

#	Problem statement	Example 1	Example 2
1	<p>Prime Number</p> <p>For a given number N check if it is prime or not. A prime number is a number which is only divisible by 1 and itself.</p> <p>Your Task: You don't need to read input or print anything. Your task is to complete the function isPrime() which takes an integer N as input parameters and returns an integer, 1 if N is a prime number or 0 otherwise.</p>	Input: N = 5 Output: 1 Explanation: 5 has 2 factors 1 and 5 only.	Input: N = 25 Output: 0 Explanation: 25 has 3 factors 1, 5, 25
2	<p>Palindrome</p> <p>Given an integer, check whether it is a palindrome or not.</p> <p>Your Task: You don't need to read or print anything. Your task is to complete the function is_palindrome() which takes the number as input parameter and returns "Yes" if it is palindrome otherwise returns "No"(Without quotes).</p>	Input: n = 555 Output: Yes	Input: n = 123 Output: No
3	<p>Factorial</p> <p>Given a positive integer, N. Find the factorial of N.</p> <p>Your Task: You don't need to read input or print anything. Your task is to complete the function factorial() which takes an integer N as input parameters and returns an integer, the factorial of N.</p>	Input: N = 5 Output: 120 Explanation: 5*4*3*2*1 = 120	Input: N = 4 Output: 24 Explanation: 4*3*2*1 = 24
4	<p>Palindrome String</p> <p>Given a string S, check if it is palindrome or not.</p> <p>Your Task: You don't need to read input or print anything. Complete the function isPalindrome()which accepts string S and returns an integer value 1 or 0.</p>	Input: S = "abba" Output: 1 Explanation: S is a palindrome	Input: S = "abc" Output: 0 Explanation: S is not a palindrome
5	<p>Nth Fibonacci Number</p> <p>Given a positive integer n, find the nth fibonacci number. Since the answer can be very large, return the answer modulo 1000000007.</p> <p>Your Task: You dont need to read input or print anything. Complete the function nthFibonacci() which takes n as input parameter and returns nth fibonacci number.</p>	Input: n = 2 Output: 1 Explanation: 1 is the 2nd number of fibonacci series.	Input: n = 5 Output: 5 Explanation: 5 is the 5th number of fibonacci series.
6	<p>Fibonacci Series up to Nth term</p> <p>You are given integer N, and return the Fibonacci Series till the Nth term.</p> <p>Your Task: You don't need to read input or print anything. Your task is to complete the function Series() which takes an Integer N as input and returns a Fibonacci Series up to the Nth term.</p>	Input: 5 Output: 0 1 1 2 3 5 Explanation: 0 1 1 2 3 5 is the Fibonacci series up to the 5th term.(0-based indexing)	
7	<p>Confused pappu</p> <p>Pappu is confused between 6 & 9. He works in the billing department of abc company and his work is to return the remaining amount to the customers. If the actual remaining amount is given we need to find the maximum possible extra amount given by the pappu to the customers.</p> <p>User Task: Your task is to complete the function findDiff() which takes single argument(amount) and returns the answer. You need not take any input or print anything.</p>	Input: amount = 56 Output: 3 Explanation: maximum possible extra amount = 59 - 56 = 3.	Input: amount = 66 Output: 33 Explanation: maximum possible extra amount = 99 - 66 = 33.
8	<p>Unique Subsets</p> <p>Given an array arr[] of integers of size N that might contain duplicates, the task is to find all possible unique subsets.</p> <p>Note: Each subset should be sorted.</p> <p>Your Task: Your task is to complete the function AllSubsets() which takes the array arr[] and N as input parameters and returns list of all possible unique subsets in lexicographical order.</p>	Input: N = 3, arr[] = {2,1,2} Output:(),(1),(1 2),(1 2 2),(2),(2 2) Explanation: All possible subsets = (),(2),(1),(1,2),(2),(2,2),(2,1),(2,1,2) After Sorting each subset = (),(2),(1),(1,2),(2),(2,2),(1,2),(1,2),(1,2,2) Unique Subsbsets in Lexicographical order = (),(1),(1,2),(1,2,2),(2),(2,2)	Input: N = 4, arr[] = {1,2,3,3} Output: (),(1),(1 2),(1 2 3) (1 2 3 3),(1 3),(1 3 3),(2),(2 3) (2 3 3),(3),(3 3)
9	<p>Count subsets having distinct even numbers</p> <p>Given a set of n numbers. The task is to count all the subsets of the given set which only have even numbers and all are distinct.</p> <p>Note: By the property of sets, if two subsets have the same set of elements then they are considered as one. For example: [2, 4, 8] and [4, 2, 8] are considered to be the same.</p> <p>Your Task: You don't need to read input or print anything. Your task is to complete the function countSubsets() which takes the array a[] and its size n as inputs and returns the Count of possible subsets.</p>	Input : n = 8 a[] = {4, 2, 1, 9, 2, 6, 5, 3} Output : 7 Explanation: The subsets are: [4], [2], [6], [4, 2], [2, 6], [4, 6], [4, 2, 6]	Input : n = 13 a[] = {10, 3, 4, 2, 4, 20, 10, 6, 8, 14, 2, 6, 9} Output : 127
10	<p>Maximum Area Rectangle</p> <p>Given N pairs of rectangles, where each pair denotes the length L and breadth B of the ith rectangle. The task is to return the maximum area of the rectangle.</p> <p>User Task: Your task is to complete the function calculate_Area() which returns maximum area. Use area() function in Rectangle class.</p>	Input: N = 3 rect[] = {{1,2}, {3,4}, {5,6}} Output: 30 Explanation: 1. Total area of Rect. 1 = 1 * 2 = 2 2. Total area of Rect. 2 = 3 * 4 = 12 3. Total area of Rect. 3 = 5 * 6 = 30 4. Out of all rectangles, Rectangle 3 has the maximum area.	Input: N = 2 rect[] = {{12,3}, {40,5}} Output: 200 Explanation: 1. Total area of Rect. 1 = 12 * 3 = 36 2. Total area of Rect. 2 = 40 * 5 = 200. 3. Out of all rectangles, Rectangle 2 has the maximum area.
11	<p>Immediate Smaller Element</p> <p>Given an integer array Arr of size N. For each element in the array, check whether the right adjacent element (on the next immediate position) of the array is smaller. If next element is smaller, update the current index to that element. If not, then -1.</p> <p>Your Task: You don't need to read input or print anything. Your task is to complete the function immediateSmaller() which takes the array of integers arr and n as parameters. You need to change the array itself.</p>	Input: N = 5 Arr[] = {4, 2, 1, 5, 3} Output: 2 1 -1 3 -1 Explanation: Array elements are 4, 2, 1, 5 3. Next to 4 is 2 which is smaller, so we print 2. Next of 2 is 1 which is smaller, so we print 1. Next of 1 is 5 which is greater, so we print -1. Next of 5 is 3 which is smaller, so we print 3. Note that for last element, output is always going to be -1 because there is no element on right.	Input: N = 6 Arr[] = {5, 6, 2, 3, 1, 7} Output: -1 2 -1 1 -1 -1 Explanation: Next to 5 is 6 which is greater, so we print -1.Next of 6 is 2 which is smaller, so we print 2. Next of 2 is 3 which is greater, so we print -1. Next of 3 is 1 which is smaller, so we print 1. Next of 1 is 7 which is greater, so we print -1. Note that for last element, output is always going to be -1 because there is no element on right.
12	<p>Convert array into Zig-Zag fashion</p> <p>Given an array arr of distinct elements of size N, the task is to rearrange the elements of the array in a zig-zag fashion so that the converted array should be in the below form: arr[0] < arr[1] > arr[2] < arr[3] > arr[4] < arr[n-2] < arr[n-1] > arr[n].</p> <p>NOTE: If your transformation is correct, the output will be 1 else the output will be 0.</p> <p>Your Task: You don't need to read input or print anything. Your task is to complete the function zigZag() which takes the array of integers arr and n as parameters and returns void. You need to modify the array itself.</p>	Input: N = 7 Arr[] = {4, 3, 7, 8, 6, 2, 1} Output: 3 7 4 8 2 6 1 Explanation: 3 < 7 > 4 < 8 > 2 < 6 > 1	Input: N = 4 Arr[] = {1, 4, 3, 2} Output: 1 4 2 3 Explanation: 1 < 4 > 2 < 3
13	<p>Third largest element</p> <p>Given an array of distinct elements. Find the third largest element in it. Suppose you have A[] = {1, 2, 3, 4, 5, 6, 7}, its output will be 5 because it is the 3 largest element in the array A.</p> <p>Your Task: Complete the function thirdLargest() which takes the array a[] and the size of the array, n, as input parameters and returns the third largest element in the array. It return -1 if there are less than 3 elements in the given array.</p>	Input: N = 5 A[] = {2,4,1,3,5} Output: 3	Input: N = 2 A[] = {10,2} Output: -1

14	<p>Find the smallest and second smallest element in an array</p> <p>Given an array of integers, your task is to find the smallest and second smallest element in the array. If smallest and second smallest do not exist, print -1.</p> <p>Your Task: You don't need to read input or print anything. Your task is to complete the function minAnd2ndMin() which takes the array A[] and its size N as inputs and returns a vector containing the smallest and second smallest element if possible, else return {-1,-1}.</p>	Input : 5 2 4 3 5 6 Output : 2 3 Explanation: 2 and 3 are respectively the smallest and second smallest elements in the array.	Input : 6 1 2 1 3 6 7 Output : 1 2 Explanation: 1 and 2 are respectively the smallest and second smallest elements in the array.
15	<p>Anagram of String</p> <p>Given two strings S1 and S2 in lowercase, the task is to make them anagram. The only allowed operation is to remove a character from any string. Find the minimum number of characters to be deleted to make both the strings anagram. Two strings are called anagram of each other if one of them can be converted into another by rearranging its letters.</p> <p>Your Task: Complete the function remAnagram() which takes two strings S1, S2 as input parameter, and returns minimum characters needs to be deleted.</p>	Input: S1 = bcadeh S2 = hea Output: 3 Explanation: We need to remove b, c and d from S1.	Input: S1 = cddgk S2 = gcd Output: 2 Explanation: We need to remove d and k from S1.
16	<p>Sieve of Eratosthenes</p> <p>Given a number N, calculate the prime numbers up to N using Sieve of Eratosthenes.</p> <p>Your Task: You don't need to read input or print anything. Your task is to complete the function sieveOfEratosthenes() which takes an integer N as an input parameter and return the list of prime numbers less than equal to N.</p>	Input: N = 10 Output: 2 3 5 7 Explanation: Prime numbers less than equal to N are 2 3 5 and 7.	Input: N = 35 Output: 2 3 5 7 11 13 17 19 23 29 31 Explanation: Prime numbers less than equal to 35 are 2 3 5 7 11 13 17 19 23 29 and 31.
17	<p>Check for subsequence</p> <p>Given two strings A and B, find if A is a subsequence of B.</p> <p>Your Task: You dont need to read input or print anything. Complete the function isSubSequence() which takes A and B as input parameters and returns a boolean value denoting if A is a subsequence of B or not.</p>	Input: A = AXY B = YADXCP Output: 0 Explanation: A is not a subsequence of B as 'Y' appears before 'A'.	Input: A = gksrek B = geeksforgeeks Output: 1 Explanation: A is a subsequence of B.
18	<p>First and last occurrences of X</p> <p>Given a sorted array having N elements, find the indices of the first and last occurrences of an element X in the given array. Note: If the number X is not found in the array, return '-1' as an array.</p> <p>Your Task: You don't need to read input or print anything. Complete the function firstAndLast() that takes the array arr, its size N and the value X as input parameters and returns a list of integers containing the indices of first and last occurence of X.</p>	Input: N = 4 , X = 3 arr[] = { 1, 3, 3, 4 } Output: 1 2 Explanation: For the above array, first occurrence of X = 3 is at index = 1 and last occurrence is at index = 2.	Input: N = 4, X = 5 arr[] = { 1, 2, 3, 4 } Output: -1 Explanation: As 5 is not present in the array, so the answer is -1.
19	<p>Merge two strings</p> <p>Given two strings S1 and S2 as input, the task is to merge them alternatively i.e. the first character of S1 then the first character of S2 and so on till the strings end. NOTE: Add the whole string if other string is empty.</p> <p>Your Task: You don't need to read input or print anything. Your task is to complete the function merge() which takes the strings S1 and S2 as input and returns the resultant string by merging both S1 and S2 alternatively starting from S1.</p>	Input: S1 = "abc", S2 = "def" Output: adbecf Explanation: The characters of both the given strings are arranged alternatively.	Input: S1 = "Hello" S2 = "Bye" Output: HBeylelo Explanation: The characters of both the given strings are arranged alternatively.
20	<p>Good or Bad string</p> <p>In this problem, a String S is composed of lowercase alphabets and wildcard characters i.e. '?'. Here, '?' can be replaced by any of the lowercase alphabets. Now you have to classify the given String on the basis of following rules: If there are more than 3 consonants together or more than 5 vowels together, the String is considered to be "BAD". A String is considered "GOOD" only if it is not "BAD". NOTE: String is considered as "BAD" if the above condition is satisfied even once. Else it is "GOOD" and the task is to make the string "BAD".</p> <p>Your Task: You don't need to read input or print anything. Your task is to complete the function isGoodorBad() which takes the String S as input and returns 0 or 1.</p>	Input: S = aeioup?? Output: 1 Explanation: The String doesn't contain more than 3 consonants or more than 5 vowels together. So, it's a GOOD string.	Input: S = bcdaeiou?? Output: 0 Explanation: The String contains the Substring "aeiou??" which counts as 7 vowels together. So, it's a BAD string.
21	<p>Unique Number of Occurrences</p> <p>Given an array arr of N integers, the task is to check whether the frequency of the elements in the array is unique or not. Or in other words, there are no two distinct numbers in array with equal frequency. If all the frequency is unique then return true, else return false.</p> <p>Your task: You don't need to read input or print anything. Your task is to complete the function isFrequencyUnique() which take integer N and array arr of size N as arguments, and returns a boolean.</p>	Input: N = 5 arr = [1, 1, 2, 5, 5] Output: false Explanation: The array contains 2 (1's), 1 (2's) and 2 (5's), since the number of frequency of 1 and 5 are the same i.e. 2 times. Therefore, this array does not satisfy the condition.	Input: N = 10 arr = [2, 2, 5, 10, 1, 2, 10, 5, 10, 2] Output: true Explanation: Number of 1's -> 1 Number of 2's -> 4 Number of 5's -> 2 Number of 10's -> 3. Since, the number of occurrences of elements present in the array is unique. Therefore, this array satisfy the condition.
22	<p>Stock buy and sell</p> <p>The cost of stock on each day is given in an array A[] of size N. Find all the segments of days on which you buy and sell the stock so that in between those days for which profit can be generated. Note: Since there can be multiple solutions, the driver code will print 1 if your answer is correct, otherwise, it will return 0. In case there's no profit the driver code will print the string "No Profit" for a correct solution.</p> <p>Your Task: The task is to complete the function stockBuySell() which takes an array of A[] and N as input parameters and finds the days of buying and selling stock. The function must return a 2D list of integers containing all the buy-sell pairs i.e. the first value of the pair will represent the day on which you buy the stock and the second value represent the day on which you sell that stock. If there is No Profit, return an empty list.</p>	Input: N = 7 A[] = {100,180,260,310,40,535,695} Output: 1 Explanation: One possible solution is (0 3) (4 6) We can buy stock on day 0, and sell it on 3rd day, which will give us maximum profit. Now, we buy stock on day 4 and sell it on day 6.	Input: N = 5 A[] = {4,2,2,2,4} Output: 1 Explanation: There are multiple possible solutions. one of them is (3 4) We can buy stock on day 3, and sell it on 4th day, which will give us maximum profit.
23	<p>Stock buy and sell II</p> <p>The cost of stock on each day is given in an array price[] of size n. Each day you may decide to either buy or sell the stock i at price[i], you can even buy and sell the stock on the same day, Find the maximum profit which you can get. Note: Buying and Selling of the stock can be done multiple times, but you can only hold one stock at a time. In order to buy another stock, firstly you have to sell the current holding stock.</p> <p>Your Task: Complete stockBuyAndSell() function which takes an array of Prices as input and returns the maximum profit achieved as described in the problem statement.</p>	Input: n = 4 price[] = {3, 4, 1, 5} Output: 5 Explanation: We can buy stock on day 1 (at price 3) and sell it on day 2 (at price 4) profit will be 4-3=1, We can buy another stock on day 3 (at price 1) and sell it on day 4 (at price 5) profit will be 5-1=4, which will give us maximum profit of 1+4=5.	Input: n = 5 price[] = {1, 3, 5, 7, 9} Output: 8 Explanation: We can buy stock on day 1 (at price 1) and sell it on day 5 (at price 9), which will give us maximum profit of 8.
24	<p>Add Minimum Characters</p> <p>Given a string str, find the minimum characters to be added at front of the string to make it a palindrome.</p> <p>Your Task: You don't need to read input or print anything. Your task is to complete the function addMinChar() which takes the string str as input parameters and returns the minimum number of characters to be added to make it a palindrome.</p>	Input: str = ABCD Output: 3 Explanation: The resultant string after adding 3 characters is DCBABCD. The minimum possible answer is 3.	Input: str = ABA Output: 0 Explanation: The given string is already a palindrome.

25	<p>Missing number in array</p> <p>Given an array of size N-1 such that it only contains distinct integers in the range of 1 to N. Find the missing element.</p> <p>Your Task : You don't need to read input or print anything. Complete the function MissingNumber() that takes array and N as input parameters and returns the value of the missing number.</p>	Input: N = 5 A[] = {1,2,3,5} Output: 4	Input: N = 10 A[] = {6,1,2,8,3,4,7,10,5} Output: 9
26	<p>Kth smallest element</p> <p>Given an array arr[] and an integer K where K is smaller than size of array, the task is to find the Kth smallest element in the given array. It is given that all array elements are distinct. Note :- l and r denotes the starting and ending index of the array.</p> <p>Your Task: You don't have to read input or print anything. Your task is to complete the function kthSmallest() which takes the array arr[], integers l and r denoting the starting and ending index of the array and an integer K as input and returns the Kth smallest element.</p>	Input: N = 6 arr[] = 7 10 4 3 20 15 K = 3 Output : 7 Explanation : 3rd smallest element in the given array is 7.	Input: N = 5 arr[] = 7 10 4 20 15 K = 4 Output : 15 Explanation : 4th smallest element in the given array is 15.
27	<p>Equilibrium Point</p> <p>Given an array A of n positive numbers. The task is to find the first equilibrium point in an array. Equilibrium point in an array is an index (or position) such that the sum of all elements before that index is same as sum of elements after it. Note: Return equilibrium point in 1-based indexing. Return -1 if no such point exists.</p> <p>Your Task: The task is to complete the function equilibriumPoint() which takes the array and n as input parameters and returns the point of equilibrium.</p>	Input: n = 5 A[] = {1,3,5,2,2} Output: 3 Explanation: equilibrium point is at position 3 as sum of elements before it (1+3) = sum of elements after it (2+2).	Input: n = 1 A[] = {1} Output: 1 Explanation: Since there's only element hence its only the equilibrium point.
28	<p>Second Largest</p> <p>Given an array Arr of size N, print second largest distinct element from an array.</p> <p>Your Task: You don't need to read input or print anything. Your task is to complete the function print2largest() which takes the array of integers arr and n as parameters and returns an integer denoting the answer. If 2nd largest element doesn't exist then return -1.</p>	Input: N = 6 Arr[] = {12, 35, 1, 10, 34, 1} Output: 34 Explanation: The largest element of the array is 35 and the second largest element is 34.	Input: N = 3 Arr[] = {10, 5, 10} Output: 5 Explanation: The largest element of the array is 10 and the second largest element is 5.
29	<p>Count pairs with given sum</p> <p>Given an array of N integers, and an integer K, find the number of pairs of elements in the array whose sum is equal to K.</p> <p>Your Task: You don't need to read input or print anything. Your task is to complete the function getPairsCount() which takes arr[], n and k as input parameters and returns the number of pairs that have sum K.</p>	Input: N = 4, K = 6 arr[] = {1, 5, 7, 1} Output: 2 Explanation: arr[0] + arr[1] = 1 + 5 = 6 and arr[1] + arr[3] = 5 + 1 = 6.	Input: N = 4, K = 2 arr[] = {1, 1, 1, 1} Output: 6 Explanation: Each 1 will produce sum 2 with any 1.
30	<p>Maximum Product Subarray</p> <p>Given an array Arr[] that contains N integers (may be positive, negative or zero). Find the product of the maximum product subarray.</p> <p>Your Task: You don't need to read input or print anything. Your task is to complete the function maxProduct() which takes the array of integers arr and n as parameters and returns an integer denoting the answer. Note: Use 64-bit integer data type to avoid overflow.</p>	Input: N = 5 Arr[] = {6, -3, -10, 0, 2} Output: 180 Explanation: Subarray with maximum product is [6, -3, -10] which gives product as 180.	Input: N = 6 Arr[] = {2, 3, 4, 5, -1, 0} Output: 120 Explanation: Subarray with maximum product is [2, 3, 4, 5] which gives product as 120.