Company Specific Problems

Service Based

Tata Consultancy Services

Problem 1

An automobile company manufactures both a two wheeler (TW) and a four wheeler (FW). A company manager wants to make the production of both types of vehicle according to the given data below:

- 1st data, Total number of vehicle (two-wheeler + four-wheeler)=v
- 2nd data, Total number of wheels = W

The task is to find how many two-wheelers as well as four-wheelers need to manufacture as per the given data.

Example :
Input :
200 -> Value of V
540 -> Value of W
Output :
TW =130 FW=70

Problem 2

Given a string S(input consisting) of '*' and '#'. The length of the string is variable. The task is to find the minimum number of '*' or '#' to make it a valid string. The string is considered valid if the number of '*' and '#' are equal. The '*' and '#' can be at any position in the string.

Note : The output will be a positive or negative integer based on number of '*' and '#' in the input string.

- (*>#): positive integer
- (#>*): negative integer
- (#=*): 0

Example 1:
Input 1:

- ###*** -> Value of S

Output :

- 0 → number of * and # are equal

Problem 3

Given an integer array Arr of size N the task is to find the count of elements whose value is greater than all of its prior elements.

Note : 1st element of the array should be considered in the count of the result. For example,

Arr[]={7,4,8,2,9}
As 7 is the first element, it will consider in the result.
8 and 9 are also the elements that are greater than all of its previous elements.

Since total of 3 elements is present in the array that meets the condition.
Hence the output = 3.

Problem 4

A parking lot in a mall has RxC number of parking spaces. Each parking space will either be empty(0) or full(1). The status (0/1) of a parking space is represented as the element of the matrix. The task is to find index of the prpeinzta row(R) in the parking lot that has the most of the parking spaces full(1).

Note :
RxC- Size of the matrix
Elements of the matrix M should be only 0 or 1.

Example 1:
Input :
3 -> Value of R(row)
3 -> value of C(column)
[0 1 0 1 1 0 1 1 1] -> Elements of the array M[R][C] where each element is separated by new line.

Output :
3 -> Row 3 has maximum number of 1's

Problem 5

A party has been organised on cruise. The party is organised for a limited time(T). The number of guests entering (E[i]) and leaving (L[i]) the party at every hour is represented as elements of the array. The task is to find the maximum number of guests present on the cruise at any given instance within T hours.

Example 1:
Input :
- 5 -> Value of T
- [7,0,5,1,3] -> E[], Element of E[0] to E[N-1], where input each element is separated by new line
- [1,2,1,3,4] -> L[], Element of L[0] to L[N-1], while input each element is separate by new line.

Output :
8 -> Maximum number of guests on cruise at an instance.

Cognizant

1. Sum of Digits of a number
2. Palindrome String
3. Reverse a String
4. Reverse a Number
5. Check Palindrome Number

Infosys

1. Program to sort a string of characters
2. Program to count the number of unique characters in a given string
3. Program to multiply two matrices and print the result through another matrix
4. Given a string find the next permutation of the given string
5. Write a program to find the area of the incircle of a right angles triangle

Wipro

1. How to swap two numbers without using a temporary variable?
2. Different Methods to Reverse a String in C++
3. Print alternate elements of an array
4. Value equal to index value
5. At least two greater elements

Capgemini

Problem 1

Write a function that will accept a string whose length is “len”, the string has some “#” keywords in it. Now move all the hashes ‘#’ to the front of the string and return the whole string back and last print it.

Sample Test Case:

Input: The#Learn#Programo

Output: ###TheLearnProgramo

Problem 2

The string contains multiple characters that are repeated consecutively. Now, write a program that will reduce the size of the string using the given mathematical logic.

Sample Test Case:

Input: abbcccddddeeeee

Output: a1b2c3d4e5

Problem 3

You will be given an array and you’ve to print the number of times that elements occur in the given array.

Sample Test Case:
Input:
10
1 3 4 2 1 2 2 1 4 3

Output:
1 occurs 3 times
2 occurs 3 times
3 occurs 2 times
4 occurs 2 times

Problem 4

Write a program that can traverse a matrix in a spiral format.

Sample Test Case:
Input:
3 3
1 2 3
4 5 6
7 8 9

Output: 1 2 3 6 9 8 7 4 5

Problem 5

There are multiple dealerships for cars and bikes. Now, write a program that will calculate how many types are in each and every dealership.

Sample Test Case:
Input:
3
2 4
5 0
1 2

Output: 16 20 8

Product based

ZOHO

Problem 1

Write a program to give the following output for the given input

Eg 1: **Input:** a1b10
Output: abbbbbbbbbb
Eg: 2: **Input:** b3c6d15
Output: bbbccccccddddddddddddddd
The number varies from 1 to 99.

Problem 2

Write a program to sort the elements in odd positions in descending order and elements in ascending order

Eg 1: **Input:** 13,2 4,15,12,10,5
Output: 13,2,12,10,5,15,4
Eg 2: **Input:** 1,2,3,4,5,6,7,8,9
Output: 9,2,7,4,5,6,3,8,1

Problem 3

Find if a String2 is substring of String1. If it is, return the index of the first occurrence. else return -1.

Eg 1:
Input:
String 1: test123string
String 2: 123
Output: 4

Problem 4

Given two sorted arrays, merge them such that the elements are not repeated

Eg 1:
Input:
Array 1: 2,4,5,6,7,9,10,13
Array 2: 2,3,4,5,6,7,8,9,11,15
Output:
Merged array: 2,3,4,5,6,7,8,9,10,11,13,15

Problem 5

Using Recursion reverse the string such as

Eg 1: **Input:** one two three
Output: three two one
Eg 2: **Input:** I love india
Output: india love I

Freshworks

1. Subarray with given sum
2. Count the triplets
3. Kadane's Algorithm
4. Missing number in array
5. Merge two sorted arrays

PayPal

1. K'th smallest element
2. Trapping Rain Water
3. Pythagorean Triplet
4. Chocolate Distribution Problem
5. Stock buy and sell

Amazon

1. Sort an array of 0s, 1s and 2s
2. Equilibrium point
3. Leaders in an array
4. Minimum Platforms
5. Reverse array in groups

Growfin

1. Element with left side smaller and right side greater
2. Convert array into Zig-Zag fashion
3. Last Index of 1
4. Spirally traversing a matrix
5. Largest Number formed from an Array