**Arrays:**

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| --- | --- | --- |
|  | Problem | Status |
|  | Program for array rotation |  |
|  | Reversal algorithm for array rotation |  |
|  | Block swap algorithm for array rotation |  |
|  | Program to cyclically rotate an array by one |  |
|  | Search an element in a sorted and rotated array |  |
|  | Given a sorted and rotated array, find if there is a pair with a given sum |  |
|  | Find maximum value of Sum( i\*arr[i]) with only rotations on given array allowed |  |
|  | Maximum sum of i\*arr[i] among all rotations of a given array |  |
|  | Find the Rotation Count in Rotated Sorted array |  |
|  | Quickly find multiple left rotations of an array |  |
|  | Find the minimum element in a sorted and rotated array |  |
|  | Rearrange positive and negative numbers in O(n) time and O(1) extra space |  |
|  | Write a program to reverse an array or string |  |
|  | Sort an array in wave form |  |
|  | Rearrange positive and negative numbers with constant extra space |  |
|  | Sort an array according to absolute difference with given value |  |
|  | Move all negative elements to end in order with extra space allowed |  |
|  | Three way partitioning of an array around a given range |  |
|  | Rearrange an array in maximum minimum form | Set 1 |  |
|  | Rearrange an array in maximum minimum form | Set 2 (O(1) extra space) |  |
|  | Maximum Length Bitonic Subarray |  |
|  | Maximize sum of consecutive differences in a circular array |  |
|  | Alternative Sorting |  |
|  | Segregate 0s and 1s in an array |  |
|  | Segregate Even and Odd numbers |  |
|  | Longest Bitonic Subsequence |  |
|  | Find a sorted subsequence of size 3 in linear time |  |
|  | Largest subarray with equal number of 0s and 1s |  |
|  | Dynamic Programming | Set 18 (Partition problem) |  |
|  | Maximum Product Sub-array |  |
|  | Replace every element with the greatest element on right side |  |
|  | Sort a nearly sorted (or K sorted) array |  |
|  | Maximum circular subarray sum |  |
|  | Shuffle a given array |  |
|  | Construction of Longest Increasing Subsequence (N log N) |  |
|  | Arrange given numbers to form the biggest number |  |
|  | Divide and Conquer | Set 3 (Maximum Subarray Sum) |  |
|  | Sort elements by frequency | Set 2 |  |
|  | Merge k sorted arrays |  |
|  | Sort an array according to the order defined by another array |  |
|  | Find Index of 0 to be replaced with 1 to get longest continuous sequence of 1s in a binary array |  |
|  | Rearrange an array such that ‘arr[j]’ becomes ‘i’ if ‘arr[i]’ is ‘j’ |  |
|  | Replace every array element by multiplication of previous and next |  |
|  | Generate all possible sorted arrays from alternate elements of two given sorted arrays |  |
|  | Minimum number of swaps required for arranging pairs adjacent to each other |  |
|  | Convert array into Zig-Zag fashion |  |
|  | Reorder an array according to given indexes |  |
|  | Form minimum number from given sequence |  |
|  | k largest(or smallest) elements in an array | added Min Heap method |  |
|  | Kth smallest element in a row-wise and column-wise sorted 2D array | Set 1 |  |
|  | Program to find largest element in an array |  |
|  | K’th Smallest/Largest Element in Unsorted Array | Set 1 |  |
|  | K’th Smallest/Largest Element in Unsorted Array | Set 2 (Expected Linear Time) |  |
|  | K’th Smallest/Largest Element in Unsorted Array | Set 3 (Worst Case Linear Time) |  |
|  | Find the largest three elements in an array |  |
|  | Find all elements in array which have at-least two greater elements |  |
|  | Find k pairs with smallest sums in two arrays |  |
|  | k-th smallest absolute difference of two elements in an array |  |
|  | Find Second largest element in an array |  |
|  | Find k numbers with most occurrences in the given array |  |
|  | Find the smallest and second smallest elements in an array |  |
|  | Next Greater Element |  |
|  | Find the smallest missing number |  |
|  | Maximum sum such that no two elements are adjacent |  |
|  | Maximum and minimum of an array using minimum number of comparisons |  |
|  | Maximum difference between two elements such that larger element appears after the smaller number |  |
|  | Given an array arr[], find the maximum j – i such that arr[j] > arr[i] |  |
|  | Maximum of all subarrays of size k |  |
|  | Find the minimum distance between two numbers |  |
|  | Find the maximum element in an array which is first increasing and then decreasing |  |
|  | Count smaller elements on right side |  |
|  | Longest Monotonically Increasing Subsequence Size (N log N) |  |
|  | Find the smallest positive number missing from an unsorted array | Set 1 |  |
|  | Find the maximum repeating number in O(n) time and O(1) extra space |  |
|  | Given an array of of size n and a number k, find all elements that appear more than n/k times |  |
|  | Find the Increasing subsequence of length three with maximum product |  |
|  | Maximum Sum Path in Two Arrays |  |
|  | Find the closest pair from two sorted arrays |  |
|  | Find the largest pair sum in an unsorted array |  |
|  | Online algorithm for checking palindrome in a stream |  |
|  | Find zeroes to be flipped so that number of consecutive 1’s is maximized |  |
|  | Count Strictly Increasing Subarrays |  |
|  | MO’s Algorithm |  |
|  | Range Minimum Query (Square Root Decomposition and Sparse Table) |  |
|  | GCDs of given index ranges in an array |  |
|  | Range LCM Queries |  |
|  | Sqrt (or Square Root) Decomposition Technique | Set 1 (Introduction) |  |
|  | Range Queries for Frequencies of array elements |  |
|  | Constant time range add operation on an array |  |
|  | Find whether a subarray is in form of a mountain or not |  |
|  | Queries for GCD of all numbers of an array except elements in a given range |  |
|  | Number of elements less than or equal to a given number in a given subarray |  |
|  | Number of elements less than or equal to a given number in a given subarray | Set 2 (Including Updates) |  |
|  | Check in binary array the number represented by a subarray is odd or even |  |
|  | Queries for counts of array elements with values in given range |  |
|  | Queries for decimal values of subarrays of a binary array |  |
|  | Merge Overlapping Intervals |  |
|  | Check if any two intervals overlap among a given set of intervals |  |
|  | Largest Sum Contiguous Subarray |  |
|  | Maximum profit by buying and selling a share at most twice |  |
|  | Find the subarray with least average |  |
|  | Find the minimum distance between two numbers |  |
|  | Minimize the maximum difference between the heights |  |
|  | Minimum number of jumps to reach end |  |
|  | Dynamic Programming | Set 14 (Maximum Sum Increasing Subsequence) |  |
|  | Smallest subarray with sum greater than a given value |  |
|  | Find maximum average subarray of k length |  |
|  | Count minimum steps to get the given desired array |  |
|  | Find minimum number of merge operations to make an array palindrome |  |
|  | Find the smallest positive integer value that cannot be represented as sum of any subset of a given array |  |
|  | Find minimum difference between any two elements |  |
|  | Longest Span with same Sum in two Binary arrays |  |
|  | Search, insert and delete in an unsorted array |  |
|  | Search, insert and delete in a sorted array |  |
|  | Given an array A[] and a number x, check for pair in A[] with sum as x |  |
|  | Majority Element |  |
|  | Find the Number Occurring Odd Number of Times |  |
|  | Find the Missing Number |  |
|  | Merge an array of size n into another array of size m+n |  |
|  | Leaders in an array |  |
|  | Sort elements by frequency | Set 1 |  |
|  | Count Inversions in an array | Set 1 (Using Merge Sort) |  |
|  | Two elements whose sum is closest to zero |  |
|  | Check for Majority Element in a sorted array |  |
|  | Union and Intersection of two sorted arrays |  |
|  | Ceiling in a sorted array |  |
|  | Find the two repeating elements in a given array |  |
|  | Sort an array of 0s, 1s and 2s |  |
|  | Find the Minimum length Unsorted Subarray, sorting which makes the complete array sorted |  |
|  | Equilibrium index of an array |  |
|  | Count number of occurrences (or frequency) in a sorted array |  |
|  | Find the repeating and the missing | Added 3 new methods |  |
|  | Median in a stream of integers (running integers) |  |
|  | Find a Fixed Point in a given array |  |
|  | Find sub-array with given sum |  |
|  | Find a triplet that sum to a given value |  |
|  | Find the two numbers with odd occurrences in an unsorted array |  |
|  | Find a pair with the given difference |  |
|  | Find four elements that sum to a given value | Set 1 (n^3 solution) |  |
|  | Find four elements that sum to a given value | Set 2 ( O(n^2Logn) Solution) |  |
|  | Median of two sorted arrays of different sizes |  |
|  | Count the number of possible triangles |  |
|  | Find a peak element |  |
|  | Find number of pairs (x, y) in an array such that x^y > y^x |  |
|  | Count all distinct pairs with difference equal to k |  |
|  | Find if there is a sub-array with 0 sum |  |
|  | Given a sorted array and a number x, find the pair in array whose sum is closest to x |  |
|  | Count 1’s in a sorted binary array |  |
|  | Print All Distinct Elements of a given integer array |  |
|  | Construct an array from its pair-sum array |  |
|  | Find common elements in three sorted arrays |  |
|  | Find the first repeating element in an array of integers |  |
|  | Find position of an element in a sorted array of infinite numbers |  |
|  | Check if a given array contains duplicate elements within k distance from each other |  |
|  | Find the element that appears once |  |
|  | Find Union and Intersection of two unsorted arrays |  |
|  | Delete an element from array (Using two traversals and one traversal) |  |
|  | Count frequencies of all elements in array in O(1) extra space and O(n) time |  |
|  | Trapping Rain Water |  |
|  | Count triplets with sum smaller than a given value |  |
|  | Count Inversions of size three in a given array |  |
|  | Merge two sorted arrays with O(1) extra space |  |
|  | Find lost element from a duplicated array |  |
|  | Count pairs with given sum |  |
|  | Turn an image by 90 degree |  |
|  | Rotate Matrix Elements |  |
|  | Inplace rotate square matrix by 90 degrees | Set 1 |  |
|  | Rotate a matrix by 90 degree without using any extra space | Set 2 |  |
|  | Rotate each ring of matrix anticlockwise by K elements |  |
|  | Check if all rows of a matrix are circular rotations of each other |  |
|  | Magic Square |  |
|  | Find the row with maximum number of 1s |  |
|  | Find the number of islands |  |
|  | Magic Square | Even Order |  |
|  | Find median in row wise sorted matrix |  |
|  | Number of cells a queen can move with obstacles on the chessborad |  |
|  | Matrix Multiplication | Recursive |  |
|  | Program to print Lower triangular and Upper triangular matrix of an array |  |
|  | Find distinct elements common to all rows of a matrix |  |
|  | Subarray/Substring vs Subsequence and Programs to Generate them |  |
|  | A Product Array Puzzle |  |
|  | Linked List vs Array |  |
|  | Check if array elements are consecutive | Added Method 3 |  |
|  | Find whether an array is subset of another array | Added Method 3 |  |
|  | Implement two stacks in an array |  |
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