Please add all question in this doc with heading :
Company name @ College Name , Date

Please group papers of same company together

DIRECTI @IITKGP 18 NOV

You are given a rectangular grid with 2 rows and N columns. The top row is labeled 1 and the bottom row is labeled 2. The columns are labeled from 1 to N in increasing order. Each cell in the grid contains a single character.

Consider a hamiltonian walk in this grid. Meaning, pick a starting cell, say (i,j), and consider a path that starts from (i,j) and goes through every cell in the grid exactly once. Note that you can only walk to adjacent cells, or cells that you share a common edge with. There may be several such paths. Let us concatenate the characters in the order in which the cells are visited during a walk. The string formed can be called the string for the walk.

Among all the possible walks, and their respective strings, find out the lexicographically smallest string. We know that the length of the strings are all the same - to be precise, 2N. Thus, the lexicographically smallest string is simply the alphabetically smallest string if you compare the characters from left to right.

Input

The first line of input contains a number T, the number of test cases. Then follow T test cases. Each test case contains 3 lines. The first line contains the number N, the number of columns in the grid. It is well known of course that the grid contains 2 rows. The next two lines contain the description of the grid in the form of two strings; the string of N characters in row 1 from left to right and the string of N characters in row 2 from left to right, respectively. Each character will be a lowercase engish letter.

Output

Output a single line for each test case. The line must contain a string with 2N characters. This string should be the lexicographically smallest string for some hamiltonian walk in the grid.

Constraints

$1 \leq T \leq 100$
$1 \leq N \leq 10$

Sample Input

```
2
3
abc
def
10
ababaaabab
bababababa
```

Sample Output

```
abcfed
aaababababababababab
```

Explanation

In the first test the possible strings are { abcfed, adebcf, adefcb, badefc, bcfeda, cbadef, cfedab, cfebad, dabcfe, dabefc, defcba, edabcf, efcbad, fedabc, fcbade, fcbeda }. The smallest string is abcfed.

You are given a large array of 10,000,000 bits. Each bit is initially 0. You perform several operations of the type "Flip all the bits between start_index and end_index, inclusive". Given a sequence of several such operations, perform all the operations on the array. Finally, split the array into sets of 4 bits - first four, next four, then next four and so on. Each set can represent a hexadecimal integer. There will be exactly 2,500,000 hexadecimal integers. Calculate the frequency of each of the hexadecimal integers from '0' to 'f' among the 2,500,000 integers, and print it. See Input / Output and explanation of Sample Input / Output for clarity.

Input

The first line of input contains an integer T ($1 \leq T \leq 10$), the number of test cases. Then follows the description of T test cases. You should assume that the array has exactly 10,000,000 bits and that the bits are all unset at the start of each test case. The first line of each test case contains an integer N ($1 \leq N \leq 10,000$), the number of operations performed. The next N lines contain two integers separated by a space, the start_index and end_index for the respective operation. Note that the flip operation is performed from start_index to end_index, inclusive. Also, the array is 1-indexed - meaning, the smallest index is 1 and the largest index is 10,000,000.

Output

For each test case, output 16 integers on a single line, separated by single space characters. The first integer should represent the number of times 0 occurs among the 2,500,000 hexadecimal integers created according to the problem

statement. The second integer should represent the number of times 1 occurs among the 2,500,000 hexadecimal integers created according to the problem statement, and so on.

Constraints

1 ≤ start_index ≤ end_index
start_index ≤ end_index ≤ 10,000,000

Sample Input

```
2
2
1 4
9999997 10000000
2
3 6
5 8
```

Sample Output

```
2499998 0 0 0 0 0 0 0 0 0 0 0 0 0 0 2
2499998 0 0 2 0 0 0 0 0 0 0 0 0 0 0 0
```

Explanation

In the first test case, after we perform the two operations and split the array into 2,500,000 groups of 4 bits, the first and the last group will have all 4 bits set - representing 'f' hexadecimal digit. All the other groups will have all 4 bits unset - representing '0' hexadecimal digit.

In the second test case, after we perform the two operations and split the array into 2,500,000 groups of 4 bits, the first two groups will have the state 0011. This represents the hexadecimal digit '3'. All the other groups will have all the 4 bits unset - representing '0' hexadecimal digit

BrowserStack Round 2 @ IIT BHU (15-11-14)

Total 5 to 6 hours time. 3 Questions. Googling, use of any other site was allowed.

Ques 1.) In this program you have to consume Twitter.com's REST API.

Write a program that, given a hashtag H and a number N,

- fetches the N most recent images (no duplicates) associated with that hashtag

- and generates a web-page (an HTML file would do) which displays these images as a simple slideshow

You may attempt this problem in any programming language but you may NOT use a third-party library like *twitter4j*. You may have to create a new Twitter account if you don't already have one. Visit Twitter App Management to register a new app and obtain an API key. See Twitter REST API docs for more details.

Ques 2.) Consider the web-server log in the file sample.log
Write a shell script (zsh/bash) that parses this file and outputs the following:

1. the number of HTTP 404 errors in it
2. a list of all HTTP response codes in the log and their count

You may download the log file and save it locally for testing purposes. For the second part, your script must find all response codes in a generic fashion, you should not hardcode searches for a known list of response codes. The script must be a shell script - Perl/Python/Ruby are *not* acceptable.

Ques 3.) Scrape IMDB top 250 list and make a knowledge base which supports query for top movies of any given actor.

MICROSOFT @ IIT BHU + IIT K (06-11-14)

1 hour test conducted on cocubes.com
2 coding questions only.
Questions same for all the students.
Languages - Only C , C++ , Java , C# were allowed.

Ques 1.) Convert a binary tree into it's Mirror tree.
Condition : In-place conversion required.

Ques 2.) Given a number, return the number of set bits of the number if binary representation of the number is a palindrome, else return -1.
Condition : You can't use array or any other data structure.
Eg . Input 37

Output -1

Input 165
Output 4

MICROSOFT @ IIT D + IIT KGP + IIT M (06-11-14)

1 hour test on cocubes.com
2 coding questions only.
Questions same for all the students.
Languages - Only C , C++ , Java , C# were allowed.

1. Given an array of integers, find an index such that sum of the element of left side = sum of element of right side
   input :
   o/p: 2 because 12+13 = 18+1+6
2. Given an array of integers, find the maximum continuous sum such that no elements contributing to the sum, are repeated.
   I/p: 1 2 3 3 4 5 2
   o/p: 14 as 3+4+5+2=14

MICROSOFT @ IIT G (06-11-14)

1).
http://www.geeksforgeeks.org/kth-smallest-element-in-a-row-wise-and-column-wise-sorted-2d-array-set-1/

2). Given a binary tree and a number. If the tree has a root-to-leaf path such that adding up all the values along the path equals the given number, return depth of that leaf (minimum, if multiple paths), Return -1 if no such path can be found.

DirectI Questions Links
(Same questions asked in all IIT's till now)

httDI14R018p://www.codechef.com/ **IIT BHU**

http://www.codechef.com/DI14R019 **IIT BHU**

http://www.codechef.com/DI14R024 **IIT M (Set Bits and Smallest Rectangular String problem)** ***@IIT-M guys please post screenshots.The link is unaccessible.***

@IIT-Delhi **Colorful Knapsack** + **Best 2x2 Sudoku** @IITG @IITB

Adobe @ IIT BHU (4-11-14)

2 Sections, 10 questions each section, total time 2 hours, Full subjective.
Paper and pen test. All questions related to CSE. No aptitude questions. No MCQ's.

Some questions :

- some microprocessor code given, tell answer
- LCA of 2 nodes in BST
- return pointer to middle of linked list in 1 pass
- Array of size n-1 has numbers 1 to n, one number missing, no number repeated, find the missing number
- What is the best STL used to find matching parenthesis
- some theoretical questions on pointers and function
- find GCD using recursion
- find max. of 3 numbers using ? : only
- reverse a doubly linked list
- find 2's compliment of a no. given in string form
- some macro related questions
- Given a Hash function, find value of keys having same hash
- Given order of insertion of nodes, make BST
- given 3AC, a number in base 14, convert it to base 7. (only show working on given example, no code or algo) [ans = 2105]
- Simplify a given boolean expression.
- Explain a) & b) -
  a) void (*p)(void *a[], int n)
  b) void* (*p[])(void *a, int n)

@IITM

13 GATE pattern MCQs and 7 Coding Questions
Platform : HackerRank
TIme : 2 hrs

Coding Questions:

1. Reverse linked list
2. Check balanced parentheses`
3. Given m*n binary matrix, where each row has all 1s first and then all 0s. You need to return row number which has maximum 1s.
4. Every integer ending with 3 has at least one multiple which is made of only 1s. Ex. 3 has 111, 13 has 111111. Given integer n(LSD is 3), return its smallest such multiple.

MCQs:

1.
```
char str1[] = “Hello”;
char str2[] = “Hello”;
if(str1==str2)
        cout<<”Equal”;
else
        cout<<”Not Equal”;
```

2.
```
char str1[]=”Hello”;
str1[6]=’b’;
cout<<str1;
```

Citrix

Citrix@IITG(06-11-14)

50MCQ including code-snippet, OS, Aptitude, Network

Three Englishmen and three Frenchmen work for the same company. Each of them knows a secret not known to others. They need to exchange these secrets over person-to-person phone calls so that eventually each person knows all six secrets. None of the Frenchmen knows English and only one Englishman knows French.What is the minimum number of phone calls needed for the above purpose?

(A) 5 (B) 15 (C) 9 (D) 10

2-Coding Problems

1-> Finding Prime Numbers between Two Numbers

2-> Determinant of a matrix.

IIT KGP

Platform : Hacker Earth

Q1.Number of Islands in a given matrix

6+

Q2. Given two Strings find whether all the chars of first string are there in second string or not. len(str2)> len(str1) in second. String may contain special chars also .

Note: Reading Input was the main problem. Both the strings will be given in a line with a vertical line between them. Also string1 and string2 might contain spaces

Ex: Input: I am a bad boy | I am not a bad boy

IIT KGP citrix written questions.

(1 hour apti followed by another 1 hour coding(2 que))

1.Dont remember the actual question but it was related to 8 connectedness, i.e given a matrix of 1's and 0's you need to find number of clusters of 1's. cluster -> for any cell in matrix every 8 adjacent cell for that cell will be in the same cluster.
2. Given two strings check whether one is pseudo-anagram of other.
conditions:-
(i)only letters need to be considered.T
e.g. abcd and bc-"ad? are pseudo-anagrams.
(ii)case-insensitive.

e.g. abCd and BCaD are pseudo-anagrams.
(iii)repetition of characters is allowed.
e.g. abcd and bccaaad are pseudo-anagrams.
aptitude:
some c, c++ programs,os,quant apti, n/w.....not tough

Codenation @ IITKGP and IITB

Platform : Hacker Rank

Opening additional tabs and googling and sharing codes isn't making much of a problem.

Duration : 1hr 45min
3 Coding questions

Q1. Given range of length of three sides of a rectangle as l1,u1,l2,u2,l3,u3. Here (l1,u1) is min-max length of the base and other two are sides with right angle. You have to find out possible min-max length of 4th side which can be connected with two sides. Here angle between 4th side and 2nd,3rd need not to be right angle.
Sample test case 1:
Input:
4,4
3,3
3,3
Output:
4,4

Note : Inputs are comma separated two numbers
Sample test case 2:
Input:

10,12
4,8
3,6

Output:
10,13 (Explanation: 10 when both sides are equal and 13 when diff is Given range of length of three sides of a rectangle as l1,u1,l2,u2,l3,u3. Here (l1,u1) is min-max length of the base and other two are sides with right angle. You have to find out possible min-max length of 4th side which can be connected with two sides. Here angle between 4th side and 2nd,3rd need not to be right angle.5)

Q2. http://www.hackerearth.com/pro.../algorithm/magic-fractions/
Q3. Given an input matrix which has Y in the cell (i, j), if person i is comfortable talking to person j, our task is to figure out what are the max number of people that can be kept engaged amongst themselves.
Note : A guest can talk to one guest at a time, effectively keeping both of them engaged.

Input :
5 (Number of guests <=50)

N Y N N Y
Y N N N N
N N N Y N
N N Y N N
Y N N N N

CodeNation @ IITK & @IITR & @IITD & @IITM

Q1. (Note that Cyclic Permutation here is not the same as the standard definition, so read carefully)
Given a sequence of numbers 1,2...N, the order of the permutation is the number of times the permutation has to be applied in order to get back to the original sequence of numbers. The i cyclic permutation is one which moves the all the numbers ahead by i. It effectively rotates

the array by i elements.
Consider a cyclic permutation of 2 for N = 3. Effective mapping for permutation will be: 1->3, 2->1, 3->2
This has to be applied 3 times to the sequence to get back to the original sequence 1,2,3 -> 2,3,1 -> 3,1,2 -> 1,2,3
Hence, the order of the above permutation is3.
Given an input N, print the number of different orders that it can have across all it's cyclic permutations.
Note: N will always be greater than 0 and less than 500
Example:
1)
Input:
3
Output:
2
Explanation: There are 2 possible permutation orders of 3 for it's cyclic permutation: 1 (for the identity permutation), and 2 (cyclic permutations of 2 and 3)
2)
Input:
4
Output:
3
Explanation: The 3 possible orders are: 1 (identity permutation), 2 (cyclic permutation of 2), 4 (cyclic permutation of 1 and3)

Q2.We have two strings A and B with the same superset of characters. We need to change these
strings to obtain two equal strings. In each move we can perform one of the following operations:
1- swap two consecutive characters of a string
2- swap the first and the last characters of a string
A move can be performed on either string.
What is the minimum number of moves that we need in order to obtain two equal strings?
Input Format and Constraints:
The first and the second line of the input contains two strings A and B. It is guaranteed that the superset their characters are equal.

1 <= length(A) = length(B) <= 2000
All the input characters are between 'a' and 'z'
Output Format:
Print the minimum number of moves to the only line of the output
Sample input:
aab
baa
Sample output:
1
Explanation:
Swap the first and last character of the string aab to convert it to baa. The two strings are now equal.

Q3.Babai is standing in the top left cell (1,1) of an NxM table. The table has N rows and M columns. Initially he is facing to the right cell. He moves in the table in the following manner:
If the cell in front of him is with in the table and unvisited, he then moves one step forward into it, and turns to his right.
1.
Otherwise he turns to his right, and tries step 1 again. 2.
If he has no right turns remaining (he has tried step 2 four times), then he stops. 3.
He moves around the table and visits as many cells as he can. Your task is to find out the number of cells that he visits before he stops.
Here's a sample of Babai's steps on a 9x9 grid. The value at each cell denotes the step number.

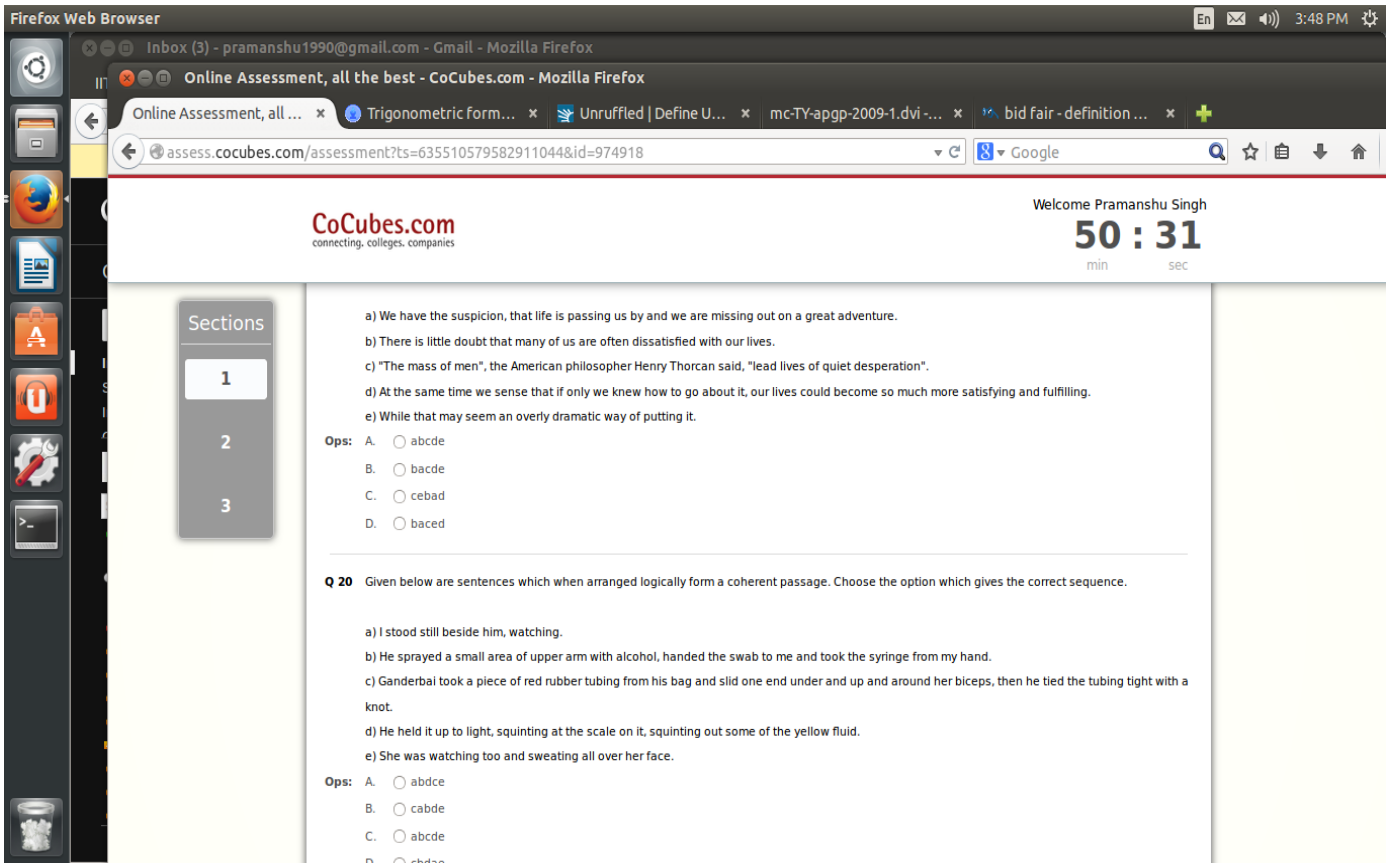
```
 1  2 55 54 51 50 47 46 45
 4  3 56 53 52 49 48 43 44
 5  6 57 58 79 78 77 42 41
 8  7 60 59 80 75 76 39 40
 9 10 61 62 81 74 73 38 37
12 11 64 63 68 69 72 35 36
13 14 65 66 67 70 71 34 33
16 15 20 21 24 25 28 29 32
17 18 19 22 23 26 27 30 31
```

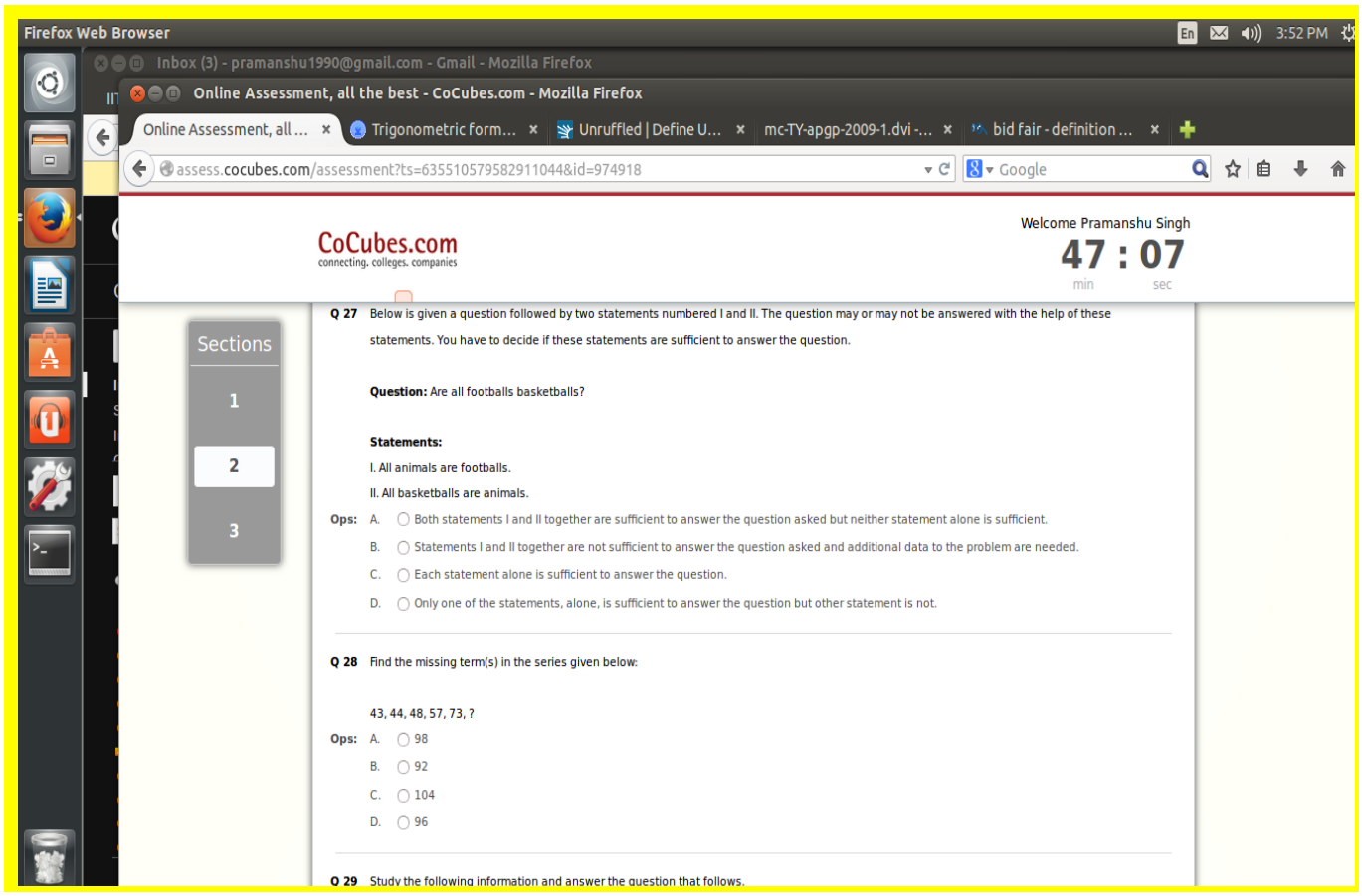
Input:
The input contains two integersN and M separated by a line. N and M are between 1 and100.

Output:
Print a single integer which is the answer to the test-case
Sample input #00:
3
3
Sample output #00:
9
Sample input #01:
7
4
Sample output #01:
18

FLIPKART

Flipkart at IIT delhi Graduate Trainee Profile

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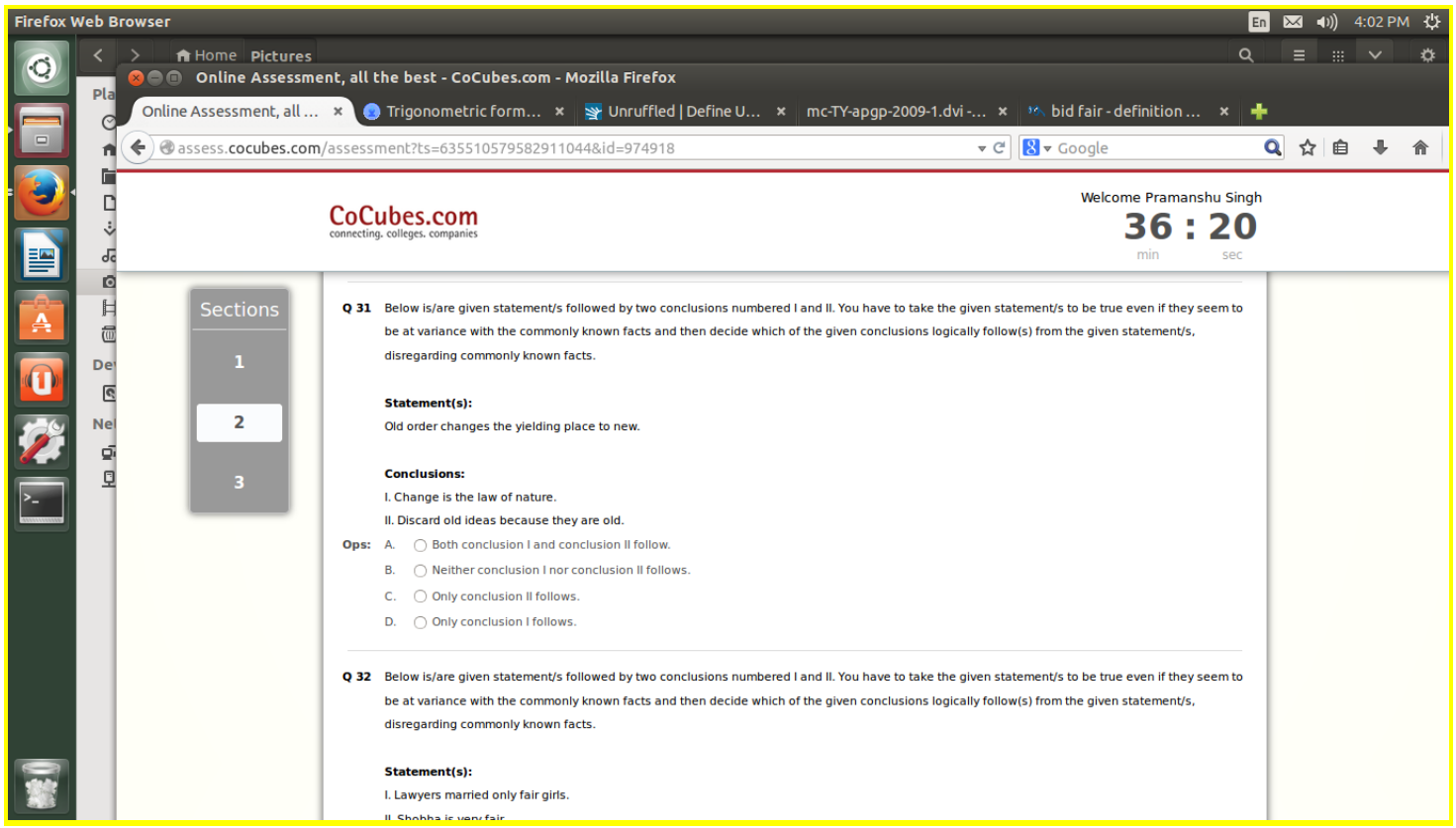
Q 27 Below is given a question followed by two statements numbered I and II. The question may or may not be answered with the help of these statements. You have to decide if these statements are sufficient to answer the question.
Question: Are all footballs basketballs?
Statements:
I. All animals are footballs.
II. All basketballs are animals.
Ops: A. Both statements I and II together are sufficient to answer the question asked but neither statement alone is sufficient.
B. Statements I and II together are not sufficient to answer the question asked and additional data to the problem are needed.
C. Each statement alone is sufficient to answer the question.
D. Only one of the statements, alone, is sufficient to answer the question but other statement is not.
Q 28 Find the missing term(s) in the series given below:
43, 44, 48, 57, 73, ?
Ops: A. 98
B. 92
C. 104
D. 96
Q 29 Study the following information and answer the question that follows.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1
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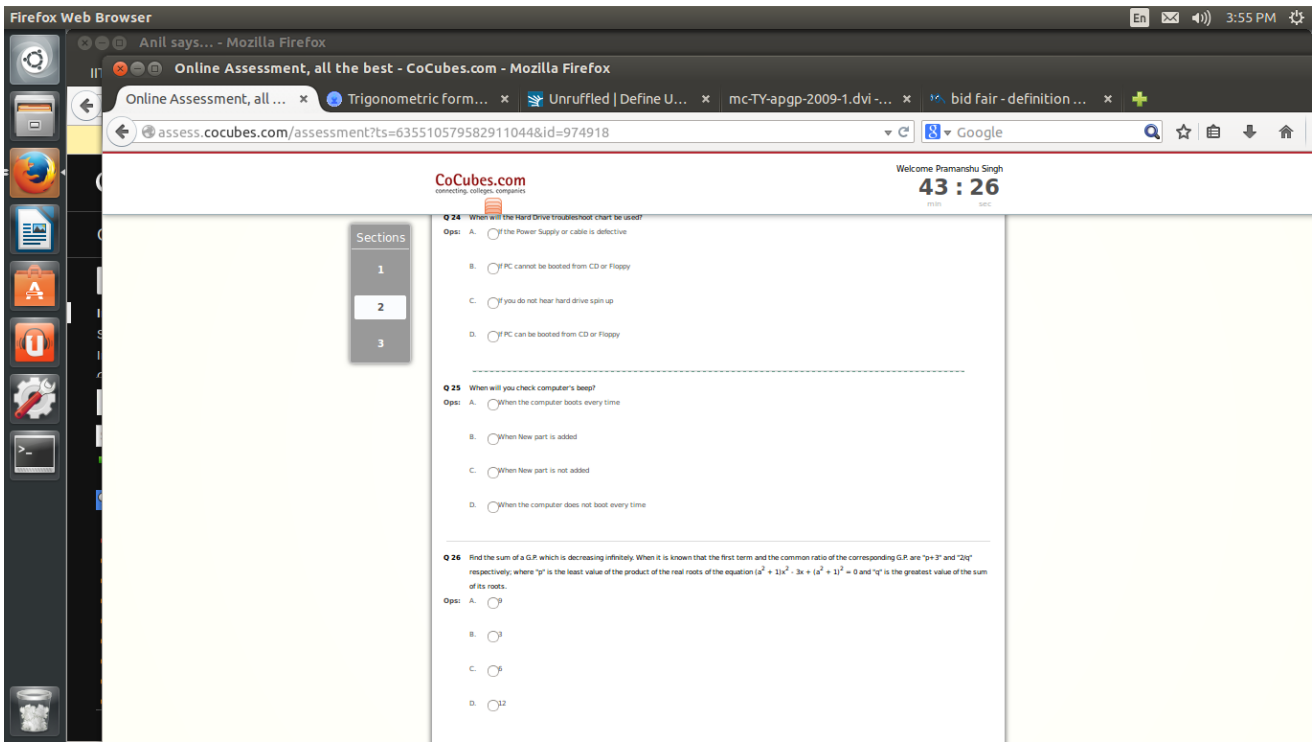
Q 31 Below is/are given statement/s followed by two conclusions numbered I and II. You have to take the given statement/s to be true even if they seem to be at variance with the commonly known facts and then decide which of the given conclusions logically follow(s) from the given statement/s, disregarding commonly known facts.
Statement(s):
Old order changes the yielding place to new.
Conclusions:
I. Change is the law of nature.
II. Discard old ideas because they are old.
Ops: A. Both conclusion I and conclusion II follow.
B. Neither conclusion I nor conclusion II follows.
C. Only conclusion II follows.
D. Only conclusion I follows.
Q 32 Below is/are given statement/s followed by two conclusions numbered I and II. You have to take the given statement/s to be true even if they seem to be at variance with the commonly known facts and then decide which of the given conclusions logically follow(s) from the given statement/s, disregarding commonly known facts.
Statement(s):
I. Lawyers married only fair girls.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43 : 26
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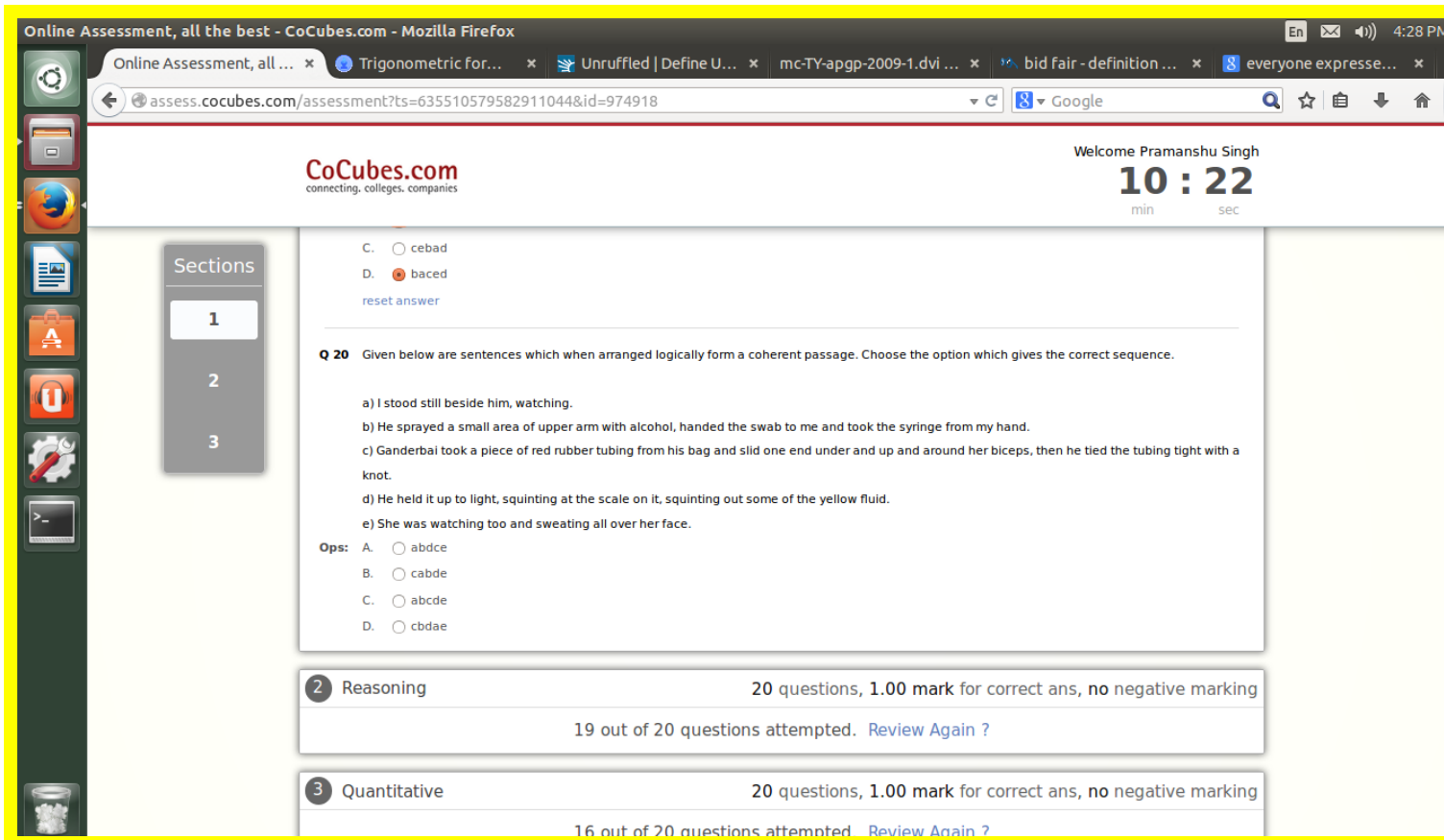
Sections
1
2
3
Q 24 When will the Hard Drive troubleshoot chart be used?
Ops: A. If the Power Supply or cable is defective
B. If PC cannot be booted from CD or Floppy
C. If you do not hear hard drive spin up
D. If PC can be booted from CD or Floppy
Q 25 When will you check computer's beep?
Ops: A. When the computer boots every time
B. When New part is added
C. When New part is not added
D. When the computer does not boot every time
Q 26 Find the sum of a G.P. which is decreasing infinitely. When it is known that the first term and the common ratio of the corresponding G.P. are "p+3" and "2/q" respectively; where "p" is the least value of the product of the real roots of the equation $(x^2 + 1)x^2 - 3x + (x^2 + 1)^2 = 0$ and "q" is the greatest value of the sum of its roots.
Ops: A. 9
B. 7
C. 6
D. 12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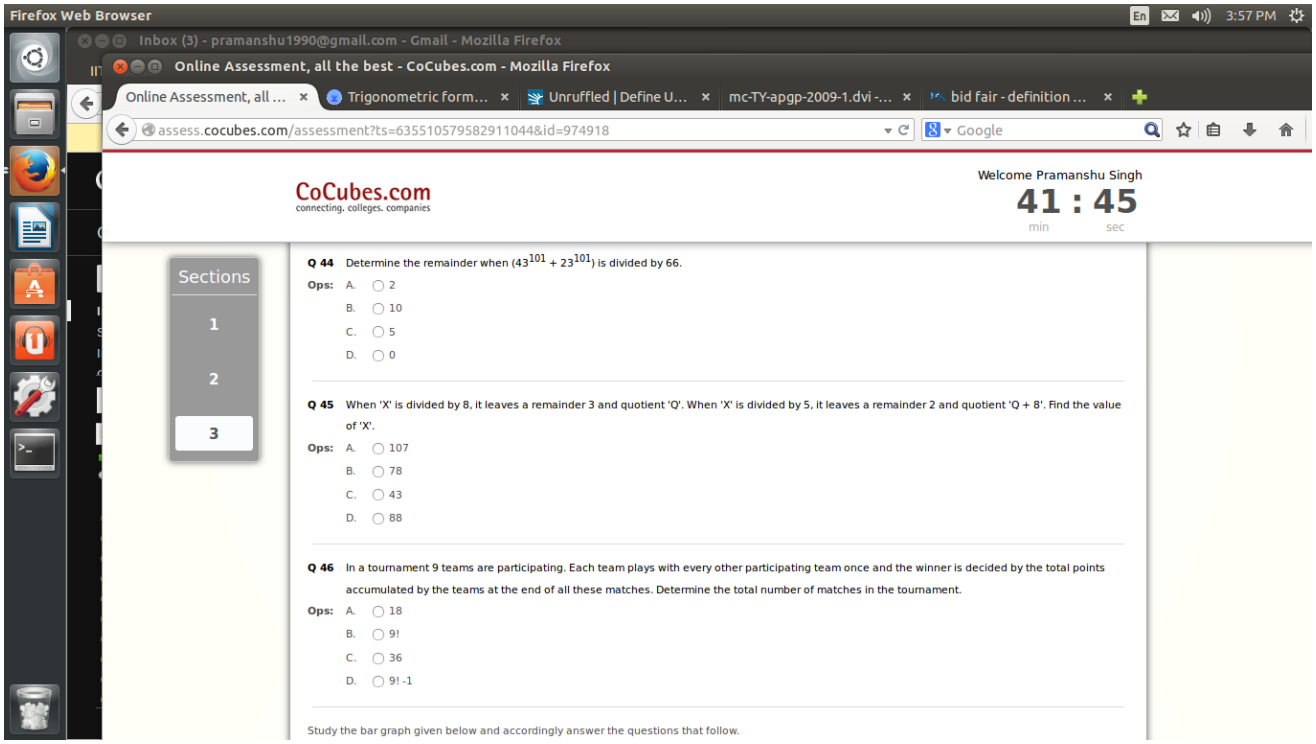
Q 20 Given below are sentences which when arranged logically form a coherent passage. Choose the option which gives the correct sequence.
a) I stood still beside him, watching.
b) He sprayed a small area of upper arm with alcohol, handed the swab to me and took the syringe from my hand.
c) Ganderbai took a piece of red rubber tubing from his bag and slid one end under and up and around her biceps, then he tied the tubing tight with a knot.
d) He held it up to light, squinting at the scale on it, squinting out some of the yellow fluid.
e) She was watching too and sweating all over her face.
Ops: A. abdce
B. cabde
C. abcde
D. cbdae
2 Reasoning
20 questions, 1.00 mark for correct ans, no negative marking
19 out of 20 questions attempted. Review Again ?
3 Quantitative
20 questions, 1.00 mark for correct ans, no negative marking
16 out of 20 questions attempted. Review Again ?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41 : 45
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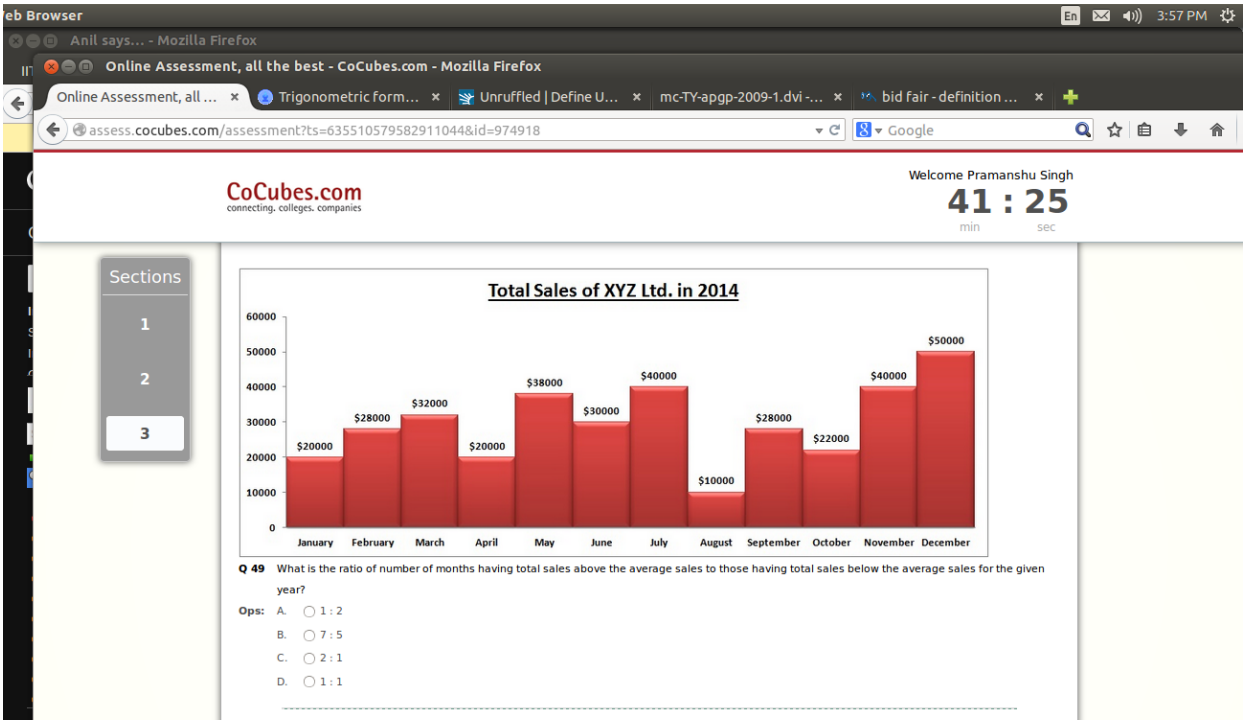
Sections
1
2
3
Q 44 Determine the remainder when ($43^{101} + 23^{101}$) is divided by 66.
Ops: A. 2
B. 10
C. 5
D. 0
Q 45 When 'X' is divided by 8, it leaves a remainder 3 and quotient 'Q'. When 'X' is divided by 5, it leaves a remainder 2 and quotient 'Q + 8'. Find the value of 'X'.
Ops: A. 107
B. 78
C. 43
D. 88
Q 46 In a tournament 9 teams are participating. Each team plays with every other participating team once and the winner is decided by the total points accumulated by the teams at the end of all these matches. Determine the total number of matches in the tournament.
Ops: A. 18
B. 9!
C. 36
D. 9! -1
Study the bar graph given below and accordingly answer the questions that follow.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Welcome Pramanshu Singh
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Total Sales of XYZ Ltd. in 2014
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$38000
$30000
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$10000
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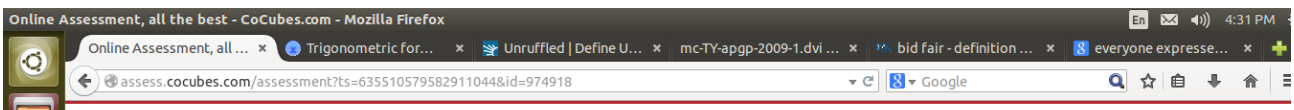
November
December
Q 49 What is the ratio of number of months having total sales above the average sales to those having total sales below the average sales for the given year?
Ops: A. 1 : 2
B. 7 : 5
C. 2 : 1
D. 1 : 1


Online Assessment, all the best - CoCubes.com - Mozilla Firefox
4:31 PM
Online Assessment, all ...
Trigonometric for...
Unruffled | Define U...
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bid fair - definition ...
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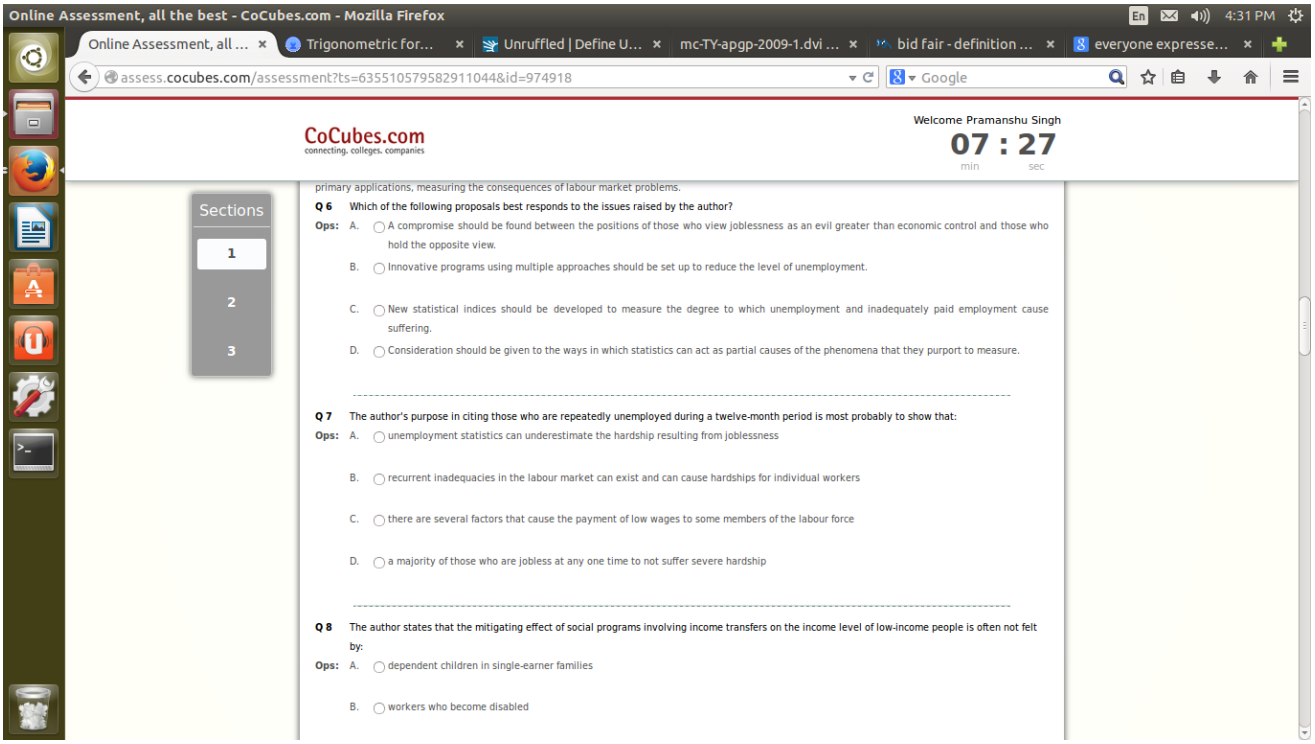
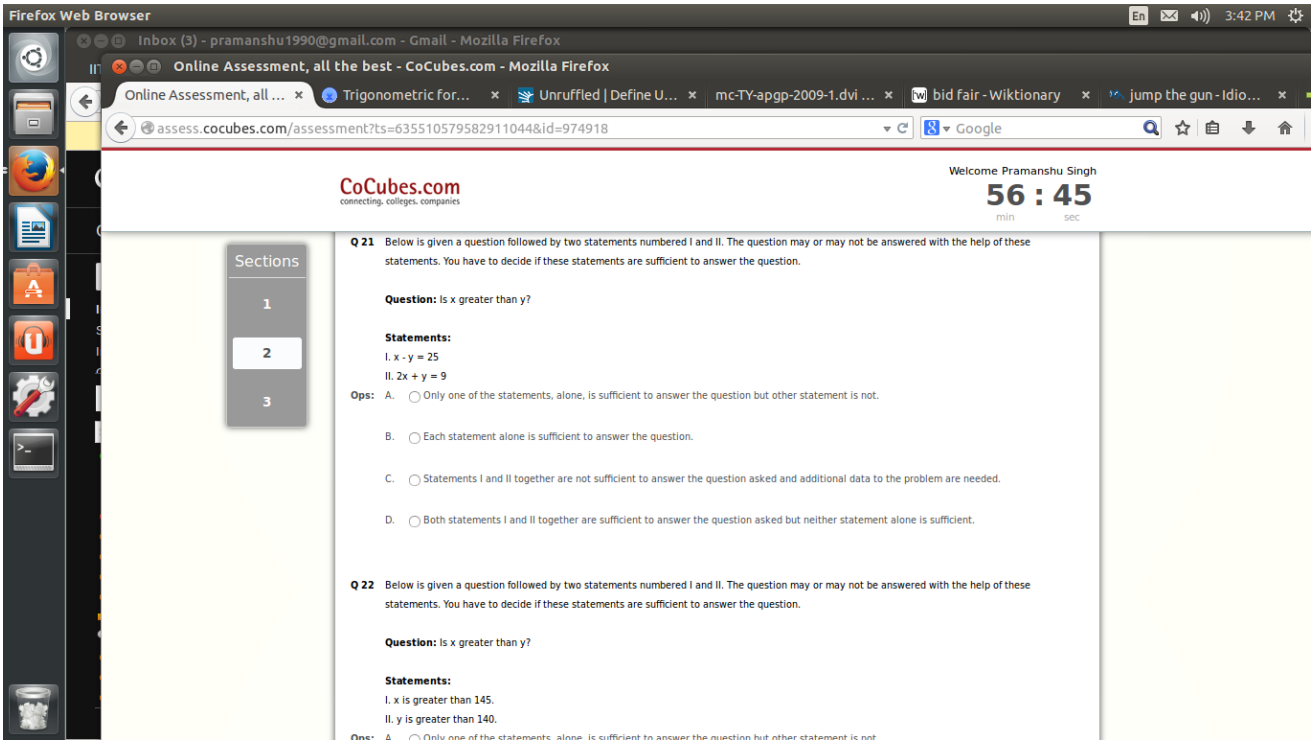
assess.cocubes.com/assessment?ts=635510579582911044&id=974918
Google

Flipkart @ IIT (BHU) Varanasi



Hosted on : hackerrank.com

Time : 90 mins No objective questions.



Two coding questions. We have to complete the function only….

One of the questions --

umber of strips required to cover the whole grid.

Note : only the colored points should be covered. Points with '.' should remain as it is.

1<= m,n <=100

Ex.

Input

2 4

..B.

..B.

Output

1

Input5 5

..B..

..GRR

..B..

R….

R....

Output

4

\Input

5 5

..B..

..GRR

..B..

B....

B...G

Outputf

5

Input1

3 4

GGGG

GRRG

G..G

Output

8

Explanation :

Blue strips are vertical.

Red strips are horizontal.

Ex 1:

Only 1 vertical strip from (0,2) to (1,2). [Indexing from (0,0)]

Ex 2:

1 vertical strip from (0,2) to (2,2)

1 horizontal strip from (1,2) to (1,4)

1 horizontal strip from (3,0) to (3,0)

1 horizontal strip from (4,0) to (4,0)

so total -- 4

Ex 3:

1 vertical strip from (0,2) to (2,2)

1 horizontal strip from (1,2) to (1,4)

1 vertical strip from (3,0) to (4,0)

1 horizontal strip from (4,4) to (4,4)

1 vertical strip from (4,4) to (4,4)

so total -- 5

Ex 4:

1.) Given a mxn grid, each of it's element be either '.', 'R', 'G' or 'B',

where '.' -> empty, 'R' -> Red, 'G' -> Green, 'B' -> Blueq

A Blue strip has width 1 and length greater or equal to one. [Vertical]

A Red strip has length 1 and width greater or equal to one. [Horizontal]

If a Red strip and a Blue strip overlaps, the overlapped portion will become 'G'.w

Find the minimum n

1 horizontal strip from (0 0) to (0,3)

1 horizontal strip from (1,0) to (1,3)

1 horizontal strip from (2,0) to (2,0)

1 horizontal strip from (2,3) to (2,3)

1 vertical strip from (0,0) to (2,0)

1 vertical strip from (0,1) to (0,1)

1 vertical strip from (0,2) to (0,2)

1 vertical strip from (0,3) to (2,3) s
so total -- 8

SAMSUNG

Samsung India (R&D) at IIT M

adras,20/10/2014

2 Rounds:

Round 1: 60 mins

Tip: Attempt the Math part first and Verbal the last.

Short list based on score in Round 1

Round 2:

Online coding round - 1 hr

Questions were different for different people. Questions collected from a limited pool of questions and jumbled sequent words) was ignored because we limit queries to 32 word for everyone.

3 questions for A: x

1. Given a string s1 remove all occurrences of the string s2 in string s1 and also remove all occurrences of string s2 after removal of s2 in s1 and so on.. and return the string obtained after such removals. [5 points]

Example: s1 = "qwewerrty" ; s2 = "wer "

Output: qty

(On the first removal of wer it becomes qwerty. On removal again now - qty. Nothing to remove now.)

2. a string, print the number of occurrences of 1[0]*1 where * denotes zero or more occurrences of the digit 0. [5 points]

Input: 10011abc10000001

Output: 3

3. Question had some robot and story build up but the essence is this:

You are given an mxn grid, where (0,0) refers top most left position and (m-1,n-1) the bottom most right. The grid is filled with ones. All positions in the grid that are blocked are filled with zeros. You are given this grid and are assured that there exists atleast one path from (0,0) to (m-1, n-1). Find the minimum distance of the path from (0,0) to (m-1, n-1) given that you are allowed to move only vertically, horizontally and diagonally. [8 points]

Another set of questions for Round 2. Adding the comment here for better visibility.

1. (5 points) Same as A's second question.

2. (5 points) Given two linked lists, where each node of a list contains the exponents and coefficients of a polynomial (in decreasing order of exponents, zero coefficients don't have nodes associated with them), perform multiplication of the two polynomials and return a linked list with the result (conditions similar to the input - decreasing order of exponents, terms with zero coefficients should not be present in the linked list)
3. (8 points) Given a word with unique lower-case characters, return its rank in a dictionary that consists only of words that are anagrams of the given word.
Eg: "take" : 6 words start with 'a', 6 with 'e', 6 with 'k', 1 with 'tae', and finally "take", so its rank is 6 + 6 + 6 + 1 + 1 = 20.

--
1. Determine whether the anagram of a given string can be a palindrome.
2. Same as A's first.
3. You're given an array of integers. Return the largest number you can make using all the digits in the array. e.g: a=[23,45,67], return 765432. (concat everything, sort and return.)

Directi

Directi @IITR, 18th October 2014
2 Questions
90 min.
Platform codechef
Q1:
The i-th stone has the color C[i] (between 1 to M, inclusive).
The Knapsack can hold a total weight of X. Fill knapsack with these stones. we
have to select exactly one of each M stone colors.
sum of the weights of the stones must not exceed X.

We have to fill the Knapsack as much as possible.(hence minimize unused capacity.)
Input
number of test cases.
The first line of each test case contains three integers, N, M and X,
The N integers, W[1], W[2], W[3] ... W[N], (Weight)
N integers C[1], C[2], C[3] ... C[N],
Output the unused capacity of the Knapsack (a single integer on a line by itself) for an optimal way. If there is no way to fill the Knapsack, output -1.
Constraints
$1 \le T \le 10$
$1 \le M \le 100$
$M \le N \le 100$
$1 \le W[i] \le 100$

1 ≤ C[i] ≤ M
1 ≤ X ≤ 10000
Sample Input
3(test cases)
9 3 10(1 st test)
2 3 4 2 3 4 2 3 4(wt)

1 1 1 2 2 2 3 3 3(color)
9 3 10(2nd test)
1 3 5 1 3 5 1 3 5(wt)
1 1 1 2 2 2 3 3 3(color)
3 3 10(3rd test)
3 4 4(wt)
1 2 3(color)
Sample Output
0
1
-1
Note: brute-force solution will fail.

Q2:
There is a bit array of length 10000000. An operation is performed several times on this array with given start and end indices (one pair). An operation flips all bits b/w start and end indices(inclusive) of bit array. After the N operations, you need to tell the frequencies of 16 hex digits in that array.
0<=N<=1000.
Note: There will be exact 2500000 hex digits.
Input:

1(# of test cases)
2(# of operations)
3 6
5 8
Output:
2499998 0 0 2 0 0 0 0 0 0 0 0 0 0 0 0

Note: Each pair of 4 bits represents a hex digit.
: In the example, bits after 1st op: 00111100……..

: after 2nd op: 0011001100….
: So, there are and 2 3’s rest of them are 0’s.
Note: Brute force will give TLE.

Directi@IITM

two 2 questions
90 min

q1
set bits

You are given a large array of 10,000,000 bits. Each bit is initially 0. You perform several operations of the type "Flip all the bits between start_index and end_index, inclusive". Given a sequence of several such operations, perform all the operations :on the array. Finally, split the array into sets of 4 bits - first four, next four, then next four and so on. Each set can represent a hexadecimal integer. There will be exactly 2,500,000 hexadecimal integers. Calculate the frequency of each of the hexadecimal integers from '0' to 'f' among the 2,500,000 integers, and print it. See Input / Output and explanation of Sample Input / Output for clarity.

Input

The first line of input contains an integer T (1 ≤ T ≤ 10), the number of test cases. Then follows the description of T test cases. You should assume that the array has exactly 10,000,000 bits and that the bits are all unset at the start of each test case. The first line of each test case contains an integer N (1 ≤ N ≤ 10,000), the number of operations performed. The next N lines contain two integers separated by a space, the start_index and end_index for the respective operation. Note that the flip operation is performed from start_index to end_index, inclusive. Also, the array is 1-indexed - meaning, the smallest index is 1 and the largest index is 10,000,000.

Output

For each test case, output 16 integers on a single line, separated by single space characters. The first integer should represent the number of times 0 occurs among the 2,500,000 hexadecimal integers created according to the problem statement. The second integer should represent the number of times 1 occurs among the 2,500,000 hexadecimal integers created according to the problem statement, and so on.

Constraints

1 ≤ start_index ≤ end_index
start_index ≤ end_index ≤ 10,000,000

Sample Input

```
2
2
1 4
9999997 10000000
2
3 6
5 8
```

Sample Output

```
2499998 0 0 0 0 0 0 0 0 0 0 0 0 0 0 2
2499998 0 0 2 0 0 0 0 0 0 0 0 0 0 0 0
```

Explanation

In the first test case, after we perform the two operations and split the array into 2,500,000 groups of 4 bits, the first and the last group will have all 4 bits set - representing 'f' hexadecimal digit. All the other groups will have all 4 bits unset - representing '0' hexadecimal digit.

In the second test case, after we perform the two operations and split the array into 2,500,000 groups of 4 bits, the first two groups will have the state 0011. This represents the hexadecimal digit '3'. All the other groups will have all the 4 bits unset - representing '0' hexadecimal digit.

q2
smallest rectangle

You are given a rectangular grid with 2 rows and N columns. The top row is labeled 1 and the bottom row is labeled 2. The columns are labeled from 1 to N in increasing order. Each cell in the grid contains a single character.

Consider a hamiltonian walk in this grid. Meaning, pick a starting cell, say (i,j), and consider a path that starts from (i,j) and goes through every cell in the grid exactly once. Note that you can only walk to adjacent cells, or cells that you share a common edge with. There may be several such paths. Let us concatenate the characters in the order in which the cells are visited during a walk. The string formed can be called the string for the walk.

Among all the possible walks, and their respective strings, find out the lexicographically smallest string. We know that the length of the strings are all the same - to be precise, 2N. Thus, the lexicographically smallest string is simply the alphabetically smallest string if you compare the characters from left to right.

Input

The first line of input contains a number T, the number of test cases. Then follow T test cases. Each test case contains 3 lines. The first line contains the number N, the number of columns in the grid. It is well known of course that the grid contains 2 rows.

The next two lines contain the description of the grid in the form of two strings; the string of N characters in row 1 from left to right and the string of N characters in row 2 from left to right, respectively. Each character will be a lowercase engish letter.

Output

Output a single line for each test case. The line must contain a string with 2N characters. This string should be the lexicographically smallest string for some hamiltonian walk in the grid.

Constraints

1 ≤ T ≤ 100
1 ≤ N ≤ 10

Sample Input

2
3
abc
def
10
ababaaabab
bababababa

Sample Output

abcfed
aaababababababababab

Explanation

In the first test the possible strings are { abcfed, adebcf, adefcb, badefc, bcfeda, cbadef, cfedab, cfebad, dabcfe, dabefc, defcba, edabcf, efcbad, fedabc, fcbade, fcbeda }. The smallest string is abcfed.

Online coding 1 hr , 3 Questions
1. We have to implement *int getIntComplement(int N)* function , that will give complement (bitwise complement.) of b a given integer . Start unsetting from the left most set bit of the number. 0 <= N <= 50000
Example:
Input: 10 (1010)
Output: 5 (0101)

2. There are "n" ticket windows in the railway station. ith window has ai tickets available. Price of a ticket is equal to the number of tickets remaining in that window at that time. When "m" tickets have been sold, what's the maximum amount of money the railway station can earn?
exa. n=2, m=4
in 2 window available tickets are : 2 , 5
2nd window sold 4 tickets so 5+4+3+2=14.

3. There is a particular sequence only uses the numbers 1, 2, 3, 4 and no two adjacent numbers are the same.
Write a program that given n1 1s, n2 2s, n3 3s, n4 4s will output the number of such sequences using all these numbers.
Output your answer modulo 1000000007 (10^9 + 7).

LinkedIn @IITG
Exactly same as IITR

LinkedIn @IITD
1) search a number in a binary search tree. return 1 if found and 0 if not.
2) count total distinct substrings in a string
3) count distinct palindromic substrings in a string eg S = aabaa . output = 5 (a,b,aa,aabaa,aba)

Qualcomm

Qualcomm@ IITKGP
same as iitk
Qualcomm@ IITK
3 sections
A) Aptitude - 20 Question in 20 min.. questions were not easy..

B) C Prog. - 20 Question in 20 min - mostly output or error finding type (questions on OOPS were also asked)
C) Computer Science - 20 Question in 30 Min, comparatively easy from other two sections.
Tips:
You start with Apti section and after 20 min it automatically redirects you to next section.
Proper time management is required. or Also test interface have some bugs as I faced. When you click on next sometime you may skip 1 2 question.-
Questions for all are same.. but jumbled

Qualcomm Questions
C output related questions, function overloading, heap, hashing, number of zeros in n!,process and threads related question

Qualcomm@ IITG
Pattern Same as IITK

Oracle

Oracle @IITK (Aptitude Test)
4 Sections (Total Time : 75 Minutes)
1: Analytical Reasoning (15 Question)
2: Quantitative Reasoning (15 Questions)
3: Verbal Reasoning (10 Question)
4: Computer Science (20 Question)
All the sections are fairly easy, specially quants and CS.

Oracle @IITM (Aptitude Test)
Same as Oracle @IITK

Oracle (Round 2 - Coding) @ IIT Bombay - November 5 2014
Q1) Game of Stones, Given N stacks of different sizes. Two player, one by one pop some values from any chosen stack, if both players play optimally then print 1 if player1 will win the Game, print 2 if he will lose the Game.

Input: N=3 {1,1,1} output: 1 , N=4 {1,1,11,11} output: 2 , N=2 {1,100} , output:1

Q2) 0/1 knapsack

Oracle (Round 2 - Coding) @ IIT Madras - October 26th 2014
Duration: 30 mins
One coding question.
Difficulty level: from person to person. If you're lucky, you might get the easiest of problems.
Most problems were direct *expected* questions.
Platform: mettl
Some questions:

1. Given inorder, preorder traversal of a Binary Tree - give postorder.
2. Rod cutting problem.

Oracle @IITKGP (Aptitude Test & Coding Test)
Same as Oracle @IITM

Oracle @IIT Guwahati (Round 2 Coding)
About 90 students were shortlisted after the MCQ round for all profiles. The coding round had only one question for each student to be solved in 30 minutes. The interface was really **ugly**. Everyone got a different question. Again the ease/difficulty of the question is purely luck-based. Better practise all sorts of standard DP and greedy-algorithmic questions.
Some Questions:
1. Job Scheduling: Given starting and ending times of n jobs, What is the maximum no. of non overlapping Jobs that can be scheduled. Ex-
If there are 5 Jobs with time intervals (1,4), (2,3),(3,5),(2,7),(5,8) then answer is 3.
(Starting time of one job and Ending time of another job can be same).
Both Greedy and DP solutions will work.

2. Standard Nim Game.

Oracle @IITBHU (Aptitude Test & Coding Test)
Same as Oracle @IITM

Oracle @IITR (Aptitude & Coding Test)
Same as Oracle @IITM

Epic Systems

Do all these questions. No need to read any other placement Paper. You will get all the questions here.

http://www.careercup.com/page?pid=epic-systems-interview-questions

Epic Systems @IITD
4 sections.
A. Speed Calculations: 2 mins 10 questions, attempt as many as u can.
B. Apti: 12 questions
C. Technical: 20 questions, based on some newly defined language.
section B,C did not have any sectional time limit. But you need to finish these 3 sections within 75 mins. You will be judged on speed and accuracy. So try to complete as fast as possible.
D. Coding: 4 questions, 2 hrs. But again you will judged based on speed and accuracy. Write functions. Pseudo codes are allowed. Its like a online version of pen and paper coding.
Questions of this section was different for everyone. I am sharing my questions.
#1. Suppose all months have 30 days. There's 12 months in a year. February would have 31 days in a Leap year. condition for leap year is defined as (year%40==0) is leap,

(year%200==0) is not leap, (year%1000==0) is leap. Given a date as MM/DD/YYYY, find the next Leap Day.
#2. Print matrix in spiral order.
#3. You have to print all possible combinations of phone numbers. The length of the number will be given. Also 3 digits will be given, which can not be used. No two consecutive digits would be same. A number containing 4 would always have 4 in the beginning.m
#4. Given a number, get all possible substrings using the digits of this number and if the product of digits in one subset is same with the another, then return false, else return true.
e.g. 345={3,4,34,45,35,345}
products are{3,4,5,12,20,15,60} hence true
3426={3,4,2,6,34,42,26,....}
product ={3,4,2,6,12,8,12,..} hence false. (products of 34 and 26 are same)

Epic@IITR

Logical Reasoning, Aptitude: See career cup for questions. Same questions were repeated.
4 coding questions (Questions for everyone were different)mo

1) To subtract 2 numbers given in form of arrays. It should handle all the overflow conditions.
2) Given a matrix, find the maximum length path. Given a index, you can move only right and bottom, and also the difference between the elements of the path should be +-1.
3) Implement Bingo game.
4) Tic Tac Toe question.
5) Search a given word in matrix.
6) Given a number, you can multiply it with any digit 2-9, check if the generated number is the anagram of the given number.
7) Given sequence of keystrokes of a .
8) In 1-9 keypad one key is not working. If someone enters a password then not working key will not be entered. You have given expected password and entered password. Check that entered password is valid or not
   Ex: entered 164, expected 18684 (you need to take care as when u enter 18684 and 164 only both will be taken as 164 input)
9) A string 'aBIY' is said to be well ordered because the letters of the string occur one after the other in the alphabet. Write a function where the number of letters in the string are passed as parameter and all such well ordered strings are found.

Epic@IITK

Same format as IITR and IITD
for speed questions if at one glance you can do it then do else attempt any option and move forward(there is no negative marks). Try to look at as many problems as you can. You can do at least 7-8 questions.
for Logical Reasoning and Apti do check Careercup Questions of previous years and for programming problem also. Many(I think all) of the questions are repeated from the previous years(everyone will have different coding questions). Some of them are :

1) Generate all well ordered numbers of given length(digit at i+1 >digit at i)
2) Implement Solitaire Game
3) Search a given word from a matrix
4) Given an array of text print it in column major format with the text as reversed e.g.-

input: Hello Output: WWH
What hhe
Where eal
rtl
e o

5) Given a sequence of keystrokes generate all possible texts

---

Ebay

Ebay @IIT(BHU)
Section-A

Horrible Quant
Aptitude 20 questions in 30 minutes. God knows what was that !! Most of us could solve hardly 7-8 out of it.

Section-B
Pen & Paper Coding
Easy

Ebay @IITD
Section-A
Pen & Paper Coding: any one out of two questions in 30 mins.
Level: Easy

1. Printing a string in wave like pattern. If the current character is greater than(a-z order) that of previous character then print it above, if it is less than current then print below and if its equal then in same line.
e.g.
I/P: abcbd
O/P: (these dashes indicates spaces)
--c-d
-b-b
a
2. Replace the given substring with some other substring in a string.
I/P: SUNDAY, replace SU with MO
MONDAY

what will be answer, if I/P SUUNAP, replace SU with MS ??

on first replacement, ans is MSUNAP, but it again contain SU, So do we need only one iteration, are something like, final answer must not have any substring of 'SU' ??

Section B
Online aptitude, 20 questions, 30 mins. +1 for correct answer, -0.25 for wrong.
DI -time consuming tedious calculations,
Logical- Horrible!
Quant- Medium but time consuming.
We didn't find many people doing more than 10-12 out of 20.

Ebay @IITKGP
Format same as above.
Coding questions
Q1 - You were given a list of strings which are correct words.
eg. is why book good ball bat this
and a sentence with misspelled words:
Ths is a god bal.
One has to create the correct sentence:
This is a good ball.

Though it wasn't mentioned, it can probably be assumed that correct word of misspelled word in given sentence exists in the given list.

Q2
Print all substrings of a given string.(Remove possible duplicates although it wasn't explicitly mentioned).
for example input-abc
output-
a
ab
abc
b
bc
c

Ebay @IITM, November 5th

eBay @IITM

Pen and paper coding question - attempt one out of 2, 30 minutes

(1) W, i.e. the order is QWERTYUIOPASDFGHJKLZXCVBNM

Input: Strings with only upper case

letters, one on each line, the last line will contain a "."

Output: The strings in qwerty-sorted order

Example (I don't remember the exact example, so I'm creating my own test case :P)

Input:

APPLE

TRACK

CAT

TRACTOR

QUEEN2

.

Output:

QUEEN

TRACTOR

TRACK

APPLE

CAT

(2) Given the sequence 3, 4, 33, 34, 43, 44, 333, 334, 343, ... and a number 'n', print the nth number in this sequence

The second part was an online aptitude test for 30 minutes. The questions were long and the calculations were tedious, similar to what others (IITD) have stated before.

Browser Stack(2 round)

@IIT BHU

Consider the following series:

A := 1
B := A*2 + 2
C := B*2 + 3 and so on...

Write a program that:

- **outputs the number corresponding to a given letter;**
  - **given a string of letters like 'GREP', computes the sum of the numbers corresponding to all the letters in the string (i.e., G + R + E + P), as given by the above series; and**
  - **given a large number (that would fit into a standard 32-bit integer), finds the shortest string of letters corresponding to it.**

You may use a greedy approach for the last part. Compute the values of the numbers corresponding to letters as and when required and DO NOT pre-compute beforehand and store them in a data structure.

You may attempt this problem in any programming language.

2nd question

The program will be given a folder named (optional, if not passed assume cwd). The program will print something like this:

```
$ tree
.
|-- README.md
|-- closure
|   |-- currencySymbols.js
|-- e2e
|   |-- i18n-e2e.js
```

```
|   |-- localeTest_cs.html
|-- generate.sh
|-- run-tests.sh
|-- spec
|   |-- closureI18nExtractorSpec.js
|   |-- converterSpec.js
|-- src
|   |-- closureI18nExtractor.js
|   |-- closureSlurper.js
|   |-- converter.js

4 directories , 10 files
```

Browser Stack

@IITB

Browser Stack ..... TEST QUESTIONS IITB @ 27 OCT

1.)

Question: You join a company which uses a legacy command line program.
This program when given an input like this: a b c d e f g h i
Spits out an output like this: a b c f i h g d e
+
Source code of this program is long lost and only the binary remains. You manager has asked you determine the logic and write this program, in a computer language that you prefer, so that source code of the program is in the control of the company.
Sample Input (Plaintext Link)
a b c
d e f
g 19 20
Sample Output (Plaintext Link)
a b c f 20 19 g d e

==========

2.)

Json parse plus series computation
Max. Score 20
Evaluate an expression given in an JSON format. Keys will be: Expr - contains the entire expression Elem - contains the digit, Sum, Prod - contains two or more keys whose evaluation needs to be sum,med or multiplied, respectively, Sub - will contain two keys or more, where the second key onwards will have to be subtracted from the first one Div - will contain two keys in which the first key will need to be divided by the second

Sample Input (Plaintext Link)

```
{
"expr": {
"sum": {
"elem": [
"4",
"6",
"7",
"3"
]
}
}
}
```

Sample Output (Pintext Link)la

20

Explanation

Input: Will be json file through standard input. expression will be given as value of expr key, as shown in example

Output: You need to print the result of evaluated expression

Browser stack :@ IITR

12th October 2014

Online coding 3hrs

2 questions

20 marks each

Problem 1:

Write a program which takes JSON as input and gives prettified JSON

a)You need to read JSON from STDIN. Input gives one line of uglified JSON.

b)Output should be formatted JSON.

Given two JSON objects, find the values of fields. whose values are different.

Eg. Input

{"Geeks":"Test1","Are":"hey","Cool":"yeah"}

{"Geeks":"Test1","Are":"20","Cool": ['B','C'] }

Answer should be as follows ..

Ans: Are:Cool

Problem 2:
Given a string and a Regular Expression mean as follows:
. - 2 occurrences of the previous character, + - 4 occurrences of previous character pattern, give the number of the times the pattern occurs in the string. RegEx symbols er, * - more than 5 occurrences of the previous character
Sample Input (Plaintext Link)
5
aaaaaannndnnnnnnfffhfhhgjjjwkkkllclc
a.
n+
a*
an.
a.d.
Sample Output (Plaintext Link)
5
3
2
1
0

Browser stack :@ IITD
Problem 1:
Given a number n, print the sum of digits in n!.(n can be large)

Problem 2:
Same as IITR

Browser stack :@ IIT-BHU

IITBHU browserstack written round questions. Duration: 3 hours, Platform: HackerEarth

1. Given a piece of code, the task was to remove all the comments from the code.
Eg. Input
int main(){
// this is a comment
int i = 1;
/*
some more

comments
*/
cout<<i;
cout<<endl; // this is for new line
return 0;
// last one
}
Output:
int main(){
int i = 1;
cout<<i;
cout<<endl;
return 0;
}

2. JSON parsing -same as IITR

Browser stack :@ IIT-G

1. Given HTML Code with tags, insert indentation based on opening and closing of tags.
   Example Input:
   <FIRST>
   <SECOND>
   <THIRD>
   This is thirdW
   <FOURTH>
   <FIFTH>
   This is fifth
   </FIFTH>
   </FOURTH>
   </THIRD>
   sample line
   </SECOND>
   </FIRST>

output:
%FIRST
  %SECOND
    %THIRD
      This is third
      %FOURTH
        %FIFTH
          This is fifth
    sample line

(each tab consists of two spaces, i.e. tab=" ").

2. Nibonacci numbers are defined as
   f(x)=0 for all x<=0
   f(x)=1 for x=1 and x=2
   f(x)=f(x-1) + f(x-2) + f(x-3) + …… + f(x-n) for x>=2

   That is, for a given 'n' the sequence is like 0,1,1,2,...
   Example, for n=3, the sequence is 0, 1, 1, 2, 4, 7, 13, …
   and n=4, the sequence is 0, 1, 1, 2, 4, 8, 15, ….

   Now, considering 0 and 1 also as powers of 2, for a given n, find the least number of the sequence which is not a pmaiower of 2 modulo 10^9+7 (1000000007)
2<=n<=1000000
Example:
   Input n=2, output = 3
   Input n=7, output = 127
   (By carefully observing, the answer is nothing but 2^n - 1. The main problem boiled down to finding the 2 power for very large numbers in less time)

Walmart

Walmart @IITR Sep 30

12 Objective Questions(GATE like) - OS, Graph Theory, Automata, SQL, Algo
2 Coding questions

Hosted on HackerRank

Due to slow internet connectivity, we were asked to solve the questions on paper which will be manually checked.
1) Question based on Optimal merge pattern problem given list of sorted files we have to find out number of comparisons in optimal worst case.
xx
2) 46 bit virtual address , 8 gb ram ,page size 8 KB , Each page entry size 4 bytes. We have to find out min. number of page levels (ans 3)
3)Given an index of an element , From heap we have to delete that element , they asked time complexity for that
4)Number of comparisons required in merge sort to merge n sorted arrays
5)Reversing each word in a string. What is the complexity?
6)The values of a,b,c and d lies between [1,12]. There is an edge between (a,b) and (c,d), only if mod(a-c)<=1 and mod(b-d)<=1. Count total number of edges in the graph.
7) sliding window protocol numerical
8) A code snippet was given. What does the above code calculate? Ans: successor of a node in a tree
9)There are 8 vertices in a polygon. Probability of having an edge between any two vertices is 0.5. Calculate expected number of unordered triangles.
10) few regular expressions were given choose which satisfy language over (a,b) , contains atleast 2 a.(3 options were possible for this)
11) We have to find the top five movie directors from a database. Which of the following query gives the correct output?
12) Same question is given here -
www.geeksforgeeks.org/minimum-number-of-jumps-to-reach-end-of-a-given-array/

Coding question
A lock has n buttons.
It opens if one pushes the buttons in a specific order. If one pressed the correct button, it remains in pressed state(ON). If one pushes a wrong button all the ON buttons turn to OFF state and the user has to push the buttons again.
Our hero Amit doesn't know the combination so he tries random combinations to open the lock. In the worst case how many presbuttonses(presses not sequences of buttons) does he have to do to open the lock ?For eg. - If there are 3 buttons and correct combination is 2-3-1. Amit presses this sequence to reach the correct order - 1,3,2,1,2,3,1

Walmart@IITBHU Nov 13

Coding Questions

1) Finding the no of connected components in a grid based on 4-connectivity. http://www.geeksforgeeks.org/find-number-of-islands/
1) A knight is placed on an 8x8 chessboard at position x,y. What is the probability that it will stay inside the board after n moves

Aptitude Questions

1) (A question based on Bayes' theorem)
2) Off by one error is which type of error a)t b) Logic c) Execution d) Testing
3) 100 kg milk with 99% water is boiled till it has 98% water. What is its mass now?
4) Microbes have potency, toxicity & growth values. These values of different microbes are plotted on a bubble chart. Find the most dangerous microbe.
5) (A question on properties of NP-completeness.)
6) HTTPS uses which protocol in the transport layer?
7) Behaviour of a given C snippet (with memset & strncat)
8) P: A collection of sand grains is a heap of sand if no of grains>100000000.
   Q: Removing a single grain from a heap of sand still gives a heap of sand.
   P,Q=> A single grain is a heap of sand. What is the problem with this argument?
9) (don't remember.. will add later)
10) (don't remember.. will add later)

Samsung

Samsung India (R&D) @IITM, 19th October 2014

Round 1: 60 mins

Verbal: 20 questions if(text[k]=='s')

Analytical: 20 questions

Math: 20 questions

Tip: Attempt the Math part first and Verbal the last.

Short list based on score in Round 1

Round 2:

Online coding round - 1 hr

Questions were different for different people. Questions collected from a limited pool of questions and jumbled for everyone.

3 questions for each student. 1 question for 8 points and 2 for 5 points each.

1. Given a string, print the number of occurrences of 1[0]*1 where * denotes zero or more occurrences of the digit 0. [5 points]
Input: 10011abc10000001
Output: 3

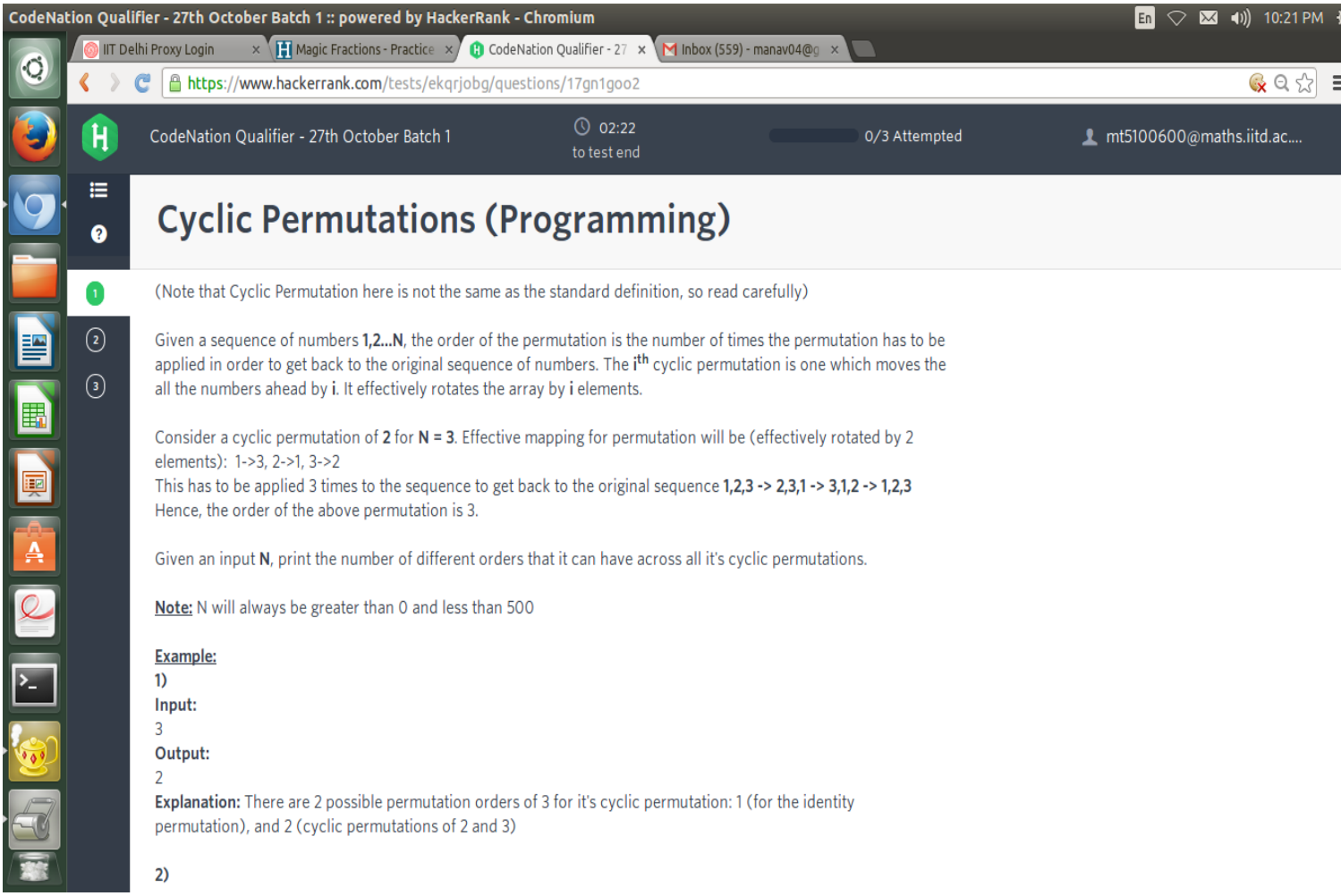
2. Given a string s1 remove all occurrences of the string s2 in string s1 and also remove all occurrences of string s2 after removal of s2 in s1 and so on.. and return the string obtained after such removals. [5 points]
Example: s1 = "qwewerrty" ; s2 = "wer "
Output: qty
(On the first removal of wer it becomes qwerty. On removal again now - qty. Nothing to remove now.)

3. Question had some robot and story build up but the essence is this:
You are given an mxn grid, where (0,0) refers top most left position and (m-1,n-1) the bottom most right. The grid is filled with ones. All positions in the grid that are blocked are filled with zeros. You are given this grid and are assured that there exists atleast one path from (0,0) to (m-1, n-1). Find the minimum distance of the path from (0,0) to (m-1, n-1) given that you are allowed to move only vertically, horizontally and diagonally. [8 points]

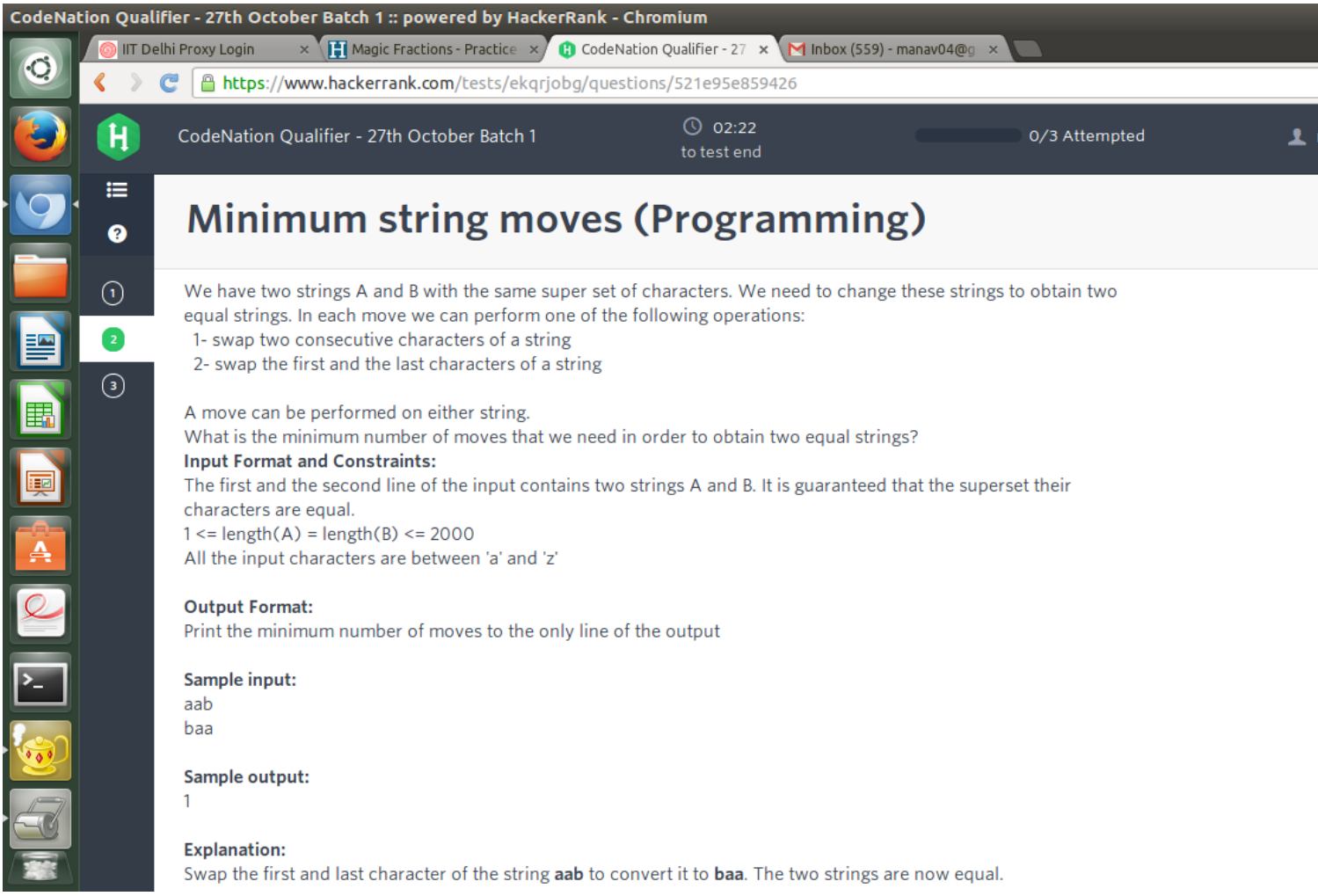
4. Given two linked lists, where each node of a list contains the exponents and coefficients of a polynomial (in decreasing order of exponents, zero coefficients don't have nodes associated with them), perform multiplication of the two polynomials and return a linked list with the result (conditions similar to the input - decreasing order of exponents, terms with zero coefficients should not be present in the linked list) [5 points]

5. Given a word with unique lower-case characters, return its rank in a dictionary that consists only of words that are anagrams of the given word.
Eg: "take" : 6 words start with 'a', 6 with 'e', 6 with 'k', 1 with 'tae', and finally "take", so its rank is 6 + 6 + 6 + 1 + 1 = 20. [8 points]
2 Rounds:

CODENATION:2014 IIT-D



continued…



2222

InMobi @ IITK

InMobi 25 Technical MCQs...

2 Coding Questions:
1.http://www.geeksforgeeks.org/maximum-sum-path-across-two.../

2. SuperKnight Problem:

Knights moves are defined
Given Size of chess board and source position, destination position and lenght k. Find number of paths from source to destination in given chessboard having exactly k length.

or

2. A n*n chessboard is given and a special player which can move like king and knight.. total 16 possibilities..

initial and ending ordinates are given and number of moves. You have to find how many ways to reach to the end by using exactly given number of moves.

InMobi @ IITR

Date – 01/11/2014

Q1. Evaluate the expression E with each operation surrounded by round brackets.

Eg. (4+((5*8)+556)) and ((20/5) – 5)

Note: There won't be any sub-expression which doesn't have brackets surrounding it. Also there in this question the number of cases in a test case was not given, so you'll have to read it till end of fill. Many students had difficulty to figure that out.

Trick Solution: In python if you take the string as this as input and use print s, it'll automatically evaluate it for you. And for input put read statement in try block and catch the exception EOF.

Q2. There are elections in town. Each candidate has been voted. A[1…n] is the array where A[i] denotes the number of votes for the ith candidate. This array A[] is sorted in descending order with ties broken by increasing indices. You can increase the votes for any candidate and also you have a desire list for the candidate. Rank[1…n] denotes the rank of the candidate that you want the candidate to be in that position where -1 denotes you don't care for him. Find the minimum number of votes added by you to get the rank of the candidates as in Rank array.

Eg. A[] = {10,8,6,4,3}
Rank = {0,2,1,3,-1}

Ans 3(Increase 6 to 9)

Eg. A[] = {10,100,40,15,15}
Rank[] = {4,0,1,3,2}

Ans 1 (tie breaker case)

Nutanix@IITD

Questions of Nutanix in IITD were -
1. Given inorder and preorder traversal of a binary tree, print the postorder traversal of the tree.

2. A maze was given with start point and an end point. Cells could be either of the form "."(can be visited) or "*"(cannot be visited). Find the minimum cost required to go from start to end. There might be cells marked with upper case alphabets as well(called portals). Each portal has an entry an exit point. We can use the portals to jump from one position to the other.

^ CAN YOU PLS GIVE AN EXAMPLE for QUESTION 2 ???

VISA@ IITB

Visa Inc. @IITB. Online coding + MCQ. 75 Minutes.

========

Assessment Composition:

1. Coding Skills: 2 Questions - Very simple problems - 30 marks total

2. Programming: 10 Questions - Simple Java Questions

--Access modifiers, inline function, Red black tree, heap

3. Machine Learning Hadoop MCQ: 6 Questions

You can't answer a single question if ML/BigData is remote-land for you.

4. Networking MCQ: 6 Questions

- Again basics. Data layer questions. IP class basic question, fields in ethernet header.

5. Operating System: 6 Questions

- Memory management mostly

6. Infrastructure: 6 Questions

- Real life scenarios - server client questions.

7. Application Security: 6 Questions

- Typical Network Security questions. Diffie Hellman, c

Each MCQ 1 mark. No negative marking.

All the best.

Pool Of Questions:

1.http://www.geeksforgeeks.org/largest-sum-contiguous-subarray/
2 . given preorder, inorder, calculate postorder.
^ (Q9: When does a player win ??????)

VISA @ IITG

November 12, 2014

Online Coding Questions:

Two questions selected from a pool.

1. The Chef has to prepare maximum number of dishes in the given time.

Input : Total time T, number of dishes on the menu (size of the arrays) n, an array cook[] where cook[i] is the time required to prepare the i-th dish, an array wait[] where abs(wait[x]-wait[y]) is theInput : N (0 < N <= 2000), Output : x, where x is a multiple of N and sumOfDigits(x) == N

2. Given inorder and preorder traversal of a binary tree, print the postorder traversal

Other sections as stated above.

Amazon

@IITG(4.11.14)

20 MCQ, 2 Coding - 90 mins Platform - Hackerrank

MCQs:

1. Which character can be used in variable name : | , * , -, _ Ans(_)
2. Complexity of sorting n string of n length in lexicographic order using Merge Sort Ans: O(n^2 log n)
3. Bubble Sort Complexity Related: Ans: 400
4. #include : Preprocessing
5. N points are placed in a circle and shoot out alternate until end, which data structure is used for implementation. (Ans: Circular Linked List)
6. A Priority-Queue is implemented as a Max-Heap. Initially, it has 5 elements. The level-order traversal of the heap is given below: 10, 8, 5, 3, 2 Two new elements "1" and "7" are inserted in the heap in that order. The level-order traversal of the heap after the insertion of the elements is:
   (a) 10, 8, 7, 5, 3, 2, 1 (b) 10, 8, 7, 2, 3, 1, 5
   (c) 10, 8, 7, 1, 2, 3, 5 (d) 10, 8, 7, 3, 2, 1, 5(ans)

7. Output of this code snippet

```
#include <stdio.h>
int main()
{
        int num[]={1,4,8,12,16};
        int *p=num;
        int *q=num+2;
        int i=*p++;
        printf("%d %d %d\n",i,*p,*q );
}
```

```
#include <stdio.h>
main() {
        int i = 2+3, 4>3, 7;
        printf(“%d”,i);
        return 0;
        }
```

8. Output:

Coding Questions :

1. 3 numbers are given as linked list. Each node represents a digit of a number starting from left. Add the three no.s and return the result in a linked list.
2. Sort a linked list containing zeros, ones and twos. (http://www.geeksforgeeks.org/sort-a-linked-list-of-0s-1s-or-2s/)

@IITM (30.10.14)

20 MCQ, 2 Coding - 90 mins Platform - Hackerrank

MCQs:

Output of code snippet, OS,DBMS basics, Complexity estimation, basic discrete math. Gate type questions. (May be those were gate questions. I'm not sure.)

Coding Q1:

Phone Keypad=> Given pressed digits, print all possible strings that you can generate.

Coding Q2:

Evaluate Expression=>4 operators in order of precedence: (%,*,+,-); associativity is left to right. Ex: 2+43%4*3=11

@IITKGP (03.11.14)

20 MCQ (negative marking is there, all questions are based on OS Time Complexities DS, Programming)+2 Coding Questions
one only need to write functions
1) gEX; { a, b} length = Given set of characters find all possible strings with length k using set of characters

output : aaa, aab, aba, abb, baa, bab, bba, bbb

2) Longest ZigZag subsequence
A sequence of numbers is called a zig-zag sequence if the differences between successive numbers strictly alternate between positive and negative. The first difference (if one exists) may be either positive or negative. A sequence with fewer than two elements is trivially a zig-zag sequence.
For example, 1,7,4,9,2,5 is a zig-zag sequence because the differences (6,-3,5,-7,3) are alternately positive and negative. In contrast, 1,4,7,2,5 and 1,7,4,5,5 are not zig-zag sequences, the first because its first two differences are positive and the second because its last difference is zero.
Given a sequence of integers, sequence, return the length of the longest subsequence of sequence that is a zig-zag sequence. A subsequence is obtained by deleting some number of elements (possibly zero) from the original sequence, leaving the remaining elements in their original order.
ex: 1,7,4,9,2,5 output = 6

@IITG (04.11.14)
20 MCQ (negative marking is there, all questions are based on OS Time Complexities DS, Programming) Coding questions were extremely easy.

1. http://www.geeksforgeeks.org/sort-a-linked-list-of-0s-1s-or-2s/
2. The following question extended to three inputs.
   http://www.geeksforgeeks.org/sum-of-two-linked-lists/

Goldman Sachs

@IIT KGP same @IITM same @IITB same @IITR same @IITBHU same @IITG same @IITD

Objective : 75 mins (10 + 10 + 5) qs

1. 2-d graph with N vertices, E edges and F faces (region bounded by >3 edges with no edge crossing across it). Given N-E+F = 2 for a certain graph of 10 vertices, find maximum number of edges
2. Split the vertices of a graph into two sets, with each having equal probability of going in either set. Find expected number of edges connecting the two sets.
3. Given a matrix A(2x2), find A^10
4. Given A satisfying a property, does it have real eigenvalues. There were 3 such As and the constraint in each case was : 1)A^2+I = 0 2) (A-3I)^2 = 0 3) A+I = 0
5. Given a set S={1,2,3,4,5,6,7,8,9} , how many even sum subsets
6. What is the probability of selecting 10 number from the set of first 18-natural numbers such that selected numbers are consecutive increasing
7. Find amount of water trapped between walls. E.g: 1 2 1 3 -> 1 water trapped between 1,2 and 2 length between 2,3

Subjective: 90 mins (someone put answers)

1. Snake and ladder game minimum number of moves(3 pages were given to write ans)
2. Vertical view of tree
3. Given binary tree , print pair of nodes whose swap make tree as bst
4. t1<=3t2 question in shortest path in graphs repeated from last year
5. rectangle 6x12. prove that if 7 points are chosen randomly in it, dist between at least 2 points<=5 //Solution by Pigeonhole Principle
6. Implement LRu cache in which get and set can be done in at max O(logn) and also write how to iterate cache
7. b1, b2, b3….bn black balls, w1, w2, w3….wm white balls in urn. pick 1 by 1 until all black are picked. probability of k white balls remaining in urn = ? probability of wj white ball remaining in urn = ? expected number of balls remaining in urn = ?(don't exactly remember the q)

Facebook Questions IITB

Hackerrank, 1.30 hrs

1. A matrix is given where each cell has 'Y' or 'N' . 'Y' implies there is grass on it. Connected cells of grass is field (2 cells connected if they share an edge). In a field only one sheep can eat grass. Find number of ways in which even sheep can eat.
   (Note: 0 is even, nC0 + nC2 + nC4 + … = 2^n-1, Use bfs/dfs and this formula to avoid timeout)

2. Minimum insertions required to convert string to palindrome. (Better than n^2 required for passing all test case)

Facebook Question IITKGP

Hackerrank, 1.30 hrs
Only one question was asked!!! :D
Two integers n, k are given s.t. 1<k<2^n. Find the kth ranked binary string of length n out of all the possible strings such that they are sorted according to the following criteria:
lower number of 1s in the binary representation => lower rank
in case of ties, number with lower value(decimal) gets lower rank.

e.g. n=3, k=5
output = 011
how?
all possible binary strings of length 3 in sorted order are:
000, 001, 010, 100, 011, 101, 110, 111
print the 5th string. :)
Any help on this problem?
Yes, here: O(n^2) solution => http://code.hackerearth.com/f29854g

Citicorp @IITM

Profile : Business Analytics(Mumbai)
Pen & Paper, 50 Minutes
There were 45 Data sufficiency Questions.

CitiCorp@IITKGP (Analyst profile):
Written test, 45 minutes
15 Quant , 5 DI, 5 Data Sufficiency , 2 case studies
case study 1 was on Expected Probability
I only recall Case study 2 which is
a rectangle house whose length 30 feet and width 15 feet . A cow is tied to the corner of house at a distance of 12 feet with a length of rope 21 feet. grass is there outside the house.
Question was find out the area which is available to cow to eat the grass.
Ans -- it would consist of three areas [3.14*21*21/2+3.14*9*9/4+3.14*3*3/4]= 3.14*243

UnBxd @IITR

Pen & Paper Coding: duration 2 hr

1.Given rand_10() function _which generate number between 0-9, implement rand_100 function which generate number between 0-99
2. write program to evaluate given infix expression
3. given a tree having left,right,random pointer(which point to any random node) write level order traversal (without any extra space)
4. U are given array of N strings of length L find minimum length string H which have K strings (from array of strings).
input first line contain N,L,K
next N line contain N string.

CitiCorp(IT analyst) at at IITD:

25 CS questions in 35 mins (easy, included graphs, data structures, sorting algorithms)
16 Quant questions in 16 mins (very easy, mostly including profit and discount, time-speed-distance, calculations)

Logical Reasoning questions depended on what language you had chosen for coding. Not included in JAVA test.

Coding questions(2 out of the following):

1. given an int matrix, rotate it by 90 degrees left or right depending upon flag variable.
2. given an int matrix, find its gram matrix.
3. implement FIFO paging technique, description was given in question
4. implement NRU ----------do----------