

DATA STRUCTURES

MUST-DO CODING PROBLEMS

[TOPIC-WISE]

TOPICS COVERED-

- **MATHS**
- **ARRAYS**
- **SEARCHING**
- **SORTING**
- **MATRIX**
- **STRING**
- **HASHING**
- **BITMAGIC**
- **LINKED LIST**
- **STACK**
- **QUEUE**
- **HEAP**
- **BST**
- **GRAPH**
- **TRIE**
- **GREEDY**
- **DYNAMIC PROGRAMMING**
- **RECURSION**
- **BACKTRACKING**
- **ALGORITHMS**
- **DESIGN**

MUST JOIN TELEGRAM CHANNEL FOR UPCOMING PART-2

LINK- https://t.me/engnr_notes



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MATRIX-IMPORTANT PROBLEMS

YOU CAN REFER THESE NOTES- https://t.me/engnr_notes/30

- **Sort a 2D vector diagonally :**
<https://practice.geeksforgeeks.org/batch/must-do1/track/md-matrix/problem/diagonal-morningassembly0028>
- **Spirally traversing a matrix :**
<https://practice.geeksforgeeks.org/batch/must-do1/track/md-matrix/problem/spirally-traversing-amatrix-1587115621>
- **Boolean Matrix :** <https://practice.geeksforgeeks.org/batch/must-do-1/track/mdmatrix/problem/boolean-matrix-problem-1587115620>
- **Rotate by 90 degree :** <https://practice.geeksforgeeks.org/batch/must-do1/track/md-matrix/problem/rotate-by-90-degree0356>
- **Search in a row-column sorted Matrix :**
<https://practice.geeksforgeeks.org/batch/must-do1/track/md-matrix/problem/search-in-a-matrix1587115621>
- **Row with max 1s :** <https://practice.geeksforgeeks.org/batch/must-do1/track/md-matrix/problem/row-with-max-1s0023>

STRINGS-IMPORTANT PROBLEMS

YOU CAN REFER THESE NOTES- https://t.me/engnr_notes/30

➤ **Reverse words in a given string :**

<https://practice.geeksforgeeks.org/batch/must-do1/track/md-string/problem/reverse-words-in-a-givenstring5459>

➤ **Longest Common Prefix in an Array :**

<https://practice.geeksforgeeks.org/batch/must-do1/track/md-string/problem/longest-common-prefixin-an-array5129>

➤ **Roman Number to Integer :**

<https://practice.geeksforgeeks.org/batch/must-do1/track/md-string/problem/roman-number-tointeger3201>

➤ **Next higher palindromic number using the same set of digits :**

<https://practice.geeksforgeeks.org/batch/mustdo-1/track/md-string/problem/next-higherpalindromic-number-using-the-same-set-of-digits5859>

➤ **Longest Prefix Suffix :**

<https://practice.geeksforgeeks.org/batch/must-do1/track/md-string/problem/longest-prefix-suffix2527>

➤ **Smallest window in a string containing all the characters of another string :** <https://practice.geeksforgeeks.org/batch/must-do-1/track/md-string/problem/smallest-window-in-a-string-containing-all-the-characters-of-another-string-1587115621>

PART-2

- **Validate an IP Address :**
<https://practice.geeksforgeeks.org/batch/must-do1/track/md-string/problem/validate-an-ip-address1587115621>
- **Implement strstr :** <https://practice.geeksforgeeks.org/batch/must-do1/track/md-string/problem/implement-strstr>
- **Implement Atoi :** <https://practice.geeksforgeeks.org/batch/must-do1/track/md-string/problem/implement-atoi>
- **Look and Say Pattern :** <https://practice.geeksforgeeks.org/batch/must-do1/track/md-string/problem/decode-the-pattern1138>
- **Longest K unique characters substring :**
<https://practice.geeksforgeeks.org/batch/must-do1/track/md-string/problem/longest-k-uniquecharacters-substring0853>
- **Anagram :** <https://practice.geeksforgeeks.org/batch/must-do1/track/md-string/problem/anagram-1587115620>
- **Remove Duplicates :**
<https://practice.geeksforgeeks.org/batch/must-do1/track/md-string/problem/remove-duplicates3034>
- **Longest Distinct characters in string :**
<https://practice.geeksforgeeks.org/batch/must-do1/track/md-string/problem/longest-distinctcharacters-in-string5848>
- **Check if string is rotated by two places :**
<https://practice.geeksforgeeks.org/batch/must-do1/track/md-string/problem/check-if-string-is-rotatedby-two-places-1587115620>
- **Permutations of a given string :**
<https://practice.geeksforgeeks.org/batch/must-do1/track/md-string/problem/permutations-of-a-givenstring2041>

PART-2

➤ **Longest Palindrome in a String :**

<https://practice.geeksforgeeks.org/batch/must-do1/track/md-string/problem/longest-palindrome-in-astring3411>

➤ **Recursively remove all adjacent duplicates :**

<https://practice.geeksforgeeks.org/batch/must-do1/track/md-string/problem/recursively-remove-alladjacent-duplicates0744>

➤ **Form a palindrome :** <https://practice.geeksforgeeks.org/batch/must-do1/track/md-string/problem/form-a-palindrome1455>

➤ **Longest Common Substring :**

<https://practice.geeksforgeeks.org/batch/must-do-1/track/md-string/problem/longest-common-substring1452>

ATTEMPT ALL THE PROBLEMS ORDER-WISE

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HASHING-IMPORTANT PROBLEMS

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➤ **Find first repeated character :**

<https://practice.geeksforgeeks.org/batch/must-do1/track/md-hashing/problem/find-first-repeatedcharacter4108>

➤ **Common elements :**

<https://practice.geeksforgeeks.org/batch/must-do1/track/md-hashing/problem/common-elements1132>

➤ **Minimum indexed character :**

<https://practice.geeksforgeeks.org/batch/must-do1/track/md-hashing/problem/minimum-indexedcharacter-1587115620>

➤ **Swapping pairs make sum equal :**

<https://practice.geeksforgeeks.org/batch/must-do1/track/md-hashing/problem/swapping-pairs-makesum-equal4142>

➤ **Two Sum :** <https://practice.geeksforgeeks.org/batch/must-do1/track/md-hashing/problem/key-pair1554>

➤ **Find all pairs with a given sum :**

<https://practice.geeksforgeeks.org/batch/must-do1/track/md-hashing/problem/find-all-pairs-whose-sumis-x5808>

PART-2

➤ **Count distinct elements in every window :**

<https://practice.geeksforgeeks.org/batch/must-do1/track/md-hashing/problem/count-distinct-elementsin-every-window>

➤ **Sort an array according to the other :**

<https://practice.geeksforgeeks.org/batch/must-do1/track/md-hashing/problem/relative-sorting4323>

➤ **Longest consecutive subsequence :**

<https://practice.geeksforgeeks.org/batch/must-do1/track/md-hashing/problem/longest-consecutivesubsequence2449>

➤ **Zero Sum Subarrays :**

<https://practice.geeksforgeeks.org/batch/must-do1/track/md-hashing/problem/zero-sum-subarrays1825>

➤ **Smallest window in a string containing all the characters of another string :**

<https://practice.geeksforgeeks.org/batch/must-do1/track/md-hashing/problem/smallest-window-in-astring-containing-all-the-characters-of-another-string1587115621>

➤ **Largest subarray of 0's and 1's :**

<https://practice.geeksforgeeks.org/batch/must-do1/track/md-hashing/problem/largest-subarray-of-0sand-1s>

➤ **Top K Frequent Elements in Array - | :**

<https://practice.geeksforgeeks.org/batch/must-do1/track/md-hashing/problem/top-k-frequent-elementsin-array>

PART-2

➤ **Intersection of two arrays :**

<https://practice.geeksforgeeks.org/batch/must-do1/track/md-hashing/problem/intersection-of-twoarrays2404>

➤ **Array Pair Sum Divisibility Problem :**

<https://practice.geeksforgeeks.org/batch/must-do1/track/md-hashing/problem/array-pair-sumdivisibility-problem3257>

➤ **Triplet Sum in Array :**

<https://practice.geeksforgeeks.org/batch/must-do1/track/md-hashing/problem/triplet-sum-in-array1587115621>

➤ **Length of the longest substring :**

<https://practice.geeksforgeeks.org/batch/must-do1/track/md-hashing/problem/length-of-the-longestsubstring3036>

➤ **Is Sudoku Valid :**

<https://practice.geeksforgeeks.org/batch/must-do1/track/md-hashing/problem/is-sudoku-valid4820>

➤ **Print Anagrams Together :**

<https://practice.geeksforgeeks.org/batch/must-do1/track/md-hashing/problem/print-anagrams-together>

➤ **Subarrays with sum K :**

<https://practice.geeksforgeeks.org/batch/must-do1/track/md-hashing/problem/subarrays-with-sum-k>

➤ **Longest subarray with sum divisible by K :**

<https://practice.geeksforgeeks.org/batch/must-do1/track/md-hashing/problem/longest-subarray-withsum-divisible-by-k1259>

BIT~MAGIC-IMPORTANT PROBLEMS

YOU CAN REFER THIS HASHING NOTES- https://t.me/engnr_notes/43

Find first set bit : <https://practice.geeksforgeeks.org/batch/must-do1/track/md-bm/problem/find-first-set-bit-1587115620>

Rightmost different bit :

<https://practice.geeksforgeeks.org/batch/must-do1/track/md-bm/problem/rightmost-different-bit1587115621>

Power of 2 : <https://practice.geeksforgeeks.org/batch/must-do1/track/md-bm/problem/power-of-2-1587115620>

Set kth bit : <https://practice.geeksforgeeks.org/batch/must-do1/track/md-bm/problem/set-kth-bit3724>

Party of Couples : <https://practice.geeksforgeeks.org/batch/must-do1/track/md-bm/problem/alone-in-couple5507>

Number is sparse or not :

<https://practice.geeksforgeeks.org/batch/must-do1/track/md-bm/problem/number-is-sparse-or-not1587115620>

Bit Difference : <https://practice.geeksforgeeks.org/batch/must-do1/track/md-bm/problem/bit-difference-1587115620>

PART-2

Swap all odd and even bits :

<https://practice.geeksforgeeks.org/batch/must-do1/track/md-bm/problem/swap-all-odd-and-even-bits1587115621>

Rotate Bits : <https://practice.geeksforgeeks.org/batch/must-do1/track/md-bm/problem/rotate-bits4524>

Reverse Bits : <https://practice.geeksforgeeks.org/batch/must-do1/track/md-bm/problem/reverse-bits3556>

Number of 1 Bits : <https://practice.geeksforgeeks.org/batch/must-do1/track/md-bm/problem/set-bits0143>

Sum of two numbers without using arithmetic operators :

<https://practice.geeksforgeeks.org/batch/must-do1/track/md-bm/problem/sum-of-two-numbers-withoutusing-arithmetic-operators>

Check whether K-th bit is set or not :

<https://practice.geeksforgeeks.org/batch/must-do1/track/md-bm/problem/check-whether-k-th-bit-is-setor-not-1587115620>

Longest Consecutive 1's :

<https://practice.geeksforgeeks.org/batch/must-do1/track/md-bm/problem/longest-consecutive-1s1587115620>

Find the element that appears once :

<https://practice.geeksforgeeks.org/batch/must-do1/track/md-bm/problem/element-appearing-once2552>

PART-2

Gray Code : <https://practice.geeksforgeeks.org/batch/must-do1/track/md-bm/problem/gray-code-1611215248>

Maximum AND Value :

<https://practice.geeksforgeeks.org/batch/must-do1/track/md-bm/problem/maximum-and-value2637>

Maximum subset XOR :

<https://practice.geeksforgeeks.org/batch/must-do1/track/md-bm/problem/maximum-subset-xor>

Bit Difference : <https://practice.geeksforgeeks.org/batch/must-do1/track/md-bm/problem/find-sum-of-differentcorresponding-bits-for-all-pairs4652>

Thank You!

MUST JOIN TELEGRAM CHANNEL FOR UPCOMING PART-3

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