TCS NQT Coding Question 2022

**Problem Statement –**

A chocolate factory is packing chocolates into the packets. The chocolate packets here represent an array  of N number of integer values. The task is to find the empty packets(0) of chocolate and push it to the end of the conveyor belt(array).

**Example 1 :**

N=8 and arr = [4,5,0,1,9,0,5,0].

There are 3 empty packets in the given set. These 3 empty packets represented as O should be pushed towards the end of the array

**Input :**

8  – Value of N

[4,5,0,1,9,0,5,0] – Element of arr[O] to arr[N-1],While input each element is separated by newline

**Output:**

4 5 1 9 5 0 0 0

**Example 2:**

**Input:**

6 — Value of N.

[6,0,1,8,0,2] – Element of arr[0] to arr[N-1], While input each element is separated by newline

**Output:**

6 1 8 2 0 0

### TCS NQT Coding Question 2022

**Problem Statement –**

Joseph is learning digital logic subject which will be for his next semester. He usually tries to solve unit assignment problems before the lecture. Today he got one tricky question. The problem statement is “A positive integer has been given as an input. Convert decimal value to binary representation. Toggle all bits of it after the most significant bit including the most significant bit. Print the positive integer value after toggling all bits”.

**Constrains-**

1<=N<=100

**Example 1:**

**Input :**

10  -> Integer

**Output :**

5    -> result- Integer

**Explanation:**

Binary representation of 10 is 1010. After toggling the bits(1010), will get 0101 which represents “5”. Hence output will print “5”.

friends could not enact OR understand the enactment.

TCS NQT Coding Question

**Problem Statement –**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

**TCS Coding Question**

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.  
**Example 1:**

**Input**5 -> Value of N, represents size of Arr  
7-> Value of Arr[0]  
4 -> Value of Arr[1]  
8-> Value of Arr[2]  
2-> Value of Arr[3]  
9-> Value of Arr[4]

**Output :**3

**Example 2:**5   -> Value of N, represents size of Arr  
3  -> Value of Arr[0]  
4 -> Value of Arr[1]  
5 -> Value of Arr[2]  
8 -> Value of Arr[3]  
9 -> Value of Arr[4]

**Output :**5

**Constraints**

* 1<=N<=20
* 1<=Arr[i]<=10000

### ****TCS Coding Question Day 1 Slot 2 – Question 2****

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

**Example 2:  
input :**4 -> Value of R(row)  
3 -> Value of C(column)  
[0 1 0 1 1 0 1 0 1 1 1 1] -> Elements of the array M[R][C]  
**Output :**4  -> Row 4 has maximum number of 1’s

**TCS Coding Question Day 2 Slot 1 – Question 1**

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.

**Explanation:**

**1st hour:**  
Entry : 7 Exit: 1  
No. of guests on ship : 6

**2nd hour :**  
Entry : 0 Exit : 2  
No. of guests on ship : 6-2=4

**Hour 3:**Entry: 5 Exit: 1  
No. of guests on ship : 4+5-1=8

**Hour 4:**Entry : 1 Exit : 3  
No. of guests on ship : 8+1-3=6

**Hour 5:**Entry : 3 Exit: 4  
No. of guests on ship: 6+3-4=5  
Hence, the maximum number of guests within 5 hours is 8.

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

**Output:**6  
Cruise at an instance

**Explanation:**Hour 1:  
Entry: 3 Exit: 0  
No. of guests on ship: 3

Hour 2:  
Entry : 5 Exit : 2  
No. of guest on ship: 3+5-2=6

Hour 3:  
Entry : 2 Exit: 4  
No. of guests on ship: 6+2-4= 4

Hour 4:  
Entry: 0  Exit : 4  
No. of guests on ship : 4+0-4=0

Hence, the maximum number of guests within 5 hours is 6.  
The input format for testing  
The candidate has to write the code to accept 3 input.  
First input- Accept  value for number of T(Positive integer number)  
Second input- Accept T number of values, where each value is separated by a new line.  
Third input- Accept T number of values, where each value is separated by a new line.  
The output format for testing  
The output should be a positive integer number or a message as given in the problem statement(Check the output in Example 1 and Example 2)

**Constraints:**

* 1<=T<=25
* 0<= E[i] <=500
* 0<= L[i] <=500

### ****Question****

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At the security checkpoint, airport security personnel have seized a number of travellers’ belongings. Everything has been thrown into a big box (array). Each product carries a specific level of risk[0,1,2]. The risk severity of the items in this case is represented by an array[] of N integer values. Sorting the elements in the array according to the degrees of danger is the task at hand. Between 0 and 2 are the risk values.

**Example** :

**Input :**

7  -> Value of N

[1,0,2,0,1,0,2]-> Element of arr[0] to arr[N-1], while input each element is separated by new line.

**Output :**

0 0 0 1 1 2 2  -> Element after sorting based on risk severity

**Example 2:**

input : 10  -> Value of N

[2,1,0,2,1,0,0,1,2,0] -> Element of arr[0] to arr[N-1], while input each element is separated by a new line.

**Output :**

0 0 0 0 1 1 1 2 2 2  ->Elements after sorting based on risk severity.

**Explanation:**

In the above example, the input is an array of size N consisting of only 0’s, 1’s and 2s. The output is a sorted array from 0 to 2 based on risk severity.

### ****Question 8****

For all of its products, a supermarket maintains a pricing structure. Each product has a value N printed on it. The price of the item is determined by multiplying the value N, which is read by the scanner, by the sum of all its digits. The goal here is to create software that, given the code of any item N, will compute the product (multiplication) of all the value digits (price).

**Example 1:**

**Input :**

5244 -> Value of N

**Output :**160 -> Price

**Explanation:**

From the input above   
Product of the digits 5,2,4,4  
5\*2\*4\*4= 160  
Hence, output is 160.

**TCS Coding Question Day 2 Slot 1 – Question 2**

At a fun fair, a street vendor is selling different colours of balloons. He sells N number of different colours of balloons (B[]). The task is to find the colour (odd) of the balloon which is present odd number of times in the bunch of balloons.

**Note:**If there is more than one colour which is odd in number, then the first colour in the array which is present odd number of times is displayed. The colours of the balloons can all be either upper case or lower case in the array. If all the inputs are even in number, display the message “All are even”.

**Example 1:**

* 7  -> Value of N
* [r,g,b,b,g,y,y]  -> B[] Elements B[0] to B[N-1], where each input element is sepārated by ṉew line.

**Output :**

* r -> [r,g,b,b,g,y,y]  -> “r” colour balloon is present odd number of times in the bunch.

**Explanation:**From the input array above:

* r: 1 balloon
* g: 2 balloons
* b:  2 balloons
* y : 2 balloons  
  Hence , r is only the balloon which is odd in number.

**Example 2:  
Input:**

* 10 -> Value of N
* [a,b,b,b,c,c,c,a,f,c] -> B[], elements B[0] to B[N-1] where input each element is separated by new line.

**Output :**b-> ‘b’ colour balloon is present odd number of times in the bunch.

**Explanation:**From the input array above:

* a: 2 balloons
* b: 3 balloons
* c: 4 balloons
* f: 1 balloons

Here, both ‘b’ and ‘f’ have odd number of balloons. But ‘b’ colour balloon occurs first.  
Hence , b is the output.

**Input Format for testing**The candidate has to write the code to accept: 2 input

* First input: Accept value for number of N(Positive integer number).
* Second Input : Accept N number of character values (B[]), where each value is separated by a new line.

**Output format for testing**The output should be a single literal (Check the output in example 1 and example 2)

**Constraints:**

* 3<=N<=50
* B[i]={{a-z} or {A-Z}}

### Question

**Problem Statement**

A washing machine works on the principle of Fuzzy System, the weight of clothes put inside it for washing is uncertain But based on weight measured by sensors, it decides time and water level which can be changed by menus given on the machine control area.

For low level water, the time estimate is 25 minutes, where approximately weight is between 2000 grams or any nonzero positive number below that.

For medium level water, the time estimate is 35 minutes, where approximately weight is between 2001 grams and 4000 grams.

For high level water, the time estimate is 45 minutes, where approximately weight is above 4000 grams.

Assume the capacity of machine is maximum 7000 grams

Where approximately weight is zero, time estimate is 0 minutes.

Write a function which takes a numeric weight in the range [0,7000] as input and produces estimated time as output is: “OVERLOADED”, and for all other inputs, the output statement is

“INVALID INPUT”.

Input should be in the form of integer value –

Output must have the following format –

Time Estimated: Minutes

**Example:  
Input value**  
2000  
**Output value**Time Estimated: 25 minutes