

1. Implement Queue using Stacks
2. Implement Stack using Queues
3. Implement a stack using single queue
4. Implement two stacks in an array
5. Reverse a number using stack
6. Reversing the first K elements of a Queue
7. Reversing a Queue
8. Design a stack with operations on middle element
9. How to efficiently implement k stacks in a single array?
10. <https://www.youtube.com/watch?v=DxW7VAsdX0o> (reference for k stack)
11. How to create mergable stack?
12. Design a stack that supports getMin() in $O(1)$ time and $O(1)$ extra space
13. Create a customized data structure which evaluates functions in $O(1)$
14. The Stock Span Problem
15. Check for balanced parentheses in an expression
16. Balanced expression with replacement
17. Find maximum depth of nested parenthesis in a string
18. Minimum number of bracket reversals needed to make an expression balanced
19. Length of the longest valid substring
20. Expression contains redundant bracket or not
21. <https://www.geeksforgeeks.org/check-two-expressions-brackets/>
22. Find index of closing bracket for a given opening bracket in an expression
23. Next Greater Element
24. Find maximum difference between nearest left and right smaller elements
25. Find next Smaller of next Greater in an array
26. Next Greater Frequency Element
27. Maximum product of indexes of next greater on left and right
28. The Celebrity Problem
29. Print next greater number of Q queries
30. Reverse a stack using recursion
31. Reverse a stack without using extra space in $O(n)$
32. Sort a stack using recursion
33. Sort a stack using a temporary stack
34. Sorting array using Stacks
35. Delete middle element of a stack
36. Delete array elements which are smaller than next or become smaller
37. Check if a queue can be sorted into another queue using a stack
38. Check if an array is stack sortable
39. Merge Overlapping Intervals
40. Largest Rectangular Area in a Histogram | Set 2
41. Find maximum of minimum for every window size in a given array

- 42. Form minimum number from given sequence
- 43. Find maximum sum possible equal sum of three stacks
- 44. Count natural numbers whose all permutation are greater than that number (same petturn microsoft)
- 45. Delete consecutive same words in a sequence
- 46. Decode a string recursively encoded as count followed by substring (same petturn Amazon)
- 47. Stack Permutations (Check if an array is stack permutation of other)
- 48. Check if stack elements are pairwise consecutive
- 49. Interleave the first half of the queue with second half
- 50. Remove brackets from an algebraic string containing + and - operators
- 51. Growable array based stack
- 52. Range Queries for Longest Correct Bracket Subsequence
- 53. Number of NGEs to the right
- 54. Count subarrays where second highest lie before highest

(most of companies ask these question)

ALL type of conversion

- 1. prefix to infix
- 2. prefix to postfix
- 3. infix to prefix
- 4. infix to postfix
- 5. postfix to infix
- 6. postfix to prefix

<https://www.youtube.com/watch?v=vXPL6UavUeA>

- 7. given expression is valid or not like $(1*3-4++5) (+5)$

- 55. Expression Evaluation
- 56. Evaluation of Postfix Expression

priority queue

- 57. How to implement stack using priority queue or heap?
- 58. Implement Stack and Queue using Deque