**ASSIGNMENT - 1**

**Searching and Sorting**

9. [Counting Inversions](https://www.geeksforgeeks.org/counting-inversions) (Hard)(got the easy approach having difficulty in hard approach)

11. [Stock Buy Sell to Maximize Profit](https://www.geeksforgeeks.org/stock-buy-sell/)  (Medium)

12. [Print a given matrix in the spiral form](https://www.geeksforgeeks.org/print-a-given-matrix-in-spiral-form/) (Medium) (got the simple approach and had difficulty in hard one)

**17.** [**Merge two sorted arrays**](https://www.geeksforgeeks.org/merge-two-sorted-arrays/) **(Easy)(having difficulty in O(1) apporach)**

13. [Kth smallest element in a row-wise and column-wise sorted 2D array | Set 1](https://www.geeksforgeeks.org/kth-smallest-element-in-a-row-wise-and-column-wise-sorted-2d-array-set-1/)  (Hard)(have implemented my way but did not understood heap)

20. [Find the smallest window in a string containing all characters of another string](https://www.geeksforgeeks.org/find-the-smallest-window-in-a-string-containing-all-characters-of-another-string/) (Hard)(not able to minimize the window)

21. H/W: Implement Searching/Sorting Algorithms - Binary Search, QuickSort, Merge Sort.

    Read about External Sort.

**ASSIGNMENT - 2**

Recursion & Backtracking

**1.** [**Fib Number and Factorial using tail recursion**](https://www.geeksforgeeks.org/program-for-nth-fibonacci-number/) **(Easy)**

    2.  [**Generate Parenthesis**](https://www.geeksforgeeks.org/print-all-combinations-of-balanced-parentheses/) **(Easy)**

**3.** [**Print all possible combinations of the mobile keyboard**](https://www.geeksforgeeks.org/find-possible-words-phone-digits/) **(Hard)**

    4. [Count All possible Decoding](https://www.geeksforgeeks.org/count-possible-decodings-given-digit-sequence/) (Medium)

    5. [Count Possible Paths](https://www.geeksforgeeks.org/count-possible-paths-top-left-bottom-right-nxm-matrix/) (Easy to Medium)

**6.** [**Write a program to print all permutations of a given string**](https://www.geeksforgeeks.org/write-a-c-program-to-print-all-permutations-of-a-given-string/) **(Medium)**

**7.** [**Rat in a maze**](https://practice.geeksforgeeks.org/problems/rat-in-a-maze-problem/1) **(Medium)**

   8.  [Subset Sum | Backtracking-4](https://www.geeksforgeeks.org/subset-sum-backtracking-4/) (Hard)

**9. N Queens Problem (Hard)**

**10.** [**Leetcode #62 Unique Paths**](https://leetcode.com/problems/unique-paths/) **(Medium)**

**ASSIGNMENT - 3**

LinkedLists

**0.  Implement (Singly/Doubly/Circular) LinkedList  class with CRUD operations**

1. [**Reverse a linked list**](https://www.geeksforgeeks.org/reverse-a-linked-list/) **(Recursive /Iterative) (Easy)**

1. [Palindromic Linked List](http://geeksforgeeks.org/function-to-check-if-a-singly-linked-list-is-palindrome/) (Easy)

1. [**Add two numbers in the linked list**](https://www.geeksforgeeks.org/add-two-numbers-represented-by-linked-lists/) **(Medium)**

1. [**Detect and remove a loop in the linked list**](https://www.geeksforgeeks.org/detect-and-remove-loop-in-a-linked-list/) **(Medium)**

1. [**Intersection point in the linked list**](https://www.geeksforgeeks.org/write-a-function-to-get-the-intersection-point-of-two-linked-lists/) **(Easy to Medium)**

1. [Merge k Sorted Linked Lists](https://www.geeksforgeeks.org/merge-k-sorted-linked-lists/) (Easy to Medium)

1. [**Arrangement of Odd And Even Nodes In Linked List**](https://www.geeksforgeeks.org/rearrange-a-linked-list-such-that-all-even-and-odd-positioned-nodes-are-together/) **(Medium)**

1. [Remove all occurrences of duplicates from a sorted Linked List](https://www.geeksforgeeks.org/remove-occurrences-duplicates-sorted-linked-list/) (Medium)

1. **Merge two sorted linked lists (Easy)**

1. [**Reverse Linked List in K groups**](https://www.geeksforgeeks.org/reverse-linked-list-groups-given-size-set-2/) **(Medium)**

1. [**Clone with Linked With Random Pointers**](https://www.geeksforgeeks.org/a-linked-list-with-next-and-arbit-pointer/) **(Medium to Hard)**

1. [**Reorder Linked List**](https://leetcode.com/problems/reorder-list/) **(Hard)**

1. [Sort a linked list](https://leetcode.com/problems/sort-list/) (Hard)

1. Delete Node in linked List (Easy)

1. [Function to check if a singly linked list is palindrome](https://www.geeksforgeeks.org/function-to-check-if-a-singly-linked-list-is-palindrome/)

1. [Intersection of two Sorted Linked Lists](https://www.geeksforgeeks.org/intersection-of-two-sorted-linked-lists/)

1. [C/C++ Program for Remove duplicates from a sorted linked list](https://www.geeksforgeeks.org/remove-duplicates-from-a-sorted-linked-list/)