Instructions:

- **Apply HEADING-1 (ctrl + alt + 1 style for new company name to show in outline**
-
- **Apply HEADING-2 (ctrl + alt + 2) style for your college name**
- While typing, use **Ctrl + Enter** to go to new page
-
- PLEASE KEEP COMPANIES ON SEPARATE PAGES
- Enable outline for Company Shortcuts View Show hi Do\zcument Outline
- Page edit history will be maintained in History Page
-
- If possible, mention whether the company is open for M.Tech. or not
- While adding external solution links, please apply green color highlights
- Mention **CPI Cutoff and eligible discipline,** please apply red color highlights

Please don’t edit or remove heading 1 or heading 2 style , it screws up the outline and makes the document look chaotic.

Company List

You can search the questions of the companies.

KINDLY ENTER COMPANY HERE, ONLY IF ANY INFO IS ADDED IN DOC

(Anyone who solved the question completely is requested to share the solution and/or approach)

Microsoft	Amazon	Nutanix	Thoughtspot	Goldman Sachs	Cisco
Flow traders	Itron	Nference Labs	WorldQuant	Samsung Bangalore	AppDynamics
Cohesity	Samsung Delhi	Arista Networks	Directi	Edgeverve	Hexagon
Clumio Technologies	Deskera	Wells Fargo	BookMyShow	Zendrive	ShareChat
Citrix	Honeywell	Walmart Labs	Motorq	Cogoport	

History of Companies

Date	**Company + College**
16/8/2019	(Microsoft, Amazon, Nutanix, ThoughtSpot)
21/8/2019	Goldman Sachs, Cisco
24/8/2019	Flow traders (IITG)
14/9/2019	Itron (IITM)
17/9/2019	Nference Labs(IITM) WorldQuant (IITD)
18/9/2019	Samsung R&D Bangalore (IITD)
20/9/2019	Cohesity, technical staff member (IITD)
22/9/2019	Samsung Delhi (IITD)
23/9/2019	Arista Networks (IIT Jammu)
24/9/2019	Oyo Rooms (IIT Jammu)
26/9/2019	Directi(IIT Gn)
29/9/2019	EdgeVerve (IIT BHU)
30/9/2019	Hexagon Capability Centre India(IITK)
03/10/2019	Clumio Technologies India LLP, member of technical staff (IITK), Wells Fargo (IIT M), Deskera ,Software developer(IITK)
04/10/2019	BookMyShow(IITH)
05/10/2019	Honeywell (IITH) Zendrive (IITG) CITRIX (IITG) ShareChat (IITK)
06/10/2019	Walmart Labs (IITG) AQR Capital (IITG) Motorq (IITM)
07/10/2019	Cogoport(IITK) Samsung R&D Bangalore (IITG)

	KINDLY ENTER COMPANY HERE, ONLY IF THE QUES ARE ADDED IN DOC **Please mention college name too**

Queries Section

!!!PLEASE ALSO MENTION YOUR COLLEGE NAME ALONG WITH THE QUESTION SET. @NIT guys!!!!! (IIT guys have written their college name)

NIT Warangal guys please add Microsoft, Uber, Salesforce questions, if your friends are there from NITs ask them to post the questions. Placements are completed in all NITs

Guys, Please add more microsoft questions.

Are the results for Flipkart APM challenge out? When will they be?

Has Jaguar Land Rover visited any campus for Software and Core Mechanical Profiles? Please add questions.

Did Swiggy visit any campus ? If yes, please add questions

Has Sprinklr India visited any college ? Please add questions.

Did Jio visit any college ? If yes, please add the questions.

Has Wells Fargo visited any IITs/NITs ? Edit: Added !!

Guys, Please add Qualcomm questions (Software Engineer)

NIT Kurukshetra and NIT Trichy guys please add Microsoft questions. Also IIIT Bangalore and IIIT Delhi

Please Add Vmware and frt questions guys

Please Add CISCO coding questions.

Please Add Goldman Sachs and Appdynamics questions.

Please add Oracle, Salesforce, Softbank coding questions.

NIT Warangal guys please add Microsoft, Uber, Salesforce questions

IIIT Delhi guys post Qualcomm Questions

BITS PILANI guys please add Microsoft Questions

IIIT Bangalore guys please add Cisco questions

Please add Future First questions guys

Please add L&T ECC questions and of TATA as well.

NIT Warangal guys please add MakeMyTrip Questions

NIT Surathkal add Walmart questions too

MNIT guys please add OYO Rooms Business Analyst questions ? (*What is BA ??)
What is the CPI cutoff Samsung R&D Delhi? - 7.0

Has Deskera taken test in any iit yet? It is on 3rd Oct at IIT kanpur. Please upload questions before that

Upload Honeywell questions if they came anywhere yet.

1. job sequencing problem 2. leetcode 741 cherry pickup

Has dwell visited any college?

What were the sections in test of Goldman Sachs?

What is CPI cutoff for FlowTraders? And, also can someone describe test+interview process followed by FlowTraders? test patterns,etc
1st round questions are in the doc, 2nd round is easy fast math (75 questions in 10 mins) {min 60% cutoff}, 3rd round is IQ round (venn diagram,LR, etc) (68 questions in 30 minutes)

Questions for which profile of Flow Traders has been added in the doc? Graduate Trader

Has HSBC visited any college ?
Has Honeywell visited any college? test will be on 04/10/19 at IITK so plss add Please add the questions after the test

Please add Atlassian Questions +1
Please add the coding questions (or even describe briefly) of Wells Fargo

Has Publicis Sapient visited any college? If yes, please add the questions. it has visited NIT Warangal. But those guys don't post the questions. If anyone has a friend from NIT Warangal ask them

Has fractal analytics visited any college? Yes, IITG PPT tomorrow

Did cohesity opened for M.tech in IIT Delhi? **No, only for dual degree and BTech**
Did Visa come any place and opened for M.Tech?

Has Dynamic Technology Lab Pte Ltd visited any campus?? Or if someone has previous year questions asked please add

Someone please add the questions asked by **VMware**(**2018**).

MICROSOFT

Only 3 questions from Microsoft. Microsoft visits almost all colleges, come on guys add more questions/. PLSSS

1. One Queue Based Question. Just queue and dequeue the elements and compute a function when the given condition reaches.
2. Minimum adjacent swap required to make a string palindrome. (solution >>https://stackoverflow.com/questions/51796237/minimum-number-of-swaps-to-convert-a-string-to-palindrome?fbclid=IwAR0cd5Qc toVZHHvuoCspcI7KDVhjA8VdqmvtEqOLvOSmCWXRi6tcqI7fi60)
   https://www.codechef.com/problems/ENCD12
   https://www.codechef.com/viewsolution/26846686
3. Find the minimum distance between a given 2D point and a set of 2D pos (had to round it off).

Amazon

1. String Parsing Question. (URLiffy)
2. Infix to Postfix
3. Postfix Evaluate
4. Alien Dictionary
5. Sort numbers when rank of each number in decimal system is changed.(Could anyone please elaborate the question or give some link of this question on some website) as per my understanding when each number is mapped to another number for eg. 1 has rank 4, 2 has 9, etc and then you have to sort the modified number system.
6. Inversions in an array.
7. Longest Common Subsequence.
8. Longest increasing Subsequence
9. https://www.geeksforgeeks.org/dice-throw-dp-30/
10. Longest decreasing subsequence.
11. MEAN, MEDIAN, MODE OF AN ARRAY .

12 You are given a String S made of lowercase English Alphabets. Find the length of smallest substring with maximum number of distinct charact
1<= |S| <= 10^5, where |S| denotes the length of the String.
https://www.geeksforgeeks.org/length-smallest-sub-string-consisting-maximum-distinct-characters/

13. https://www.geeksforgeeks.org/count-possible-decodings-given-digit-sequence/

14. Replace every element with the smallest element on the right side
.
15 Right, Left, Top, Bottom view of the tree..

****Can anyone know what was “Walls” problem last year in IIT Delhi? Please write if anyone knows.

NUTANIX

1. Implement OS scheduler. N tasks with burst time and K-core processor.
2. Graph with Red-Black nodes. Minimum weight to reach from source to dest such that abs(count(red)-count(black))

*** Can anyone tell what do you mean by weight in the second question? I believe it should only be about minimizing **abs(count(red)-count(black))**

Can anyone provide approach for 1st problem?

THOUGHTSPOT

1. Build BST from sorted LL.
2. Snakes and Ladder game.
3. Max length valid palindrome //what does it mean ?

GOLDMAN SACHS

1. **What is the probability of getting consecutive 6,6 before consecutive 6,5{Please verify answer: 1/2}[I am also getting ½]**

2. Derive an expression for the expected number of steps an ant makes to travel from one vertex to diametrically opposite vertex of an N dimensional object(eg - N=3 is cube). The ant is free to move at any path each time from a vertex.
   Is the question correct? Is there a condition on number of steps(hope it is in 'n' steps) ans: $(n! / n^n)$? else isn't the answer 1 ..? Answer is 10(N=3) assume some variable and do recursion
3. Prove that for a given ring, there exists at least two diametrically opposite points, which will have the same temperature.
4. What is expected no. of throw to get consecutive 6 different numbers on a dice.d no. , Also, many questions were on the higher level concept of "Expectation". So do study the same.
5. Leetcode problem: **Product of array except self**

CISCO

(Software Consulting Engineer)
1)Digital Electronics+aptitude+3 finance questions+networking+os+basic puzzles. (Every section had cutoff).
2)one programming question: Confusing one,had to play with cin.getline(), cin.ignore() and many terms to read and output strings in different lines.
Total 26 questions, 25 mcqs and 1 coding. Coding was also of 1 mark. Give more time to mcqs. 1 hour time was given. Platform:HR
Can somebody tell the exact programming question?

FLOW TRADERS

IITG

Problem One: Tennis Game

Tennis players A and B have probabilities of a = 0.6 and b = 0.4 respectively to win a point. The current score is 30:30, what is the probability that tennis player A wins this game?

The games are scored as per normal tennis rules starting at "love" (or zero) and go up to 40. From love, the first point is 15, then 30, then 40, then the game point, which wins the game. One of the players has to win by two points. Say your opponent wins the point after you are up 40–30, the score would then be tied, and you would announce: "40–all", otherwise known as "deuce". Now you continue to play until one of you has a two-point advantage and wins the game.

You need to submit both python file and image of your work inside a zipped file

You'll receive -1 for all wrong submissions so make your submissions judiciously

Was only python allowed? YES

Problem Two: Elevators

There are n elevators moving independently of each other in a building of 100 floors. The elevators move continuously through floors 1, 2, . . . , 100, 99, . . . , 2, 1, 2, . . . , except that they stop on a floor on which the button has been pressed. Assume that time spent loading and unloading passengers is very small compared to the travelling time. Suppose you reside on floor 92, answer the following questions accordingly:

What is the probability that the first elevator arriving on your floor moves up?

Suppose the lifts move at the rate of 20 floors per minute, what is the expected time it takes to reach floor 1 from floor 92, assuming you take the first lift that arrives on your floor. Compute your answer in seconds and just give the integral part. So if your answer is 123.67, return 123

We'd recommend that you try to solve this for small values of n and then figure out the general logic

You'll receive -1 for all wrong submissions so make your submissions judiciously

Problem Three: Logicians with Hats

Thirty-one logicians came from different countries to participate in the Annual International Conference on Logic. After greeting all 31 participants, the main organiser remarked that it would be necessary to run a special test to check whether all participants were indeed logicians as they claimed to be. He explained kindly that in the past there had been cases where some non-logicians tried to get into the conference, and he would not allow that to happen again. He further explained the basis of the test: he said that each participant would get a dot of some colour that he would place on each participant's forehead. Each participant would be allowed to look around (thus everyone would see the dots of all other participants except his own), but no communication of any sort would be allowed. After a while, the organiser would ring a bell and if any participant had deduced the colour of his or her dot, they should leave the room. The organiser would ring a bell as many times as necessary. As the organiser knows the colour of all of the dots, he also knows when each participant should leave the room (if the participant is a logician). This was the essence of the test.

At this stage, the organiser asked the participants whether there were any questions. One participant raised his hand and asked whether it was possible to pass the test - i.e., to correctly guess the colour of his dot. The organiser replied that he had selected the colours of all the dots in such a way that every participant should be able to deduce the colour of his/ her dot.

As this was the only question from the crowd, the test started. The organiser placed the colour dots on the foreheads of all of the participants and waited for a while so that everyone had a chance to look around. After a few minutes, he rang the bell for the first time. At this moment, four participants left the room. When he rang the bell for the second time, all the participants with red dots left the room. When he rang the bell for the third time, no one moved. When he rang the bell for the fourth time, at least one participant left. Soon afterwards, he rang the bell again, the participant who asked the only question before the commencement of the test left together with his sister and some other participants - he and his sister had dots of different colours. At this stage, there were still some participants left in the room. Assuming that all the participants were true logicians (so everyone was leaving the room at the right time), how many times did the organiser ring the bell?

You'll receive -1 for all wrong submissions so make your submissions judiciously

ITRON

IITM

1.Aptitude 35 questions
2.3 coding questions

1. https://www.geeksforgeeks.org/find-two-numbers-sum-xor/
2. https://www.geeksforgeeks.org/perfect-number/
3. Given N lists, each list has P strings find if count of unique strings is greater than K.

NFERENCE LABS

IITM

2 coding questions

1. Array Journey

☆ Array Journey

You are standing at the start of an array of integers. You want to move to the end of the array, collecting as many points as possible along the way. Each step can cover a maximum number of elements. Each time you land on an element, its value is added to your score. What is the maximum score achievable?

For example, you are at position *0* of the array *path = [10, 2, -10, 5, 20]*. Your maximum step can cover *k=2* elements. Your score starts at *10*, the value at index *0*. Your first step could land you on elements valued *2* or *-10*. You choose to land on *2* to achieve the higher score, now *10+2=12*. Next you choose between landing on *-10* or *5*. You choose *5* for a score of *12+5=17*. You make one final move to your goal and your total score is *17+20=37*.

Function Description

Complete the function *journey* in the editor below. The function must return a long integer denoting your maximum attainable score.

journey has the following parameter(s):

path[path[0],...path[n-1]]: an array of integers
k: an integer, the maximum step length

Constraints

- $1 \le n \le 10^5$
- $0 \le |path[i]| \le 10^5$, where $0 \le i < n$ and $|x|$ denotes absolute value of x.
- $1 \le k \le n$

▶ **Input Format for Custom Testing**

▼ **Sample Case 0**

2. The Jungle Book

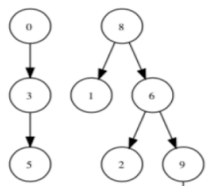
☆ The Jungle Book

There are a number of animal species in the jungle. Each species has one or more predators that may be direct or indirect. Species *X* is said to be a predator of species *Y* if at least one of the following is true:

- Species *X* is a direct predator of species *Y*.
- If species *X* is a direct predator of species *Z*, and *Z* is a direct predator of *Y*, then species *X* is an indirect predator of species *Y*. Indirect predation is transitive through any number of levels.

Each species has a maximum of *1* direct predator. No two species will ever be mutual predators, and no species is a predator of itself. Your task is to determine the minimum number of groups that must be formed to so that no species is grouped with its predators, direct or indirect.

As an example, consider an array where each position represents a species and each element represents a predator of that species or -1 if there are none. The array is *a=[-1, 8, 6, 0, 7, 3, 8, 9, -1, 6]* and we'll use zero indexing. Generate the graph of predation. All labels are the indices within array *a*:



From the graph, we can determine possible grouping:

```
[0,8]
[3,1,6]
[5,2,9]
[7]
[4]
```

We need a minimum of *5* groups to satisfy all conditions.

PLEASE ADD THE PROBLEM DESCRIPTION FOR “ARRAY 4

HONEYWELL

- **IIT-H**

1) Activity Selection Problem :- Arrival, duration arrays of companies given. Need to schedule such that number of meetings are maximised

2) Dynamic Programming :- N*N matrix of (-1,0,1) given. -1 represents blockade, 1 represents a diamond and 0 is for empty route. A traveller goes from (0,0) to (n-1,n-1) and returns to (0,0). Need to output the maximum no of diamonds collected (a diamond can only be collected once)
https://www.geeksforgeeks.org/maximum-points-top-left-matrix-bottom-right-return-back/

3) Tree based question:- given edges in (parent,child) form. Return Lexicographically least Preorder traversal.

IITK test also had the same questions.

Honeywell Software Developer

https://www.hackerrank.com/tests/c8rnbijc6re/questions/38j6kkaooij

Honeywell Software Developer Hiring Test-IIT Hyderabad | 27m to test end | 3/3 Attempted

University Career Fair

Sam is part of the organizing team arranging the university's career fair and has list of companies and their respective arrival times and durations. Due to university-wide budget cuts, there is only one stage/dais available on the entire campus so only one event can occur at a time. Given each company's arrival time and the duration they will stay, determine the maximum number of promotional events that can be hosted during the career fair.

For example, there are $n = 5$ companies that will arrive at times $arrival = [1, 3, 3, 5, 7]$ and will stay for $duration = [2, 2, 1, 2, 1]$. The first company arrives at time 1 and stays for 2 hours. At time 3, two companies arrive, but only 1 can stay for either 1 or 2 hours. The next companies arrive at times 5 and 7 and do not conflict with each other. In total, there can be a maximum of 4 promotional events.

Function Description

Complete the function *maxEvents* in the editor below. It must return an integer that represents the maximum number of promotional events that can be hosted.

maxEvents has the following parameter(s):

arrival[arrival[0],...arrival[n-1]]: an array of integers where i^{th} element is the arrival time of the i^{th} company.

duration[duration[0],...duration[n-1]]: an array of integers where i^{th} element is the duration that the i^{th} company's stay at the career fair.

Constraints

- $1 \le n \le 50$
- $1 \le arrival[i] \le 1000$
- $1 \le duration[i] \le 1000$
- *Both 'arrival' array and 'duration' array will have equal number of elements*

Input Format For Custom Testing

Sample Case 0

Sample Input For Custom Testing

```
3
1
3
5
3
2
2
2
```

Sample Output

Honeywell Software Developer

https://www.hackerrank.com/tests/c8rnbijc6re/questions/16jibsb8ei2

Honeywell Software Developer Hiring Test-IIT Hyderabad | 02m : 55s to test end | 3/3 Attempted

Diamond Mine

Diamond Mine is your new favorite game. Its map is represented as a square matrix.
The board is filled with cells, and each cell will have an initial value as follows:

- A value ≥ 0 represents a *path*.
- A value of 1 represents a diamond.
- A value of -1 represents an obstruction.

The basic rules for playing *Diamond Mine* are as follows:

- The player starts at $(0, 0)$ and moves to $(n-1, n-1)$, by moving right (→) or down (↓) through valid path cells.
- After reaching $(n-1, n-1)$, the player must travel back to $(0, 0)$ by moving left (←) or up (↑) through valid path cells.
- When passing through a path cell containing a diamond, the diamond is picked up. Once picked up, the cell becomes an empty path cell.
- If there is no valid path between $(0, 0)$ and $(n-1, n-1)$, then no diamonds can be collected.
- The ultimate goal is to collect as many diamonds as you can.

For example, consider the following grid:

```
 0 1
-1 0
```

Start at the top left corner. Move right one, collecting a diamond. Move down one to the goal. Cell $(1, 0)$ is blocked, so we can only return on the path we took initially. All paths have been explored, and 1 diamond was collected.

Function Description

Complete the function *collectMax* in the editor below. It must return an integer denoting the maximum number of diamonds you can collect given the current map.

collectMax has the following parameter(s):

mat[mat[0],...mat[n-1]]: an array of integers describing the game grid map

Constraints

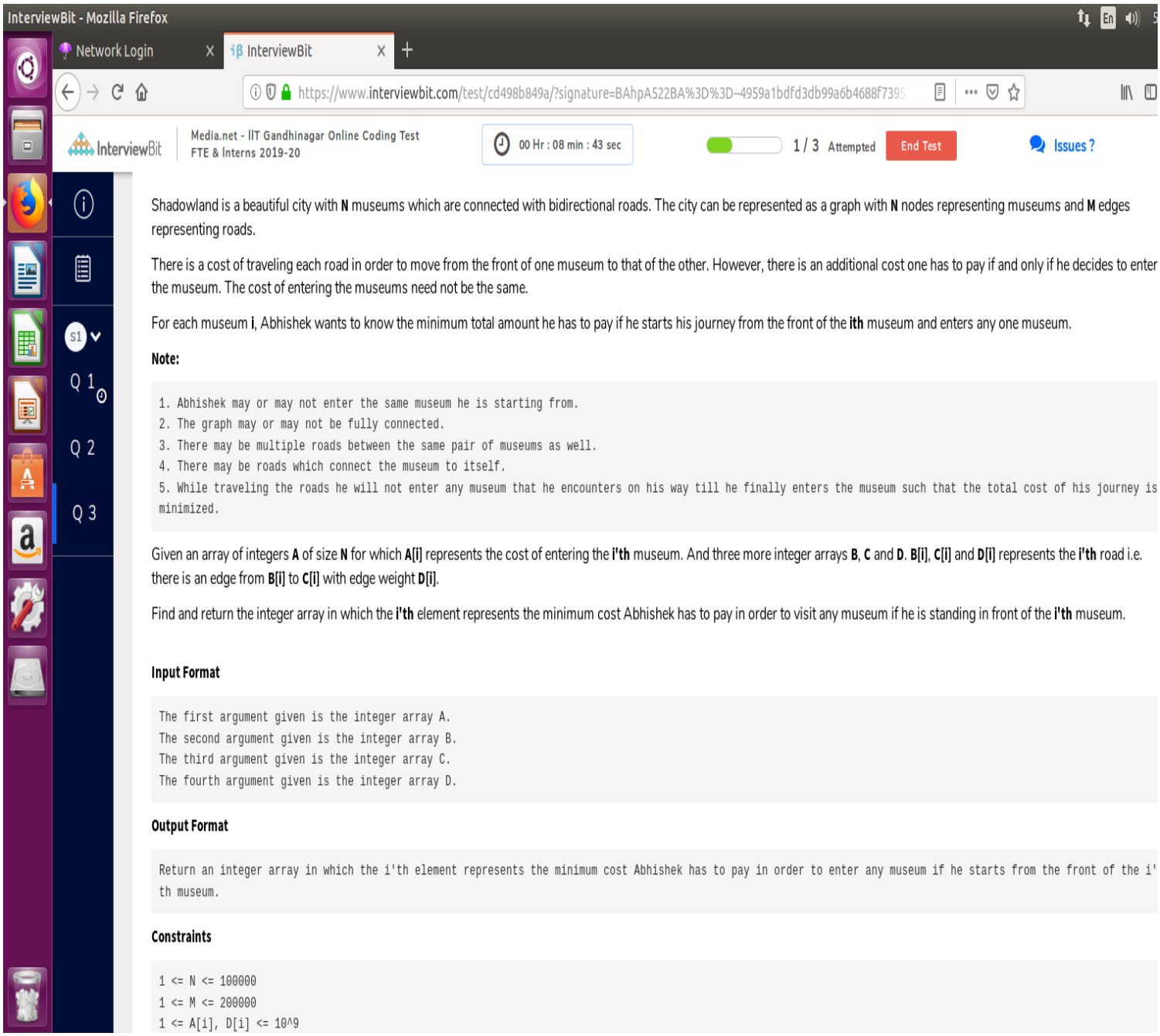
- $1 \le n \le 100$
- $-1 \le mat[i][j] \le 1$

Oyo Rooms

IIT Jammu

Question 1

Max Rectangle in Binary Matrix: https://www.interviewbit.com/problems/max-rectangle-in-binary-matrix/



Shadowland is a beautiful city with **N** museums which are connected with bidirectional roads. The city can be represented as a graph with **N** nodes representing museums and **M** edges representing roads.

There is a cost of traveling each road in order to move from the front of one museum to that of the other. However, there is an additional cost one has to pay if and only if he decides to enter the museum. The cost of entering the museums need not be the same.

For each museum **i**, Abhishek wants to know the minimum total amount he has to pay if he starts his journey from the front of the **ith** museum and enters any one museum.

Note:

```
1. Abhishek may or may not enter the same museum he is starting from.
2. The graph may or may not be fully connected.
3. There may be multiple roads between the same pair of museums as well.
4. There may be roads which connect the museum to itself.
5. While traveling the roads he will not enter any museum that he encounters on his way till he finally enters the museum such that the total cost of his journey is minimized.
```

Given an array of integers **A** of size **N** for which **A[i]** represents the cost of entering the **i'th** museum. And three more integer arrays **B**, **C** and **D**. **B[i]**, **C[i]** and **D[i]** represents the **i'th** road i.e. there is an edge from **B[i]** to **C[i]** with edge weight **D[i]**.

Find and return the integer array in which the **i'th** element represents the minimum cost Abhishek has to pay in order to visit any museum if he is standing in front of the **i'th** museum.

Input Format

```
The first argument given is the integer array A.
The second argument given is the integer array B.
The third argument given is the integer array C.
The fourth argument given is the integer array D.
```

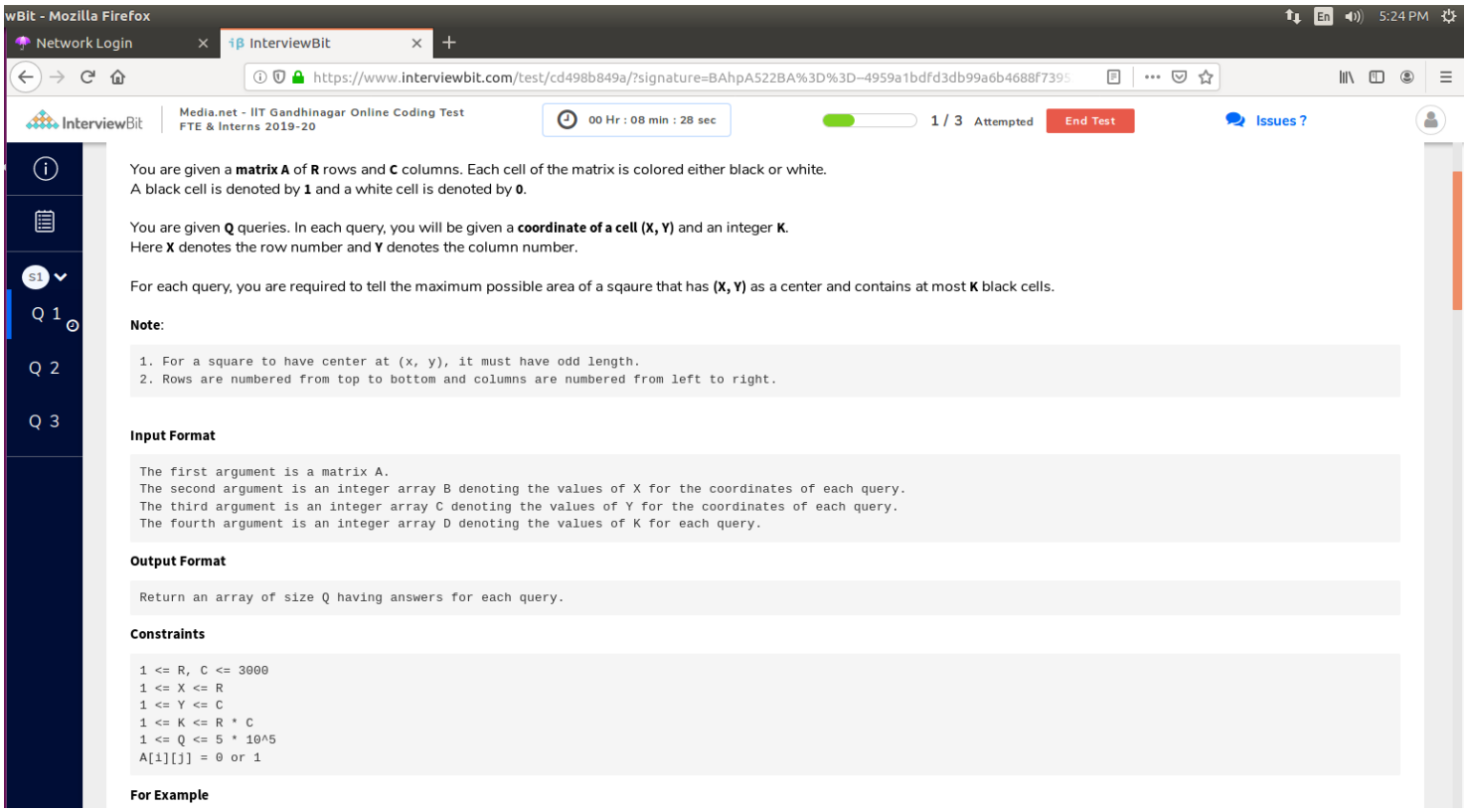
Output Format

```
Return an integer array in which the i'th element represents the minimum cost Abhishek has to pay in order to enter any museum if he starts from the front of the i'th museum.
```

Constraints

```
1 <= N <= 100000
1 <= M <= 200000
1 <= A[i], D[i] <= 10^9
```

solution please
++



OBJ

can someone share the solution for the above question (question 1)?
How to solve question 1??
can somebody put question 2 also? and 3 as well?

EdgeVerve

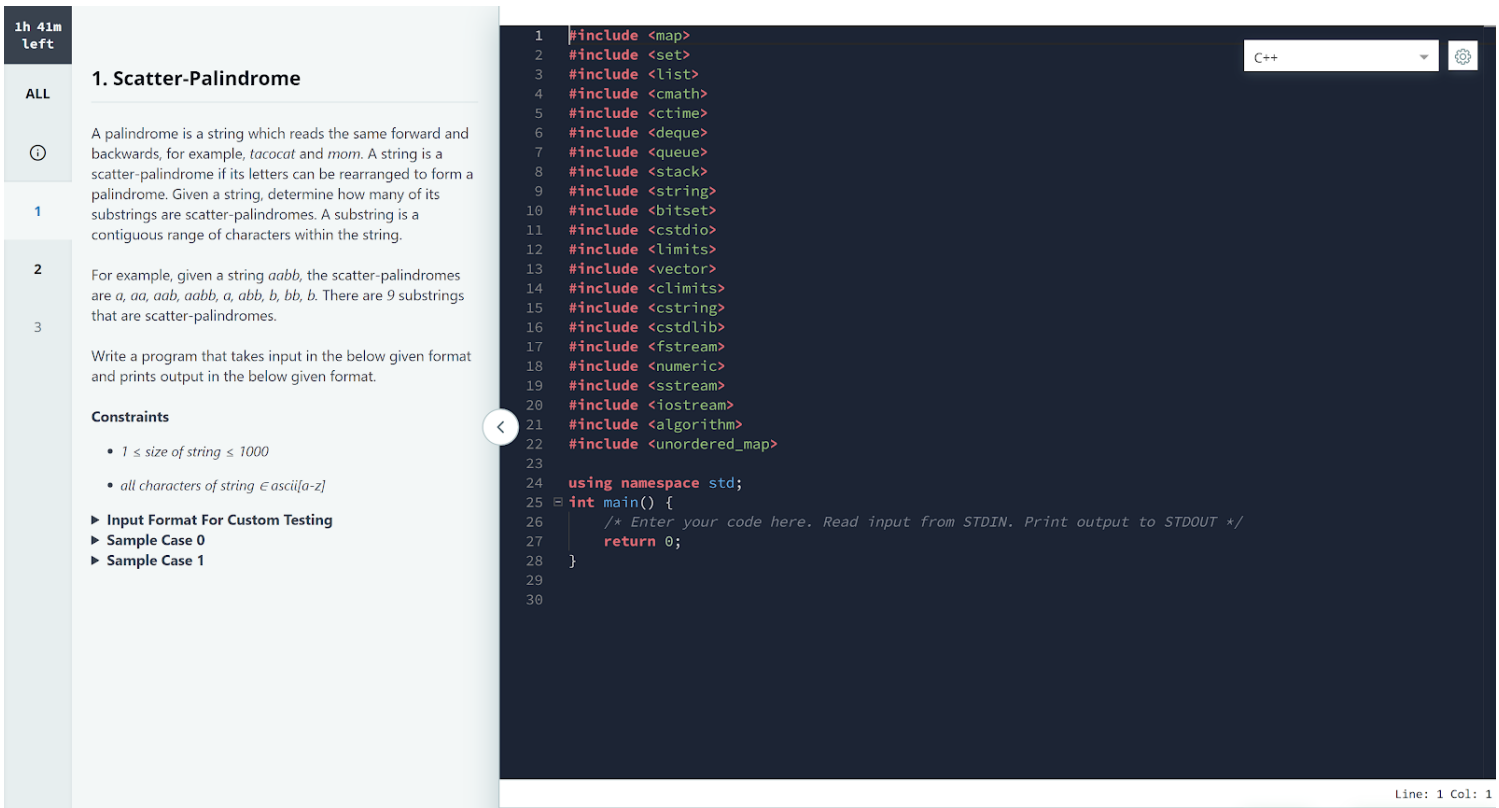
IIT BHU @ 29/09/2019

Hackerrank, STL Allowed, 1 Section, 3 hrs, 3 coding questions. Each question had 15 test cases.

Q1 - Scatter Palindrome : Given a string, find the no. of substrings which can be rearranged into a palindrome.
> Brute Force solution accepted. For all possible substrings, check if odd occuring characters are not more than one b/w the start and end index.

Q2 - Box and 3 Colours : Given n boxes and the costs for colouring each of them with 3 colours (say R,G,B) find minimum total cost to colour all boxes such that no two adjacent boxes of same colour.
> DP solution accepted. Populate DP table with minimum possible costs for each choosing a colour till that index.

Q3 - Maximum for Given Money : Find the length of the longest sub-array such that sum of elements does not exceed ‘k’.
> Two Pointer solution accepted. For each index, add the element to your current sum, and decrement from beginning index ‘l’ so that the sum fits in ‘k’ units of money.
> { O (n) with sliding window approach} , {O(nlogn) with currentsum + binary search} : both worked.



1h 41m left

ALL

1

2

3

are *a, aa, aab, aabb, a, abb, b, bb, b*. There are *9* substrings that are scatter-palindromes.

Write a program that takes input in the below given format and prints output in the below given format.

Constraints

- *1 ≤ size of string ≤ 1000*
- *all characters of string ∈ ascii[a-z]*

▼ Input Format For Custom Testing

One line containing a string

▼ Sample Case 0

Sample Input For Custom Testing

```
abc
```

Sample Output

```
3
```

Explanation

The substrings that are scatter-palindromes of the string *abc* are:

- *a*
- *b*
- *c*

▼ Sample Case 1

Sample Input For Custom Testing

```
bbrrg
```

Sample Output

C++

```
#include <map>
#include <set>
#include <list>
#include <cmath>
#include <ctime>
#include <deque>
#include <queue>
#include <stack>
#include <string>
#include <bitset>
#include <cstdio>
#include <limits>
#include <vector>
#include <climits>
#include <cstring>
#include <cstdlib>
#include <fstream>
#include <numeric>
#include <sstream>
#include <iostream>
#include <algorithm>
#include <unordered_map>

using namespace std;
int main() {
    /* Enter your code here. Read input from STDIN. Print output to STDOUT */
    return 0;
}
```

Line: 1 Col: 1

Test Results | Custom Input | Run | Submit Code

1h 41m left

ALL

1

2

3

2. Coloring the blocks

There are *n* blocks placed in a row. Each block must be covered with one of the three colors available, but no two adjacent blocks can be the same color. The cost of coloring each block varies and is given in an array. Given the cost of using each color on each block, determine the minimum cost to color all of the blocks.

Example

cost = [[1, 2, 3],
[1, 2, 3],
[3, 3, 1]]

For the first block, the cheapest color is the first color which costs *1*. For the second block, colors cost the same but color *1* cannot be used because it matches the first block. Instead, choose color *2*. For the third block, it can be color *1* or color *3*. The cheaper is color *3* at *1* unit. The total cost to color the blocks is *1 + 2 + 1 = 4*.

Write a program that takes input in the below given format and prints output in the below given format.

Constraints

- *1 ≤ n ≤ 100*
- *0 ≤ cost[i][j] ≤ 100*

▼ Input Format For Custom Testing

The first line contains an integer, *n*, the size of the *cost* array.
Each line *i* of the *n* subsequent lines (where *0 ≤ i < n*) contains three space-separated integers that denote the cost of each color, *cost[i][j]* (where *1 ≤ j ≤ 3*) .

▼ Sample Case 0

Sample Input For Custom Testing

C++

```
#include <bits/stdc++.h>

using namespace std;
int main() {
    /* Enter your code here. Read input from STDIN. Print output to STDOUT */
    int n;

    return 0;
}
```

Line: 1 Col: 1

Test Results | Custom Input | Run | Submit Code

1h 41m left

ALL

1

2

3

block. Instead, choose color *2*. For the third block, it can be color *1* or color *3*. The cheaper is color *3* at *1* unit. The total cost to color the blocks is *1 + 2 + 1 = 4*.

Write a program that takes input in the below given format and prints output in the below given format.

Constraints

- $1 \le n \le 100$
- $0 \le cost[i][j] \le 100$

▼ **Input Format For Custom Testing**

The first line contains an integer, *n*, the size of the *cost* array.
Each line *i* of the *n* subsequent lines (where $0 \le i < n$) contains three space-separated integers that denote the cost of each color, *cost[i][j]* (where $1 \le j \le 3$) .

▼ **Sample Case 0**

Sample Input For Custom Testing

```
3
1 2 2
2 2 1
2 1 2
```

Sample Output

```
3
```

Explanation

Choose the cheapest color for each block: color *1* for block *0*, color *3* for block *1* and color *2* for block *2*.

▼ **Sample Case 1**

Sample Input For Custom Testing

```
3
```

```
#include <bits/stdc++.h>

using namespace std;
int main() {
    /* Enter your code here. Read input from STDIN. Print output to STDOUT */
    int n;

    return 0;
}
```

C++

Line: 1 Col: 1

Test Results | Custom Input | Run | Submit Code

1h 41m left

ALL

1

2

3

3. Arbitrary Shopping

An avid shopper goes to a clothing store and picks any arbitrary outfit. Later the shopper buys all consecutive outfits picked up, as long as there is the money to pay for them up to the n^{th} outfit. For example, after first selecting outfit *i*, the shopper will continue to outfit *i + 1*, *i + 2* and so on until there is not enough money for another outfit. Determine the maximum number of outfits the shopper can buy.

For example, assume the outfits prices are *outfits = [2, 3, 5, 1, 1, 2, 1]*, and the money available, *money = 5*. There are three subarrays of prices that sum to less than or equal to *money*: *[2, 3]*, *[5]*, *[1, 1, 2, 1]*. The longest of these, that is, the maximum number of outfits that can be bought, is *4*.

Write a program that takes input in the below given format and prints output in the below given format.

Constraints

- $1 \le n \le 10^5$
- $1 \le outfits[i] \le 100$
- $1 \le money \le 10^6$

▶ Input Format For Custom Testing

1h 41m left

ALL

1

2

3

- $1 \le outfits[i] \le 100$
- $1 \le money \le 10^6$

▶ Input Format For Custom Testing

▼ Sample Case 0

Sample Input For Custom Testing

```
3
10
10
10
5
```

Sample Output

```
0
```

Explanation

There are *3* outfits each costing *10*. With *money = 5*, there is not enough money to buy any of the outfits.

▼ Sample Case 1

Sample Input For Custom Testing

```
3
5
10
10
5
```

Hexagon Capability Centre India

IIT Kanpur (30/9/2019) : Aptitude Test
Total 50 Questions : 50 Min
3 section:

1) Quantitative Aptitude : 20
2) Logical Reasoning and data interpretation: 15
3) Verbal Ability:15

Reference : CAT book + pariksha type question asked

Clumio Technologies India LLP

IIT Kanpur - 3/10/2019

(Member of Technical Staff) (M. Tech allowed)

2 coding questions. Duration: 70 minutes
Platform: Hackerrank

1. Count all substrings of a string such that the substring contains all the vowels and it doesn't contain any character apart from a vowel.
   https://www.geeksforgeeks.org/count-substrings-that-contain-all-vowels-set-2/
2. Given a list of cities along with their x and y coordinates for a grid, for each query city, find its nearest city such that the city has the same x or y coordinate

Deskera

(IIT Kanpur)(03/10/2019)

total of b 18 questions (5 aptitude+5logical+5 technical+3 coding questions) which platform??? hackerrank?? platform was techgig
3 coding question based on string
1.https://www.geeksforgeeks.org/longest-palindrome-substring-set-1/
2.https://www.geeksforgeeks.org/recursively-remove-adjacent-duplicates-given-string/
//what should be the output of mississipie for 2nd question?(because on gfg its quite unclear)
3.https://www.geeksforgeeks.org/length-of-the-longest-substring-without-repeating-characters/

Wells Fargo

IIT-Madras (3rd October 2019)

Program Associate Profile: 10 Questions - 8 Aptitude + 2 Coding

Solution to Angry Animals?

Can someone explain the input format for part 2?

first line is the number of animals. followed by the size of array ‘a’ then accordingly the number follows. Then these are followed by the size of array ‘b’ then the number follows

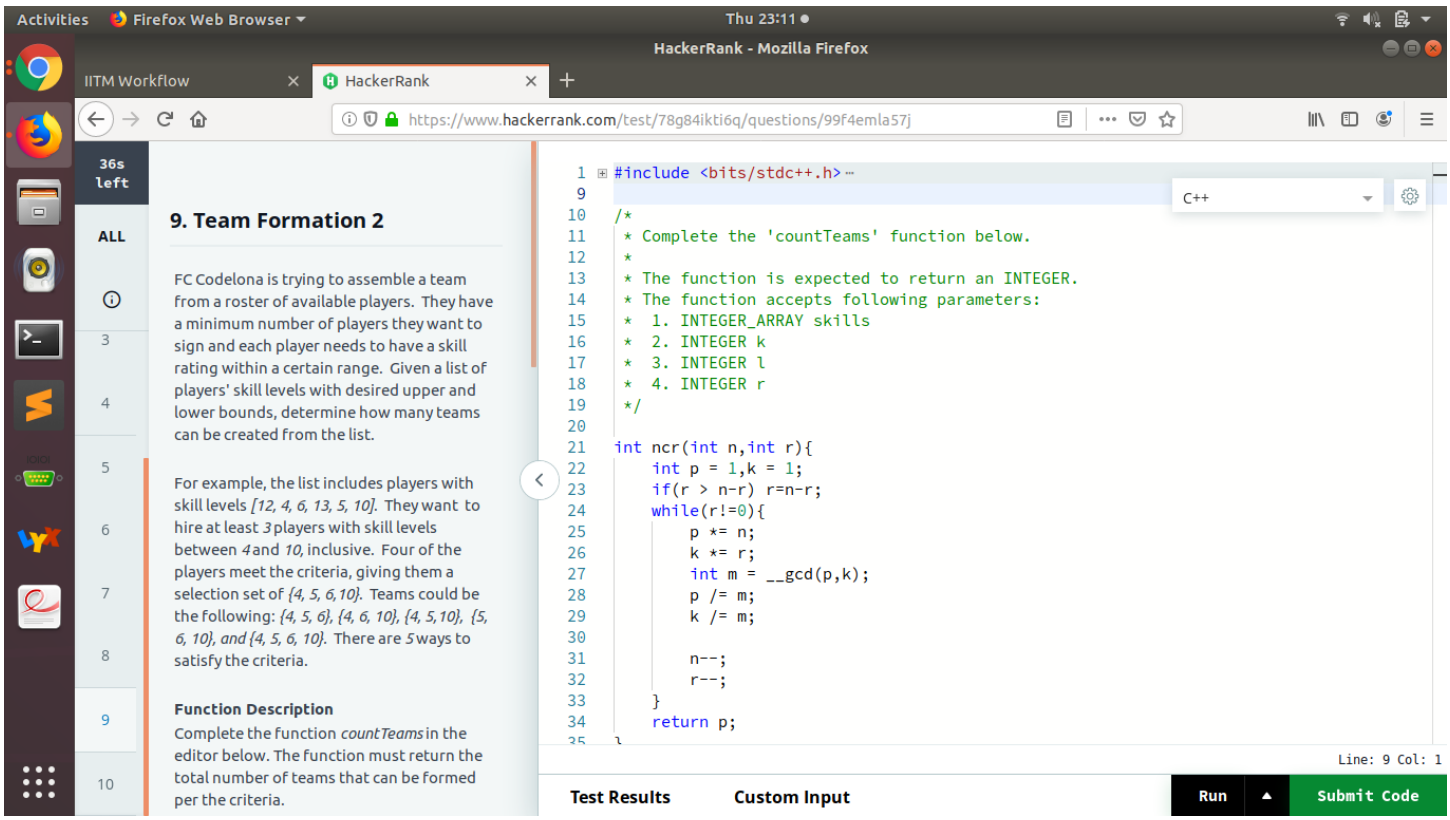
Check the link below for input format explanation (Complete question for part 2)

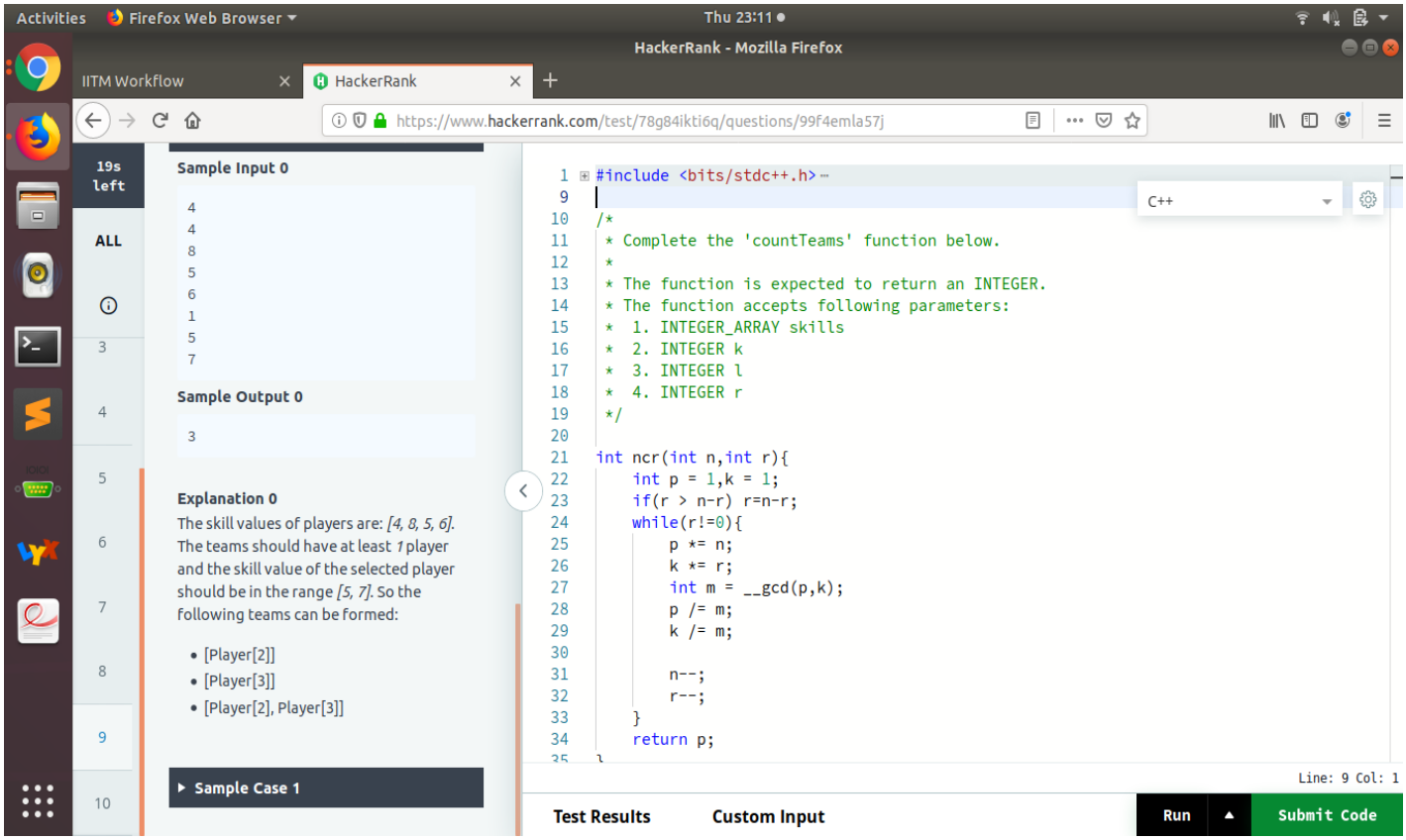
https://drive.google.com/file/d/18kHmOiJ8HQ8uA7BqQZ3GQ6eVZ4afn2Fm/view

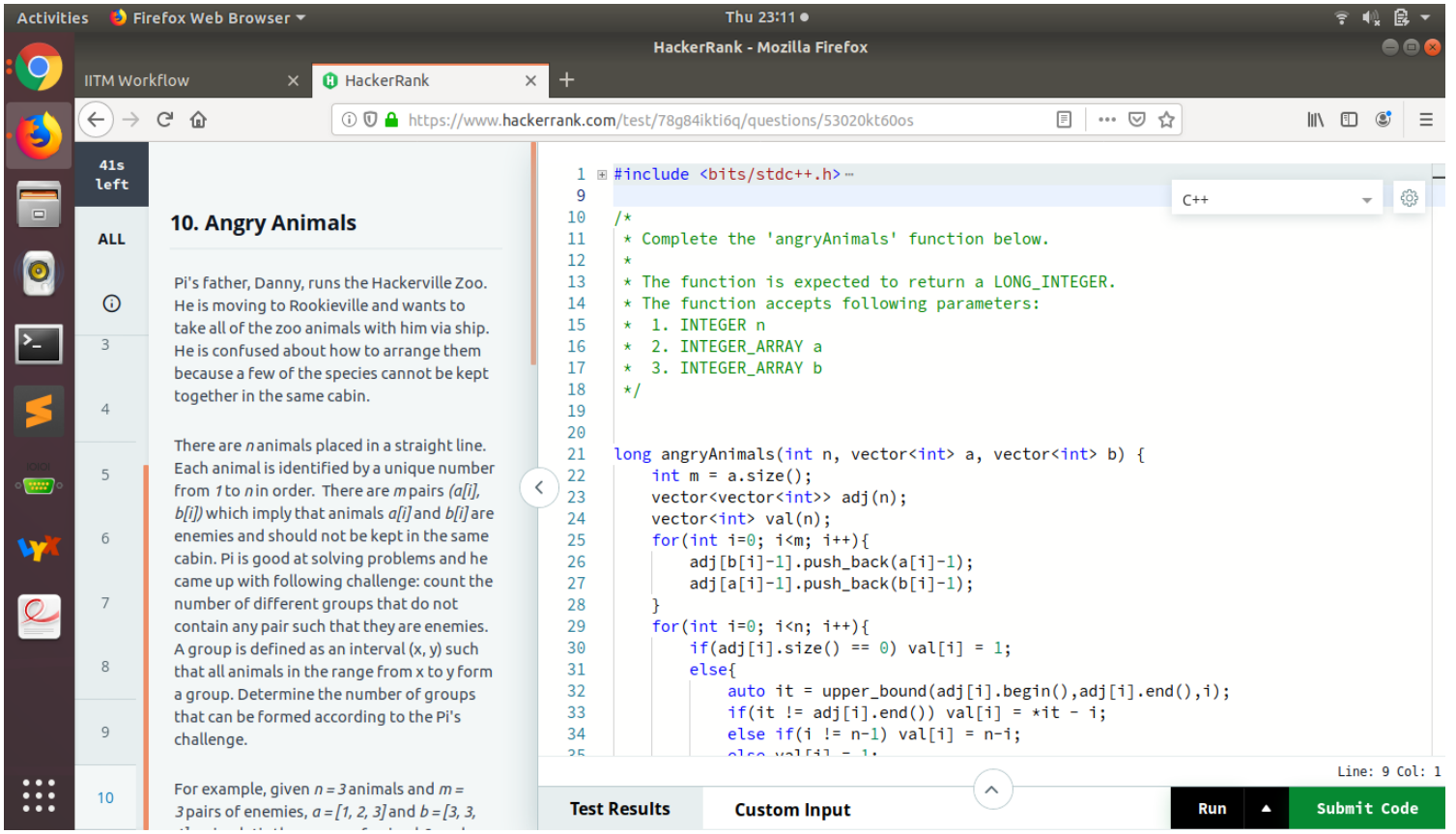
Can someone please elaborate what type of aptitude questions were asked

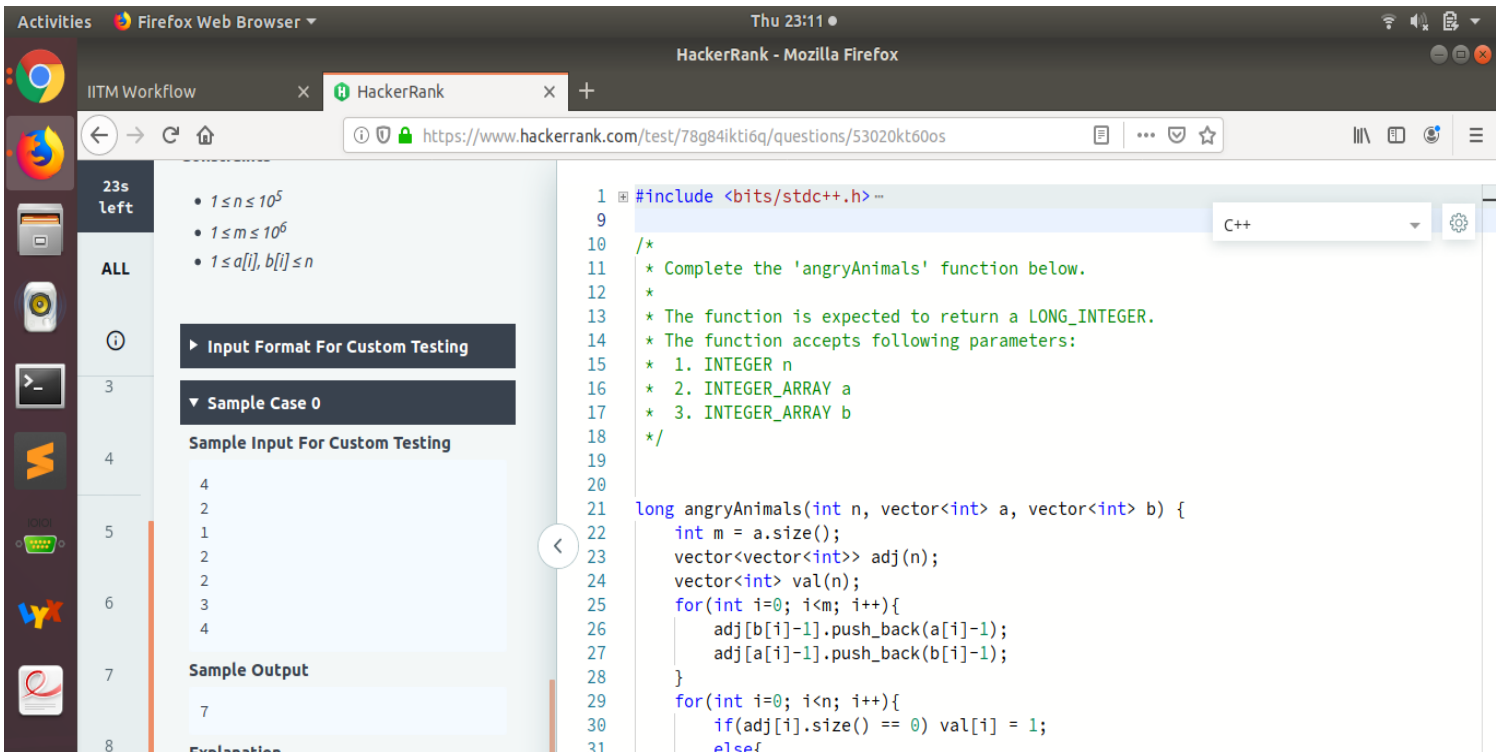
What were the aptitude questions ??? Anyone? Did aptitude contains verbal ability questions?

What was the test duration?



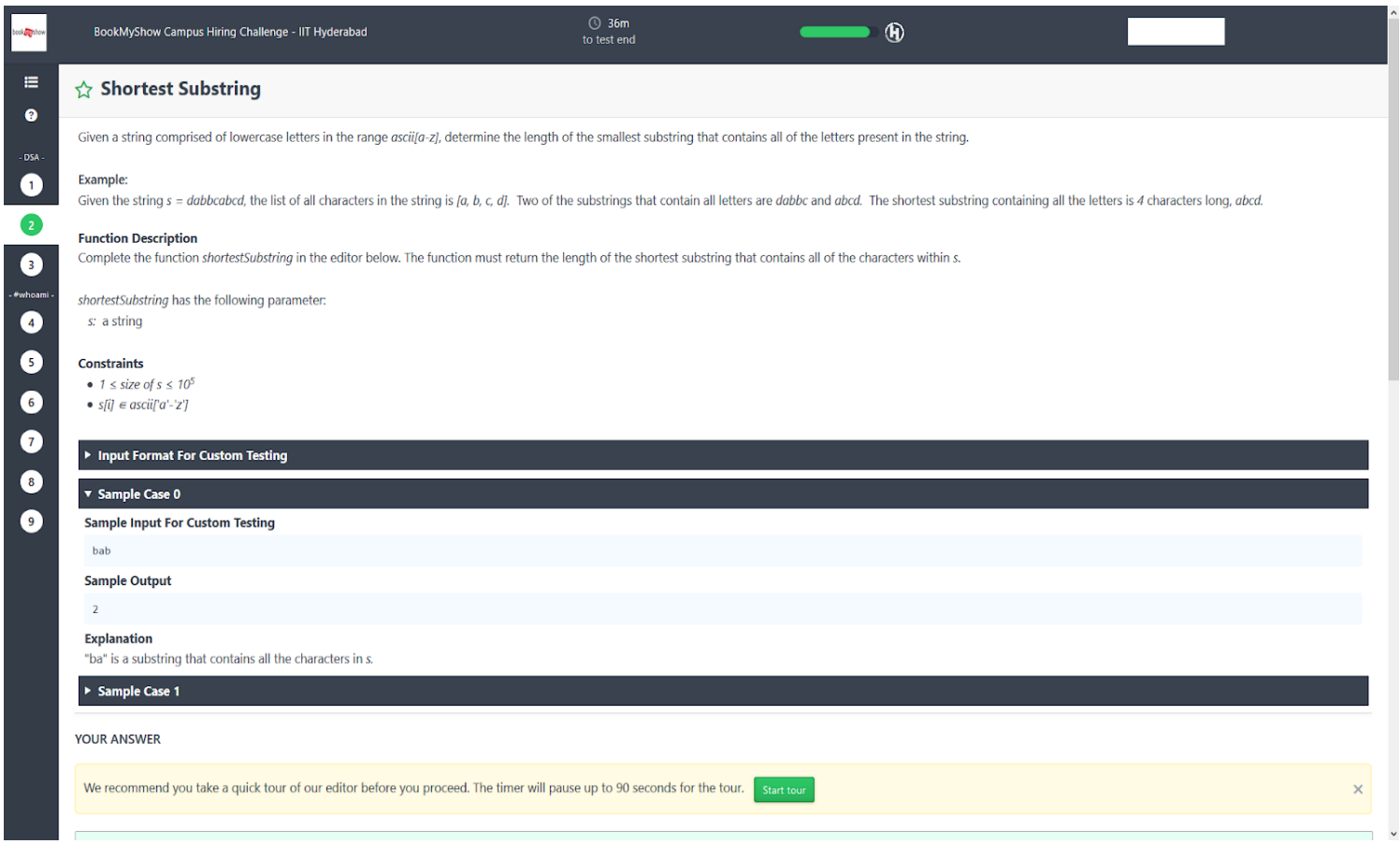

Activities
Firefox Web Browser
Thu 23:11
HackerRank - Mozilla Firefox
IITM Workflow
HackerRank
https://www.hackerrank.com/test/78g84ikti6q/questions/99f4emla57j
19s left
ALL
Sample Input 0
4
4
8
5
6
1
5
7
Sample Output 0
3
Explanation 0
The skill values of players are: [4, 8, 5, 6]. The teams should have at least 1 player and the skill value of the selected player should be in the range [5, 7]. So the following teams can be formed:
• [Player[2]]
• [Player[3]]
• [Player[2], Player[3]]
Sample Case 1
C++
#include <bits/stdc++.h>
/*
* Complete the 'countTeams' function below.
*
* The function is expected to return an INTEGER.
* The function accepts following parameters:
* 1. INTEGER_ARRAY skills
* 2. INTEGER k
* 3. INTEGER l
* 4. INTEGER r
*/
int ncr(int n,int r){
int p = 1,k = 1;
if(r > n-r) r=n-r;
while(r!=0){
p *= n;
k *= r;
int m = __gcd(p,k);
p /= m;
k /= m;
n--;
r--;
}
return p;
}
Line: 9 Col: 1
Test Results
Custom Input
Run
Submit Code


Activities
Firefox Web Browser
Thu 23:11
HackerRank - Mozilla Firefox
IITM Workflow
HackerRank
https://www.hackerrank.com/test/78g84ikti6q/questions/53020kt60os
41s left
ALL
10. Angry Animals
Pi's father, Danny, runs the Hackerville Zoo. He is moving to Rookieville and wants to take all of the zoo animals with him via ship. He is confused about how to arrange them because a few of the species cannot be kept together in the same cabin.
There are n animals placed in a straight line. Each animal is identified by a unique number from 1 to n in order. There are m pairs (a[i], b[i]) which imply that animals a[i] and b[i] are enemies and should not be kept in the same cabin. Pi is good at solving problems and he came up with following challenge: count the number of different groups that do not contain any pair such that they are enemies. A group is defined as an interval (x, y) such that all animals in the range from x to y form a group. Determine the number of groups that can be formed according to the Pi's challenge.
For example, given n = 3 animals and m = 3 pairs of enemies, a = [1, 2, 3] and b = [3, 3,
C++
#include <bits/stdc++.h>
/*
* Complete the 'angryAnimals' function below.
*
* The function is expected to return a LONG_INTEGER.
* The function accepts following parameters:
* 1. INTEGER n
* 2. INTEGER_ARRAY a
* 3. INTEGER_ARRAY b
*/
long angryAnimals(int n, vector<int> a, vector<int> b) {
int m = a.size();
vector<vector<int>> adj(n);
vector<int> val(n);
for(int i=0; i<m; i++){
adj[b[i]-1].push_back(a[i]-1);
adj[a[i]-1].push_back(b[i]-1);
}
for(int i=0; i<n; i++){
if(adj[i].size() == 0) val[i] = 1;
else{
auto it = upper_bound(adj[i].begin(),adj[i].end(),i);
if(it != adj[i].end()) val[i] = *it - i;
else if(i != n-1) val[i] = n-i;
Line: 9 Col: 1
Test Results
Custom Input
Run
Submit Code


Activities
Firefox Web Browser
Thu 23:11
HackerRank - Mozilla Firefox
IITM Workflow
HackerRank
https://www.hackerrank.com/test/78g84ikti6q/questions/53020kt60os
23s left
ALL
• 1 ≤ n ≤ 10^5
• 1 ≤ m ≤ 10^6
• 1 ≤ a[i], b[i] ≤ n
Input Format For Custom Testing
Sample Case 0
Sample Input For Custom Testing
4
2
1
2
2
3
4
Sample Output
7
C++
#include <bits/stdc++.h>
/*
* Complete the 'angryAnimals' function below.
*
* The function is expected to return a LONG_INTEGER.
* The function accepts following parameters:
* 1. INTEGER n
* 2. INTEGER_ARRAY a
* 3. INTEGER_ARRAY b
*/
long angryAnimals(int n, vector<int> a, vector<int> b) {
int m = a.size();
vector<vector<int>> adj(n);
vector<int> val(n);
for(int i=0; i<m; i++){
adj[b[i]-1].push_back(a[i]-1);
adj[a[i]-1].push_back(b[i]-1);
}
for(int i=0; i<n; i++){
if(adj[i].size() == 0) val[i] = 1;

BookMyShow

IIT Hyd



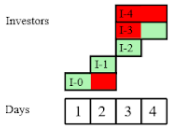
- DSA -
1
2
3
- #whoami -
4
5
6
7
8
9

Meetup Schedule

The founder of a new startup company is looking for investors and needs to meet with as many of them as possible. Given a number of investors' schedules, determine the maximum number of meetings the founder can have. Each potential investor provides a window of days they are available. The founder can only have one meeting per day.

The schedules are given in the form of two lists of integers, *arrival* and *departure*. The list *arrival* contains integers that represent the first day an investor is available, and the list *departure* shows the last days they are available, both inclusive.

Example:
arrival = [1,2,3,3,3]
departure = [2,2,3,4,4]
The period each of the *5* investors is available is summarized as *[1,2], [2,2], [3,3], [3,4]* and *[3,4]*. The graphic below shows a possible schedule that accommodates meetings with *4* investors. Scheduled meetings in green and blocked days are in red.



Function Description
Complete the function *countMeetings* in the editor below. The function must return an integer that represents the maximum number of meetings possible.

countMeetings has the following parameters:
arrival[arrival[0],...arrival[n-1]]: an array of integers where the value of each element *arrival[i]* is the first day the i^{th} investor is available to meet.
departure[departure[0],...departure[n-1]]: an array of integers where the value of each element *departure[i]* is the last day the i^{th} investor is available to meet.

Constraints
- $1 \le n \le 10^5$
- $1 \le arrival[i], departure[i] \le 10^5$ (where $0 \le i < n$)
- $arrival[i] \le departure[i]$ (where $0 \le i < n$)

▸ **Input Format For Custom Testing**

▾ **Sample Case 0**

Sample Input For Custom Testing

Zendrive

IITG (SDE PROFILE) (**salary 20-27 CPI 6.5)**

Test was of 1 hour
3 questions
I dont have ss if someone has plz add
Q1. You are given N points on a positive number line. You have to put them in different jars. Each jar can have at most C points and difference b/w any two points in a jar cannot exceed K.
Find minimum number of jars required. **(20 MARKS)**

Approach;

```
func(int a[],int k,int c){
        int n=a.size();
        sort(a,a+n);
        in i=0;
        int start=0;
        int c;
        while(i<n){
                start=i;
                c++;
                while(i<n && A[i]-A[start]<=K && i-start+1<=C){
                        i++;
                }
        }
        return c;
}
```

Q2:**(50 MARKS)**
You are given an array. You are allowed to square exactly 1 element of array. Find max subarray sum after you square an element.
Approach :
For every index find max subarray sum with subarray starting at that index. Call this array start
For every index find max subarray sum with subarray ending at that index. Call this array end
Note: if element is negative,set start[i]=0;end[i]=0;
Compute start and end using start[i]=max(0,arr[i]+start[i+1);
end[i]=max(0,arr[i]+end[i-1);

```
for(all i){
        val=A[i]*A[i];
        ans=max(ans, val + start[i+1] + end[i-1]);
}
```

This approach can be optimized to O(1) space complexity. However the above solution has no issue.

Q3:**(30 MARKS)**
You are given a 2D grid. each cell contains either 0 or 1. 0 means the cell is empty 1 means there is a tower on that cell. Each tower has height 1. Find max water you can store in the grid.
Water can be stored in empty cell if they are surrounded by tower on all sides. IF a empty cell is connected to edge of grid then water will flow out

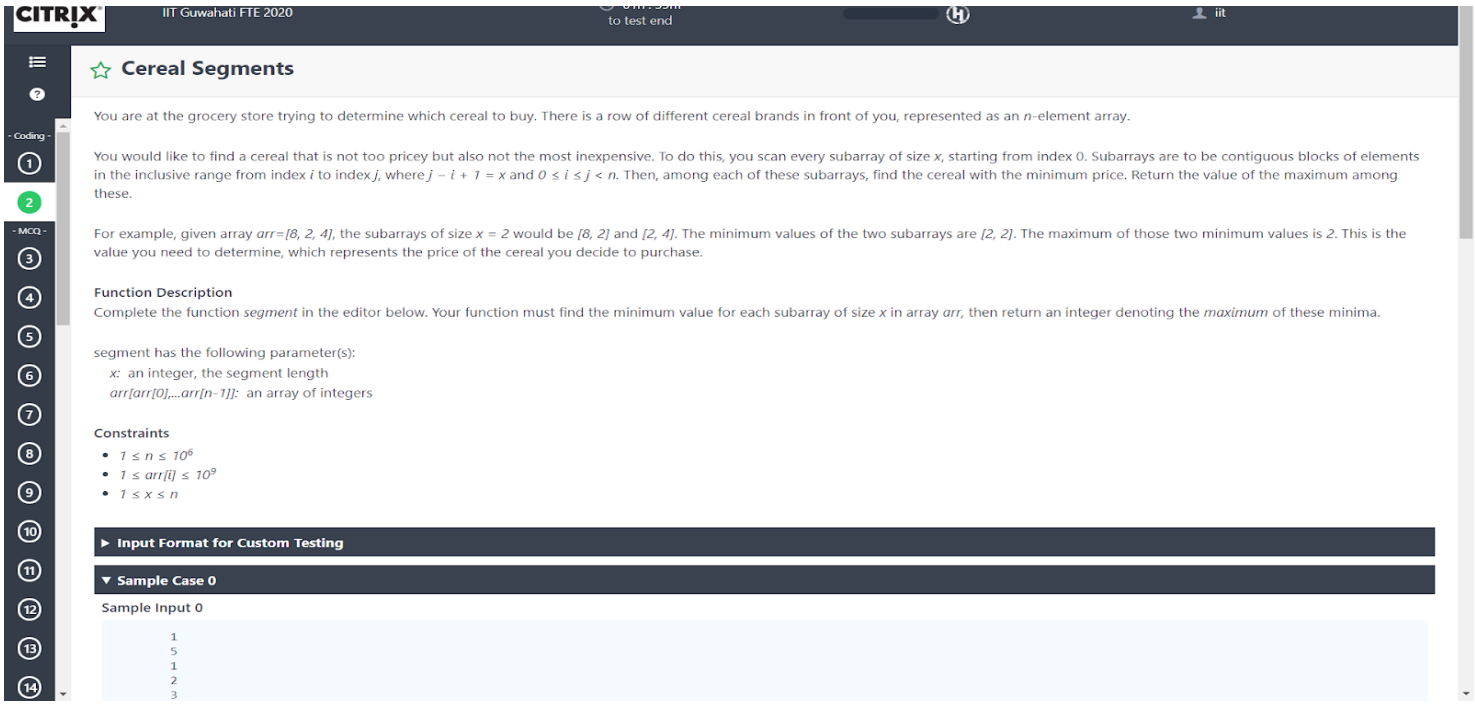
Can be solved using bfs too. Convert the edge dots to some other symbol,

CITRIX

IIT Guwahati
2 hours test
40 MCQS , 2 coding`
MCQs consists of Aptitude,OS,Networks,C++
MCQ Questions : https://imgur.com/a/4W8vTeQ

Coding1: https://www.geeksforgeeks.org/sliding-window-maximum-maximum-of-all-subarrays-of-size-k/

Coding 2: https://leetcode.com/problems/binary-string/



Sharechat

IIT Kanpur

1 hour, 3 coding questions:
Q1: Given a string S composed of lowercase letters, you are allowed to reverse any substring of S at most once. Find out how many different strings can you generate. Eg. For 'aatt' : one can make 'atat' (reversing S[1]..S[2]), 'ttaa' (reversing whole string), etc.
Q2: Given a string of lowercase letters, output the compressed form of the string. Compressed form of a string 'aaabccdde' is : a3bc2d2e.
Q3: Given a string S of lowercase letters, find out the size of smallest possible substring of S which contains all the distinct letters of S at least once.

Walmart Labs

Was this open to all branches or just circuit branches ? Ans. All B.Tech, All M.Tech, All M.Sc, MSR with C.P.I. 6.5 and above
Were there MCQs from OS,DBMS, Networks as well?

IITG (CPI cut-off 6.5 Open for all branches)

There were 23 MCQ questions and **no** coding question to be done in one hour. Questions were based on

1. Unix commands like cal, command to sort files in decreasing order, etc,
2. Unix VI editor modes
3. Cloud computing questions (based on Amazon cloud (Question-Name architecture in which a single instance of a software application serves multiple customers? Ans. Multi-Tenacy))
4. OOPS questions based on Java(Derived Class,Integer Class,valueOf function), C++, ASP. (Basic)
5. Logical Reasoning Questions & basic maths questions (For ex, on interest rate).
6. Different pseudocodes were given, and was asked to tell the algorithm name. (Codes were of Bellman Ford, Floyd Warshall, Bubble Sort and Knapsack).

AQR Capital Management

IITG

There were **2 coding questions**, which had to be solved in **75 minutes**. (Level - Easy/Medium)

1st Question - Given list of edges in a graph, you have to keep on storing the maximum size of all the connected components in the graph. So, suppose there are 4 nodes. And edges are [[1,2],[3,4],[2,3]].
You have to return :- 2 2 4.

Solution - Union Find with path compression and a size array will work fine.
Constraints were pretty loose, so I think brute force DFS should even work. I used DFS, it passed all test cases.

2nd question - Given a list of points which basically represent polygons, you have to return all those polygons which are mirror images of each other. Both X-axis and Y-axis act as mirrors.

Solution - Did this using brute force. You have to store the points in a 2D Vector. Then sort all those vectors (A custom compare function needs to be written here), and then keep on comparing.

9/12 test cases passed. I might have missed some corner cases, it was not TLE for sure.
(Please upload any better solution).
Alternate: I created a function for checking if two polygons are mirror image of each other(having two parameters which are the coordinates of the two polygons). After comparing the size of the vectors, push points of a polygon with y-coordinate negated(doing it for checking mirror image w.r.t x-axis, same can be done for y-axis). Then check whether all points of the other polygon are present in the set and it passed all the cases.

WHAT IS MAXIMUM LENGTH OF LIST???
Test Platform?? Ans. HirePro: https://www.hirepro.in/

Motorq

Question 1 Max. Marks 100.00

Profit maximization

You are travelling to different villages in a state to make some profit. Villages are numbered 1 to N. In each village, you gain some profit P_i. From a village i, you can only move to a village j if and only if $i < j$ and the profit gain from village j is **a multiple of** the profit gain from village i.
You are required to determine the **maximum profit** you can gain while travelling. You could start at any of the villages.

Input format

- First line: A single integer N denoting the total number of villages
- Second line: N space-separated integers, each denoting the profit gain P_i from village i

Output format

Print the maximum profit you can gain.

Constraints

$1 \leq N \leq 10^3$
$0 \leq P_i \leq 10^5$

Sample Input

```
6
1 2 3 4 9 8
```

Sample Output

```
15
```

Explanation

The maximum profit **15** can be achieved by going to villages **(1, 2, 4, 6)** with profit gain **(1, 2, 4, 8)**.

Note: Your code should be able to convert the sample input into the sample output. However, this is not enough to pass the challenge, because the multiple test cases. Therefore, your code must solve this problem statement.

Question 2 Max. Marks 100.00

Substrings and Distinct Characters

You are given a substring S of lowercase English alphabets. Let X_i be the number of substrings of S having at least i $(1 \leq i \leq 26)$ distinct characters. Find X_i for all i $(1 \leq i \leq 26)$.

Input format

For each test case

- First line: An integer N representing the length of the string S.
- Second line: String S

Output format

Your output should contain a single line containing 26 space-separated integers. The i^{th} integer is the number of substrings of S having atleast i distinct characters.

Constraints

$$1 \leq N \leq 5 * 10^5$$

Sample Input

```
3
abc
```

Sample Output

```
6 3 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
```

Explanation

Subarrays with atleast **1** distinct characters: *{a, b, c, ab, bc, abc} = 6*

Subarrays with atleast **2** distinct characters: *{ab, bc, abc} = 3*

Subarrays with atleast **3** distinct characters: *{abc} = 1*

Rest all of them are 0 since the entire string contains only 3 distinct characters.

Cogoport

There was a CPI criteria but I don't know about it. Please update if you know it. 7.5

IITK, M. Tech. allowed (Software Development Engineer)

The test consisted of 3 sections

1. **Behavioral:** This test was without any time limit. In the first page, we had to select those behaviour which people expect from us. Eg cleanliness, punctuality. In the next page, we had to select those behaviour which defines us. We cannot go to the first page while answering the second page.
2. **Logical reasoning and aptitude:** Duration: 12min. This test consisted of 50 questions of logical reasoning, patterns, aptitude. We had to answer quickly within 12 minutes and there were only a few questions from quantitative aptitude so it was better to leave them.
3. **Programming:** Duration: 2 hours. Platform: Hackerearth.
    - Question 1: Given an array of size N and Q queries, where each query consists of two integers L and R, representing left and right indices in the array, tell whether all the integers present within these two ranges are present even number of times or not. Brute force will not work here.
    - Question 2: Given an array of size N and Q queries, where each query consists of two integers L and R and K, return the K-step sum within the range L and R. For example for the array [1, 2, 3, 4, 5, 6, 7], if a query is L=2, R=6 and K=2, then the numbers 1, 3, 5, 7 are a part of the 2 step sequence and among these, only 3 and 5 lie within the range(array indexing starting from 1). So the required sum = 8.

Please provide constraints for n,q and k for both problems??