**Array :**

|  |  |  |
| --- | --- | --- |
|  | **Description** | **Status** |
|  | Python | Ways to rotate a list |  |
|  | Generating Lyndon words of length n |  |
|  | Check whether all the rotations of a given number is greater than or equal to the given number or not |  |
|  | Rotate the sub-list of a linked list from position M to N to the right by K places |  |
|  | Check if it is possible to sort the array after rotating it |  |
|  | Maximum contiguous 1 possible in a binary string after k rotations |  |
|  | Generating numbers that are divisor of their right-rotations |  |
|  | Check if an array is sorted and rotated clockwise |  |
|  | Rotate a matrix by 90 degree in clockwise direction without using any extra space |  |
|  | Elements that occurred only once in the array |  |
|  | Split the array and add the first part to the end | Set 2 |  |
|  | Amazon Interview Experience |  |
|  | Check if strings are rotations of each other or not | Set 2 |  |
|  | Rotate Doubly linked list by N nodes |  |
|  | Rotate the matrix right by K times |  |
|  | Reversal algorithm for right rotation of an array |  |
|  | Find a rotation with maximum hamming distance |  |
|  | Queries on Left and Right Circular shift on array |  |
|  | Count rotations divisible by 8 |  |
|  | String slicing in Python to rotate a string |  |
|  | Rotate a Matrix by 180 degree |  |
|  | Minimum move to end operations to make all strings equal |  |
|  | Sort a Rotated Sorted Array |  |
|  | Count rotations in sorted and rotated linked list |  |
|  | Find element at given index after a number of rotations |  |
|  | Split the array and add the first part to the end |  |
|  | Rotate Linked List block wise |  |
|  | Print left rotation of array in O(n) time and O(1) space |  |
|  | Minimum rotations required to get the same string |  |
|  | Quickly find multiple left rotations of an array | Set 1 |  |
|  | Lexicographically smallest rotated sequence | Set 2 |  |
|  | Check if two numbers are bit rotations of each other or not |  |
|  | Left Rotation and Right Rotation of a String |  |
|  | Count rotations divisible by 4 |  |
|  | Check if a string can be obtained by rotating another string 2 places |  |
|  | Rotate a matrix by 90 degree without using any extra space | Set 2 |  |
|  | Find the Rotation Count in Rotated Sorted array |  |
|  | Check if all rows of a matrix are circular rotations of each other |  |
|  | Rotate each ring of matrix anticlockwise by K elements |  |
|  | Maximum sum of i\*arr[i] among all rotations of a given array |  |
|  | Inplace rotate square matrix by 90 degrees | Set 1 |  |
|  | Find maximum value of Sum( i\*arr[i]) with only rotations on given array allowed |  |
|  | Rotate Matrix Elements |  |
|  | Given a sorted and rotated array, find if there is a pair with a given sum |  |
|  | Lexicographically minimum string rotation | Set 1 |  |
|  | Program to cyclically rotate an array by one |  |
|  | Rotate a Linked List |  |
|  | Turn an image by 90 degree |  |
|  | Block swap algorithm for array rotation |  |
|  | C Program for Reversal algorithm for array rotation |  |
|  | Java Program for Reversal algorithm for array rotation |  |
|  | Reversal algorithm for array rotation |  |
|  | Program for array rotation |  |
|  | Rotate bits of a number |  |
|  | Search an element in a sorted and rotated array |  |
|  | Rearrange an array such that arr[i] = i |  |
|  | Write a program to reverse an array or string |  |
|  | Rearrange array such that arr[i] >= arr[j] if i is even and arr[i]<=arr[j] if i is odd and j < i |  |
|  | Rearrange positive and negative numbers in O(n) time and O(1) extra space |  |
|  | Rearrange array in alternating positive & negative items with O(1) extra space | Set 1 |  |
|  | Move all zeroes to end of array |  |
|  | Move all zeroes to end of array | Set-2 (Using single traversal) |  |
|  | Minimum swaps required to bring all elements less than or equal to k together |  |
|  | Rearrange positive and negative numbers using inbuilt sort function |  |
|  | Rearrange array such that even positioned are greater than odd |  |
|  | Rearrange an array in order – smallest, largest, 2nd smallest, 2nd largest, .. |  |
|  | Double the first element and move zero to end |  |
|  | Reorder an array according to given indexes |  |
|  | Rearrange positive and negative numbers with constant extra space |  |
|  | Arrange given numbers to form the biggest number |  |
|  | Rearrange an array such that ‘arr[j]’ becomes ‘i’ if ‘arr[i]’ is ‘j’ |  |
|  | Rearrange an array in maximum minimum form | Set 1 |  |
|  | Rearrange an array in maximum minimum form | Set 2 (O(1) extra space) |  |
|  | Move all negative numbers to beginning and positive to end with constant extra space |  |
|  | Move all negative elements to end in order with extra space allowed |  |
|  | Rearrange array such that even index elements are smaller and odd index elements are greater |  |
|  | Positive elements at even and negative at odd positions |  |
|  | Replace every array element by multiplication of previous and next |  |
|  | Shuffle a given array |  |
|  | Segregate even and odd numbers |  |
|  | Segregate 0s and 1s in an array |  |
|  | Longest Bitonic Subsequence |  |
|  | Find a sorted subsequence of size 3 in linear time |  |
|  | Largest subarray with equal number of 0s and 1s |  |
|  | Maximum Product Sub-array |  |
|  | Replace every element with the greatest element on right side |  |
|  | Maximum circular subarray sum |  |
|  | Construction of Longest Increasing Subsequence (N log N) |  |
|  | Sort elements by frequency | Set 2 |  |
|  | Maximize sum of consecutive differences in a circular array |  |
|  | 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 |  |
|  | Three way partitioning of an array around a given range |  |
|  | 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 |  |
|  | Form minimum number from given sequence |  |
|  | Replace two consecutive equal values with one greater |  |
|  | Rearrange a binary string as alternate x and y occurrences |  |
|  | Distinct adjacent elements in an array |  |
|  | Shuffle 2n integers as a1-b1-a2-b2-a3-b3-..bn without using extra space |  |
|  | Merge k sorted arrays |  |
|  | 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) |  |
|  | K’th Smallest/Largest Element using STL |  |
|  | 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 |  |
|  | Find the largest three elements in an array |  |
|  | Find all elements in array which have at-least two greater elements |  |
|  | Program for Mean and median of an unsorted array |  |
|  | Median of Stream of Running Integers using STL |  |
|  | Minimum product of k integers in an array of positive Integers |  |
|  | K-th Largest Sum Contiguous Subarray |  |
|  | K maximum sum combinations from two arrays |  |
|  | K maximum sums of overlapping contiguous sub-arrays |  |
|  | K maximum sums of non-overlapping contiguous sub-arrays |  |
|  | k smallest elements in same order using O(1) extra space |  |
|  | 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 |  |
|  | 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 |  |
|  | Smallest greater elements in whole array |  |
|  | Delete array elements which are smaller than next or become smaller |  |
|  | Online algorithm for checking palindrome in a stream |  |
|  | Delete array elements which are smaller than next or become smaller |  |
|  | Find zeroes to be flipped so that number of consecutive 1’s is maximized |  |
|  | Count Strictly Increasing Subarrays |  |
|  | K’th largest element in a stream |  |
|  | Find k pairs with smallest sums in two arrays |  |
|  | Maximum difference between group of k-elements and rest of the array. |  |
|  | Minimum number of elements to add to make median equals x |  |
|  | Next Greater Element |  |
|  | MO’s Algorithm |  |
|  | Sqrt (or Square Root) Decomposition Technique | Set 1 (Introduction) |  |
|  | Sparse Table |  |
|  | Range sum query using Sparse Table |  |
|  | Range Minimum Query (Square Root Decomposition and Sparse Table) |  |
|  | Range Queries for Frequencies of array elements |  |
|  | Constant time range add operation on an array |  |
|  | Range LCM Queries |  |
|  | GCDs of given index ranges in an array |  |
|  | 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) |  |
|  | Queries for counts of array elements with values in given range |  |
|  | Queries for decimal values of subarrays of a binary array |  |
|  | Count elements which divide all numbers in range L-R |  |
|  | Number whose sum of XOR with given array range is maximum |  |
|  | XOR of numbers that appeared even number of times in given Range |  |
|  | Array range queries over range queries |  |
|  | Array range queries for searching an element |  |
|  | Array range queries for elements with frequency same as value |  |
|  | Maximum Occurrence in a Given Range |  |
|  | Number of indexes with equal elements in given range |  |
|  | Merge Sort Tree for Range Order Statistics |  |
|  | Total numbers with no repeated digits in a range |  |
|  | Difference Array | Range update query in O(1) |  |
|  | Range Query on array whose each element is XOR of index value and previous element |  |
|  | Find whether a subarray is in form of a mountain or not |  |
|  | Range sum queries without updates |  |
|  | Number of primes in a subarray (with updates) |  |
|  | Check in binary array the number represented by a subarray is odd or even |  |
|  | Array Queries for multiply, replacements and product |  |
|  | Mean of range in array |  |
|  | Print modified array after executing the commands of addition and subtraction |  |
|  | Queries on probability of even or odd number in given ranges |  |
|  | Products of ranges in an array |  |
|  | Count Primes in Ranges |  |
|  | Binary array after M range toggle operations |  |
|  | Merge Overlapping Intervals |  |
|  | Check if any two intervals overlap among a given set of intervals |  |
|  | Sum of Interval and Update with Number of Divisors |  |
|  | Print modified array after multiple array range increment operations |  |
|  | Queries on XOR of greatest odd divisor of the range |  |
|  | Queries for number of distinct elements in a subarray |  |
|  | Count and Toggle Queries on a Binary Array |  |
|  | Min-Max Range Queries in Array |  |
|  | 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 |  |
|  | Number of subsets with product less than k |  |
|  | 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 |  |
|  | Size of The Subarray With Maximum Sum |  |
|  | Find minimum difference between any two elements |  |
|  | Space optimization using bit manipulations |  |
|  | Longest Span with same Sum in two Binary arrays |  |
|  | Alternative Sorting |  |
|  | Sort a nearly sorted (or K sorted) array |  |
|  | Sort an array according to absolute difference with given value |  |
|  | Sort an array in wave form |  |
|  | Merge an array of size n into another array of size m+n |  |
|  | Sort an array which contain 1 to n values |  |
|  | Sort 1 to N by swapping adjacent elements |  |
|  | Sort an array containing two types of elements |  |
|  | Sort elements by frequency | Set 1 |  |
|  | Count Inversions in an array | Set 1 (Using Merge Sort) |  |
|  | Two elements whose sum is closest to zero |  |
|  | Shortest Un-ordered Subarray |  |
|  | Minimum number of swaps required to sort an array |  |
|  | Union and Intersection of two sorted arrays |  |
|  | Find Union and Intersection of two unsorted arrays |  |
|  | Sort an array of 0s, 1s and 2s |  |
|  | Find the Minimum length Unsorted Subarray, sorting which makes the complete array sorted |  |
|  | Median in a stream of integers (running integers) |  |
|  | Count the number of possible triangles |  |
|  | Find number of pairs (x, y) in an array such that x^y > y^x |  |
|  | Count all distinct pairs with difference equal to k |  |
|  | Print All Distinct Elements of a given integer array |  |
|  | Construct an array from its pair-sum array |  |
|  | Merge two sorted arrays with O(1) extra space |  |
|  | Product of maximum in first array and minimum in second |  |
|  | Given an array and two numbers x and k. |  |
|  | Probability of a random pair being the maximum weighted pair |  |
|  | Minimum De-arrangements present in array of AP (Arithmetic Progression) |  |
|  | De-arrangements for minimum product sum of two arrays |  |
|  | Divide an array into k segments to maximize maximum of segment minimums |  |
|  | Minimum product pair an array of positive Integers |  |
|  | Count ways to form minimum product triplets |  |
|  | Check if reversing a sub array make the array sorted |  |
|  | Maximize elements using another array |  |
|  | Making elements of two arrays same with minimum increment/decrement |  |
|  | Check if any interval completely overlaps the other |  |
|  | Sorting array except elements in a subarray |  |
|  | Sorting all array elements except one |  |
|  | Minimum swaps required to Sort Binary array |  |
|  | Sort the linked list in the order of elements appearing in the array |  |
|  | Print sorted distinct elements of array in C++ |  |
|  | Maximum number of partitions that can be sorted individually to make sorted |  |
|  | Sort on the basis of number of factors using STL |  |
|  | Ropes left after every removal of smallest |  |
|  | Rank of all elements in an array |  |
|  | Merge 3 Sorted Arrays |  |
|  | Minimum number of subtract operation to make an array decreasing |  |
|  | Maximize the sum of arr[i]\*i |  |
|  | Pairs with Difference less than K |  |
|  | Merging two unsorted arrays in sorted order |  |
|  | Maximizing Unique Pairs from two arrays |  |
|  | Sort an array after applying the given equation |  |
|  | Sum of minimum absolute difference of each array element |  |
|  | Find whether it is possible to make array elements same using one external number |  |
|  | Smallest Difference pair of values between two unsorted Arrays |  |
|  | Program to check if an array is sorted or not (Iterative and Recursive) |  |
|  | Find elements larger than half of the elements in an array |  |
|  | Minimum swaps to make two arrays identical |  |
|  | Elements to be added so that all elements of a range are present in array |  |
|  | 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 |  |
|  | Searching in an array where adjacent differ by at most k |  |
|  | Find common elements in three sorted arrays |  |
|  | Find position of an element in a sorted array of infinite numbers |  |
|  | Find the only repetitive element between 1 to n-1 |  |
|  | Find the element that appears once |  |
|  | Maximum Subarray Sum Excluding Certain Elements |  |
|  | Maximum equlibrium sum in an array |  |
|  | Equilibrium index of an array |  |
|  | Leaders in an array |  |
|  | Ceiling in a sorted array |  |
|  | Majority Element |  |
|  | Check for Majority Element in a sorted array |  |
|  | Check if an array has a majority element |  |
|  | Two Pointers Technique |  |
|  | Find a peak element |  |
|  | Find the two repeating elements in a given array |  |
|  | Find a Fixed Point in a given array |  |
|  | Find sub-array with given sum |  |
|  | Maximum triplet sum in array |  |
|  | Smallest Difference Triplet from Three arrays |  |
|  | Find a triplet that sum to a given value |  |
|  | Find all triplets with zero sum |  |
|  | All unique triplets that sum up to a given value |  |
|  | Count triplets with sum smaller than a given value |  |
|  | Print all triplets in sorted array that form AP |  |
|  | Number of unique triplets whose XOR is zero |  |
|  | Find a triplet such that sum of two equals to third element |  |
|  | Find the Number Occurring Odd Number of Times |  |
|  | Find the Missing Number |  |
|  | Count number of occurrences (or frequency) in a sorted array |  |
|  | 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 |  |
|  | Find the first repeating element in an array of integers |  |
|  | Find lost element from a duplicated array |  |
|  | Find the repeating and the missing | Added 3 new methods |  |
|  | 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) |  |
|  | Find if there is a sub-array with 0 sum |  |
|  | Search an element in an array where difference between adjacent elements is 1 |  |
|  | Third largest element in an array of distinct elements |  |
|  | Check if there exist two elements in an array whose sum is equal to the sum of rest of the array |  |
|  | Check if a given array contains duplicate elements within k distance from each other |  |
|  | Search an element in an unsorted array using minimum number of comparisons |  |
|  | Count of only repeated element in a sorted array of consecutive elements |  |
|  | Find element in a sorted array whose frequency is greater than or equal to n/2. |  |
|  | Minimum absolute difference of adjacent elements in a circular array |  |
|  | Find the first, second and third minimum elements in an array |  |
|  | Program to find the minimum (or maximum) element of an array |  |
|  | Closest greater element for every array element from another array |  |
|  | Count frequencies of all elements in array in O(1) extra space and O(n) time |  |
|  | Pair with given sum and maximum shortest distance from end |  |
|  | Delete an element from array (Using two traversals and one traversal) |  |
|  | Count Inversions of size three in a given array |  |
|  | Count pairs with given sum |  |
|  | Binary search in sorted vector of pairs |  |
|  | Trapping Rain Water |  |
|  | Replacing an element makes array elements consecutive |  |
|  | k-th missing element in sorted array |  |
|  | Median of two sorted arrays with different sizes in O(log(min(n, m))) |  |
|  | Print uncommon elements from two sorted arrays |  |
|  | Non-Repeating Element |  |
|  | Most frequent element in an array |  |
|  | Least frequent element in an array |  |
|  | Maximum difference between two subsets of m elements |  |
|  | Maximum sum of increasing order elements from n arrays |  |
|  | Pairs such that one is a power multiple of other |  |
|  | Find number of pairs in an array such that their XOR is 0 |  |
|  | Minimum distance between two occurrences of maximum |  |
|  | Find final value if we double after every successful search in array |  |
|  | Last duplicate element in a sorted array |  |
|  | Find an array element such that all elements are divisible by it |  |
|  | Find k maximum elements of array in original order |  |
|  | Maximum in array which is at-least twice of other elements |  |
|  | Consecutive steps to roof top |  |
|  | Maximum difference between groups of size two |  |
|  | Minimum difference between groups of size two |  |
|  | Closest numbers from a list of unsorted integers |  |
|  | Maximum absolute difference of value and index sums |  |
|  | Number of local extrema in an array |  |
|  | Check if an array has a majority element |  |
|  | Find closest number in array |  |
|  | Number of pairs with maximum sum |  |
|  | Print n smallest elements from given array in their original order |  |
|  | Find first k natural numbers missing in given array |  |
|  | Noble integers in an array (count of greater elements is equal to value) |  |
|  | Minimum sum of absolute difference of pairs of two arrays |  |
|  | Find sum of non-repeating (distinct) elements in an array |  |
|  | Check whether Arithmetic Progression can be formed from the given array |  |
|  | Minimum product subset of an array |  |
|  | Count ways of choosing a pair with maximum difference |  |
|  | Repeatedly search an element by doubling it after every successful search |  |
|  | Maximum sum of pairwise product in an array with negative allowed |  |
|  | Subarray/Substring vs Subsequence and Programs to Generate them |  |
|  | A Product Array Puzzle |  |
|  | Number of subarrays with given product |  |
|  | 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 |  |
|  | Find relative complement of two sorted arrays |  |
|  | Minimum increment by k operations to make all elements equal |  |
|  | Minimize (max(A[i], B[j], C[k]) – min(A[i], B[j], C[k])) of three different sorted arrays |  |