Guru Gobind Singh Indraprastha University
"A State University established by the Govt. Of NCT Delhi"
Sector 16-C, Dwarka, New Delhi – 110078

F. No.: GGSIPU/CCGPC/2023/ 824 18th December 2023

Sub. Placement opportunity for B.Tech, M.Tech and MCA students of GGSIP University of the batch passed out in year 2023 in the company "Infosys".

Dear Placement Officer,

Greetings from CCGPC, GGSIPU!!!

Please find below details of Placement opportunity for B.Tech, M.Tech and MCA students of GGSIP University of the batch passed out in year 2023 in the company "Infosys" for your reference and circulation to students to apply on given link by **19th December 2023, 6:00 PM:**

Registration Link – https://forms.gle/8Y23xcKJRAHC1VXH8

Infosys Off-Campus Recruitment Program

Role - Specialist Programmer

CTC – The compensation for the Specialist Programmer role **is INR 9.5 lakhs per annum**.

Selection Process –

1. The first step will be a virtual online assessment
2. The shortlisted students will be required to undergo an online or in-person interview to assess their technical and behavioral skills.

The online assessment will be conducted on January 7, 2023.

Eligibility criteria -

- **Courses:** B.Tech, M.Tech and MCA
- **Branches:** All branches.
- **Academic criteria:** None

Attached are **'Important Instructions for Candidates'** and **'Sample Questions_Infosys'** for eligible students so they can adhere to the process and prepare for the Infosys online assessment.

(Dr. Nisha Singh)
Training and Placement Officer
CCGPC, GGSIP University

About Company - Infosys is a global leader in next-generation digital services and consulting. Our purpose is to amplify human potential and create the next opportunity for people, businesses and communities. We enable more than 1,884 clients in more than 50 countries to navigate their digital transformation. We do it by enabling the enterprise with an AI-powered core, empowering the business with agile digital at scale, and our always-on learning agenda. Our team, of 3,28,000+ employees, makes this happen.

Infosys®
Navigate your next

IMPORTANT INSTRUCTIONS FOR CANDIDATES
PARTICIPATING IN THE INFOSYS RECRUITMENT PROCESS

1. It is mandatory that your original college ID card is available with you during the virtual interview.

2. Simple average includes marks obtained in all subjects/semesters/years including electives, optional subjects, additional subjects, practical, and languages. **We require you to calculate simple average marks as per the instructions below:**

   - To get Simple Average, aggregate percentages for Class 10, Class 12, Graduation, and Post-graduation, including all languages, additional subjects, practical, and optional subjects. (Refer to the given illustration.)

   - If your college follows a CGPA system, please ensure that the CGPA is calculated taking into account each course that you have undertaken in the curriculum, including optional or additional subjects (if any).

   - If you have done your Diploma after Class 10 and have joined directly as a lateral entrant into the second year of B.E./B. Tech, please calculate the aggregate for all the three years of Diploma, including all languages/optional subjects/additional subjects undertaken. Calculate the aggregate for Engineering from the second year (third semester) onwards to the final semester, as applicable.

   - If your school follows a grade system, please enter the simple average of marks equivalent to it.

X/XII Standard			Diploma/Graduation/Post-Graduation											
	MarksObtained	Max.Marks	Courses	MarksObtained	Max.Marks	Courses	MarksObtained	Max.Marks	Courses	MarksObtained	Max.Marks	Courses	MarksObtained	Max.Marks
Subject1	60	100	Course-1	81	100	Course-8	87	100	Course-15	77	100	Course-22	87	100
Subject2	73	100	Course-2	79	100	Course-9	62	75	Course-16	39	50	Course-23	78	100
Subject2Practicals	26	50	Course-3	62	75	Course-10	74	100	Course-17	88	50	Course-24	87	100
Subject3	82	100	Course-4	91	100	Course-11	91	100	Course-18	83	100	Course-25	83	100
Subject3Practicals	52	100	Course-5	90	100	Course-12	35	50	Course-19	80	100	Course-26	82	100
Optional -1	77	100	Course-6	38	50	Course-13	78	100	Course-20	38	50	Course-27	89	100
Additional Subject-1	48	75	Practicals	89	100	Optional	80	100	Optional	69	100	Course-28	92	100
	418	625		530	625		507	625		474	600		598	700
SimpleAverage/Aggregate=418/625=66.88%			SimpleAverage/Aggregate=(530+507+474+598)/(625+625+600+700)=82.70%											

Sample Problems

Sample Problem #1:

Today you decided to go to the gym. You currently have energy equal to E units. There are N exercises in the gym. Each of these exercises drains Ai amount of energy from your body.

You feel tired if your energy reaches 0 or below. Calculate the minimum number of exercises you have to perform such that you become tired. Every unique exercise can only be performed at most 2 times as others also have to use the machines.

If performing all the exercises does not make you feel tired, return -1.

Parameters:

E :: INTEGER
The first line contains an integer, E, denoting the Energy.
E :: 1 -> 10^5

N :: INTEGER
The next line contains an integer, N, denoting the number of exercises.
N :: 1 -> 10^5

A :: INTEGER ARRAY
Each line i of the N subsequent lines (where 0 ≤ i < N) contains an integer describing the amount of energy drained by *i*-th exercise.
A[i] :: 1 -> 10^5

Test Cases

Case#: 1

Input:
6
2
1
2
Output:
4

E = 6
Do 1st exercise 2 times
Do 2nd exercise 2 times
Hence, total exercises done 4.

Case#: 2

Input:
10
2
1
2
Output:
-1

E = 10
By doing both the exercises 2 times, you won't feel tired.

Case#: 3

Input:
2
3
1
5
2
Output:
1

E = 2
Use 3rd exercise 1 time.
Hence, total exercise done 1.

Sample Problem #2:

There is a battle between heroes and villains going on. You have M heroes, all of them have the same health H. There are N villains, health of the *i*-th villain is Vi.

When a hero, with health H battles a villain with health Vi, one of the three scenarios can happen:

if H > Vi: The villain is defeated, and the health of the hero is decreased by Vi
if H < Vi: The villain wins, his health is not affected, and the hero is no longer able to fight.
if H = Vi: Both are considered defeated, and neither can fight.
The heroes start fighting villains one by one in the same order, first villain 1 then villain 2 and so on. It might be possible that before defeating all the villains, all the heroes are defeated. Therefore, to ensure the victory of the heroes, you want to remove some villains from the front.

Your task is to find the minimum number of villains you need to remove from the front such that the victory of the heroes is guaranteed.

Note: If in the last battle, both the hero and villain are defeated and no more heroes or villains remain, it would still be considered a victory since all the villains are defeated.

Parameters:

N :: INTEGER
The first line contains an integer, N, denoting the number of villains
N :: 1 -> 2*10^5

M :: INTEGER
The next line contains an integer, M, denoting the number of heroes
M :: 1 -> 2*10^5

H :: INTEGER
The next line contains an integer, H, denoting the health of each of the heroes
H :: 1 -> 10^9

array :: INTEGER ARRAY
Each line i of the N subsequent lines (where $0 \leq i < N$) contains an integer describing the health of each of the villains.
array[i] :: 1 -> 10^9

Test Cases

Case#: 1

Input:
4
4
3
3
1
3
3
Output:
0

[3, 1, 3, 3]. We have 4 heroes will health 3. The heroes 1 will fight villain 1. Both get defeated. The hero 2 fights villain 2. It wins the battle and now his health is 2. He fights the third villain and loses, the villain still has health 3. The hero 3 fights villain 3 and both get defeated. Hero 4 fights villain 4 and both get defeated. So, no need to remove any villain.

Case#: 2

Input:
5
3

3
1
2
3
1
1
Output:
0

The fight will take place and hero 1 will defeat villain 1 and 2. Hero 2 will defeat villain 2. Hero 3 will defeat villain 3 and 4

Case#: 3

Input:
5
1
4
1
2
3
1
3
Output:
3

Only 1 hero is present with health 4. Since you can only remove villain from the front, you will have to remove the first 3 villains to ensure victory. The hero can fight the last 2 villain of health 1 and 3 respectively and win the battle.

Sample Problem #3:

You need to build a road in a rugged terrain. You know the sea level of each segment of the rugged terrain, i.e., the *i*-th segment is Li meters from sea level.

You need to transform the terrain into a strictly downward sloping terrain for the road, i.e., for each i-th segment where 2 <= i <= N, resultant Li-1 > Li. To do so, you employ a powerful digging team to help you dig and reduce the sea level of the segments. On day D, the team can reduce the sea level for each segment that you scheduled that day by 2D-1 meters each.

You are allowed to assign the team to dig on multiple segments and/or dig on the same segments for multiple days.

Your task is to find the minimum number of days needed to transform the terrain as per your requirements.

Parameters:

N :: INTEGER
The first line contains an integer, N, denoting the number of elements in L.
N :: 1 -> 10^5

L :: INTEGER ARRAY
Each line i of the N subsequent lines (where 0 < i ≤ N) contains an integer describing Li, the sea level of the *i*-th segment.
L[i] :: -10^9 -> 10^9

Test Cases

Case#: 1

Input:
2
3
3
Output:
1

We can dig on the 2nd segment, reducing it from 3-meter sea level to 2. Resulting in {3, 2} which is strictly decreasing.

Case#: 2

Input:
2
5
-3
Output:
0

It is already strictly decreasing before start.

Case#: 3

Input:
4
-1
1
1
1
Output:
3

One of the possible ways:
On day 1, we can dig on 1st and 4th segment, resulting in {-2, 1, 1, 0}
On day 2, we can dig on 3rd and 4th segments, resulting in {-2, 1, -1, -2}
On day 3, we can dig on 2nd, 3rd, and 4th segments, resulting in {-2, -3, -5, -6}

Sample Problem #4:

You are given an array of size N. You need to change this array into a mountain. By mountain we mean, the either ends of the array should have equal elements. Then as we move towards the middle from both ends, the next element is just one more than the previous one. So, it would have a peak in the middle and decreases if you go towards either end, just like a mountain.

Examples of mountains are [1, 2, 3, 2, 1] or [6, 7, 8, 8, 7, 6]. But the array [1, 2, 4, 2, 1] is not a mountain because from 2 to 4 the difference is 2. The array [1, 2, 3, 1] is also not a mountain because the elements 2 and 3 are not equal from both ends.

You need to find the minimum number of elements that should be changed to make the array a mountain. You can make the elements negative or zero as well.

Parameters:

N :: INTEGER
The first line contains an integer, N, denoting the number of elements in array.
N :: 1 -> 10^5

array :: INTEGER ARRAY
Each line i of the N subsequent lines (where $0 \leq i < N$) contains an integer describing i-th element of array.
array[i] :: 1 -> 10^6

Test Cases

Case#: 1

Input:
5
1
2
3
4
5
Output:
2

array = [1, 2, 3, 4, 5]. We can change 4 and 5 to make it [1, 2, 3, 2, 1]

Case#: 2

Input:
9
1
1
1
2
3
2
1
1
1
Output:
4

array = [1, 1, 1, 2, 3, 2, 1, 1, 1]. We can change the array to [-1, 0, 1, 2, 3, 2, 1, 0, -1]

Case#: 3

Input:
6
3
3
4
4
5
5
Output:
3

array = [3, 3, 4, 4, 5, 5]. We can change the array to [2, 3, 4, 4, 3, 2]

Sample Problem #5:

You have an interesting string S of length N. It is interesting because you can rearrange the characters of this string in any order. You want to cut this string into some contiguous pieces such that after cutting, all the pieces are equal to one another.

You can't rearrange the characters in the cut pieces or join the pieces together. You want to make the number of pieces as large as possible. What is the maximum number of pieces you can get?

Note: You can observe that you may not want to cut the string at all, therefore the number of pieces is 1. Hence, the answer always exists.

Parameters:

S :: STRING
The first line contains a string, S, denoting the string.
length(S) :: 1 -> 2 * 10^5

Test Cases

Case#: 1

Input:
zzzzz
Output:
5

You can cut it into 5 pieces "z" + "z" + "z" + "z" + "z"

Case#: 2

Input:
ababcc
Output:
2

Rearrange the string as abcabc. you can cut it into "abc" + "abc", hence the answer is 2

Case#: 3

Input:
abccdcabacda
Output:
2

Rearrange the string as "dcbaca" + "dcbaca", the answer is 2.