Topics :

- Introduction
- Design and Implementation
- Standard Problems
- Operations on Stack
- Misc
- Quick Links

Introduction :

1. Introduction to Stack
2. Stack in C++ STL
3. Stack Class in Java
4. Stack in Python
5. Stack in C#

Design and Implementation :

1. Implement Queue using Stacks
2. Design and Implement Special Stack Data Structure | Added Space Optimized Version
3. Implement two stacks in an array
4. Implement Stack using Queues
5. Design a stack with operations on middle element
6. How to efficiently implement k stacks in a single array?
7. How to create mergable stack?
8. Design a stack that supports getMin() in O(1) time and O(1) extra space
9. Implement a stack using single queue
10. How to implement stack using priority queue or heap?
11. Create a customized data structure which evaluates functions in O(1)
12. Implement Stack and Queue using Deque

Standard Problems based on Stack :

1. Infix to Postfix Conversion using Stack
2. Prefix to Infix Conversion
3. Prefix to Postfix Conversion
4. Postfix to Prefix Conversion
5. Postfix to Infix
6. Convert Infix To Prefix Notation
7. The Stock Span Problem
8. Check for balanced parentheses in an expression
9. Next Greater Element
10. Next Greater Frequency Element
11. Number of NGEs to the right
12. Maximum product of indexes of next greater on left and right
13. The Celebrity Problem
14. Expression Evaluation
15. Arithmetic Expression Evalution
16. Evaluation of Postfix Expression
17. Iterative Tower of Hanoi

18. Print next greater number of Q queries

Operations on Stack :

1. Reverse a stack using recursion
2. Sort a stack using recursion
3. Sort a stack using a temporary stack
4. Reverse a stack without using extra space in O(n)
5. Delete middle element of a stack
6. Sorting array using Stacks
7. Delete array elements which are smaller than next or become smaller
8. Check if a queue can be sorted into another queue using a stack
9. Reverse individual words
10. Count subarrays where second highest lie before highest
11. Check if an array is stack sortable

Misc :

1. Iterative Postorder Traversal | Set 1 (Using Two Stacks)
2. Iterative Postorder Traversal | Set 2 (Using One Stack)
3. Merge Overlapping Intervals
4. Largest Rectangular Area in a Histogram | Set 2
5. Print ancestors of a given binary tree node without recursion
6. Reverse a string using stack
7. Program for Tower of Hanoi
8. Find maximum depth of nested parenthesis in a string
9. Find maximum of minimum for every window size in a given array
10. Length of the longest valid substring
11. Iterative Depth First Traversal of Graph
12. Minimum number of bracket reversals needed to make an expression balanced
13. Expression contains redundant bracket or not
14. Identify and mark unmatched parenthesis in an expression
15. Check if two expressions with brackets are same
16. Find index of closing bracket for a given opening bracket in an expression
17. Check for balanced parentheses in an expression
18. Balanced expression with replacement
19. Check if a given array can represent Preorder Traversal of Binary Search Tree
20. Form minimum number from given sequence
21. Find if an expression has duplicate parenthesis or not
22. Find maximum difference between nearest left and right smaller elements
23. Find next Smaller of next Greater in an array
24. Find maximum sum possible equal sum of three stacks
25. Count natural numbers whose all permutation are greater than that number
26. Delete consecutive same words in a sequence
27. Decode a string recursively encoded as count followed by substring
28. Bubble sort using two Stacks
29. Pattern Occurrences : Stack Implementation Java
30. Iterative method to find ancestors of a given binary tree
31. Stack Permutations (Check if an array is stack permutation of other)
32. Tracking current Maximum Element in a Stack

33. Check mirror in n-ary tree
34. Reverse a number using stack
35. Reversing the first K elements of a Queue
36. Reversing a Queue
37. Check if stack elements are pairwise consecutive
38. Spaghetti Stack
39. Interleave the first half of the queue with second half
40. Remove brackets from an algebraic string containing + and – operators
41. Growable array based stack
42. Range Queries for Longest Correct Bracket Subsequence