287	Find the Duplicate Number		n(logn) by binary search, or O(n) by fast and slow two pointers
		160	Intersection of Two Linked Lists		can solve elegently by connenct AB and BA
Remove Node from Linked List		237	Delete Node in a Linked List		do not need to change every node
		83	Remove Duplicates from Sorted List		
		82	Remove Duplicates from Sorted List II		
		203	Remove Linked List Elements		
		19	Remove Nth Node From End of List		
move nodes		61	Rotate Lists		corner case: k = 0, < 0, =m * len(list)
		86	Partition List		
		328	**Odd Even Linked List**		can have short, elegent solution
		206	Reverse Linked List		dummy.next, node.next, node = node, dummy.next, node.next every time, from the old node, we remove head into the newhead, update both head and newhead
		92	Reverse Linked List II		keep, pre and m-th, insert (m+1) to n nodes between pre and pre.next
		21	Merge Two Sorted Lists		
		23	Merge k Sorted Lists		

		147	Insertion Sort List			
	fast and slow	148	Sort List		fast slow pointers, pay attantion to the fast and slow start position	
	fast and slow	143	Reorder List		find right part, reverse right part, insert right into left	
		24	Swap Nodes in Pairs		recursive should be easier, while for iterative, we each time reverse two, and move two position	
		25	Reverse Nodes in k-Group		recursive	
reverse array		344	Reverse String			
		541	Reverse String II			
		345	Reverse Vowels of a String			
		151	Reverse Words in a String			
		186	Reverse Words in a String II			
		557	Reverse Words in a String III			
		189	Rotate Array		nums = nums[::-1] will not change the nums passed as parameter, but nums[:] = nums[::-1] will do	
		7	Reverse Integer			
	bit	190	Reverse Bits		get the bin in each position, and set the result correspondingly	
tradicitional BT	backtracking	17	Letter Combinations of a Phone Number			
	backtracking	401	Binary Watch			
	backtracking	22	Generate Parentheses			
	backtracking	78	Subsets			
	backtracking	90	Subsets II			
	backtracking	491	Increasing Subsequences			
	backtracking	46	Permutations			
	backtracking	47	Permutations II			
	backtracking	77	Combinations			
	backtracking	39	Combination Sum			
	backtracking	40	Combination Sum II			
	backtracking	216	Combination Sum III			
	namic programmi	377	Combination Sum IV			
	backtracking	638	Shopping Offers			
	backtracking	254	Factor Combinations			
			Two Pointers			
Palindrome		5	Longest Palindromic Substring	25.10%	Medium	
		647	Palindromic Substrings	56.00%	Medium	extension of 5, to find the longest, in fact we checked all the palindromic substrings
		9	Palindrome Number	34.70%	Easy	corner case, x< 0, x =0 and x is ***0
		125	Valid Palindrome	25.90%	Easy	string.ascii_letters, digits, str.isalnum()
		680	Valid Palindrome II	28.10%	Easy	
	KMP	214	Shortest Palindrome	23.60%	Hard	only s.startswith can pass, while s[:n-i] == r[i:] will TLE
		409	Longest Palindrome	45.10%	Easy	insert or remove from set
		266	Palindrome Permutation	56.30%	Easy	same as 409, use a set to add odd char and remove it when even (meet again)
		267	Palindrome Permutation II	31.50%	Medium	first determine whether can form as permuation, then if the odd exist, it must be in the middle The left problem is the distint permutation of the even chars using backtracking
		234	Palindrome Linked List	32.20%	Easy	Two pointer to find the middle, and reverse the right part
		564	Find the Closest Palindrome	14.00%	Hard	
			Binary Search			
		35	Search Insert Position	39.40%	Easy	bisect.bisect_left
		34	Search for a Range	31.10%	Medium	bisect
		162	Find Peak Element	36.70%	Medium	
		74	Search a 2D Matrix	35.30%	Medium	
		240	Search a 2D Matrix II	38.10%	Medium	
Rotated Sorted Array		33	Search in Rotated Sorted Array	32.10%	Medium	
		81	Search in Rotated Sorted Array II	32.80%	Medium	When we find left == mid or right == mid, we have to move it towards mid until a different value found
		153	Find Minimum in Rotated Sorted Array	39.30%	Medium	
		154	Find Minimum in Rotated Sorted Array II	36.70%	Hard	
		540	Single Element in a Sorted Array	53.50%	Medium	
		4	Median of Two Sorted Arrays	21.30%	Hard	**Median of K sorted Arrays**
		315	Count of Smaller Numbers After Self	34.10%	Hard	binary search
		374	Guess Number Higher or Lower	34.50%	Easy	
		658	Find K Closest Elements	35.30%	Medium	
		278	First Bad Version	24.80%	Easy	
		302	Smallest Rectangle Enclosing Black Pixels	44.80%	Hard	
		441	Arranging Coins	36.10%	Easy	
		475	Heaters	29.60%	Easy	sort... and two pointers
			Backtracking			
Games..		36	Valid Sudoku	34.90%	Medium	
		37	Sudoku Solver	29.20%	Hard	
		488	Zuma Game	36.20%	Hard	
		51	N-Queens	30.00%	Hard	

		52	N-Queens II	43.80%	Hard	
		351	Android Unlock Patterns	43.20%	Medium	
ab to 12	string	205	Isomorphic Strings	33.20%	Easy	
	string	290	Word Pattern	32.60%	Easy	
	string	291	Word Pattern II	37.80%	Hard	backtracking to test different length
	string	468	Validate IP Address	20.20%	Medium	
	string	93	Restore IP Addresses	26.60%	Medium	
	string	526	Beautiful Arrangement	54.10%	Medium	
	string	131	Palindrome Partitioning	32.00%	Medium	
	string	132	Palindrome Partitioning II	23.80%	Hard	dp
		79	Word Search	26.10%	Medium	can early return instead of set a flag
		212	Word Search II	22.90%	Hard	
		127	Word Ladder	19.30%	Medium	
		126	Word Ladder II	13.90%	Hard	
		422	Valid Word Square	36.30%	Easy	
		425	Word Squares	42.60%	Hard	
abbreviation		408	Valid Word Abbreviation	27.60%	Easy	
		288	Unique Word Abbreviation	16.10%	Medium	hashtable
		320	Generalized Abbreviation	44.30%	Medium	
		411	Minimum Unique Word Abbreviation	31.80%	Hard	brute force?
		527	Word Abbreviation	34.80%	Hard	not a bt
		282	Expression Add Operators	29.30%	Hard	
		679	24 Game	38.60%	Hard	
Dynamic Programming (try to save space)						
		53	Maximum Subarray	39.20%	Easy	
		152	Maximum Product Subarray	25.10%	Medium	
	traverse	238	Product of Array Except Self	48.20%	Medium	two pass, pay attention to the index in each side
	traverse	581	Shortest Unsorted Continuous Subarray	28.30%	Easy	
		303	Range Sum Query - Immutable	28.00%	Easy	
		304	Range Sum Query 2D - Immutable	24.00%	Medium	range matters
stock dp		121	Best Time to Buy and Sell Stock	40.30%	Easy	
		122	Best Time to Buy and Sell Stock II	46.30%	Easy	
		123	Best Time to Buy and Sell Stock III	28.80%	Hard	There is a one pass dp using O(1) space
		188	Best Time to Buy and Sell Stock IV	24.10%	Hard	Need to think clearly how the dp works
		309	Best Time to Buy and Sell Stock with Cooldown	40.20%	Medium	
O(n) DP, can do O(1) Space		70	Climbing Stairs	39.30%	Easy	sn = sn-1 + sn-2, s0 = 1, s1 = 0
		91	Decode Ways	19.30%	Medium	a lot of corner cases
		639	Decode Ways II	18.90%	Hard	
		198	House Robber	38.20%	Easy	
		213	House Robber II	33.50%	Medium	
		337	House Robber III	42.60%	Medium	indeed can do a postorder with another stack
		256	Paint House	45.90%	Easy	
		265	Paint House II	37.70%	Hard	
		276	Paint Fence	34.20%	Easy	
O(n) DP but need to check all possible position before		494	Target Sum	43.80%	Medium	
		300	Longest Increasing Subsequence	37.90%	Medium	have a O(nlogn) solution
		673	Number of Longest Increasing Subsequence	30.80%	Medium	
		96	Unique Binary Search Trees	40.40%	Medium	
		95	Unique Binary Search Trees II	31.00%	Medium	
		279	Perfect Squares	36.00%	Medium	
		322	Coin Change	26.20%	Medium	
		343	Integer Break	45.50%	Medium	
		139	Word Break	29.20%	Medium	
		140	Word Break II	22.70%	Hard	
M*N path O(M) space		120	Triangle	33.10%	Medium	
		62	Unique Paths	40.20%	Medium	O(min(m, n)) space, best performance if we dp on the short direction
		63	Unique Paths II	31.30%	Medium	
		562	Longest Line of Consecutive One in Matrix	36.30%	Medium	
		221	Maximal Square	28.00%	Medium	
		64	Minimum Path Sum	37.80%	Medium	
		174	Dungeon Game	23.40%	Hard	
		568	Maximum Vacation Days	40.20%	Hard	
		551	Student Attendance Record I	44.20%	Easy	
		552	Student Attendance Record II	27.70%	Hard	N * (2*3)
M*N path M*N Space		361	Bomb Enemy	38.60%	Medium	

String Matching (M+1)*(N+1)		44	Wildcard Matching	19.60%	Hard	might have a quick solution
		10	Regular Expression Matching	23.90%	Hard	can do a standard dp of (M+1) * (N+1)
		72	Edit Distance	31.10%	Hard	can do O(M) space
		87	Scramble String	28.70%	Hard	
		97	Interleaving String	24.30%	Hard	
		583	Delete Operation for Two Strings	40.80%	Medium	
		115	Distinct Subsequences	31.10%	Hard	can do O(M) space
		89	Gray Code	40.30%	Medium	no need to do a standard bt, but just extend the result, similar to subset
		375	Guess Number Higher or Lower II	35.60%	Medium	
		629	K Inverse Pairs Array	15.90%	Medium	
		600	Non-negative Integers without Consecutive Ones	21.60%	Hard	
		678	Valid Parenthesis String	26.20%	Medium	
		241	Different Ways to Add Parentheses	42.70%	Medium	
		312	Burst Balloons	42.20%	Hard	
		321	Create Maximum Number	24.30%	Hard	
		354	Russian Doll Envelopes	32.00%	Hard	
		363	Max Sum of Rectangle No Larger Than K	32.50%	Hard	
		368	Largest Divisible Subset	33.50%	Medium	
		410	Split Array Largest Sum	35.20%	Hard	
		416	Partition Equal Subset Sum	38.50%	Medium	
		403	Frog Jump	31.60%	Hard	
		293	Flip Game	54.90%	Easy	
		294	Flip Game II	45.90%	Medium	
		464	Can I Win	23.80%	Medium	
		486	Predict the Winner	44.40%	Medium	
		413	Arithmetic Slices	54.90%	Medium	
		446	Arithmetic Slices II - Subsequence	25.30%	Hard	
		467	Unique Substrings in Wraparound String	31.40%	Medium	
		466	Count The Repetitions	26.60%	Hard	
		472	Concatenated Words	29.70%	Hard	
		474	Ones and Zeroes	37.70%	Medium	
		514	Freedom Trail	34.90%	Hard	
		516	Longest Palindromic Subsequence	42.40%	Medium	
		517	Super Washing Machines	35.60%	Hard	
		546	Remove Boxes	29.60%	Hard	
		553	Optimal Division	53.70%	Medium	
		471	Encode String with Shortest Length	41.60%	Hard	
		576	Out of Boundary Paths	0.324	Hard	
			Design			
list		380	Insert Delete GetRandom O(1)	38.90%	Medium	list for random O(1), dict for insert and remove O(1)
		381	Insert Delete GetRandom O(1) - Duplicates allowed	28.50%	Hard	
linked list		146	LRU Cache	17.00%	Hard	double linked list for get max, min, most recent O(1), need to update both direction
		460	LFU Cache	22.40%	Hard	double linked list with ordered dict
		432	All O`one Data Structure	27.50%	Hard	
stack		155	Min Stack	27.60%	Easy	
		225	Implement Stack using Queues	32.10%	Easy	
		232	Implement Queue using Stacks	35.90%	Easy	
Iterator		251	Flatten 2D Vector	39.80%	Medium	
		281	Zigzag Iterator	49.60%	Medium	
		284	Peeking Iterator	35.30%	Medium	
		341	Flatten Nested List Iterator	40.30%	Medium	
		604	Design Compressed String Iterator	30.20%	Easy	
		353	Design Snake Game	26.10%	Medium	
		379	Design Phone Directory	31.40%	Medium	
	hashtable	631	Design Excel Sum Formula	17.00%	Hard	
	hashtable	359	Logger Rate Limiter	59.00%	Easy	
		635	Design Log Storage System	42.60%	Medium	
		362	Design Hit Counter	53.30%	Medium	
	trie	208	Implement Trie (Prefix Tree)	27.00%	Medium	dict is faster than a list in OJ
	trie	211	Add and Search Word - Data structure design	21.50%	Medium	
	trie	677	Map Sum Pairs	54.00%	Medium	
	trie	642	Design Search Autocomplete System	26.70%	Hard	
		676	Implement Magic Dictionary	51.10%	Medium	
	hashtable	535	Encode and Decode TinyURL	74.60%	Medium	
		271	Encode and Decode Strings	26.20%	Medium	
		355	Design Twitter	25.00%	Medium	

		348	Design Tic-Tac-Toe	45.60%	Medium	
		588	Design In-Memory File System	30.90%	Hard	
			Tree			
Traversal	inorder	94	Binary Tree Inorder Traversal	45.30%	Medium	iterative, Morris traversal
	preorder	144	Binary Tree Preorder Traversal	44.10%	Medium	iterative
	postorder	145	Binary Tree Postorder Traversal	39.40%	Hard	iterative, stack with status, inorder and preorder can be solved similarly
	inorder	173	Binary Search Tree Iterator	40.30%	Medium	
	inorder	98	Validate Binary Search Tree	22.90%	Medium	
	inorder	99	Recover Binary Search Tree	29.30%	Hard	
	inorder	285	Inorder Successor in BST	36.00%	Medium	
	preorder	606	Construct String from Binary Tree	54.90%	Easy	
	inorder	105	Construct Binary Tree from Preorder and Inorder Traversal	31.50%	Medium	hashmap might make it faster
	inorder	106	Construct Binary Tree from Inorder and Postorder Traversal	31.50%	Medium	
	preorder	255	Verify Preorder Sequence in Binary Search Tree	39.60%	Medium	
	inorder	501	Find Mode in Binary Search Tree	38.40%	Easy	
	inorder	653	Two Sum IV - Input is a BST	50.50%	Easy	
Level Order Traversal (mostly BFS)		102	Binary Tree Level Order Traversal	38.40%	Medium	
		107	Binary Tree Level Order Traversal II	39.10%	Easy	
		339	Nested List Weight Sum	60.90%	Easy	
		364	Nested List Weight Sum II	51.40%	Medium	
		103	Binary Tree Zigzag Level Order Traversal	33.50%	Medium	
		515	Find Largest Value in Each Tree Row	53.90%	Medium	
		116	Populating Next Right Pointers in Each Node	36.90%	Medium	we need to set next, not left, right
		117	Populating Next Right Pointers in Each Node II	33.60%	Medium	
		199	Binary Tree Right Side View	39.80%	Medium	
		623	Add One Row to Tree	50.10%	Medium	
		637	Average of Levels in Binary Tree	63.20%	Easy	
BFS/DFS (iterative/recursive)	postorder	110	Balanced Binary Tree	36.90%	Easy	
		100	Same Tree	45.90%	Easy	
		101	Symmetric Tree	37.90%	Easy	
		226	Invert Binary Tree	50.90%	Easy	recursive, iterative (dfs using stack and bfs using deque, appendleft and pop)
		617	Merge Two Binary Trees	73.40%	Easy	
		314	Binary Tree Vertical Order Traversal	36.20%	Medium	
		104	Maximum Depth of Binary Tree	51.80%	Easy	
	DFS	563	Binary Tree Tilt	49.00%	Easy	
		111	Minimum Depth of Binary Tree	32.70%	Easy	
		257	Binary Tree Paths	36.90%	Easy	
		404	Sum of Left Leaves	46.60%	Easy	
	DFS	112	Path Sum	33.50%	Easy	48.96 iterative
	DFS	113	Path Sum II	32.60%	Medium	iterative using stack and extra status
	BFS/DFS	437	Path Sum III	39.30%	Easy	a dfs method with 98.87
	DFS	124	Binary Tree Maximum Path Sum	25.50%	Hard	
	BFS/DFS	513	Find Bottom Left Tree Value	55.80%	Medium	
	BFS/DFS	129	Sum Root to Leaf Numbers	35.90%	Medium	
	BFS/DFS	298	Binary Tree Longest Consecutive Sequence	40.50%	Medium	
	DFS	250	Count Univalue Subtrees	41.20%	Medium	
	left and right	549	Binary Tree Longest Consecutive Sequence II	36.80%	Medium	two different writing have different performance, saving almost half time
	left and right	543	Diameter of Binary Tree	42.80%	Easy	the diameter is not the number of nodes
		366	Find Leaves of Binary Tree	58.60%	Medium	
		310	Minimum Height Trees	28.70%	Medium	
		508	Most Frequent Subtree Sum	52.00%	Medium	
	inorder	538	Convert BST to Greater Tree	52.90%	Medium	
		156	Binary Tree Upside Down	43.60%	Medium	
		545	Boundary of Binary Tree	28.20%	Medium	
Tree Conversion	stack	114	Flatten Binary Tree to Linked List	34.30%	Medium	
	stack	536	Construct Binary Tree from String	38.30%	Medium	
	binary	108	Convert Sorted Array to Binary Search Tree	41.40%	Easy	
	binary	109	Convert Sorted List to Binary Search Tree	33.40%	Medium	
Serialization		572	Subtree of Another Tree	43.90%	Easy	serialize, recursive, iterative
		331	Verify Preorder Serialization of a Binary Tree	35.70%	Medium	
	stack	297	Serialize and Deserialize Binary Tree	32.60%	Hard	preorder, recover with a stack. or BFS with a list
		449	Serialize and Deserialize BST	42.20%	Medium	
	binary search	222	Count Complete Tree Nodes	27.10%	Medium	
	hashtable	133	Clone Graph	25.10%	Medium	
	hashtable	138	Copy List with Random Pointer	26.50%	Medium	O(1) extra space solution
	adjacency list	323	Number of Connected Components in an Undirected Graph	47.50%	Medium	

	adjacency list	261	Graph Valid Tree	37.30%	Medium	
Binary Search Tree		230	Kth Smallest Element in a BST	43.00%	Medium	
		235	Lowest Common Ancestor of a Binary Search Tree	38.50%	Easy	
		236	Lowest Common Ancestor of a Binary Tree	29.60%	Medium	
		270	Closest Binary Search Tree Value	38.90%	Easy	
		272	Closest Binary Search Tree Value II	38.40%	Hard	
	postorder	333	Largest BST Subtree	30.20%	Medium	
		450	Delete Node in a BST	35.80%	Medium	
		530	Minimum Absolute Difference in BST	47.50%	Easy	
		669	Trim a Binary Search Tree	59.60%	Easy	
Topological Sort		207	Course Schedule	31.30%	Medium	
		210	Course Schedule II	26.80%	Medium	
		444	Sequence Reconstruction	19.70%	Medium	
	traverse	269	Alien Dictionary	22.80%	Hard	
		329	Longest Increasing Path in a Matrix	35.90%	Hard	
BFS		582	Kill Process	42.50%	Medium	
BFS		130	Surrounded Regions	17.90%	Medium	
BFS		200	Number of Islands	33.60%	Medium	
BFS		305	Number of Islands II	38.60%	Hard	
BFS		286	Walls and Gates	43.50%	Medium	
		490	The Maze	42.40%	Medium	
		505	The Maze II	36.10%	Medium	dijkstra.. Heap
		499	The Maze III	31.00%	Hard	
		301	Remove Invalid Parentheses	34.90%	Hard	
		317	Shortest Distance from All Buildings	33.60%	Hard	
DFS		332	Reconstruct Itinerary	28.70%	Medium	
		399	Evaluate Division	40.30%	Medium	
DFS		547	Friend Circles	49.00%	Medium	
BFS		417	Pacific Atlantic Water Flow	33.20%	Medium	
BFS		419	Battleships in a Board	61.20%	Medium	
BFS		473	Matchsticks to Square	34.30%	Medium	
BFS		529	Minesweeper	51.80%	Medium	
BFS on all		542	01 Matrix	32.40%	Medium	
Segment Tree						
		307	Range Sum Query - Mutable	19.60%	Medium	
		308	Range Sum Query 2D - Mutable	21.50%	Hard	
		327	Count of Range Sum	29.30%	Hard	
		493	Reverse Pairs	19.10%	Hard	
Greedy						
		561	Array Partition I	73.20%	Easy	
		55	Jump Game	29.30%	Medium	
		45	Jump Game II	26.10%	Hard	
		455	Assign Cookies	47.20%	Easy	
		134	Gas Station	29.00%	Medium	
		392	Is Subsequence	44.30%	Medium	
		630	Course Schedule III	8.90%	Medium	
		406	Queue Reconstruction by Height	54.70%	Medium	
		418	Sentence Screen Fitting	27.40%	Medium	
		484	Find Permutation	52.30%	Medium	
		452	Minimum Number of Arrows to Burst Balloons	43.40%	Medium	
		135	Candy	24.30%	Hard	
		316	Remove Duplicate Letters	29.10%	Hard	
		330	Patching Array	31.70%	Hard	
		621	Task Scheduler	38.60%	Medium	
		358	Rearrange String k Distance Apart	31.80%	Hard	
		68	Text Justification	18.60%	Hard	
		605	Can Place Flowers	29.20%	Easy	
Bit Manipulation						
		136	Single Number	53.70%	Easy	60.79 using defaultdict
		137	Single Number II	40.80%	Medium	63.24 using defaultdict
		260	Single Number III	50.50%	Medium	86.24 using defaultdict
		371	Sum of Two Integers	51.20%	Easy	Have not idea how to solve it...
		191	Number of 1 Bits	39.10%	Easy	
		338	Counting Bits	60.40%	Medium	
		476	Number Complement	61.30%	Easy	101 to 010 can be done by 101 ^ 111
		461	Hamming Distance	70.70%	Easy	

		477	Total Hamming Distance	46.40%	Medium	
		201	Bitwise AND of Numbers Range	33.50%	Medium	
		318	Maximum Product of Word Lengths	43.30%	Medium	
		397	Integer Replacement	29.60%	Medium	
		421	Maximum XOR of Two Numbers in an Array	44.50%	Medium	
			Array			
			String			
			Math1			
ADD		2	Add Two Numbers	27.20%	Medium	Append node into the current list
		445	Add Two Numbers II	46.10%	Medium	stack, insert after dummy to form the correct order
		67	Add Binary	31.50%	Easy	consider each list separately as a list, in other words, solve the problem as 2
		66	Plus One	37.80%	Easy	Can to similar as 445, while a briliant way is to determine whether the current digit is 9, if not, then we do not have carry and can return early
		369	Plus One Linked List	53.90%	Medium	Either reverse the list using a stack as 445, or can do a recursion so that for each next node, we return whether it has a carry
		415	Add Strings	41.20%	Easy	Similar to 2, do not forget to append the carry, and reverse the result
Multiplication		43	Multiply Strings	26.50%	Medium	It is more convenient to have a direct index/pointer for the array, and reduce the index each time than calculate the index
		537	Complex Number Multiplication	65.40%	Medium	
		311	Sparse Matrix Multiplication	50.60%	Medium	
Divide		29	Divide Two Integers	16.00%	Medium	log(N) binary search to find all possible divisor * factor that is less than dividend. Dividend / divisor = quotient and remainder
		166	Fraction to Recurring Decimal	17.20%	Medium	Corner Cases: numerator is 0, denominator is 0, negative number and sign
Square		69	Sqrt(x)	27.50%	Easy	binary search, corner case is mid*mid <= x, but (mid+1)**2 > x, then mid is the result
		367	Valid Perfect Square	37.90%	Easy	standard binary search. 1+3+5+(2n-1) = ...
		633	Sum of Square Numbers	27.80%	Easy	
Power		50	Pow(x, n)	26.70%	Medium	Same as sqrt, but x**2 will overflow while x*x will not There are lots of different solutions. A quick solution is recursion, pow(x, n) = pow(x*x, n/2) * (1 if n % 2 else x)
		372	Super Pow	33.80%	Medium	
		231	Power of Two	39.80%	Easy	Count 1 in binary format, or bit manipulation x & x-1 should be 0
		326	Power of Three	39.80%	Easy	log10(n)/log10(3) % 1 == 0
		342	Power of Four	38.00%	Easy	same as power of two, but need to remove those are power of 2 but not 4
String		8	String to Integer (atoi)	13.90%	Medium	need to pay attention to corner cases, like max/min int, the idx
		65	Valid Number	12.70%	Hard	corner cases, while idx < n and (a or b)
		12	Integer to Roman	43.80%	Medium	just consider each case...
		13	Roman to Integer	44.80%	Easy	same to 12
		273	Integer to English Words	21.70%	Hard	corner case: 0
Base		168	Excel Sheet Column Title	25.30%	Easy	idx is n-1 % 26
		171	Excel Sheet Column Number	46.20%	Easy	
		405	Convert a Number to Hexadecimal	40.80%	Easy	if num < 0: num = num + 2**32
		504	Base 7	45.50%	Easy	
		660	Remove 9	44.70%	Hard	
Traverse an arry or matrix		6	ZigZag Conversion	26.40%	Medium	
		498	Diagonal Traverse	46.40%	Medium	row+col=s, row in [0, m-1] thus col in [0 or s-m+1, s or n -1]
		48	Rotate Image	37.90%	Medium	
		54	Spiral Matrix	25.30%	Medium	
		59	Spiral Matrix II	38.80%	Medium	
		73	Set Matrix Zeroes	35.50%	Medium	
		661	Image Smoother	47.90%	Easy	
		520	Detect Capital	52.50%	Easy	
		616	Add Bold Tag in String	36.20%	Medium	
		289	Game of Life	36.50%	Medium	
		118	Pascal's Triangle	37.70%	Easy	
		119	Pascal's Triangle II	35.90%	Easy	
		566	Reshape the Matrix	67.90%	Easy	
		391	Perfect Rectangle	25.60%	Hard	
		382	Linked List Random Node	46.60%	Medium	
		398	Random Pick Index	41.80%	Medium	
		384	Shuffle an Array	45.90%	Medium	
		624	Maximum Distance in Arrays	31.00%	Easy	
		628	Maximum Product of Three Numbers	44.20%	Easy	
		657	Judge Route Circle	71.90%	Easy	str.count
		674	Longest Continuous Increasing Subsequence	44.00%	Easy	
		20	Valid Parentheses	32.90%	Easy	
		32	Longest Valid Parentheses	23.00%	Hard	
		224	Basic Calculator	26.30%	Hard	
		227	Basic Calculator II	28.70%	Medium	
		71	Simplify Path	24.70%	Medium	
		388	Longest Absolute File Path	35.90%	Medium	

Stack		150	Evaluate Reverse Polish Notation	26.60%	Medium	
		591	Tag Validator	17.90%	Hard	corner cases
		385	Mini Parser	30.00%	Medium	
		439	Ternary Expression Parser	50.30%	Medium	
		394	Decode String	40.90%	Medium	
		496	Next Greater Element I	57.60%	Easy	
		503	Next Greater Element II	47.20%	Medium	
		556	Next Greater Element III	27.20%	Medium	
		218	The Skyline Problem	26.60%	Hard	
missing or extra number	traverse	41	First Missing Positive	25.20%	Hard	mark negative to 0, and turn value in exisiting index to negative, finally the first positive position is missing
	traverse	268	Missing Number	44.00%	Easy	1+..+n = (n+1)*n/2
	traverse	169	Majority Element	45.80%	Easy	
	traverse	229	Majority Element II	28.20%	Medium	
	hashtable	217	Contains Duplicate	44.80%	Easy	set
	hashtable	219	Contains Duplicate II	32.00%	Easy	hashtable to store the last idx
	hashtable	220	Contains Duplicate III	19.20%	Medium	
	traverse	442	Find All Duplicates in an Array	53.80%	Medium	add n is a good idea
	traverse	448	Find All Numbers Disappeared in an Array	52.50%	Easy	
	hashtable	389	Find the Difference	51.50%	Easy	
	hashtable	645	Set Mismatch	40.60%	Easy	
Interval	traverse	56	Merge Intervals	29.30%	Medium	
	traverse	57	Insert Interval	27.00%	Hard	
	traverse	252	Meeting Rooms	46.50%	Easy	
	greedy	253	Meeting Rooms II	38.70%	Medium	
	binary search	436	Find Right Interval	41.20%	Medium	
		435	Non-overlapping Intervals	40.40%	Medium	greedy
	traverse	495	Teemo Attacking	52.00%	Medium	
	traverse	163	Missing Ranges	25.50%	Medium	
	traverse	228	Summary Ranges	28.90%	Medium	
		352	Data Stream as Disjoint Intervals	39.50%	Hard	
Number	hashtable	202	Happy Number	40.00%	Easy	
	math	258	Add Digits	50.70%	Easy	
	math	507	Perfect Number	32.90%	Easy	
	traverse	306	Additive Number	27.30%	Medium	
	traverse	38	Count and Say	33.60%	Easy	
	hashtable	204	Count Primes	26.40%	Easy	corner case, and how to reduce duplicate multiply
	math	246	Strobogrammatic Number	39.40%	Easy	
	math	247	Strobogrammatic Number II	39.10%	Medium	
	math	248	Strobogrammatic Number III	31.20%	Hard	DP
	math	263	Ugly Number	38.80%	Easy	<=0
	math	264	Ugly Number II	32.10%	Medium	
	math	313	Super Ugly Number	37.30%	Medium	
	math	172	Factorial Trailing Zeroes	35.50%	Easy	
	math	625	Minimum Factorization	27.70%	Medium	
		479	Largest Palindrome Product	17.90%	Easy	
	math	357	Count Numbers with Unique Digits	45.60%	Medium	
	math	233	Number of Digit One	27.90%	Hard	
	math	396	Rotate Function	31.50%	Medium	
	math	483	Smallest Good Base	31.40%	Hard	
	math	453	Minimum Moves to Equal Array Elements	46.80%	Easy	min
	math	462	Minimum Moves to Equal Array Elements II	51.30%	Medium	median
	math	296	Best Meeting Point	51.30%	Hard	median
	math	573	Squirrel Simulation	46.70%	Medium	
Digital or String order	traverse	31	Next Permutation	28.50%	Medium	
		386	Lexicographical Numbers	40.50%	Medium	
		60	Permutation Sequence	27.80%	Medium	
		440	K-th Smallest in Lexicographical Order	23.30%	Hard	
		555	Split Concatenated Strings	28.50%	Medium	
		400	Nth Digit	30.10%	Easy	
		179	Largest Number	22.10%	Medium	
	stack	402	Remove K Digits	26.10%	Medium	
Top N	traverse	414	Third Maximum Number	27.50%	Easy	corner cases
	heap	378	Kth Smallest Element in a Sorted Matrix	43.80%	Medium	can also binary search
	heap	373	Find K Pairs with Smallest Sums	30.40%	Medium	
	heap	215	Kth Largest Element in an Array	38.40%	Medium	

	heap	347	Top K Frequent Elements	47.30%	Medium	bucket LFU/LRU
		632	Smallest Range	43.50%	Hard	
	heap	659	Split Array into Consecutive Subsequences	33.20%	Medium	
	heap	502	IPO	34.70%	Hard	
	bucket	539	Minimum Time Difference	45.50%	Medium	
	bucket	128	Longest Consecutive Sequence	36.00%	Hard	can solve use hashmap too
	bucket	164	Maximum Gap	29.10%	Hard	
Shape		463	Island Perimeter	56.80%	Easy	
		492	Construct the Rectangle	49.10%	Easy	
	math	223	Rectangle Area	32.40%	Medium	
	math	335	Self Crossing	24.70%	Hard	
		593	Valid Square	36.10%	Medium	
	math	469	Convex Polygon	30.60%	Medium	
	math	587	Erect the Fence	0.226	Hard	
Logitic Game		292	Nim Game	55.10%	Easy	1,2,3 win, 4 loss, 5,6,7 win, 8 loss
	math	319	Bulb Switcher	42.20%	Medium	
	math	672	Bulb Switcher II	45.60%	Medium	
132 Pattern	dp	376	Wiggle Subsequence	35.20%	Medium	
		280	Wiggle Sort	56.20%	Medium	
		324	Wiggle Sort II	25.50%	Medium	
		334	Increasing Triplet Subsequence	38.60%	Medium	
		456	132 Pattern	28.20%	Medium	
		360	Sort Transformed Array	43.60%	Medium	
		634	Find the Derangement of An Array	26.60%	Medium	
	traverse	370	Range Addition	54.60%	Medium	
		598	Range Addition II	44.40%	Easy	tricky..
		640	Solve the Equation	38.60%	Medium	
		544	Output Contest Matches	72.10%	Medium	
		565	Array Nesting	47.10%	Medium	
	traverse	390	Elimination Game	40.50%	Medium	binary
	traverse	420	Strong Password Checker	20.10%	Hard	
	traverse	393	UTF-8 Validation	34.80%	Medium	do int comparison instead of string
	traverse	459	Repeated Substring Pattern	38.50%	Easy	
	traverse	465	Optimal Account Balancing	34.00%	Hard	
	traverse	481	Magical String	45.20%	Medium	
	traverse	506	Relative Ranks	47.40%	Easy	
	traverse	521	Longest Uncommon Subsequence I	51.30%	Easy	
	traverse	522	Longest Uncommon Subsequence II	28.70%	Medium	
	traverse	531	Lonely Pixel I	51.60%	Medium	
	traverse	533	Lonely Pixel II	40.00%	Medium	
	traverse	548	Split Array with Equal Sum	29.30%	Medium	
	traverse	277	Find the Celebrity	35.30%	Medium	
	traverse	482	License Key Formatting	41.20%	Medium	replace and upper is faster than do each position
	traverse	412	Fizz Buzz	58.80%	Easy	
	traverse	14	Longest Common Prefix	31.10%	Easy	
	traverse, KMP	28	Implement strStr()	27.60%	Easy	
	traverse	161	One Edit Distance	30.90%	Medium	
	traverse	58	Length of Last Word	31.50%	Easy	
	traverse	434	Number of Segments in a String	37.00%	Easy	
	traverse	485	Max Consecutive Ones	54.50%	Easy	
	traverse	487	Max Consecutive Ones II	44.40%	Medium	Follow Up: if we can flip at most K zero, we store the previous at most K zero index in a queue, so that we can calculate the len when new value come in. Queue is better
	traverse	157	Read N Characters Given Read4	29.10%	Easy	
	traverse	158	Read N Characters Given Read4 II - Call multiple times	24.30%	Hard	
	traverse	165	Compare Version Numbers	19.70%	Medium	
			Hash Table			
		349	Intersection of Two Arrays	46.60%	Easy	set.intersection(t)
		350	Intersection of Two Arrays II	44.30%	Easy	(countera & counterb).elements()
		599	Minimum Index Sum of Two Lists	57.50%	Easy	
		299	Bulls and Cows	34.00%	Medium	
		49	Group Anagrams	33.30%	Medium	count sort may make the str sort quicker..
		242	Valid Anagram	45.70%	Easy	hashmap is faster than len_26 char
		383	Ransom Note	46.70%	Easy	
		447	Number of Boomerangs	44.10%	Easy	
		356	Line Reflection	30.20%	Medium	
	gcd	592	Fraction Addition and Subtraction	46.80%	Medium	gcd, and re

	gcd	365	Water and Jug Problem	26.70%	Medium	
	gcd	149	Max Points on a Line	15.40%	Hard	
		249	Group Shifted Strings	40.30%	Medium	
		187	Repeated DNA Sequences	30.60%	Medium	
word distance not edit distance	travese	243	Shortest Word Distance	51.60%	Easy	just traverse the word list, update the distance, the initial set is important
		244	Shortest Word Distance II	36.30%	Medium	
	travese	245	Shortest Word Distance III	49.80%	Medium	only need to slightly modify 243
		387	First Unique Character in a String	46.40%	Easy	
		594	Longest Harmonious Subsequence	36.20%	Easy	
		423	Reconstruct Original Digits from English	43.20%	Medium	
		451	Sort Characters By Frequency	50.60%	Medium	
		500	Keyboard Row	60.30%	Easy	
		575	Distribute Candies	0.648	Easy	
		554	Brick Wall	41.60%	Medium	
		274	H-Index	32.70%	Medium	
		275	H-Index II	33.90%	Medium	
		609	Find Duplicate File in System	54.80%	Medium	
		336	Palindrome Pairs	25.60%	Hard	