Problem: Deletion of questions in the doc

EDIT ACCESS permission has been restricted to privileged users. You can request here for access
https://goo.gl/forms/tYZs5fyUfPO9uGUG2 (Provide only gmail address - approval can take maximum - a day)
(Edit Doc invites are getting failed to be delivered, but those who requested will get edit access in a day. Login to google and access doc.)

You can contribute the company questions anonymously here.
https://goo.gl/wJ7zNc (ques will be copied to this doc by someone who has edit access & deleted from anonymous doc)

Check all the announcement posts(Pinned posts) of the below facebook page.
https://www.facebook.com/groups/1540488506008368

There was a link to appdynamics question of IITD. Someone deleted it. Kindy retrieve it.
Restored, btw you can do that yourself, using version history. Kindly report other deletions as well. Thanks :)
Please maintain backup of outside(imgur, google photos) resources for reliability.

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 Document 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**

Companies List

You can search the questions of the following companies.

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

Microsoft	Qualcomm	Adobe	Goldman Sachs	Cisco	Samsung R&D (Bangalore)
Citrix	KLA Tencor	Zendrive	BNY Mellon	Flipkart	Cohesity
Samsung R&D Delhi	Samsung R&D Noida	Nutanix	Alphonso	UBS	Phone pe
Jaguar Land Rover	Walmart	Ansys	SAP Labs	Uber	Appdynamics
Mentor Graphics	Juniper Networks	Sandvine	Quadeye	Rivigo	EXL
Indeed	Fractal Analytics	NetApp	Sprinklr	JPMC (Software)	

History of Companies

Date	Company + College
6/7/2018	(Microsoft, Goldman Sachs-IIIT Delhi)
7/7/2018	(Qualcomm, Adobe - IIIT Delhi)
22/9/2018	Alphonso-Business and data analyst (IIT Delhi)
24/9/2018	(Samsung R&D Bangalore - IIT Madras), (Inautix/BNY Mellon Tech-IIT(BHU))
30/9/2018	(Mykaarma, Axella Advisory-IIT(BHU))
4/10/2018	HSBC (IIT(BHU))
23/9/2018	Samsung Delhi (IIT Delhi)
25/9/2018	Citrix (IIT Madras), KLA Tencor (IIT Madras)
27/9/2018	Zendrive (IIT Delhi)
27/9/2018	Nutanix(IIT Delhi), Cohesity(IIT Delhi)
28/9/2018	Samsung R&D Bangalore(IIT Delhi)
29/9/2018	Samsung R&D Noida(IIT Delhi)
28/9/2018	UBS(IIT BHU)
1/10/2018	BNY Mellon (IIT Kanpur)
6/10/2018	Walmart(IIT ISM), Adobe (IITM), Tesco (IITM), Qualcomm(IITM)
7/10/2018	ANSYS Software (IIT Guwahati), Da Vinci Derivatives (IIT Delhi), Sterlite(IIT Kanpur),Samsung Semiconductor(IIT Kanpur)
8/10/2018	KLA Tencor(IIT Kanpur), SAP Labs(IITM)
9/10/2018	AppDynamics(IIT Delhi), Uber(IIT Delhi) Samsung R&D Noida(IIT BHU), Harness (IITR), Samsung Bangalore (IITK)
10/10/2018	Juniper Networks(IITK), Microsoft(IITR),Microsoft(IITG),Greenland Investment Management(IITK)
11/10/2018	Samsung R&D Delhi(IIT Kanpur), Rivigo(IITD),Quadeye(IITD)
12/10/2018	Citrix(IITG), Quadeye(IITK)
13/10/2018	Indeed(IITK), Fractal Analytics(IITK), NetApp(IITG), Rivigo(IITG), Quadeye(IITB)
14/10/2018	AppDynamics(IITG),Sprinklr(IITK),Oracle(IITR), Fidelity(IITG)
15/10/2018	AppDynamics(IITK),Samsung Bangalore(IITG), Cohesity(IITK)
16/10/2018	Razorpay(IITR), AppDynamics(IITR)

18/10/2018	Uber (IITR)
	KINDLY ADD COMPANY HERE, ONLY IF THE QUES ARE ADDED IN DOC

Answered Queries

Someone please update Nutanix questions if it visited IIT Delhi.

Guys, what's the link for FB group as mentioned in other G-Doc?
https://www.facebook.com/groups/1540488506008368

Can you tell about the Morgan Stanley written pattern? In my college it will be for 3 hours.

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

What is the compensation offered by Microsoft in any campus this year?
39-LPA **https://www.thehindubusinessline.com/news/record-offers-at-campus-placements-in-tn/article24949073.ece**

Have FICO visited any college yet?

Does Flow Traders look at the CGPA? +1+1+1+1+1+1+1 ---->>> **Nope**.

Anybody had a technical interview after HR round ?

Where can I find the last years DOCs?

FIDELITY

IITG

4 sections:

1. Verbal
2. MCQs-Data structures+Networks+Mysql+OOPS
3. 2 Coding Questions(1 hr- easy)
4. 2 algorithm questions (given 2 random problem statements, had to write pseudo codes for both) (i)Minimum moves for Knight to reach King whose position is fixed.(BFS).

CODING ROUND-(STL,Python were allowed)

1. Given 2 strings A and B. Output the count and jumbled words of string A which are substring of string B.
   Input: A= ram, B=cmarma
   Output: 3 rma, mar, arm
2. Given three students A,B,C. They have to plant N saplings in a playground. They can use only 1,3,7 numbers, starting from A find the last student who sows the seed.(have to use maximum number possible each time).
   a. Input: N=6
      Output: B (A=3 B=3)

Input: N=9
Output: C (A=7 B=1 C=1)

JPMC (SDE)

IIT (BHU)

CTC: 21LPA
2 coding questions on Hackerrank. Time: 65 min
1.Stock buy and sell with two given conditions:
-> Sell only after buying the stock(array keys can be considered timestamps)
-> Sell beforehand and buy it later (just find maxima and minima)
It was required to return (4) iterators(days) on which you buy and sell in both conditions to maximise profit.
The same question has been mentioned somewhere in 17-18` doc(JPMC section)
2. Given an array and a window of size m. Pick the maximum element out of starting/ending m elements if sizeof(arr)>m, else find maximum out of sizeof(arr) elements.
In case of two same valued maximas, return one with lower position in the array.
(Use priority queue)

Everyone came across same questions. I wanted some more time to solve both =(

EXL Private Ltd

CTC: 11.2 lac In-Hand

IITR

(12-10-2018)
CGPA Cutoff- 6.7 (shortlisted about 300 students)
Test on cocubes; 45 minutes- 40 questions
20 Quant, 10 LR/DI, 10 Verbal
LR/DI was a bit trickier than the rest
Verbal was easy could be done in 7 minutes while quant and LR/DI were time consuming so overall paper was lengthy according to time. Paper was quite tough if compared with Pariksha papers/practice.

1. Test Sections

45 min 40 question

Marking Scheme :- +1, -.25

Test is conducted on , one can find some mock papers of cocube available online
Questions division :- 20 quant, 10 LR, 10 English

2. Test Experience

Difficulty level: Avg and above for quant. English and LR were relatively simple
In quant, revise ratio and mixtures properly
Also questions on the sum of factors, no. of the factor of given no. (see formula)

BNY Mellon Technologies/INAUTIX

What is the CTC and the break up?
80k USD for New York and 21LPA in India
Any information on option for pittsburg hiring

IIT(BHU)

Date - 24th September,2018
Profile - Software Engineer
5 coding questions/ 2 Hour test on hackerrank(different sets for everyone)
New set:

1. Cavity Map https://www.hackerrank.com/challenges/cavity-map/problem
2. To find number of possible paths in a matrix of 1's and 0's from top left to bottom right (with condition given that the path doesn't go through any zero)
3. Fused nuclear rods https://www.careercup.com/question?id=5721734273564672 C++ code
4. Two operations are possible: ADD- add 1 to number and MULTIPLY- multiply number by 2. Find the minimum number of operations to take number from 0 to k (given) using only above two operations
5. Friend Circles https://www.hackerrank.com/contests/juniper-hackathon/challenges/friend-circles C++ code

New Set:

1. https://www.geeksforgeeks.org/stack-set-2-infix-to-postfix/ Stack Operation
2. https://github.com/Nehoss/Ascending-Binary-Sorting C++ code
3. https://www.geeksforgeeks.org/count-ways-reach-nth-stair/
4. https://www.hackerrank.com/challenges/travel-in-hackerland/problem [Similar question not exactly same]
5. Generate all possible sub-sequences of a string https://www.geeksforgeeks.org/print-subsequences-string/
6. Maximum points from top left of matrix to bottom right and return back g4g Topcoder

New set:

1. Given two arrays A and B, print the elements that are common in both
2. Convert the given prefix expression to postfix expression>
3. Problem was on disjoint set. Given 3 arrays, A, B , C (A for starting node, B for end node, C for query type). Query type will be either 0(to take union of groups in which A[i] and B[i] fall) and 1 (to print sum of size of group of A[i] and B[i]).
4. Read .json file. Didn't attempt as only option was to use Objective C.
5. Given an encoded string and the Huffman codes for each character, print the decoded string. Huffman codes were given as array of strings like ["a 100",...]) C++ code

IITK

Date - 1st October,2018
Multiple sets. Listing them sequentially -
New set:

1. https://github.com/josergc/min-max-product: C++ proposed solution
2. https://www.geeksforgeeks.org/check-whether-two-strings-are-anagram-of-each-other/
3. https://www.geeksforgeeks.org/program-chocolate-wrapper-puzzle/
4. https://www.geeksforgeeks.org/connected-components-in-an-undirected-graph/
5. https://www.hackerrank.com/challenges/strplay/problem

New set:

1. repeat: Read .json file question (above mentioned by IIT BHU)
2. Given an array of integers, return total number of pairs having sum multiple of 60.
3. Given intervals within range of 1 to n, find the least position having maximum overlap.
4. https://www.geeksforgeeks.org/count-ways-express-number-sum-consecutive-numbers/

New set:

1. https://www.geeksforgeeks.org/find-minimum-difference-pair/ + print all pairs with minimum difference (no duplicates)
2. https://www.geeksforgeeks.org/minimum-number-of-manipulations-required-to-make-two-strings-anagram-without-deletion-of-character/
3. Given 2 numbers *a* and *b,* you have to return 2*x+3*y if solution exists for following equations:
    a. x + y = a
    b. x *xor* y = b
    c. x >= 0 . (https://www.geeksforgeeks.org/find-two-numbers-sum-xor/)

4. https://www.geeksforgeeks.org/count-possible-paths-top-left-bottom-right-nxm-matrix/
5. repeat: Given an encoded string and the Huffman codes for each character, print the decoded string

New set:

1. repeat
2. repeat: Given an array of integers representing seconds. Find number of pairs whose sum gives some minute (i.e. a + b = multiple of 60) : Example : [20,40,60] -> ans = 1
3. (Medium) Decode the string given formed of {1-10, 11#-26#, (some integer)}. Decode following this scheme.
    a. 1-> a, 2 -> b, ..., 10 -> j
    b. 11# -> k, ..., 26# -> z
    c. 11# (3) -> kkk, (i.e. consecutive letters are represented with their code and followed by parentheses with their occurence)
4. (Hard) repeat: https://www.geeksforgeeks.org/maximum-points-top-left-matrix-bottom-right-return-back/
5. (Hard) Given a matrix and (x,y). Matrix consists of 0,1,2. 0 means non-blocking, 1 means blocked, 2 means gold. Find minimum steps to travel from (0,0) to (x,y) collecting all gold coins. Can move in East-><-West, North-><-South.

New Set:

1. (Easy) Find the size of the largest connected component given the graph.
2. (Medium) g4g
3. Degree of an array is the maximum frequency of any element. Find the length of the shortest subarray which contains all occurences of the most frequent number (there can be more than one most frequent number).
4. (Hard) Given a matrix and (x,y).Matrix consists of 0,1,2 . 0 means non blocking, 1 means blocked, 2 means gold. Find minimum steps to travel from (0,0) to (x,y) collecting all gold coins.Can move in East-><-West, North-><-South. Number of 2 <= 10
5. (Hard) Given equation 1/x+1/y=1/N!, find the number of ordered pairs (x,y) satisfying this equation. (N is given and ranges from 0 to 10^5) where x and y are positive integers. C++ efficient code with explanation

Microsoft

Hosting on cocubes platform: STLs allowed

IIITD

Date - 6th July hare d 2018
Profile - Software Engineer
3 questions/ 1.5 Hour test on cocubes
When is the Microsoft test in IITs? Any test before 10th October? Please post the questions immediately. :) +1
Eligibility: B.Tech. CSE, EE, ECE, MSM
IDD CSE, EE, ECE
M.Tech. CSE, EE, ECE (IITR) No CGPA cutoff to apply

1. https://www.geeksforgeeks.org/round-the-given-number-to-nearest-multiple-of-10/ C++ efficient code
2. Similar to https://www.hackerrank.com/challenges/30-binary-numbers/problem C++ proposed code
3. Delete N nodes after M nodes of a linked list C++ code (function linkdelete)
4. Given 2 arrays, find sum of uncommon elements
    a. Sorted arrays: C++ code
    b. Unsorted arrays: C++ code
    c. Unsorted arrays elegant code (uses STL): C++ code with explanation

(There was one more set I will ask my friends to add those & cocube interface was too poor we couldn't debug the codes)

http://ctrlq.org/html-mail/IIITD

IITG

Date - 10th Oct 2018
IDC profile: 3 questions/ 1 Hour 15 minutes test on cocubes
Different sets
Set 1

1. **Reorder an array according to given indexes.**
   https://www.geeksforgeeks.org/reorder-a-array-according-to-given-indexes/
2. Maximum sum such that no two elements are adjacents.
   https://www.geeksforgeeks.org/maximum-sum-such-that-no-two-elements-are-adjacent/
3. Arrange Constants and vowels nodes in Linked List
   https://www.geeksforgeeks.org/arrange-consonants-vowels-nodes-linked-list/
4. *Given a string , return its lexicographic rank among all possible combinations of its characters. All characters were lower and distinct. For example "asdfg" has rank 19. -- (5 marks)*

Set 2

Q1. **Reorder Array given indices**: Given an array of values and an array of indices, rearrange the array in constant space.
link: https://www.geeksforgeeks.org/reorder-ax-array-according-to-given-indexes/
Q2. Finding Minimum-Cost Path in a 2-D Matrix with Right, Down and Diagonal move allowed.
link: variant of 2 in
https://www.hackerearth.com/practice/notes/dynamic-programming-problems-involving-grids/
Q3. (Same as above set): **Sorted Permutation Rank (no repeats)**
link: https://www.interviewbit.com/problems/sorted-permutation-rank/

IITR

Date - 10/10/2018

Set-1
Q.1 A string is given. Minimum no. of characters to append to the string such that it will become palindrome. Print them.
Q.2 A number is given in string form. Manipulate the string to tell the next greater element that can be formed. Find that next greater no.
Q.3 Sum of leaf nodes of a binary tree such that leaf should be on minimum level.

Set-2

1. Given an array of n elements and an integer k. Group the elements in k. And then sort the array.
   Ex: [1, 23, 4, 3, 8, 9] and k = 2. So number formed are 123, 43, 89. Now after sorting, it will be 43, 89, 123. SO return the array as [4,3,8,9,1,23]
   n will always be multiple of k.

2. https://www.geeksforgeeks.org/maximum-sum-such-that-no-two-elements-are-adjacent/

3. https://www.geeksforgeeks.org/sum-leaf-nodes-minimum-level/

Set-3

1 - https://www.geeksforgeeks.org/find-distance-between-two-nodes-of-a-binary-tree/

2-https://www.geeksforgeeks.org/maximum-sum-such-that-no-two-elements-are-adjacent/

3 - Decode the string. Given a character array number is mapped to corresponding alphabet and "_" is mapped to space. If there is "#" after "#" is is number. There will be no "_" and "#" returned string. Something like that.

Ex-

Input - 3 2 20_21 # 1 # 2_#11 4 @11

Output - CBT U12 22D@H

Question is not clear...can someone please explain in little more detail..

Please take care of char pointer it waste so much time , cause me one ques (microsoft) (seriously, don't overlook this.)

Goldman Sachs

IIITD

Date - 6th July 2018
1 Position - Analyst
1 hour test @hackerrank

1 coding question*(20 min)*
count all possible quadrilateral by joining different sides of a quadrilateral

4 Q's on Computer science basics*(20 min)*

AVL tree, Probability & Stat and addition of two hexadecimal number

4Q's on Analytical comprehension*(20 min)*

IITR

Coding:

1. Given strings with (x,y) coordinates , for an input string find the nearest string . two strings are nearest if they have same value at x or y coordinates.
2. Find the smallest number greater than given number and largest number lesser than given number , with same number of set bits as in given number.link
3. Which of the following will be the correct method to swap two numbers in all possible case.
   Options were exor, product & division, sum and difference: Correct answer - exor

Quant

1. Find the expected number of events required to get three consecutive sixes on a dice. (E = 258)
2. Same as 1 , given that first two outcomes are two sixes. (E = 216)
3. Two questions on hamiltonian cycles in a graph. Conditions and conclusions.
4. A paragraph on Buffon's Needle - (find the expected number of "crossings" a L-shaped bar , and a ring would do) (The distance between the lines and the diameter of the ring and the two sides of the L shape were given)

Guys, please add more problems from the test or ask your friends to do at least, it will be of great help(NIT and IIIT people , *even internships from iits*)

Qualcomm

(CPI Cutoff?) (Branches Allowed ?)

IIITD

Date - 6th July 2018
Position -
1.5 hour@ HirePro (+3, -1)
CGPA: 6.5 & above

20 Q's/30 min Aptitude, DI and LR
20 Q's/30 min C
C pointers (Around 5 questions), , operator precedence (Around 5 questions), switch cases etc
20 Q's/30 min CSE **Topics**
OS, Architecture, digital logic, semaphores, Algo,

IITM

Date - 6th oct 2018
1.5 hour@ HirePro (+1, -0.25)(yes negative marking was there)
Same as IIITD
After 2 section, we have choice of selecting one section from ML, CS, Communications, Hardware
ML part
Simple questions on linear regression, Neural network(time and space complexity), loss function, some os questions, LRU page fault count.

Adobe

(CPI Cutoff?) (Branches Allowed ?)

IIITD

Date - 6th July 2018
Position -
1.5 hours Coding + 1 Hour aptitude(NO Negative Marks) @ Hackerrank

Q1. Sort the characters of a string and print the string
Q2. find the lexicographically smallest string after rotating a string t
Q3. In a directed graph find all pair of node which can be traversed

IIITA

Q2 kadane algo
Q3 substring search
  s1:aab s2:a*b o/p 2(ab, aab)
  * can be anything null also
Could someone please explain the question and its solution
https://www.geeksforgeeks.org/adobe-interview-experience-set-55-campus-full-time-mts-profile/
Codind round questions from above experience(link) were exactly same at IIITA

PLZ SHARE SOLUTION??

IITKGP

Requested Clarifications: When was the test? Only one coding problem? Aptitude test?
A square grid(matrix - n x n) is given, with values 0, 1 or -1 in each cell. 0 means there is a path via that square. 1 means there is a diamond in it(and obviously a path via it). -1 means no path, i.e. obstacle. Starting from (0,0) u need to go to (n-1,n-1) and return back again. When going from (0,0) to (n-1,n-1) you can take only right or down and during returning u can only take left or up. The question is to find maximum number of diamonds that can be collected in a round trip.If no path exists return 0(since u collected no diamond) g4g Topcoder

IITM

06/10/18
# of Coding Questions: 3
Time : 90min
Platform: Hackerrank

Ex: given array = 11223
Output: 3
Exp: Remove 11 and then 22. Only 3 is left in the array.
Given array = 21123
output : 3
Exp: remove 11, then array will be 223, now remove 22.
Given array = 21132
Output: 232
Exp: remove 11, then array will be 232. Can't remove further.

Solution: can use linked list and after deletion go back to head or previous node (keep a pointer for that). I got full points using this.
Output for the following? 2121: 2121
Can We use Stack instead of LL? yes

Q2. Given a string, print the most frequent substring of length 5. In case of more than one, output lexicographically smallest.
Input 1: bababababa

Output 1: ababa
Input 2: bababababab
Output 2: babab

Solution: take an unordered map(string, int) and put all substring of length 5 in it, sort it , now traverse the map, the first maximum count(frequency) value will correspond to largest frequent substring of length 5. This solution pass one cases, except the one, which was giving timeout. Replace unordered_map with array of length 26^5 to get AC for all cases.

Q3.https://www.hackerrank.com/challenges/challenging-palindromes/problem

Ex: given: 3
ban
3
ana
Output: 5 (because of anana)
Exp: palindromic string S will be an + ana = anana.

Solution: concat s1 , s2 lets say s3 = s1+s2, apply LCS on reverse of(s3)(row) and s3(column) , bottom rightmost value, will be the answer. I did it that way and got full points for that

How this can give the answer? Here subsequences from s1 or s2 may come up in sol but that is not allowed ryt? So what's the problem, that's what is asked. The whole batch used this approach and able to get full marks.!!

In the link that has been mentioned, we have to pick substrings from s1 and s2 and not subsequences. The solution that has been given above is for the latter case.

Cisco

IITM

Date - 17th September 2018
Role : Software Engineer
Open for : Btech, Dual, Mtech, MS in CSE and EE
Exam Pattern :
1 hour MCQ type exam, based on HackerRank, 50 questions.
Questions covered areas like aptitude (time and work, logical reasoning), probability, OS(scheduling, concepts of paging), questions from Electrical Engineering (3-4), Computer Networks (Most were from subnet masks and host / IP addresses), permutations and combinations, finding output, questions about linked lists (3-4 basic ones).

IITG

Date - 24th Sept 2018
Exam Pattern : Same as IITM
Questions covered areas same as above including Digital Logic design , Counters(Ripple counters , input and output frequency relation in counters), from Programming MCQs few problems are from bitwise operators (Like : “int a = 2 ; int b = 3 ; a ^= b ^= a =^b ; “ what will be the change in values?) ,structures.
3 ants in a triangle. Probability that 2 or 3 of the ants collide ?
https://www.quora.com/If-5-letters-are-posted-for-5-different-addresses-how-many-ways-are-there-for-each-of-the-letters-to-reach-wrong-addresses
Postorder from preorder traversal.
Basic Networking Questions like where does routing takes place ?

Samsung R & D Bangalore

Samsung Software-Competency Test

1) Test Details & Pattern

Write code in C/C++/Java to solve a given problem. Code should compile, run and pass all given test cases.

- Emphasis on working code with efficient Programming Logic, Algorithms, Data structures, Samsung
- NOT dependent on any Platform/API

<table>
<tr><td>Duration</td><td>3 hours</td><td colspan="3"></td></tr>
<tr><td>Allowed Languages</td><td>C, C++, Java</td><td colspan="3">· Candidates proficient in C# or other language can also take the test, by choosing one of C / C++ / Java to write the code as the focus is on Algorithms & Data Structures. (Some language-specific learning/refreshing and practice may be required)</td></tr>
<tr><td>Number of Questions</td><td>One</td><td colspan="3">· The question details the problem, gives constraints, test inputs, and sample outputs</td></tr>
<tr><td rowspan="5">Allowed Functions, Libraries</td><td rowspan="5">Basic memory mgmt, input, output</td><td>Language</td><td>Memory</td><td>Input, Output</td></tr>
<tr><td>C</td><td>malloc, free</td><td>scanf, printf</td></tr>
<tr><td>C++</td><td>new, delete, malloc, free</td><td>cin, cout, scanf, printf</td></tr>
<tr><td>Java</td><td>New (memory freeing is automatic by garbage collector)</td><td>java.util.Scanner, System.out.print, println</td></tr>
<tr><td colspan="3">· Other functions, libraries not allowed
· Test taker needs to write any required utility functions</td></tr>
<tr><td>Allowed IDEs</td><td>· VS (C/C++)
· Eclipse (Java)</td><td colspan="3">· To be pre-installed on the Test PC/Laptop</td></tr>
<tr><td>Criteria for Passing Test</td><td>Pass all test-cases</td><td colspan="3">· “Sample test-cases” are given to test locally
· Developed program has to:
· Pass all “Evaluation test cases” on server (not shared with test-taker) and generate the output in specified format
· Meet efficiency criteria given in question (max limit on execution time, heap memory, and stack)</td></tr>
</table>

2) Preparation recommended

Refresh/Learn data structures & algorithms

i) e.g., Array, Grid, List, Tree, Graph, Map, String, Search, Sort, Permutations, Combinations, Probability, Traversal, Path finding, Optimization, Dynamic Programming etc.

ii) Some popular external websites for study/practice: geeksforgeeks, hackerrank, codeforces, topcoder, codechef, spoj, project-euler etc.

They have very frustrating software which need to be installed on the day of exam(compatible only with WINDOWS).
In that software, you may face a lot of login issues. Make sure once you login,you stay in it. If you come out, after logging in, that same password doesn’t works. (coordinator may give common password to all then)
Note:

1. There is some sample input pop-up from where you need to copy the test case in order to run for your local testing.
2. There is some full screen button somewhere(though I was not able to find it out, very few of us got it)

3. Scrolling up and down is a big pain.
4. Eclipse will be prefered(or save code in Notepad).
5. Don't trust their server, your code may be flushed, if in case you are facing network issue.
6. In case test starts at 9, but due to some issue, you logged in at 9:15, then your 15 mins are gone.(They have some common server timings)

IIT M

Role: software engineer and software engineer research
Test was of 3 hour. Only 5 submission allowed(compile as many times you want). 10 test cases to be passed
Date: 24/09/2018. Question was same as that of previous year.
gscs.samsung.com/download/gscs103.zip]
Cycle in directed graph number of vertex(n), number of edge(m). Then in next line m pairs of numbers representing edges of directed graph. Find if there is some cycle. If yes, print cycle in ascending order of vertex numbers involved in the cycle else print 0 (if there are multiple cycles print any one)
Total no. of test cases: 10 None of them had the "No Cycle" graph.

IIT D

Role: Software Engineer and Software Engineer Research
Date: 28/09/2018
2-coloring in Undirected graph Given an undirected graph, if the graph can be coloured in two colors such that no two adjacent vertices are of same color then print the vertices which belong to the same color (you can print vertices with color 0/1), otherwise print -1.
Input : First line gives number of vertices(V) and edges(E) (e.g. 7 10)
Next line contains E pairs representing edges.

IIT K

Role: software engineer and software engineer research
Date: 09th Oct 2018
Test was of 3 hour. Only 10 submission allowed(compile as many times you want). 50 test cases to be passed
Question: Constraints: N <= 50; M <= 50
Inefficient Solution (passes all test cases): Consider jump of length = 1 to N-1 and for each case check if Destination is reachable. For first jump_length we reach destination return that.

```
Start at bottom {
        For jump_length in 1 to N-1 {
                For all continuous 1's in that row{
                        For (current row - max_length) to (current row + max_length) {
                                Visit node if not visited;
```

Another method using backtracking. C++ CODE

Mr. K has a mania for rock-climbing.
Mr. K who completed several rock-climbing courses in the past now wants to go for a course which is known to be tough and hard.

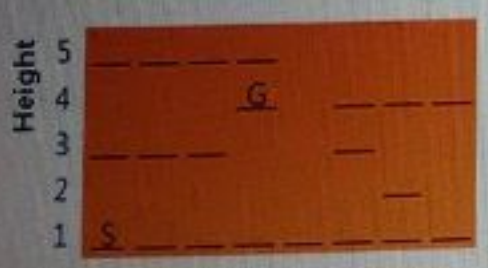
Since he obtained the map of the tough rock-climbing course in advance, he wants to prepare himself to successfully complete the course.

N is the height and *M* is the width of the rock. What '-' in the map means is that there's space to place foot into that corresponding spot.

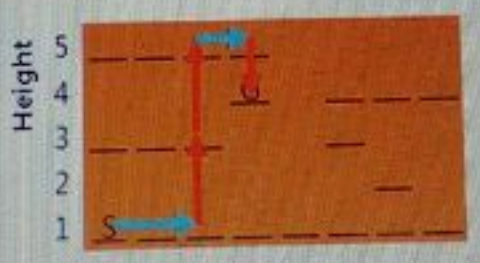
When he is climbing and '-' exists sequentially on the same height, **he can freely move**.
But if '-' is more than one space apart, moving towards the **horizontal direction is impossible due to safety reasons**.

From the current location, if, although the height is different, '-' exists right in the level above or below,
he can safely move up or down by using his equipment and physical strength.
Here, depending on how high/low he moves towards the upper or lower direction at one time,
the level of difficulty of rock climbing gets determined.

For instance, suppose a rock map such as below is given. (Empty space means there's no space to place foot).
The starting point of climbing is always the very left end point (height 1) on the ground and is expressed as *S*.
The goal point (or final point) is expressed as *G*.



[Fig. 1-1]



[Fig. 1-2]

In this case, since the maximum height of moving from the starting point to reach the goal point
by either moving up or down is 2 at one time, the level of difficulty of this rock is 2.

IITG

Mr. Kim has to deliver refrigerators to N customers. From the office, he is going to visit all the customers and then return to his home. Each location of the office, his home, and the customers is given in the form of integer coordinates (x,y) (0≤x≤100, 0≤y≤100) . The distance between two arbitrary locations (x1, y1) and (x2, y2) is computed by |x1-x2| + |y1-y2|, where |x| denotes the absolute value of x; for instance, |3|=|-3|=3. The locations of the office, his home, and theb customers are all distinct. You should plan an optimal way to visit all the N customers and return to his among all the possibilities.

You are given the locations of the office, Mr. Kim's home, and the customers; the number of the customers is in the range of 5 to 10. Write a program that, starting at the office, finds a (the) shortest path visiting all the customers and returning to his home. Your program only have to report the distance of a (the) shortest path.

Constraints
5≤N≤10. Each location (x,y) is in a bounded grid, 0≤x≤100, 0≤y≤100, and x, y are integers.

Input:
You are given 10 test cases. Each test case consists of two lines; the first line has N, the number of the customers, and the following line enumerates the locations of the office, Mr. Kim's home, and the customers in sequence. Each location consists of the coordinates (x,y), which is represented by 'x y'.

Output:
Output the 10 answers in 10 lines. Each line outputs the distance of a (the) shortest path. Each line looks like '#x answer' where x is the index of a test case. '#x' and 'answer' are separated by a space.

I/O Example :::: Input (20 lines in total. In the first test case, the locations of the office and the home are (0, 0) and (100, 100) respectively, and the locations of the customers are (70, 40), (30, 10), (10, 5), (90, 70), (50, 20).)
5 ← Starting test case #1
0 0 100 100 70 40 30 10 10 5 90 70 50 20
6 ← Starting test case #2
88 81 85 80 19 22 31 15 27 29 30 10 20 26 5 14
10 ← Starting test case #3
39 9 97 61 35 93 62 64 96 39 36 36 9 59 59 96 61 7 64 43 43 58 1 36
Output (10 lines in total)
#1 200
#2 304
#3 366

Samsung Delhi

IITD

Initially you have H amount of energy and D distance to travel, you are given two arrays of size 5, each indicating the amount of energy you can utilise and the time it will take to cover the next distance with that energy. For eg.
h(array of energy) = { 4 , 5 , 7 , 12, 2 }
t(corresponding array of time) = {5min20sec, 3min20sec, 2min30sec, 1min0sec, 15min20sec}
You start at 1 and you need to take one of the five energies to move to 2 and so on until you reach D. The task is to find the minimum time required for given H,D,h and t.

Question reworded: Initially you have H(<4000) amount of energy and D(<1000 km) distance to travel. You may travel with any of the given 5 speeds. **But you may only travel in units of 1 km**. For each km distance travelled, you will spend corresponding amount of energy. E.g. the k;given speed are :

Cost of travelling 1 km:	4	5	2	3	6
Time taken to travel 1 km:	200s	210s	230s	235s	215s

The task is to find minimum time required to cover total D km with remaining H >= 0.
Time Limit: 3hrs
Number of Submissions: 10

C++ code

IIT-BHU

Mr. Kim has to deliver refrigerators to N customers. From the office, he is going to visit all the customers and then return to his home. Each location of the office, his home, and the customers is given in the form of integer coordinates (x,y) (0≤x≤100, 0≤y≤100) . The distance between two arbitrary locations (x1, y1) and (x2, y2) is computed by |x1-x2| + |y1-y2|, where |x| denotes the absolute value of x; for instance, |3|=|-3|=3. The locations of the office, his home, and the customers are all distinct. You should plan an optimal way to visit all the N customers and return to his among all the possibilities.

You are given the locations of the office, Mr. Kim's home, and the customers; the number of the customers is in the range of 5 to 10. Write a program that, starting at the office, finds a (the) shortest path visiting all the customers and returning to his home. Your program only have to report the distance of a (the) shortest path.

Constraints
5≤N≤10. Each location (x,y) is in a bounded grid, 0≤x≤100, 0≤y≤100, and x, y are integers.

Input:
You are given 10 test cases. Each test case consists of two lines; the first line has N, the number of the customers, and the following line enumerates the locations of the office, Mr. Kim's home, and the customers in sequence. Each location consists of the coordinates (x,y), which is represented by 'x y'.

Output:
Output the 10 answers in 10 lines. Each line outputs the distance of a (the) shortest path. Each line looks like '#x answer' where x is the index of a test case. '#x' and 'answer' are separated by a space.

I/O Example :::: Input (20 lines in total. In the first test case, the locations of the office and the home are (0, 0) and (100, 100) respectively, and the locations of the customers are (70, 40), (30, 10), (10, 5), (90, 70), (50, 20).)
5 ← Starting test case #1
0 0 100 100 70 40 30 10 10 5 90 70 50 20
6 ← Starting test case #2
88 81 85 80 19 22 31 15 27 29 30 10 20 26 5 14
10 ← Starting test case #3
39 9 97 61 35 93 62 64 96 39 36 36 9 59 59 96 61 7 64 43 43 58 1 36

Output (10 lines in total)
#1 200
#2 304
#3 366

IITK

There was shortlisting. I don’t know the criteria but 78 applicants were shortlisted. Total 5 submissions were allowed.
2-coloring of undirected graph (Same as Samsung Bangalore IITD)

Samsung Noida

IITM

https://www.geeksforgeeks.org/samsung-delhi-interview-experience-set-38-campus/
Solution for the question given below is slightly different. we can just write 4 if conditions for mentioned 4 conditions in question to get score C++ similar code

IIT BHU

Repeat: Signal Amplifier (explained below by IITK)

IITD

We are given a function f = an + blogn + cn^3. The function is monotonic, we will be given a, b,c as input and a variable k (value of function at some value of n). We need to find the value of n such that f(n)=k.

1. The upper bound of n was given
2. They gave code for finding logn
3. Sol: Binary search

IITK

Same as IITD

Samsung Semiconductor(SSIR)

IITK

Signal Amplifier: You have a matrix of 0 and 1 of order N*M and a parameter K is given. You have to perform the operation of flipping any column of matrix exactly K times. Flipping means changing 0 to 1 and 1 to zero. This operation can be performed any number of times on the same column . Using this operation, maximize number of rows filled with all 1. First line is number of test cases, next line is N, M and K, and then N*M matrix follows.

Total 50 test cases had to be passed and maximum allowed submissions were 10

Constraints:
1 <= N <=100
1 <= M <= 20
1 <= K <= M

Sample Input:
2
5 3 3
1 0 0
0 1 0
1 0 0
0 0 1
0 1 0
3 3 2
0 1 1
1 0 0
1 1 0

Sample Output:
0
1

Efficient algorithm

Zendrive

20L base, 27L CTC

IITD

Two profiles opened (cgpa >= 6.5):

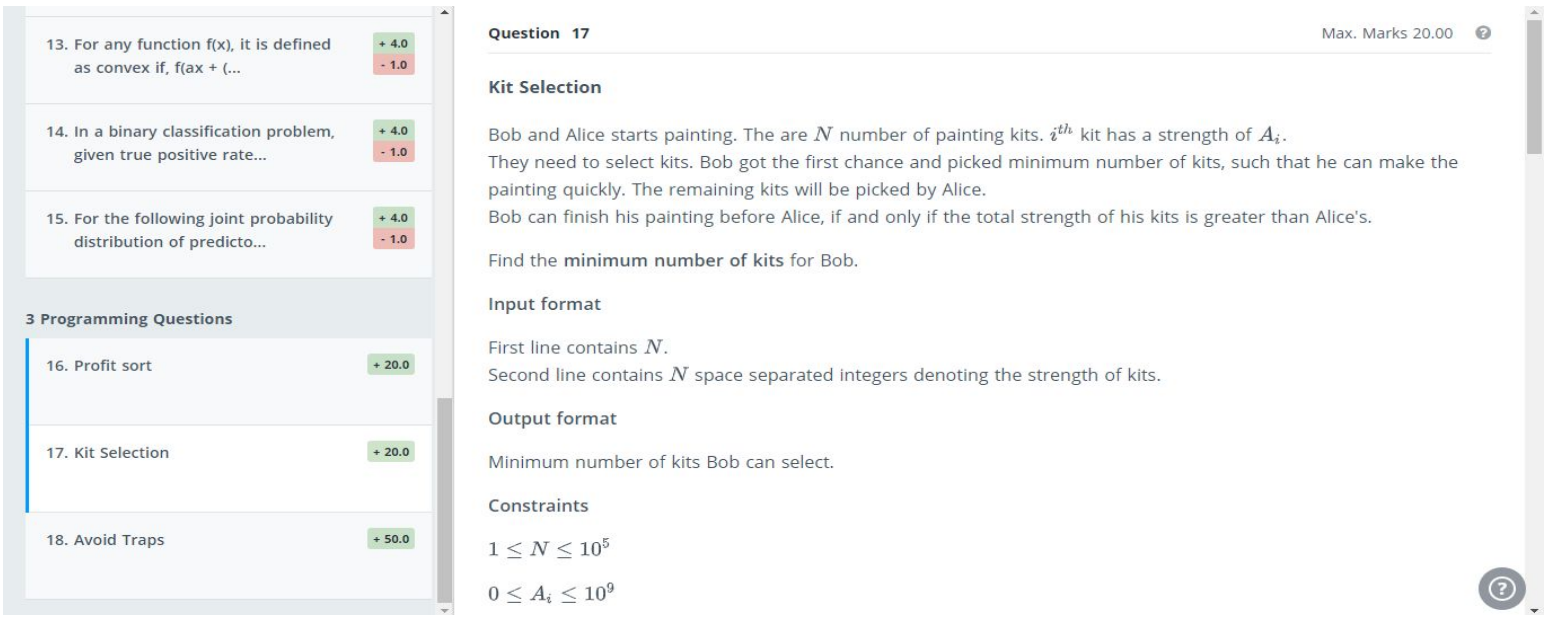
1. Associate Data Scientist
2. Software Development Engineer 1

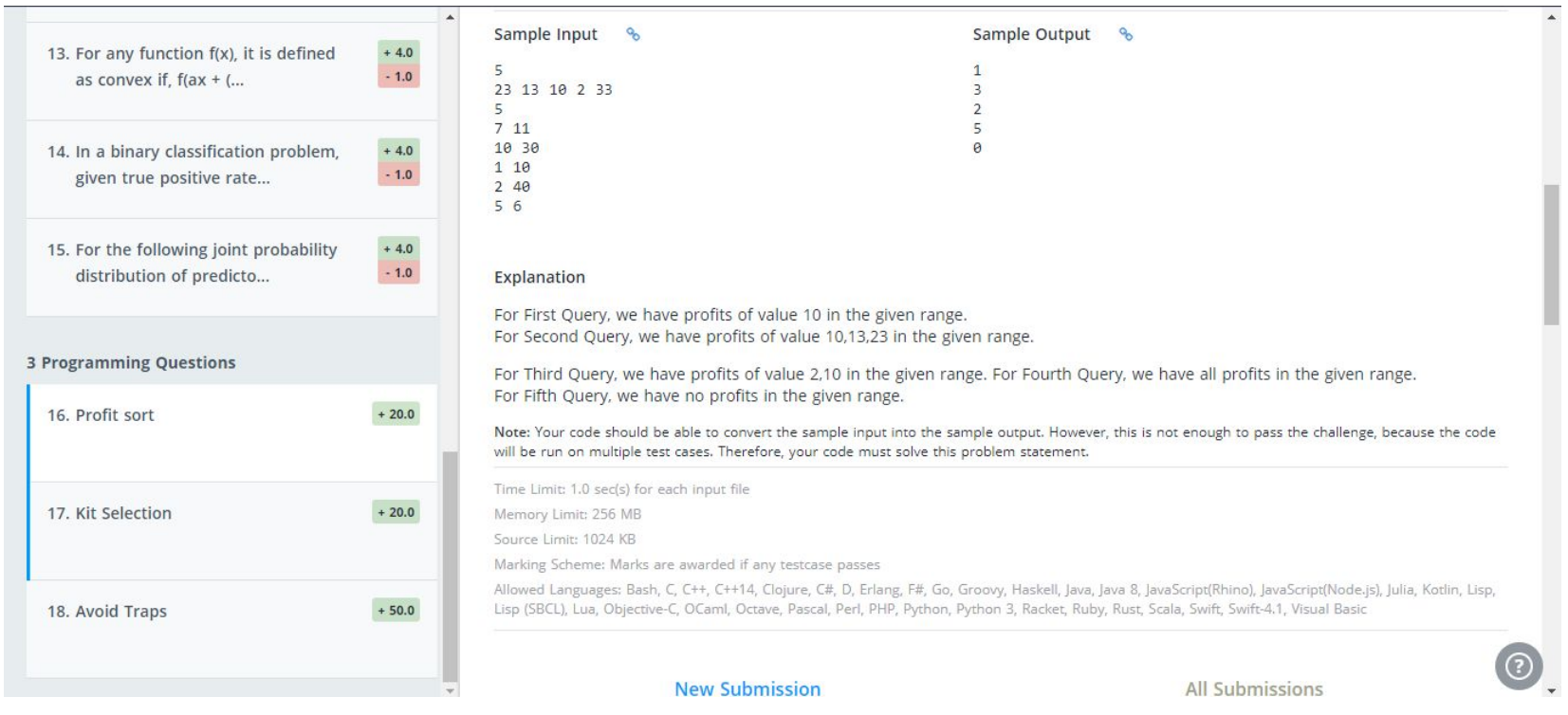
Total 1 hr test with 15 questions for Data Science and 3 simple coding questions for Software development
Software Developer Profile-

1. https://imgur.com/Gk7c8rq Solution: Take GCD of array elements++++
2. https://imgur.com/4jf39Jv Solution: Initially take all a's. Keep changing a->z from the end.. lastly a->{b, c, …, z}
3. https://imgur.com/aAY9m1j https://imgur.com/s0jaNfj

Data Scientist profile- https://imgur.com/Gk7c8rq
15 MCQs (+4,-1)(1 hour), from topics like probability, stats, Apti, and some ML.

IITM





13. For any function f(x), it is defined as convex if, f(ax + (... + 4.0 - 1.0

14. In a binary classification problem, given true positive rate... + 4.0 - 1.0

15. For the following joint probability distribution of predicto... + 4.0 - 1.0

3 Programming Questions

16. Profit sort + 20.0

17. Kit Selection + 20.0

18. Avoid Traps + 50.0

Minimum number of kits Bob can select.

Constraints

$1 \leq N \leq 10^5$

$0 \leq A_i \leq 10^9$

Sample Input

```
5
5 3 4 1 2
```

Sample Output

```
2
```

Explanation

If Bob selects 5 and 3 in as his kits, the required condition is met.

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 code will be run on multiple test cases. Therefore, your code must solve this problem statement.

Time Limit: 1.0 sec(s) for each input file
Memory Limit: 256 MB
Source Limit: 1024 KB
Marking Scheme: Marks are awarded if any testcase passes
Allowed Languages: Bash, C, C++, C++14, Clojure, C#, D, Erlang, F#, Go, Groovy, Haskell, Java, Java 8, JavaScript(Rhino), JavaScript(Node.js), Julia, Kotlin, Lisp, Lisp (SBCL), Lua, Objective-C, OCaml, Octave, Pascal, Perl, PHP, Python, Python 3, Racket, Ruby, Rust, Scala, Swift, Swift-4.1, Visual Basic

13. For any function f(x), it is defined as convex if, f(ax + (... + 4.0 - 1.0

14. In a binary classification problem, given true positive rate... + 4.0 - 1.0

15. For the following joint probability distribution of predicto... + 4.0 - 1.0

3 Programming Questions

16. Profit sort + 20.0

17. Kit Selection + 20.0

18. Avoid Traps + 50.0

Question 18 Max. Marks 50.00

Avoid Traps

There is a cave of N cells where each cell has a trap or is safe to land.
From a cell i, a person can jump to cells $i+1$ or $i+2$. Also, if the the number i is special, he can also jump from cell i to cell $i+A$ where $A = number\ of\ primes\ in\ [1, i]$. The number i can be special in case, $\frac{A}{i} \geq \frac{r1}{r2}$.
Given the details of cave, r1, r2, N, find the minimum number of steps to reach N^{th} $cell$. Initially, you are at cell 1.

Input format

- Given an integer *T* (number of test cases).

For each test case:

- The first line contains two integers r_1, r_2.
- The second line contains an integer *N*.
- The third line contains a string of length N representing N cells (1st character of string represents first cell, 2nd corresponds to second cell and so on). Each cell is either '#' or '*'.

Note:
'#' means empty cell, '*' means trapped cell.

Output format

For each test case print the minimum time to get out of the cave (in a separate line). If it it not possible to get out of the cave, print "$No\ way!$" without quotes.

Constraints:

- $1 \leq T \leq 500$
- $1 \leq r_1, r_2 \leq 10000$
- $1 \leq N \leq 100000$

Note: Large Input files. Use faster input methods.

Sample Input

```
2
1 2
8
########
1 5
5
#***#
```

Sample Output

```
3
No way!
```

Explanation

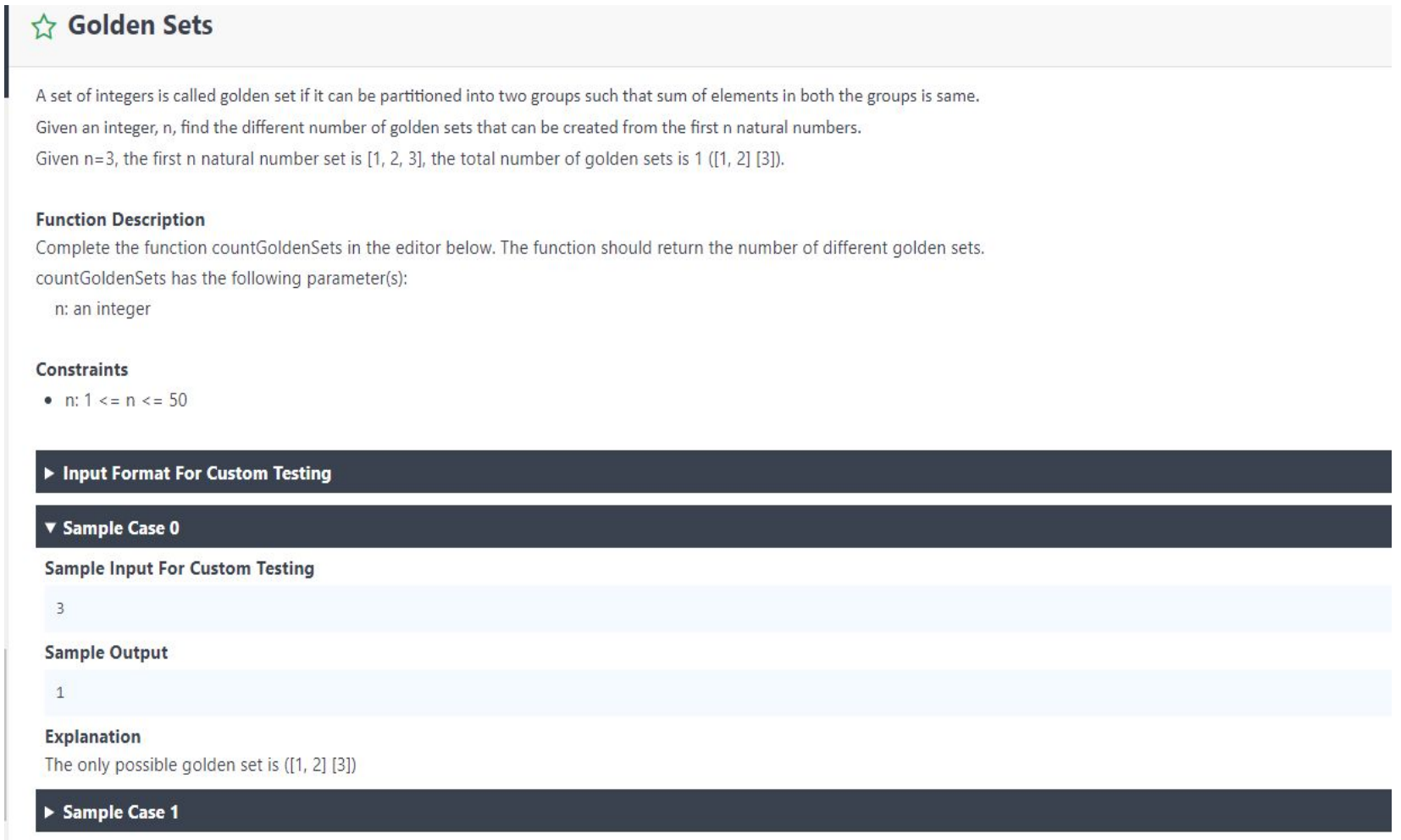
First Case:

You can jump to $index = 3$, then to $index = 5$, then he could use

CITRIX

IITM

(CPI Cutoff?) (Branches Allowed?)
Software Engineer
Date: 25/09/18
2 hours of test, in which you have 50 MCQs(with no negative a), 2 coding questions on Hackerrank Platform



☆ Golden Sets

A set of integers is called golden set if it can be partitioned into two groups such that sum of elements in both the groups is same.
Given an integer, n, find the different number of golden sets that can be created from the first n natural numbers.
Given n=3, the first n natural number set is [1, 2, 3], the total number of golden sets is 1 ([1, 2] [3]).

Function Description
Complete the function countGoldenSets in the editor below. The function should return the number of different golden sets.
countGoldenSets has the following parameter(s):
n: an integer

Constraints
- n: 1 <= n <= 50

▶ **Input Format For Custom Testing**

▼ **Sample Case 0**

Sample Input For Custom Testing

```
3
```

Sample Output

```
1
```

Explanation
The only possible golden set is ([1, 2] [3])

▶ **Sample Case 1**

Coding -> 1. Similar problem with explanation A set of number is called golden set, if it has 2 subsets which equal sum. Ex- for 3 .[[1,2],[3]] -> golden set for 3. Given n , find number of golden set possible using first n natural number

Coding -> 2. It was based on some share markets terms. You have n users , with some number of shares, bidding prices, timestamp. Input will be [user_id, no_of_shares,bidding_prices, timestamp]. You have total shares to be distributed among bidders.
For which -

- User with highest bidding prices will be given shares first.
- If 2 users have same bidding price, then we give 1-1 shares to them iteratively in the order of their timestamp .
- This process continues till all bidders get shares or no more shares are left,whichever happens first.

You have to output the number of users which will not get any share.

Suppose input is:
[1,5,5,0]
[2,7,8,1]
[3,7,5,1]
[4,10,3,3]
Totalshare = 18
Explanation: User2 bidding prices is high , so we give it 7 shares as it wants. Left share = 18-7 = 11.Now user 1 and 3 have same bidding prices, so we give 1 to user 1 , then 1 to user 3(because of timestamp order). Keep on doing till 5 iterations, left share 11-10 = 1 and user1 is done

Now with 1 share left we will give it to user3. So the answer is 4, as user4 didn't get anything

☆ Initial Public Offering

A company registers an IPO on a website *sellshares.com*. All the shares on this website are available for bidding for a particular time frame called the bidding window. At the end of the bidding window an auction logic is used to decide how many of the available shares go to which bidder until all the shares that are available have been allotted, or all the bidders have received the shares they bid for, whichever comes earlier.

The bids arrive from the users in the form of *<user Id, number of shares, bidding price, timestamp>* until the bidding window is closed.

The auction logic assigns shares to the bidders as follows:

1. The bidder with the highest price gets the number of shares they bid for
2. If multiple bidders have bid at the same price, the bidders are assigned shares as follows:
   Each bidder in the same price group gets assigned one share each consecutively, with each bidder being arranged inside the group based on their timestamp. Once a bidder gets the number of shares they bid for, they will be removed from the above iterative process and the process which then continues until all bidders are removed or the shares get exhausted, whichever comes first.

List the user Id's of all users who did not get even one share after the shares have been allocated.

For example, bids come in as *bids = [[1, 5, 5, 0], [2, 7, 8, 1], [3, 7, 5, 1], [4, 10, 3, 3]]*. There are *totalShares = 18* to allocate. The highest price bid is for user Id *2* for *7* shares at a price of *8*, so that user gets *7* shares leaving *11* to allocate to lower prices. Users with Id's *1* and *3* each bid *5* for *5* and *7* shares, with bidder *1* having the earlier timestamp. After *5* iterations, *10* shares have been allocated with *5* shares going to each of these two bidders. Bidder *1* has the full allotment, bidder *3* has *2* more shares to buy and there is *1* share left to allocate. It goes to bidder *3* and all shares have been allotted. Bidder *4* is the only bidder who gets no shares.

Function Description

Complete the function *getUnallottedUsers* in the editor below. The function must return a list of integers, each an Id for those bidders who receive no shares, sorted ascending.

getUnallottedUsers has the following parameter(s):

bids[bids[0],...bids[n-1]]: a 2D array of arrays of integers, *Id, shares, price, timestamp* named *u, sc, bp, ts* going forward

totalShares: an integer, the total shares to allocate

MCQs -> based on Networks(gate level), apti, programming(find output n errors)
Were there MCQs from DBMS or OS ?

Thoughtspot

IIT BHU

CSE and MnC
date: 25/09/18
CPI: 6.5
Member of Technical Staff
1hr test on interviewbit - Constraints were given

1. [200 pts] http://codeforces.com/contest/493/problem/C
2. [300 pts] https://codeforces.com/contest/408/problem/D
3. [500 pts] hackerearth

KLA Tencor

IITM

Date: 25/09/2018
KLA Tencor opened several profiles like Software Engineer, Algorithm Engineer, System Engineer and Application Engineer. Online test was different for each of the profiles. Students were allowed to write for only one profile as all test were conducted at the same time. However they announced during PPT that those who write for application engineer will be considered for system engineer as well.

Profile: Software Engineer
Open for Masters of CS, EE, Math, and Physics
Platform: Hackerrank
# of programming question: 2
# of apti + technical MCQ: 15
Time given: 75 min
P1: Something related to traversing a tree using adjacency matrix. Finding height of the graph (binary graph). The input is given in 2d vector.
P2: given a matrix with 0 and 1, finding the longest path of 1 in the matrix.
Apti + Tech questions were of standard quality. Questions were from Computer Networks, DB, Operating System, Permutation, Combination, seating arrangement etc.
Tip: Time is very less for 2 programs and 15 MCQs. Manage your time properly, start with coding. 15-20min is more than enough for MCQs.

Profile: Algorithm Engineer
Open for Masters of CS, EE, and Physics
Platform: Hackerrank
# of programming question: 2
# of apti MCQ: 15
Time given: 60 min
P1: https://www.geeksforgeeks.org/longest-palindromic-substring-set-2/
P2: Find the strings in the list of string which does not have an anagram.
Aptitude questions were of standard quality. Questions were from Probability, Proportion , etc

IITK

Date: 8-oct-2018
Same format as in IITM, and same coding questions(Software Engineer).
Profile: Application Developer Engineer
Platform: Hackerrank
# of programming question: 0
# of apti MCQ: 25
Time given: 60 min

Cohesity

IIT D

(CGPA cutoff ??)
CTC: 18L
Date: 27-sep-2018
Platform: Hackerearth (1 hour)
https://imgur.com/gallery/M0RKXgJ
Good luck guys.

IIT BHU

(CGPA cutoff ??)
Date: 7-oct-2018
Platform: Hackerearth (1 hour)

1. https://www.geeksforgeeks.org/find-number-of-islands/
2. StackOverflow HackerRank C++ code

IIT Kanpur

(8+ CGPA) (34 lakhs in India)

1. https://www.geeksforgeeks.org/maximum-sum-in-circular-array-such-that-no-two-elements-are-adjacent/
2. From 0 make X such that you can add, subtract and double. Cost of adding and subtracting is A whereas cost of doubling is B. Find minimum cost. (35 M)
   I/P - X=4, A=1, B=1
   O/P- 3
   Explanation 0->1->2->4 #each link is of cost 1.

Nutanix

IISc

11 October 2018

Questions: 2
Time: 1.5 Hrs

Nutanix FTE Hiring Test - IISc 2018 | 01h : 29m to test end | 0/2 Attempted | abc xyz

☆ Nutanix Sports Meet

It's Nutanix's sports meet and this time the Nutants have come up with an interesting event in order to test their bonding with each other.
N nutants have to reach a destination along a one lane road. The destination is **M** miles away. Each nutant **i** has a constant maximum speed **speed[i]** (miles per hour) and an initial position **position[i]** miles towards the destination (Since it's a surprise race, the nutants will start from their current position). A nutant can never pass another nutant ahead of him, but once he catches up to him, they both run with the same speed. A nugang is some non-empty set of nutants running at the same position and same speed. Note that a single person is also a nugang.
How many nugangs will arrive at the destination?

Input:
The first line of the input contains an integer **t**, denoting the number of testcase. **t** testcases follow.
Each testcase consists of 4 lines:

- The first line contains a single integer **N**.
- The second line contains a single integer **M**.
- The third line contains N integers separated by single spaces denoting the **position** of each nutant.
- The fourth line contains N integers separated by single spaces denoting the **speed** of each nutant.

Output:
For each test case output a single line containing a single integer denoting the number of nugangs.

Constraints:

- 1 <= t <= 10
- 0 <= N <= 10 ^ 5
- 0 < M <= 10 ^ 6
- 0 < speed[i] <= 10 ^ 6
- 0 <= position[i] < M
- All initial positions are different

Nutanix FTE Hiring Test - IISc 2018 | 01h : 28m to test end | 0/2 Attempted | abc xyz

Input:
The first line of the input contains an integer **t**, denoting the number of testcase. **t** testcases follow.
Each testcase consists of 4 lines:

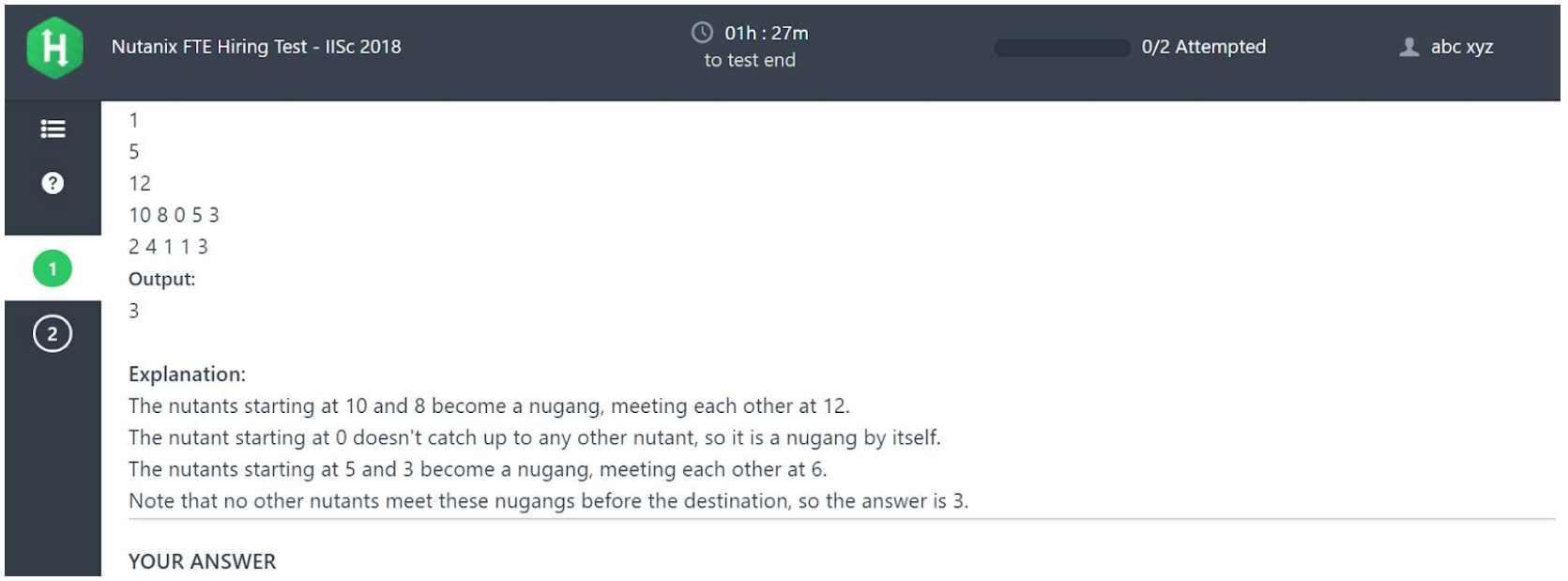
- The first line contains a single integer **N**.
- The second line contains a single integer **M**.
- The third line contains N integers separated by single spaces denoting the **position** of each nutant.
- The fourth line contains N integers separated by single spaces denoting the **speed** of each nutant.

Output:
For each test case output a single line containing a single integer denoting the number of nugangs.

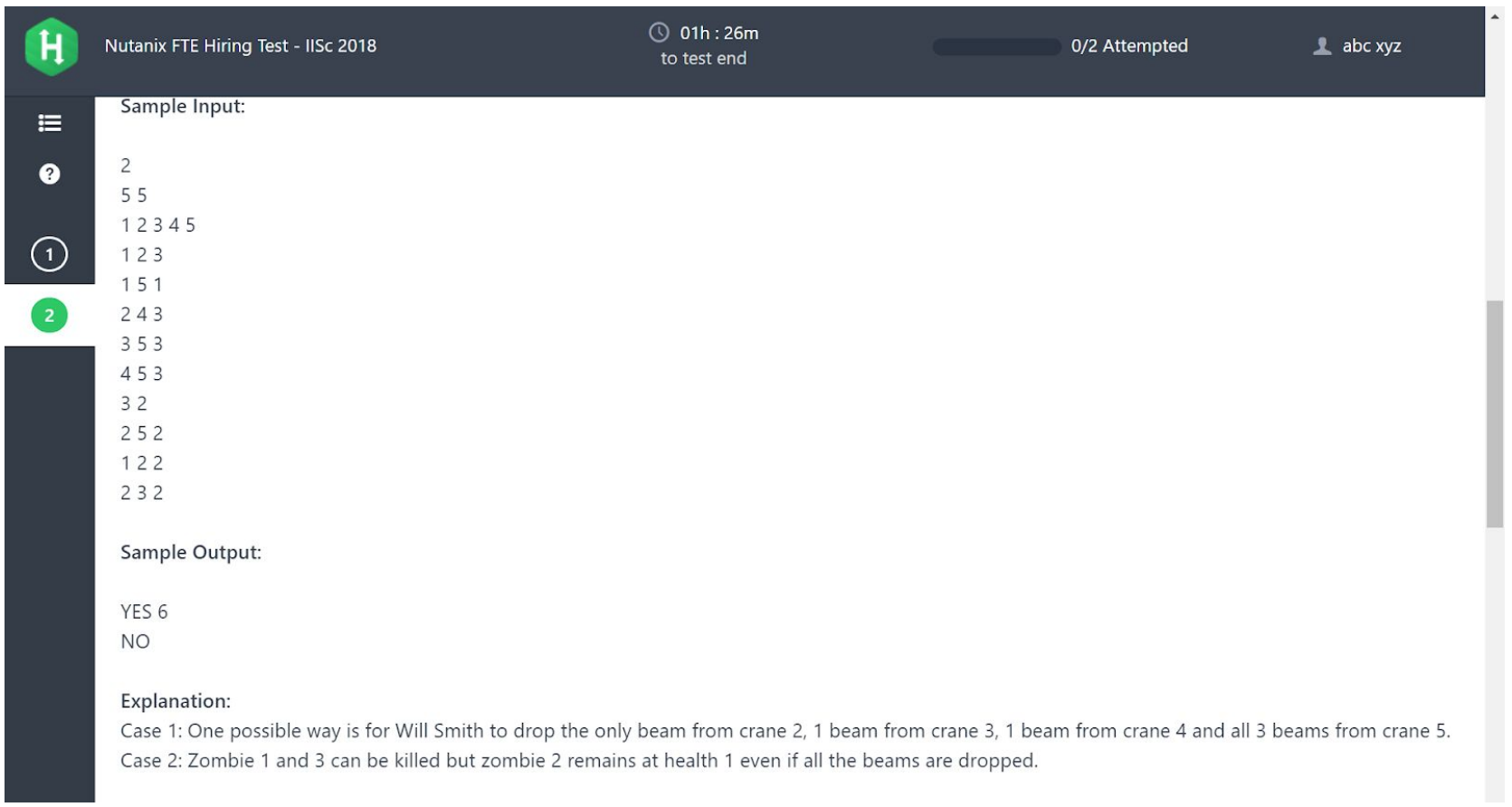
Constraints:

- 1 <= t <= 10
- 0 <= N <= 10 ^ 5
- 0 < M <= 10 ^ 6
- 0 < speed[i] <= 10 ^ 6
- 0 <= position[i] < M
- All initial positions are different.

Example:
Input:
1
5
12
10 8 0 5 3
2 4 1 1 3
Output:
3



Was anybody able to solve fully? Can anybody share an approach?



IITD

What are the constraints for 2nd problem ?

27 SEPTEMBER 2018

2 coding questions- 1.5 hr- Hackerrank

Q1. We are given the inorder and postorder traversal of a Binary tree. The data in the nodes are alphanumeric characters. Had to classify the tree shape into one of the following types:

1. / (forward slash)- if the shape of tree is like a forward slash-
   Eg- a
   /
   b
   /
   c
   2. \ (Backward slash) - if the shape is like a backward slash.(every node has only the right child)
   3. < (less than)- if the tree shape is like:

```
      a
     /
    b
     \
      c
```

4. > (greater than)
5. ^ (exponent symbol)- if the shape of tree is like-

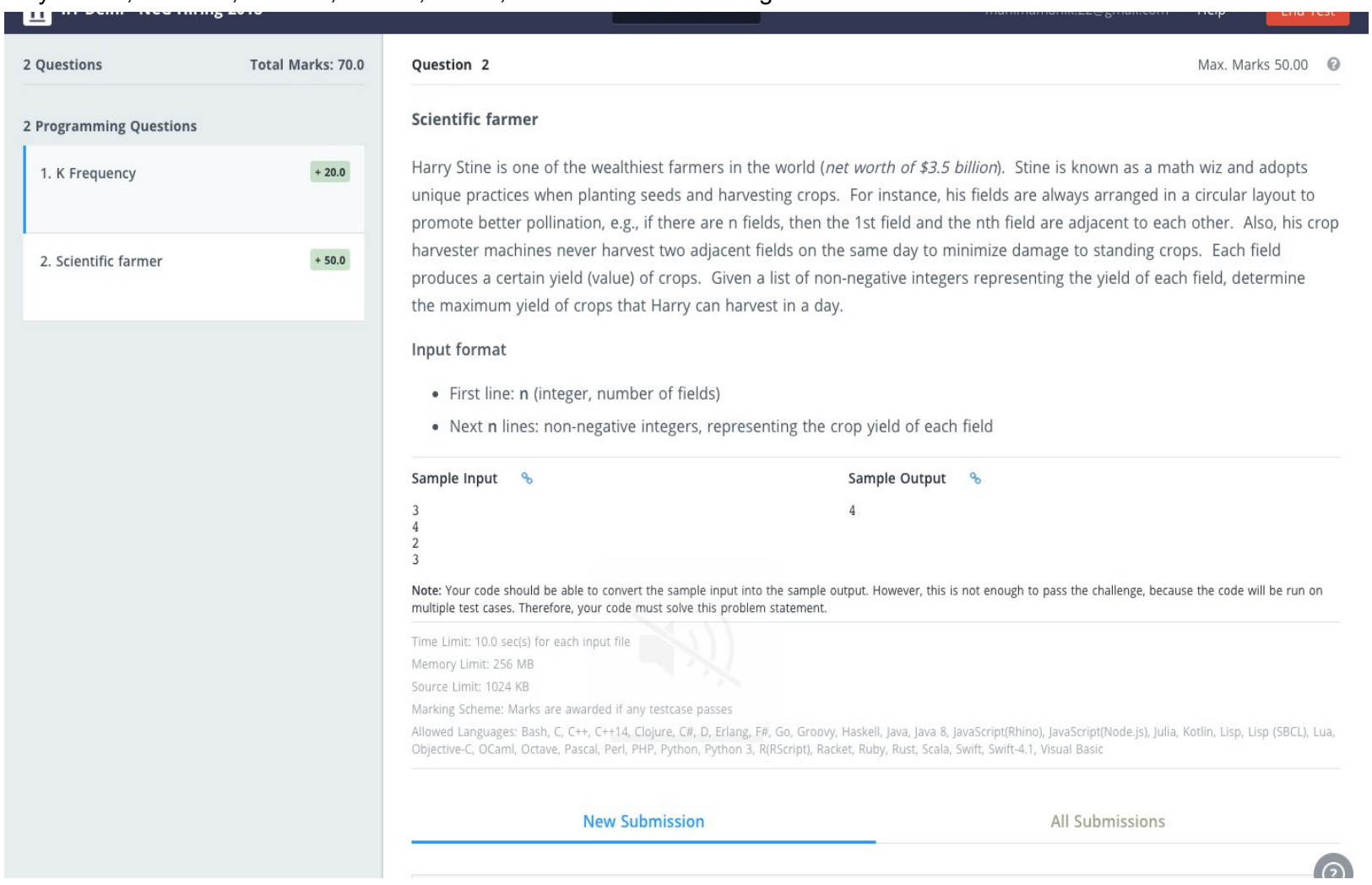
```
      A
     /  \
    B    c
```

6. # (hash)- if none of the above.

Sample Input- abcde (first line inorder)
edcba (second line postorder)
Sample output- \ (backward slash(shape))

Q2. There are N points on a 2D- grid in the form (x,y). The distance between any two points x1,y1 and x2,y2 is=|x1-x2|+|y1-y2|. We have to traverse all the points starting from any one such that the total distance travelled by you is minimum. But, there are M restrictions, in the form u,v such that you cannot traverse v after covering u.

Eg- input- 5 (N=Number of points)
1,1 2,2 3,3 4,4 5,5 (xy coordinates of these points)
1 (M=number of restrictions)
1 2 (meaning you cannot traverse 2nd point(2,2) after covering 1st(1,1))
4 3 (meaning you cannot traverse 4th point(4,4) after covering 3rd(3,3))
Output- 10
explanation--- > traverse in the order----- 2,2---> 1,1----> 3,3------>4,4------>5,5
Why not 5,5 ------>4,4------>3,3----> 2,2---> 1,1 ? ans will be 8 then right?



Alphonso

CPI Cutoff Or eligible branches?
No Cutoff

IIT Delhi

Business and data Analyst profile.(22/9/2018)
Questions for Technologist role? For tech role test is not conducted yet. When is the test?

1 hr test on hackerrank. 26 questions. 24 of them were MCQs [stats, probability, aptitude based] (+1,-1), and two were subjective in which you had to write the pseudo code.
2 subjective questions-

1. Sort a given array without using intermediate(Extra) memory. **(Could you please elaborate how to solve this?) What do you mean by intermediate memory?? If someone understands it please answer.**
2. Write pseudo code to find the difference between two times given in HH:MM:SS format.

IIT K

PPT: 14th Oct

IITB

PPT: 15th Oct

UBS

X : *70.00%* XII : *70.00%*
CGPA : ***7.00*** Course(s) : ***btechidd***
Department(s) : ***cse eee ece mat***

IIT BHU

Platform: Hackerearth
Date: 28/9/2018
Time: 1.5 hours
Section A: 30 MCQ covering Networking, DBMS, basics about finance, aptitude, OOPS (JAVA), english
Section B: programming question
Q1-> Given n cities and the profit earned by visiting that city, calculate maximum profit one can earn provided he can move to city 'j' from 'i' iff 'j' > 'i' and profit that he can earn in city 'j' is multiple of profit earned in city 'i'.
Ex-> P[]={1, 2, 3, 4, 9, 8}, output is 15.

PhonePe

IITM

Date: 1/10/18
Open for all Btech and Dual, along with CSE and EE MTech and MS
Cutoff CGPA > 6
Ctc 23 , base 14

Is python allowed???

Time complexity is really important. If you solve using brute-force, expect no more than one test case to pass. Take long long int instead of int. Hosted on doselect.com

1. [50 pts] Given an array and value K, find the max no. of array elements avg which will be less than K
2. [100 pts] Given N: array size, U: number of updates, Q: number of queries. Initially array is filled with 0s. There will be U updates lines consisting I, J, K. You need to update array from index I to J (both index inclusive) with K, i.e if I = 0, J = 3, then perform a[i] += K for i ∈ [0, 3]. Finally there will be Q no. of single number as queries IDX. you need to print what is the content of the IDX in array. If IDX = 1; then print a[IDX]
3. [200 pts] Given acyclic graph, find total no. of ways to traverse the entire graph starting from node 1
    a. Traverse dfs and count number of unvisited nodes in source's adjacency
    b. Multiply its factorial to prod
    c. Do this recursively C++ code

Jaguar LandRover (JLR)

{Eligibility=CS,MnC,ECE/EEE,Mech}
CPI cutoff=6.5
Base - 17.86L , CTC - 20.30L Bangalore

IIT Guwahati

(SOFTWARE profile) 20 minutes aptitude + 45 minutes coding round (on firstnaukri.com)
Only 1 Coding Question -

given a string, remove isolated vowels from a string, i.e, don’t remove it if there are 2 or more continuous vowels together. Both lower and uppercase to be handled.

25 minutes psychometric test consisting of 53 questions.

Walmart Labs

(They generally ask same set of questions)

IIT Dhanbad

Python also allowedlll
Time: 90 min

1. String A and B are given. Minimum Manipulation done in string A to make string A a palindrome if not and make sure that B is present as a substring in A. (40 M)

I/P-A=aaaaa ,B=bbb O/P- 3
I/P-A=archit ,B=ar O/P- 3

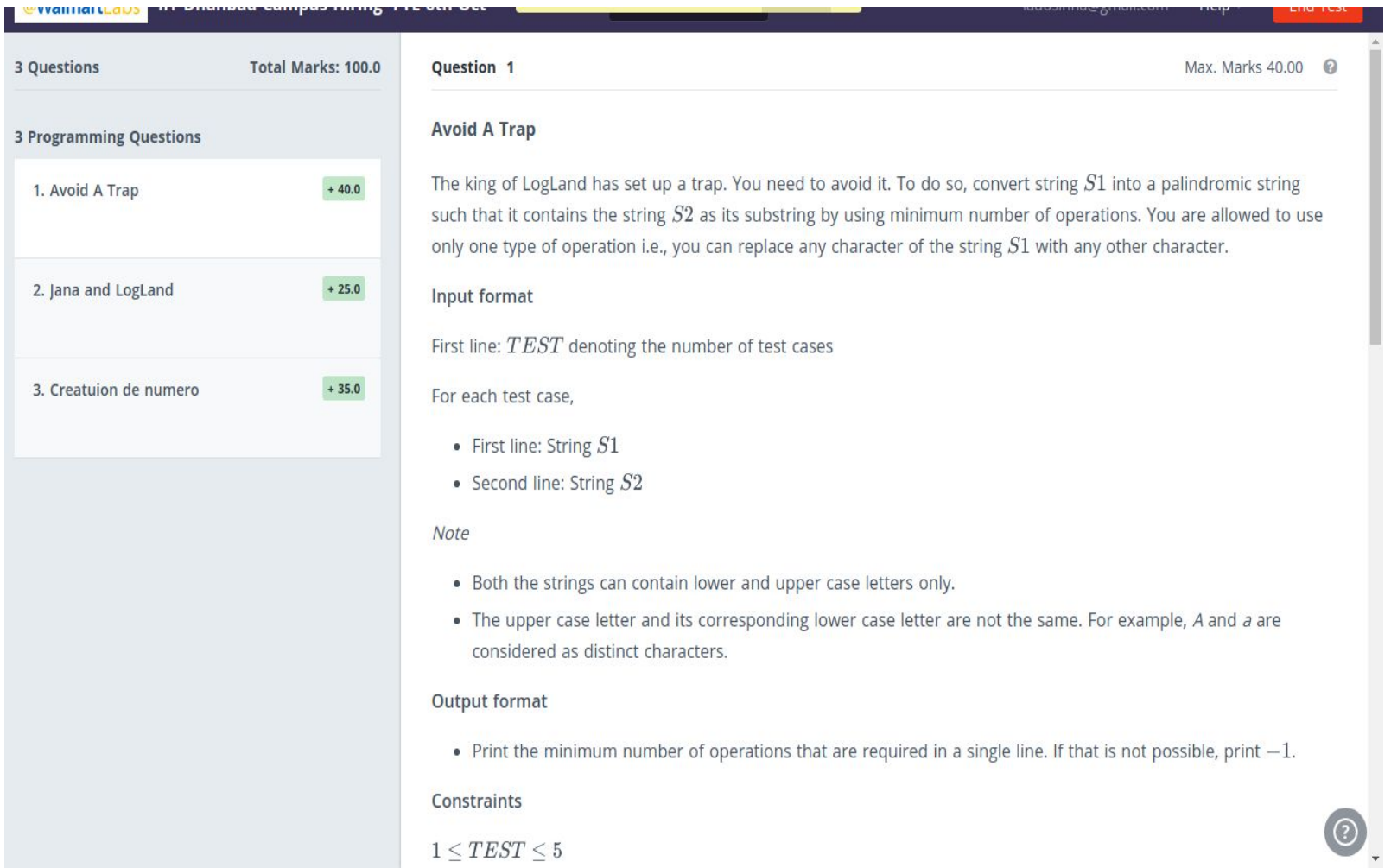
Can anyone please tell the solution to this question?

To que 1

2. From 0 make X such that you can add, subtract and double. Cost of adding and subtracting is A whereas cost of doubling is B. Find minimum cost. (35 M)

I/P- X=4, A=1, B=1 O/P- 3
0->1->2->4

3. How many K length string can be made if you can use exactly P alphabets from given X alphabets and exactly Q digits from dgiven Y digits. You are given values of K, X, Y, P, Q.



3 Questions | Total Marks: 100.0

3 Programming Questions

1. Avoid A Trap + 40.0

2. Jana and LogLand + 25.0

3. Creatuion de numero + 35.0

- Print the minimum number of operations that are required in a single line. If that is not possible, print -1.

Constraints

$1 \leq TEST \leq 5$

$1 \leq \text{Length } (S1, S2) \leq 5000$

Sample Input

```
2
archit
ar
aaaaa
bbb
```

Sample Output

```
3
3
```

Explanation

In the first sample, we can get a string "arccra" or " arhhra" as our final string which is both palindromic as well as contains "ar" as substring. We can see that our final string differs from original string i.e. "archit" in exactly *3* places. So, minimum number of operations required is *3*.

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 code will be run on multiple test cases. Therefore, your code must solve this problem statement.

Time Limit: 1.0 sec(s) for each input file
Memory Limit: 256 MB
Source Limit: 1024 KB
Marking Scheme: Marks are awarded if any testcase passes
Allowed Languages: C, C++, C++14, Java, Java 8, Python, Python 3

New Submission | All Submissions

3 Questions | Total Marks: 100.0

3 Programming Questions

1. Avoid A Trap + 40.0

2. Jana and LogLand + 25.0

3. Creatuion de numero + 35.0

Question 2 Max. Marks 25.00

Jana and LogLand

Jana is the king of log land. He wants to find a minster for his kingdom. He has tasked his pupil to find all the possible ways to make a word of length K that follows these rules:

- The word can use X number of different alphabets.
- The word can use Y number of different digits.
- The word should always start with an alphabet.
- The word should contain exactly P number of alphabets.
- The word should contain exactly Q number of digits.

And print answer modulo $10^9 + 7$.

Please help the pupil of log land by writing a code to solve this problem

Note:

Each alphabet and digit is unique and can be used multiple times.

Input format

- First line : T (number of test cases)
- First line in each test case: Five space-separated integers X, Y, K, P, and Q

Output format

For each test case, print the number of different words that can be created. Since the answer can be large, print it as

3 Questions | Total Marks: 100.0

3 Programming Questions

1. Avoid A Trap + 40.0

2. Jana and LogLand + 25.0

3. Creatuion de numero + 35.0

Each alphabet and digit is unique and can be used multiple times.

Input format

- First line : T (number of test cases)
- First line in each test case: Five space-separated integers X, Y, K, P, and Q

Output format

For each test case, print the number of different words that can be created. Since the answer can be large, print it as a modulo of $10^9 + 7$.

Constraints

$1 \leq T \leq 10^5$
$1 \leq X \leq 26$
$1 \leq Y \leq 10$
$2 \leq K \leq 50$
$1 \leq P < K$
$1 \leq Q < K$
$P + Q = K$

Sample Input

```
1
25 5 2 1 1
```

Sample Output

```
125
```

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 code will be run on multiple test cases. Therefore, your code must solve this problem statement.

Time Limit: 1.0 sec(s) for each input file
Memory Limit: 256 MB
Source Limit: 1024 KB

3 Questions | Total Marks: 100.0

3 Programming Questions

1. Avoid A Trap + 40.0

2. Jana and LogLand + 25.0

3. Creatuion de numero + 35.0

Question 3 Max. Marks 35.00

Creatuion de numero

The king of LogLand wishes to enter Spain. He is asked to solve a puzzled at th eimigration check. He is given a number X & have to obtain the number starting from **0** by performing the following operations:

- Add or subtract **1** to the current number. The cost is A units.
- Double the current number. The cost is B units.

Without making the number negative at any time, find the minimum cost of obtaining the number X when starting from **0**.

Help the king of LogLand by writing a program to do this.

Note:
The Current number cannot be negative at any time.

Input format

- The first line consists of a number T(the number of test cases).
- Then T lines follow and each line has 3 space-separated integers X,A and B.

Output format

Print T lines where each line consists of 1 integer denoting the minimum cost.

Constraints

$1 \leq T \leq 100$

3 Questions Total Marks: 100.0

3 Programming Questions

1. Avoid A Trap + 40.0

2. Jana and LogLand + 25.0

3. Creatuion de numero + 35.0

- The first line consists of a number T(the number of test cases).
- Then T lines follow and each line has 3 space-separated integers X, A and B.

Output format

Print T lines where each line consists of 1 integer denoting the minimum cost.

Constraints

$1 \leq T \leq 100$

$1 \leq X \leq 10^5$

$1 \leq A, B \leq 10^9$

Sample Input

```
2
4 1 1
4 1 5
```

Sample Output

```
3
4
```

Explanation

For the first case $X = 4, A = B = 1$.

Conversion:

0 to 1 ->cost=1 (add *1*)
1 to 2 ->cost=1 (double current number)
2 to 4 ->cost=1 (double current number) Total cost=*3*

Next case has $X = 4, A = 1, B = 5$

Conversion:

WAL MART LAB:

(17/10/2018)

IITG

1) Check if the provided number is made of alternate sequence of 1 and 0 or not .
   For example : 2 => [10] => yes, 3 =>[11]=>No, 4=>[100]=>No, 5 =>[101]=>yes.
2) Find the minimum cost of making a number sum of two single digit odd prime numbers with positive power.
   Calculate the cost where cost of increasing by 1 and cost of decreasing by 1 is provided.
   For example: Provided no is 4, increment cost 9 ,decrement cost 7, nearest no possible is 8 ,(3^1 + 5^1).
   So minimum cost = (8-4)*9 = 36.
3) A array is provided , you have to provide answers of range queries.
   There was three type of query (i) calculate the multiplicative sum of given range. (ii) calculate reverse order multiplicative sum in given range. (iii) Updation of an element in the array.

Multiplicative sum = SUM(k*Arr[i]) where 0 < k < L-R-1 , where i is from L to R
reverse Multiplicative sum = SUM(k*Arr[i]) where 0 < k < L-R-1 , where i is from R to L

```
Example : 5 3                 // array length , no of queries
          1 2 3 4 5           //array
          1 1 2               //Q1 ( 1*1 + 2*2)
          2 1 2               //Q2 (2*1 + 1*2)
          3 1 2               // Q3 update position 1 value with 2
          Output: 5 4         //5 is the o/p Q1,4 is o/p of Q2, Q3 will update the array as [2 2 3 4 5]
```

Sterlite

IITK

Test was on cocubes platform. 1hr for Verbal, Aptitude and basic quant. 30 mins for technical test.
Technical test was department wise.

For CSE question were mostly on C, synchronization and DBMS.
For EE - Out of 30 questions, at least 10 were from control systems , mostly open loop, closed loop transfer functions. Others were from power systems, 1-2 on BJTs, and 5-6 from signals , unit transfer functions, laplace transform.
For ME- 30 questions, topic asked machine design, manufacturing, Refrigeration, IC Engines, theory of machine, questions were basic but involving formulae. Different people got different sets.
For CHE - 30 questions. Topic asked were Organic Chemistry, Properties of Materials, Polymer Physics, Chemical Process Industries, Chemical Reaction Engineering, Kinetics
For MTH- No technical test

Intel

(**Please update for hardware profile also!**)

IITM

-> (Only for software guys) Coding question Merge two sorted arrays very easy
-> Aptitude 15 mins 10 MCQs
-> Technical sections (Hardware or Software - 45 mins 30 MCQs)
-> Software MCQs on OS Networks Comp arch. (Bit Difficult for elec guys)

Tesco

IITM

06/10/18
2 coding questions were asked on hackerrank and time limit was 90 min.
Questions were very tough.
Q1. some variant of Knapsack problem. Total money a girl have is N, then total no. of shops given, then bundle quantity of notebook in each store was given as an array. Bundle cost of each bundle quantity was given in another array.Find max no. of notebooks she can purchase in N money.
Ex: 501
2
24 20
2
20 19
output : 40(We need to return number of notebooks but this is total cost. right?) yes, return total notebook
Exp: she have 50$, from 0th store she purchase 24 notebook bundle for 20, then she repeats the same, to have 24 + 24 = 48 notebooks spending 20+20=40 $.

Q2. Huffman decoding. Input is the huffman mapping as a vector of string and a string of encoded message. Return the decoded message C++ code

Input: 5
a 01
b 110
c 101
d 0010
[newline] 1111
1100010110111101
Output: bdb
a

The questions were same for all or there were different sets?

ANSYS Software

IIT Guwahati

There were 2 papers:
Paper-1 (16 MCQ from OOP concepts, Operating Systems, Data Structures and Algorithms) [Time 30 minutes] [all were from Geeks Quizzes and almost all OS questions were direct questions asked in GATE exam]

Paper-2 (2 coding questions) [Time 45 minutes] **Written round on paper!**

1. Implement Round Robin Scheduling Algorithm for a number of processes and print the Completion Time, TurnAround Time and Waiting Time of the processes.

2. Given a binary tree, modify it as follows:(Note-we had to clone the binary tree as per given specifications, not just modify)

- The left pointers are kept intact
- The right pointers point to the next right sibling, if there is none to the right, then the right pointer should point to the first node in the next level

Da Vinci Derivatives

IITD

1st round (Speed Maths)

(OMR sheet) - 25 questions (15min) - mathematics, currency conversion comparison (exchange rates were provided), stock comparison (Basic multiplication and addition)

SAP Labs

IITM

All Profiles
-Hackerrank platform (1 hour) 2 coding question
Test was in sets. So people got different questions:

1. https://discuss.codechef.com/questions/134734/most-frequent-substring-problem
2. Given two strings, find the minimum number of characters that have to be changed to make them anagrams.
3. Given a string find number of valid substrings. [O(n) solution was expected] Valid strings are of the form:
    a. Followed by any number(even 0) of lowercase alphabets, digits, or colon
    b. Followed by a forward slash
    c. Followed by at least one lowercase alphabet or digit
    d. Followed by backslash
    e. Followed by at least one lowercase alphabet Start with a lower case alphabet
4. https://www.geeksforgeeks.org/check-if-a-given-sequence-of-moves-for-a-robot-is-circular-or-not/
5. https://www.hackerrank.com/contests/hack-it-to-win-it-paypal/challenges/q4-traveling-is-fun

Requested solution for 3
Was Python allowed?
Anyone have any idea how to solve question no.5 I am getting TLE in last 5 test cases?

Sandvine

IIT (ISM) Dhanbad

https://www.geeksforgeeks.org/sandvine-interview-experience-for-fte-2018/

Uber

IITD

▸ **Input Format for Custom Testing**

▾ **Sample Case 0**

Sample Input 0

```
4
13
10
21
20
```

Sample Output 0

```
1
```

Explanation 0

Given *a = [13, 10, 21, 20]*, we can swap *a[0]* and *a[3]* to get the custom-sorted array *a = [20, 10, 21, 13]* in 1 move.

▾ **Sample Case 1**

Sample Input 1

```
5
8
5
11
4
6
```

Sample Output 1

```
2
```

☆ Custom-Sorted Array

In an array, we can swap the elements at any two indices in a single operation called a *move*. For example, if our array is *a = [17, 4, 8]*, we can swap *a[0] = 17* and *a[2] = 8* to get *a = [8, 4, 17]* in a single move. We want to custom-sort an array such that all of the *even* elements are at the beginning of the array and all of the *odd* elements are at the end of the array.

For example, if our array is *[6, 3, 4, 5]*, then the following four arrays are valid custom-sorted arrays:

- *a = [6, 4, 3, 5]*
- *a = [4, 6, 3, 5]*
- *a = [6, 4, 5, 3]*
- *a = [4, 6, 5, 3]*

Function Description

Complete the function *moves* in the editor below. The function must return the minimum number of moves it takes to sort an array of integers with all even elements at earlier indexes than any odd element.

moves has the following parameter(s):

a[a[0],...a[n-1]]: an array of positive integers

Note: The order of the elements within even or odd does not matter.

Constraints

- $2 \le n \le 10^5$
- $1 \le a[i] \le 10^9$, where $0 \le i < n$.
- It is guaranteed that array *a* contains at least one *even* and one *odd* element.

▸ **Input Format for Custom Testing**

▾ **Sample Case 0**

1 3 20
2 4 100
2 3 40
2 5 10
4 5 15
Sample output
100
Explanation
In this case, it is optimal to pick up 3,2,4 in that order and going from 2 to 4 through 5. The best route is 1->3->2->5->4->5 and the total time taken on this route is 100.
You can verify that this is the optimal solution and all other routes take longer time to complete.

YOUR ANSWER

We recommend you take a quick tour of our editor before you proceed. The timer will pause up to 90 seconds for the tour. Start tour

Original code | C++14

```
#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>
```

Uber Shuttle Problem

An imaginary city Z has N(<= 20) junctions and M(<= N*(N-1)/2) roads connecting these junctions. There are N-2 passengers in total, one in each junction from 2,3,...,N-1. An uber shuttle currently at junction 1 in the city needs to pick up the N - 2 people by going to those junctions and finally reach junction N. You are given the time taken to traverse each of the M roads and the pair of junctions each of them connect. All roads are bidirectional. You can use the same road multiple times (if required). You can also pickup the people in any order you want. You need to find the minimum time needed to finally reach junction N after picking up everyone. (Your intermediate route can also pass through N. It doesn't affect the answer). Output this minimum time. If it is not possible to either reach the destination or pick up someone, output -1.

Constraints
1 <= N <= 20
0 <= M <= N*(N-1)/2
1 <= time taken to traverse each road <= 10^5
Nodes are labelled from 1 to N.
Input graph does not contain multi edges, i.e. between any 2 pairs of cities there exists at most one edge.
Input format
First line contains 2 integers N,M as defined in the problem statement.
Next M lines contains 3 integers u v w each representing the 2 junctions the road connects and the time taken to traverse that road respectively.
Output format
Output 1 integer representing the minimum time required to pick up everyone and reach the destination.
Output -1 if the task cannot be completed.
Sample input
5 5
1 3 20
2 4 100
2 3 40
2 5 10
4 5 15
Sample output
100
Explanation
In this case, it is optimal to pick up 3,2,4 in that order and going from 2 to 4 through 5. The best route is 1->3->2->5->4->5 and the total time taken on this route is 100.

Will O((2^n)*(n^2)) pass? This will be the order when we apply bitmasking+floyd warshall.

It must return the number of different possible sequences of getting those points. As the answer could be very large, return the value of result % (10^9 + 7).

Input Format
The locked stub code in your editor reads the following input from stdin and passes it to your function:
The first line contains a single integer X.
The next line contains a single integer Y.

Constraints
$0 \le X,Y \le 10^9$

Output Format
The locked code in the editor prints the return value of the function.
Your function must return the number of different possible sequences of getting those points. As the answer could be very large, return the value of result % (10^9 + 7).

Sample Input 1
3
25

Sample Output 1
2925

Explanation 1
There are 2925 different sequences to reach the score (3,25).

Sample Input 2
24
17

Sample Output 2
0

Jenny is a big sports fan, especially uberball.

Rules of uberball are following :
- The match is played by 2 teams
- During one round of the game, a team scores a point, and thus increases its score by 1.
- Both team starts with 0 points each.

The game ends when
- One of the teams gets 25 points and another team has < 24 points (strictly less than 24).
- If the score ties at 24:24, the teams continue to play until the absolute difference between the scores is 2.

After the game has ended, the final score is given in the format X:Y, which means the first team has scored X points and the second has scored Y points, can you find the number of different sequences of getting points by teams that leads to this final score?

Complete the function uberball in your editor. It has 2 parameters:
An integer X.
An integer Y.

It must return the number of different possible sequences of getting those points. As the answer could be very large, return the value of result % (10^9 + 7).

Input Format
The locked stub code in your editor reads the following input from stdin and passes it to your function:
The first line contains a single integer X.
The next line contains a single integer Y.

Constraints
$0 \le X,Y \le 10^9$

Output Format
The locked code in the editor prints the return value of the function.
Your function must return the number of different possible sequences of getting those points. As the answer could be very large, return the value of result % (10^9 + 7).

Mentor Graphics

IITH

Min CGPA: 7.0, EE,CS (B.Tech and M.Tech)
50 min 4-coding questions
3 Sections (Apti, C++ basics, Coding)

1. Number N, number of bits K, rotate number R bits
   e.g.: N = 0000 0010 0001 1010, K = 12, R = 3, output = 0000 0100 0100 0011
2. Rotate every pair of linked list
3. https://www.geeksforgeeks.org/add-greater-values-every-node-given-bst/
4. Given char array, replace every duplicate char by next non-repeated char e.g.: GeekG ----> GefkH

Harness

IITR

Test was conducted on 9/10/2018.
CPI cutoff: 7.0
10 MCQ's computer science basic
2 functional coding problem

(i) Operations of stack.
→ Super Stack -

- Push
- Pop
- inc e k(increment last e items by k)
  (O(n^2) doesn't pass all cases) Solution: Think it the lazy propagation way..

(ii) Count the min modification to make two strings anagrams.
https://www.geeksforgeeks.org/minimum-number-of-manipulations-required-to-make-two-strings-anagram-without-deletion-of-character/ Solution: Maintaining simple count array works. Which is almost bruteforce :)

IITG

1) Find minimum elements of all k size window of an array , and find max element among them.
2) Count no of path from (0,0) to (end,end) of a grid. You can go only left and down from any point. There will be obstacles in the matrix . (https://www.interviewbit.com/problems/unique-paths-in-a-grid/)

Greenland Investment Management

IIT K

Date: 10/10/18
Pen paper based 1 hour, 3 sections: first one focussed on writing programs/functions: printing Fibonacci numbers using recursion, reversing a string using memory efficient method, detecting loop in a linked list.
Second one focussed on SQL
Third one was from Prob and Stats and stock prices.

1) Given positive correlations between A and B and B and C, does it imply positive correlation between A and C
2) Finding monthly volatility given the annual volatility rate=2*(3)^0.5.
3) If Annual Volatility of Stock is given to be 2*(3)^0.5 then what is the probability that the stock closes above Rs102 after a month’s end. (Price of the Stock=Rs100)

Juniper Networks

IIT K

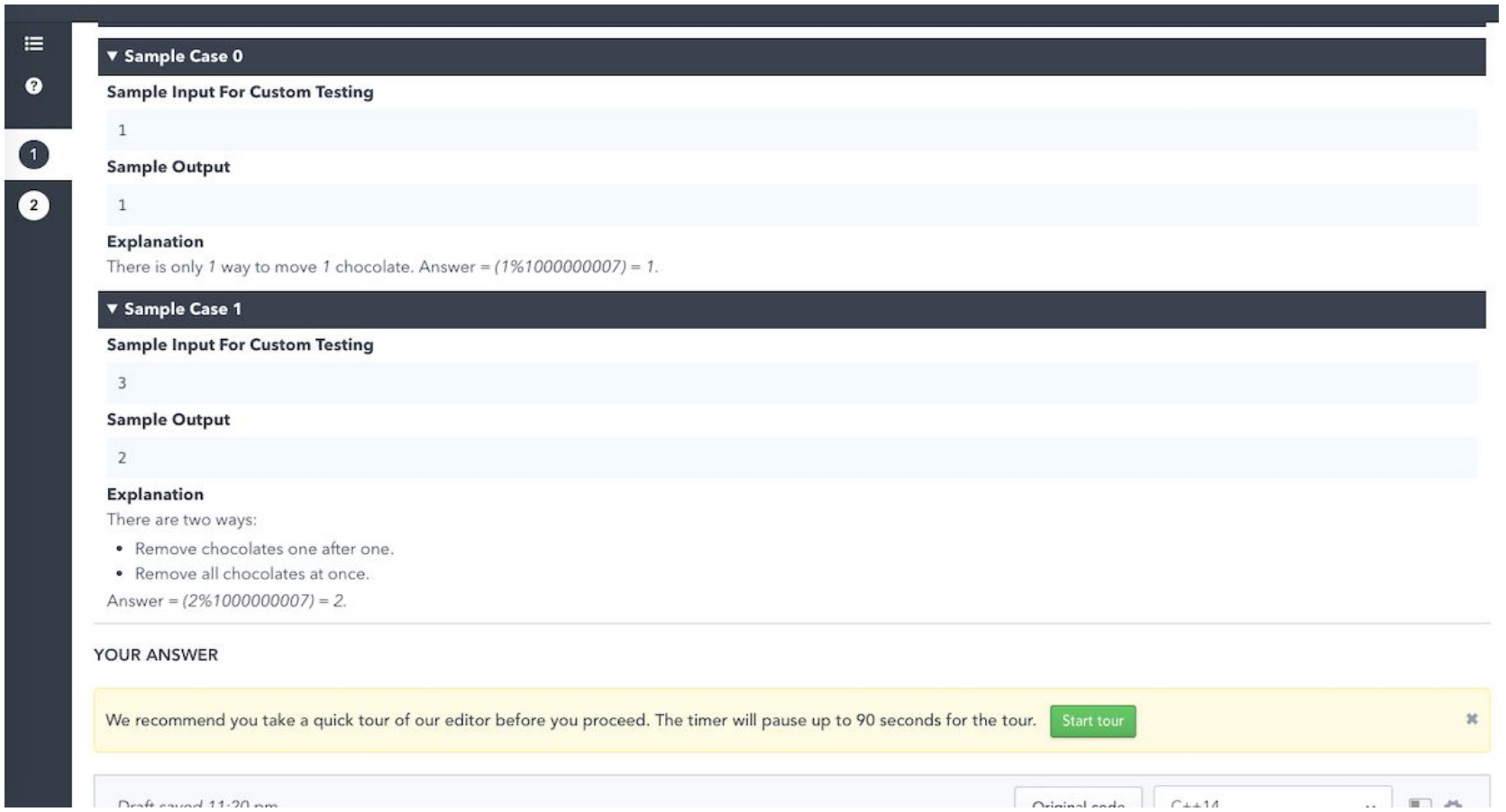
CPI Criteria- 7.5; Date- 10/10/18
There were 10 Aptitude, 20 Technical and 3 coding questions.
For Technical questions practice memory allocation in C and pointers. Some of them were on networks. A few were on simple algorithms. Practice OS well if you want to do good in this section. There were some hard questions from OS.
1 question I remember from this section. Given 4 data structure you have to tell which is sufficient to store given IP address.
Aptitude questions were normal but time consuming.
Q1- You are given a string of length 24 consisting of 1's and 0's. First 8 chars represent Red component, next 8 Green and last 8 represents Blue component of a color.
You are given RGB values of 5 natural colors(as integers and fixed). You have to return closest color. Here closeness is defined as euclidean distance between colors.
For e.g- White = (255, 255, 255); Black = (0, 0, 0); Red = (255, 0, 0); Input = 000000001111111100000001
Here for this input RGB components are (0, 255, 1);
Distance with White = 359.918
Distance with Black = 255.1
Distance with Red = 359.919
So this is closest to Black, hence output is "Black"
Q2- This was related to N queens problem. You are given column number of queens in each row. You have maximum number of times a queen can be attacked. Here is modified version of this problem:-
https://www.hackerrank.com/challenges/queens-attack-2/problem
Instead of obstacles there were other queens and you had to find number of times this queen can be attacked by another queens and then maximum of it. There was a catch e.g- If 3 queens are in diagonals(say (1,1) (2,2) & (3,3)) then this will be counted as 1 attack for (3,3).[**This is what I think as all tests were not passing, so it's my guess why**]
Q3- You are given a library of n words(say w[0].....w[n-1]), length of each word is maximum 60. You have to choose a word and you can delete one letter from this string and if this results in string from this set then continue doing so and return the max number of steps this can continue. Solvable in O(n*60)
E.g- dictionary = {"abc", "bc", "b", "bde", "a"}
Then answer will be 3 as "abc"->"bc"->"b"

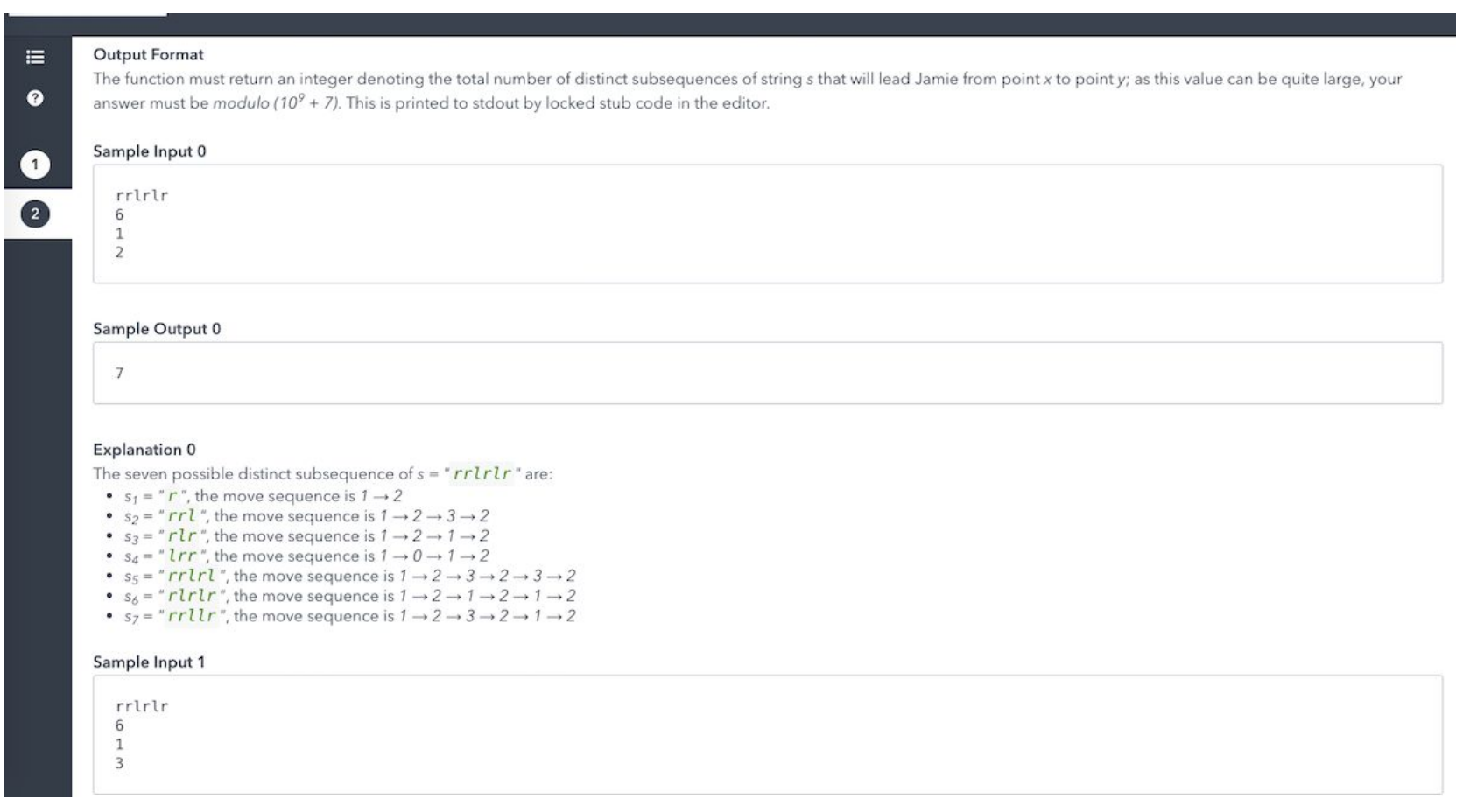
Rivigo

IITD

2 coding question - 1hr 15min

For which job profile (Business Analyst/ Algorithm Engineer/ Software Engineer), these questions were asked ?





IITG

2 coding questions 1:20 hrs
CPI cutoff = 6.5
Solve all dp from LeetCode.

1. https://www.geeksforgeeks.org/minimum-steps-reach-target-knight/
2. https://leetcode.com/problems/cherry-pickup/description/

Quadeye

IITD

1 hr pen-paper test.

Two profiles: **System Engineer and Quant**

3 sections of paper:

1st(both profile): 30q, Gate level C programs, OS related it, general probability e.g find expected values, use bayes theorem etc. This section has to be done by all

2nd(For quant profile): 7q, Main Quant section. Don't know much.

3rd(For system engineer profile): 7q, C and OS, diff between deadlock and livelock, what is switching & routing, Determine No. Of vtble & vptr of given classes, predict output of given C program, related to Preprocessor manipulation etc,

Good luck

IITK

60 min Pen Paper test
section A: Quant 30 most of them single correct choice
section B: Strategy role 7 subjective
section C: Engineer role 7 subjective
Very less time to complete. Do take your watches with you. Try to do your section B or C fully

Section A

1. Given rv's X and Y in (0,1) find the probability that X + 3Y lies in [1,3] {½, ⅔, ¾, ⅘}
2. Minimum integer value of v where x□y□z□w□v has median 25 and mean 30 {1, 14, 25, 37, 38}
3. How many minimum comparisons to get second largest number out of an array of 32 numbers {18, 32, 64, 76}
4. What is the expected number of rolls to get two consecutive 5s? {36, 42, 56, 112}
5. Plot $x^{1/x}$.
6. Write a method to return n^{th} fibonacci number
7. Write a method to return the number of trailing zeroes in n!
8. person A rolls twice and the sum of the numbers on top is 4, similarly for person B the sum is 11. What is the probability that B has higher sum?
9. In Bag A there are ■ Black, ■ Blue marbles. One is chosen randomly and put in Bag B that already ■ Black and ■ Blues marbles. What is the probability that a Black one comes out of one is now chosen at random from Bag B?
10. A lily leaf in your pond grows to twice its area every day and the pond gets full in 33 days. If you start with 8 lily leafs in the beginning, in how many days does the pond gets full? {15, 18, 25, 30}
11.

Section B

1. If there are 100 rods and you bend them so that all 200 ends are indistinguishable and now you keep choosing 2 random ends and gluing them together (a) what is the expected number of loops formed? (b) what is the probability that a single big loop is formed? http://brainstellar.com/puzzles/207
2. If a postman puts letter 1 to 100 randomly in 100 envelopes numbered 1 to 100, what is the expected number of letters that are put in the correct envelope?
3. If X & Y are uniformly distributed pdf then find the cdf of X+Y.
4. What is the expected number of cards that need to be turned over in a regular 52-card deck in order to see the first ace? http://brainstellar.com/puzzles/209

Section C

1. Semaphore s = 2, there is a shared variable x = 0 initially, process X, Y use wait P, do x++, signal V, while processes Z, W do wait P, do x-=2, signal V. Give a possible scenario where the final value of x is (a) -3 (b) 2
2. What is the final output?

```
int main() {
     try {
          int *p = NULL;
          *p = 5;
          printf("%d\n", *p);
     } catch {
          printf("pointer was NULL");
     }
     return 0;
}
```

3. Print the output:

```
int main() {
     u_int8 arr[] = {45, 23, 16, 7, 45, 231, 23, 8, 7, 231};
     u_int32* a = (u_int32 *)arr;
     printf("%d\n", a[0] - a[1]);
     return 0;
}
```

4. Algorithm to find if two strings are anagrams
5. Objective: Get only 5 objects of a particular class. Write Pseudocode
6. Difference between IPC and RPC
7. Write a method to determine whether your system is operating in little endian or big endian

IITB

Date : 13/10/18
Duration: 1 hr pen paper
Open for: CS , EE Btech
Roles : Quant Strategist & System Engineer

Question paper same as above for IITD & IITK.
section A: Quant 30 most of them single correct choice
section B: Strategy role 7 subjective
section C: Engineer role 7 subjective
Checkout the probability puzzles from brainstellar.com . Some questions in section A & B were directly from here.

Indeed India

IITK

3 coding problems on Hackerrank platform - 90 minutes

1. There is a gate in an amusement park. There is an entrance queue and an exit queue. Given two arrays of length n, time[ ] and direction[ ] such that time[i] represents the time when person_i reaches the gate and direction[i] represents whether the person is joining the entrance queue or exit queue, output an array timestamp[ ] of length n such that timestamp[i] represents the time when person_i crosses the gate. The gate operates as follows:
    a. If the gate was used at time t - 1 for entrance, then entry queue will be preferred.
    b. Else If the gate was used at time t - 1 for exit, then exit queue will be preferred.
    c. Else exit queue will be preferred.

    $1 <= n <= 10^5$, $1 <= time[i] <= 10^9$, time[i] <= time[i+1], direction[i] = 0 means entrance, direction[i] = 1 means exit.

    C++ code
2. Totale different combinations possible from 5556477 etc where 555 is tapping a numeric key in your phone thrice for a letter. For eg if keys mapped to 5 are fgh so 555 can represent fff, fg, gf, h so → 4
3. Converting gray code to binary. It wasn't exactly gray code but a variant. It went on from 2^k to 2^{k-1} to 2^{k-2} and so on till 0.

Oracle

``IITR

Date - 14th October, 2018
Profile:- Application Engineer and Server Technology (Test was same)
1st Test
MCQ-3 section-Total 7 sub-sections,time allotted as per sub-section, 87 min test, Roughly around 60 questions. (AVL Trees, Trees, BST, DBMS- 25 questions around) (20 questions- Aptitude)
2nd Test
2 Coding Ques in 1 hr

Bletchley Park and the Enigma

Problem Statement:

At the height of World War II, in the early 1940s, British mathematicians, led by Dr Alan Turing developed an astonishing code breaker called Enigma at Bletchley Park. Enigma could easily catch and breakdown the messages being sent from and to the Axis powers. The next step was to track down the traitors, the people in civility who were secretly revolting against the crown, and sending crucial war information through radio channels, to the enemies.

In those days, the radio transmission overseas had a simple flaw. It had to be acknowledged within a standard time period **D** or it would be rendered futile. So the enemies and the traitors would both need to respond to one other's message within the given time duration for correct acknowledgement of information. Dr Turing was tasked to encode a simple algorithm within Enigma. Let's say a British **X** sends one radio message to a German **Y** at time **T1** and **Y** sends a radio message to **X** at **T2** such that **0<T2-T1<=D** then X and Y are co-conspirators. Enigma had access to all the radio transmission done overseas. Lets say if you time travelled to Bletchley Park, London at the said time, could you help Dr Turing develop an algorithm for the same ?

Input format:

The first line of the input contains two integers **N and D ($1 \le N, D \le 1000$)**. **N** is the number of radio transmissions recorded in Enigma and **D** is the maximum time difference.

The next **N** lines contain the transmissions log. The **i**-th line contains one line of the radio transmission record formatted as "X_i Y_i T_i", which means that person X_i sent a message to person Y_i at time T_i **($1 \le i \le n$)**. X_i and Y_i are non-empty strings at most 20 characters long, consisting of lowercase letters

Fun Jump

Problem Statement:

Stuart is funny and he likes to jump a lot. There are **N** boxes in a line numbered **1** to **N**. Each box has a value **A[i]>i** which represents that from box **i** Stuart can jump to any box till **i+A[i]** and **A[N]=0**.

P[i][j] is the minimum number of jumps needed to reach from box **i** to box **j**.

X[i] is the sum of **P[i][j]** such that **i<=j<=N**.

Find the sum of **X[i]** for **1<=i<=N**.

Input Format:

The first line of the input contains a single integer **N ($2 \le N \le 100\,000$)** — the number of boxes.

The second line contains **N** integer **A[i] ($i < A[i] <= N$)**, the **i**-th of them means that at the **i**-th box Stuart may jump to each box from **i + 1** to **i+A[i]** inclusive.

Output Format:

One line, that is the sum of **X[i]** (defined above).

Sample Input 1:

```
3
3 3 3
```

Sample Output 1:

```
3
```

Fractal Analytics

IITK

Date - 13th October,2018
Profile - Data Scientist
4 coding questions/ 1:15 Hour test on hackerrank

1. Given a vector of strings where each string is an operation. Print top element after every update.
   There were 3 type of operations- “push k”, “pop”, “inc e k”. Here “inc e k” mean increase bottom e elements by k.
   E.g- [“push 4”, “pop”, “push 3”, “push 5”, “inc 2 1”, “pop”, “push 5”, “push -1”, “inc 1 5”, “pop”]
   Ans: [4, EMPTY, 3, 5, 6, 4, 5, -1, -1, 5]
2. Given a src position (x1, y1) and a destination position (x2, y2). Return “Yes” if destination is reachable from source and “No” otherwise. Only 2 movements were allowed. (x, y) -> (x+y, y) or (x, x+y). 1 <= x1, y1, x2, y2 <= 1000 (https://www.geeksforgeeks.org/check-destination-reachable-source-two-movements-allowed/)
3. Minimum Operation on the string so as no consecutive letters are same. (Operations : Select any char and replace it with any another) . EX . Boook → Boxok (expected output: 1)
4. Given a source string and a target string, both length up to 10^5, find the minimum length of a circular substring which contains the target string. If no such substring exists, return -1. Circular substring means any substring of the rotated source string. For e.g. if source string is “fuck” then all circular strings will be {“fuck”, “uckf”, “ckfu”, “kfuc”}. String x contains string y if all characters appear at least the same number of times in x as it appears in y. E.g. for source “kecrha” and target “ack”, the best possible answer can be for the circular string “hakecr” where the relevant substring is “akec” containing “ack”. Hence the final answer is 4. C++ most efficient code

Sprinklr

IITK

Date - 14th October,2018
Profile - Product Engineer & Platform Software Engineer
3 coding questions/ 1:45 Hour test on hackerearth
Codes provided by default in all the 3 questions can be completely removed. I was overwhelmed by the code for Q1 and I wrote complete new code from scratch and passed all cases.

Q1(150 marks)- Given a tree with N nodes and values associated with them, root R, n-1 edges. You had to perform Q queries, queries can be of 2 types: (i) update i k: add k to the value ith node (ii) sum i: Report sum of subtree rooted at i.
Constraints: N <= 10^5 ; k <= 10^7 No need to implement Segment Tree :(n^2 algo passes all cases

Q2(50 marks)- You are given a function f(i) = f(i-1) * ($A*i^9$ + (B*i! + 1)*i^i + C*(i^(i^i))). Where A = a*m, B = A*(b+c), C = 5*B + ($A*\log_{10}(b*c)$)
Input:- n, m, a, b, c
Output:- f(n)%m
Solution- In case (n >= m) it's divisible by m so return 0;
In case(n < m) the problem boils down to (n^n * (n-1)^(n-1) * ….. * 1^1)%m as A, B and C are divisible by m.

Q3(100 marks)- You are given an array (length <= 10^5) of 0's and 1's. Is it possible to split array into 3 parts such that decimal value of all 3 parts is same? If possible, return the decimal value else return -1.
Solution - Count number of 1s. If 0, return 0. If not divisible by 3, return -1. Else divide by 3 and find the value: if you iterate from the back of given array, you can figure out the number of trailing zeros in the last split, say tz. Now you know the required number of 1s in each split and the number of trailing zeros as soon as you hit the last 1 of any split while scanning from left to right. Store the splits in vectors and remove leading zeros and compare - v1 != v2 or v2 != v3 then return -1. Else you already have the vector and you can report the desired value.

NetApp

IITG

te - 13th October 2018
Profile - Software Developer
2 coding questions/45 mins on their own platform
30 MCQ questions/30 mins on their own platform
Coding question 1: Given an array of size n where each the ith index has the value i, count the number of subsequences whose product is even.

Coding question 2: You are given a grid of size m*n, where there are 3 types of values: ‘X’ invalid, ‘0’ can be visited and ‘1’ can be visited. You are stationed at (0,0) facing right. What is the maximum number of 1’s that you can visit?
The condition is that you can do only two types of movements, either you can move one step to the direction you are faced, or you can move down and reverse your face.

The MCQ questions were based on OS, Networking concepts and General Aptitude.

IITK

Set 1:
Coding q1: GIven a number n, 1<=n<=10^18. Find all divisors of n. For each divisor d, count numbers less than d and co-prime to d (basically euler totient function, phi), and sum up these counts.
Ex. for n = 4, divisors are 1,2,4. phi(1) =1, phi(2) = 1, phi(4) = 2. So answer is 1+1+2 = 4

Set 2:
Coding q1: Repeated coding question 1 IITG. {even product subsequence}
Coding q2: Given a binary array find the longest non decreasing subsequence and return the product of number of zeros and ones.

APPDYNAMICS

IIT-GUWAHATI

Time: 90 minutes

Platform: Hackerrank

→ Total 15 questions , 12 mcqs and 3 coding :- Coding questions are relatively easy..

→ Mcqs are based on data structures (easy)..

* on XOR linked list
* on recursion tail
* on B-Trees
* on stack uses
* probability
* Aptitude

→ 1) you will be given value of k and you need to find the value of n for which ;

n*(n+1) = 2*k; if integer value of n is not possible take the floor of n. The values are big so you need to use long or long long . I just simplified and given the main part of the question the actual question building was quite different.

2) Given an array you have to find the degree of divisibility of the array which is the max of divisibility of all elements then just multiply degree with 10^5 which was termed as **strength**. Then 2 terms were given no. of instructions and time for each instruction just calculate the total time by multiplying and if this value is greater than the strength return 1 else return 0.

- very easy problem

3) Have to construct a k-ary tree and then the from the given node have to traverse and return the number of nodes containing prime values.

Please update 2 more questions +10

IIT D

Questions: https://imgur.com/a/PIXIxR8

Go, slay them. Good luck.

IITK

1. https://www.careercup.com/question?id=5721734273564672

2. Simple Ad-hoc question. Hardest part was to understand the question itself.

Key-value pairs were given as strings, and if a key appears once again, then you need to update the value of that key every time. And return the values in the order in which their keys appeared first.

3. Undirected unweighted graph was given. We need to return nodes in increasing order of the distance from a given source. Simply apply BFS to find distances of all nodes, sort nodes according to distances and return.

4. MCQs based on trees, B-trees, time complexity, sql queries, etc. (Simple GATE level)

IIT R

1. Simple ad hoc math question. (Bruteforce)
2. No of co primes with a number in a given range (Bruteforce)
3. Similar to rod cutting but no DP. (Bruteforce)

FORTANIX

2 Questions in 45 minutes on co-cubes

IITK

Date: 14/10/18

1) https://www.geeksforgeeks.org/given-an-array-arr-find-the-maximum-j-i-such-that-arrj-arri/
2) https://www.geeksforgeeks.org/wildcard-pattern-matching/
(1 DP question and 1 other question afaik)
SET 2
1)https://www.geeksforgeeks.org/maximum-product-of-4-adjacent-elements-in-matrix/
2)https://www.geeksforgeeks.org/wildcard-pattern-matching/

SET 3
1)https://www.geeksforgeeks.org/transform-one-string-to-another-using-minimum-number-of-given-operation/
2)https://www.geeksforgeeks.org/write-c-code-to-determine-if-two-trees-are-identical/

SHUTTL

IITK

Software engineer:
14 questions (10 multiple choice + 4 coding) on HackerRank
Business Analyst:
60 MCQ in 60 min. (type is same as of Pariksha but bit tougher than that)
IMP - Time management

Queries / Requests

Any update about Goldman Sachs Bangalore Office Test dates for IITs?

Can there be a google form for submitting questions this doc be made view only? People are questions.

HSBC CPI cutoff any IITs?HSBC GM (Analyst): IITK - open to all, no cutoff

Specific source of quant questions quadeye? 50 CP, Brainstellar

Tesco Visited any college?

Somebody having any information on test of juniper networks ? Yes, Test was conducted on 10th Oct @ IITK

Please add JP Morgan Chase (Quantitative Research Profile or software profile) questions if visited by any IITs/NITs or questions for Quant Research profile by any other company as well.+3+1

Could people also post the probability and data science questions as well in this sheet ? For Goldman Sachs, Zendrive etc ? Screenshots of Data Science and Quant questions would be of much help ! +12

Did IBM Research visit any college? Please update the dates and questions +1

IITD people please add NUTANIX QUESTIONS ?? And what was CG cutoff ? questions added. cg cutoff was 7.5, Only open for CSE? Open to all

Is Analog Devices coming for recruitments in any college? Yes IITM IITB

Is Rivigo Services (Algorithm Engineer) Open for Electrical Engineering students as well? No

Did Myntra visited any college? Visiting IIT R on 14th OCT, Postponed now

NIT people, please add the details in the doc as the placements are already going on/done at your campuses

HAVE COMPANIES STARTED COMING FOR MECH ENGG ??

Nagarro questions IIIT DELHI?

AQR conducted test in any college?

Selection process of GEP.

What is the selection procedure for minds.ai?

What questions were asked in minds.ai test?

Microsoft and flipkart question IIIT Bangalore ??

SAP Labs conducted test in any IIT? IITM

Nutanix conducted test in any IIT? yes,IIT Delhi

PLZ UPDATE SAP LABS QUESTIONS, updated

What kind of problems does zendrive asks in tests?? +100000

Data science profile - 15 MCQ

Software developer profile - 3 coding question

https://stackoverflow.com/questions/49284510/generate-string-equals-to-given-sum-within-given-character

Solution

More questions posted above

Arista Network had been to any College ? Yes,(IITM) | (IITK) Test is also scheduled on 20th October.

Please update questions for Arista

Versa Network conducted test in any college (IIT,NIT,IIIT) ?(Yes, IITM)

Anyone from IIITD, please update the Qualcomm questions

Please update intel questions if it visited any IITs/NITs. +1 (Yes, IITM,updated)

Has Fractal Analytics visited any IIT/NITs? Finalized interviews in iitk -- Shortlist done .. Yes

Did Uber visit any IIT/ IIIT/ NIT ? If so please add questions. Or has anyone so far given the offcampus uber second round? Just mention that it was offcampus and add questions.
Visited IITD, added questions above

Did Rivigo visit any campus? Can you add relevant questions or details ? Check above (IITD)

Tower Research visited any college?? Please add questions? +4

NIT GUYS PLEASE ADD THE QUESTIONS ASKED BY TESCO

Please update Samsung Semiconductor questions if it visited any IITs/NITs. IITK.

Anyone have intel last year questions? or if it visited any IIT this year then this year questions ? Last year there was no test. Only resume shortlist

Did Super Highway Lab (Shuttl) came for software engineer role anywhere? IITK

Trexquant process ??? anyone???

Did DE Shaw visit any college yet? Please update the questions asked.

Please add Microsoft questions if any IIT has its test

Please add Walmart Labs questions if any IIT has its test

Any update about APM role of flipkart? Anybody shortlisted????????????? When will result declare? By next week. Not out yet :/

Update about dynamic technology labs ?? Pattern of the test?
Please add Sapients test Questions

Please update the flipkart questions ??

Is IBM Research coming to any college ??

Did Fidelity visit any college yet? Please update the questions asked.
in IITG 14/10.

Did fortanix take any test in any IIT as of yet ? iitk

Has Oracle visited any of the colleges? IITR 14th Oct, IITB 17th oct

IIT Delhi Plz add APPDYNAMICS and APT Portfolio +10

Is Rubrik visiting any IIT? IITM,IITB

Can somebody give an update on the questions asked in HSBC trainee Software Engineering test??? IIT BHU???

Do they allow python in SAP labs(Data Science profile) coding test and what about fractal analytics(Data Science) ?

Did Walmart visit any other campus other than ISM?

What is flow traders second test after speed math?Any Idea about behavioural fit?

Any idea about the test of Gartner . Some questions or preparation sources ?

Which all companies released shortlists???

IIT D, IIT M people- Do we need to solve coding questions for data science profile too???????

Please Add Indeed India --- IITK people!! Added one with solution :)

Does anybody know about Flow trader’s HR interview format? Did they ask anything particular in Finance like arbitrage??? Yes, standard HR questions. Did anyone get a call after the HR interview ?Nope. They said they will communicate within a week.