Normal Content

Week 1

Arrays

- Largest Element in Array
- Second Largest Element in Array
- Linear Search
- Binary Search
- Reverse an Array
- Pairs in Array

1. Check if Array is Sorted and rotated (1752)
2. Remove Duplicates From Array (26)
3. Rotate Array (189)
4. Move zero to ends (283)
5. Union of Two Sorted Array
6. Find Missing Number in a Range (268)
7. **Maximum Consecutive Ones (485)**
8. Number that Appear Once (136)
9. Longest Subarray with sum K
10. Two Sum II - (Input Array is Sorted) (167)
11. Two Sum (1)
12. Sort Array of 0's, 1's and 2's (75)
    OR Merge Sort
    OR Sort Colors
13. Majority Elements (>N/2 Times) (169)

14. Maximum Sub-Array Sum (53)
15. Best Time to Buy and Sell Stocks (121)
16. Rearrange Array Element in alternate position of positive and negative items (2149)
17. Leaders in Array
18. Longest Consecutive Sequence (128)
19. Sub- Array sum equals k (560)
20. Largest Sub-Array With Sum 0
21. Maximum Product Sub-Array (152)

Week 2

22. Majority Elements (n/3 Times) (229)
23. **Count subarrays with given XOR K**
24. Merge Overlapping Sub Intervals (56)
25. Merge Sorted Arrays (88)
26. Missing and Repeated Values (2965)

2D Arrays

1. Matrix Diagonal Sum (1572)
2. Spiral Matrix (54)
3. Rotate Matrix by 90 degree (48)
4. Set Matrix Zero (73)
5. Pascal's Triangle (118)
6. 3 Sum (15)
7. 4 Sum (18)

Strings

- Shortest Path in Strings

1. Valid Palindrome (125)
2. Length of Last Word (58)
3. Valid Parenthesis (20)
4. Remove Outmost Parenthesis (1021)
5. Reverse Word in String (151)
6. String Compression (443)
7. **Maximum Number of Vowels in a Substring of Given Length (1456)**
8. Find all Anagrams in a String (438)

Week 3

9. Valid Anagram (242)
10. Largest Odd Number in String (1903)
11. Isomorphic Strings (205)
12. Longest Common Prefix (14)
13. Rotate Strings (796)
14. Maximum Nesting Depth of the Parenthesis(1614)
15. Sort Characters By Frequency (451)
16. Roman To Integer (13)
17. Integer to Roman (12)
18. String to Integer (atoi) (8)
19. Longest Palindromic Substring (5)
20. Sum of Beauty of All SubString (1781)

Binary Search

Pattern 1- BS on 1D Array

- Implement Lower Bound
- Implement Upper Bound
- Floor and Ceil in Sorted Array

1. Binary Search (704)
2. Search Insert Position (35)
3. Find First and Last Position of Element in Sorted Array (34)
4. Search in Rotated Sorted Array (33)
5. Search in Rotated Sorted Array II (81)
6. Find Minimum in Rotated Sorted Array (153)
7. Single Element in Sorted Array (540)
8. Find Peak Elements (162)

Week 4

Binary Search

Pattern 2 - BS for Min or Max

9. Sqrt{x} (69)
10. Find nth root of m
11. Koko Eating Bananas (875)
12. Minimum No of days to make m Bouquets (1482)
13. Find a Smallest Divisor given in Threshold (1283)

14. Capacity to Ship Packages Within D Days (1011)
15. Kth Missing Positive Number (1539)

Pattern 3- BS for Max of Min || Min of Max

1. Aggressive Cows
2. Allocate Minimum Pages
3. Split Array Largest Sum (410)
4. Painter's Partition Problem
5. Minimize Max Distance to Gas Station (774)
6. Median of 2 Sorted Arrays (4)
7. Kth Element of 2 Sorted Arrays

Pattern 4- BS for 2D Array

1. Row With Maximum Once (2643)
2. Search in 2D Matrix (74)
3. Search in 2D Matrix II (240)
4. Find Peak Element II (1901)
5. Median in a Row Wise Sorted Matrix
6. Search in a Row - Column Sorted Matrix

Week 5

Linked List

1. Add Node in Linked List
    a. Add in First
    b. Add in Last
    c. Add in Middle

2. Remove Node from Linked List
    a. Remove from first
    b. Remove from Last
    c. Remove From Middle
3. Find Length of Linked List
4. Print Linked List
5. Search an Element in Linked List
    A. Iterative Search
    B. Recursive Search
6. Find Middle of Linked List
7. Reverse a Linked List
    A. Iterative
    B. Recursive
8. Detect a Loop in Linked List
9. Remove a Loop/Cycle from a Linked List
10. Find a Starting Point in Linked List
11. Length of Loop in Linked List
12. Check if Linked List is Palindrome or not
13. Segregate odd and Even Nodes in Linked List
14. Remove Nth node form Back of the Linked List
15. Delete the Middle node of The Linked List
16. Sort Linked List (Merge Sort)
17. Sort LL of 0's, 1's and 2's by changing links
18. Find Intersection Point of Y linked List
19. Add 1 to a number represented by Linked List
20. Add 2 Numbers in Linked list

Week 6

Doubly Linked List

1. Add Node in doubly Linked List
    A. Add at first
    B. Add in End
    C. Add in Middle
2. Remove Node from Doubly Linked List
    A. Remove from first
    B. Remove from last
    C. Remove from middle
3. Find Length of Doubly Linked List
4. Print Doubly Linked List
5. Reverse a Doubly Linked List
6. Delete all Occurrences of key in doubly Linked List
7. Find Pairs with given sum in DLL
8. Remove Duplicates from Sorted Doubly Linked List
9. **Flatten a Multilevel Doubly Linked List (430)**

LL Hard

1. Remove Duplicates From Sorted List (83)
2. Reorder List (143)
3. Swap Nodes in Pairs (24)
4. Rotate a LL (61)
5. Reverse a LL in a group of given size K (25)

6. Clone a LL with random and Next Pointer (138)
7. Falttening a LL

Recursion -Basic

a. Print Number in Decreasing Order

b. Print no in Increasing Order

c. Factorial of Number

d. Sum of N Natural No

e. Fibonacci Series

f. Array is Sorted or Not

g. First Occurrence

h. Last Occurrence

i. Print X to Power N

j. Print X to Power N (Optimized)

1. Recursive Implementation of Atoi
2. Pow(x, n)
3. Count Good Numbers
4. Sort a Stack using Recursion
5. Reverse a Stack using Recursion

Week 7

Extra

- Tilling Problem
- Remove Duplicate Letter From Strings

- Friend Pairing Problem
- Binary String Problem
- occurrences of Index
- Convert no in String
- length of String
- Tower of Hanoi

Recursion - Sub Sequences Pattern

1. Generate all binary Strings
2. Generate Parenthesis (22)
3. Print all subsequences/ Power Set / Subsets (78)
4. Count all Subsequences with sum k
5. Check if there exists a subsequence with sum k
6. Combination sum I (39)
7. Combination sum II (40)
8. Combination sum -III (216)
9. Subset sum - I
10. Subset sum- II (90)
11. Letter Combination of Phone Numbers (17)

Backtracking

- Backtracking on Array
- Find Subset of Strings
- Permutations of all Strings

1. Palindrome Partitioning (131)
2. Word Search (79)

3. N Queen (51)
4. Rat in a Maze
5. Unique Paths (62)
6. Word Break (139)
7. M Coloring Problem
8. Sudoku Solver (37)
9. Expression Add Operators (282)

Week 8

Stack and Queue

Stack

- Implementation of Stack Using Array List
- Implementation of Stack using Linked List
- Implementation of Stack Using Deque
- Push Element at the Bottom of the Stack
- Reverse a String Using Stack
- Reverse a Stack

Conversion

- Infix to Postfix
- Infix to Prefix
- Postfix to Infix
- Prefix to Infix
- Postfix to Prefix
- Prefix to Postfix

Queue

- Implementation of Queue Using Array
- Implementation of Circular Queue Using Array
- Implementation of Queue using Linked List
- Implementation of Deque
- Implementation of Queue using Deque
- Queue Reversal

1. Implementation of Stack using Queue (225)
2. Implementation of Queue using Stack (232)
3. Implement Min Stack (155)
4. First Non Repeating Letter in a Stream of Chars
5. Interleave 2 half of Queue
6. Stock Span Problem (901)
7. Next Greater Element {Right} (496)
    - Next Greater Element {Left}
    - Next Smaller Element {Right}
    - Next Smaller Element {Left}
8. Next Greater Element II (503)
9. Duplicate Parenthesis
10. Largest Rectangle in Histogram (84)
11. Maximal Rectangle (85)
12. Simplify Path (71)
13. Decode a String (394)
14. Tapping Rain Water (42)
15. Sum of Subarray Minimum (907)

16. Asteroid Collision (735)
17. Sum of Subarray Ranges (2104)
18. Remove K digits (402)
19. Generate Binary Numbers
20. Connect N Rope With Minimum Cost
21. Job Sequencing Problem
22. Reverse first k Queue
23. The Celebrity Problem (277)
24. LRU Cache (146)
25. LFU Cache (460)