Important Instructions

- Kindly Create a **NEW PAGE** for Companies **(CTRL + ENTER)**

- Add all your queries to the **QUERIES** .

- Add the new companies to the **COMPANY LIST PAGE** .

- Apply **HEADING-1** style for new company name, to show in outline.

- Enable outline for Company Shortcuts **Tools -->Document Outline**

- Page edit history will be maintained in **History Page** .

- Make use of this sheet for **CTC Details** : https://goo.gl/Zyf3ZY

- Mention whether the company is open for M.Tech or not.

Companies List

You can search the questions of the following companies.

(Anyone solving the questions, is requested to ==share== the ==solution== and ==approach==)

Walmart	Zendrive	Elastic Run	Indeed	Flock (Directi)	Flock(Media.Net)
IBM	Samsung	Deutsche Bank	Oracle	Flipkart	Optiver
Qualcomm	Futures first	VMWare	iManage	J P Morgan	EXL
ISRO	PayPal	Alphonso.tv	HSBC	American Express	Mercari
SAP Labs	MathWorks	Microsoft	Capital One	Next Education	Societe General
RazorPay	Saavn	Fidelity	Tesco	Texas Instruments	Goldman Sachs
Yodlee	Nutanix	CISCO	CITI(Bank)	Symantec	Cohesity
Rakuten					

Please Update Tower Research Questions. (IIT-G and IIT-D)

History of Companies <mark>already added in this doc</mark>

Date	Company + College
09/10/17	Indeed US (IITK), Optiver (IITK)
10/10/17	Qualcomm (IITG), Flipkart (IITD)
11/10/17	Futures first (IITG), Walmart (IITH), Flipkart SDE (IITR)
12/10/17	Flipkart APM (IITG), Flipkart (IITM)
13/10/17	Mathworks PPT (IITG), VMWare(IIT BHU)
14/10/17	Samsung Bang(IIT Bhu), iManage (IITM), JP Morgan (IITG)
14/10/17	EXL Services (IITR), ISRO (IITG)
15/10/17	Indeed IITM, Alphonso.tv (IITB, IITK), PayPal (IITR) , Mercari(IITB)
17/10/17	HSBC(IITM)
18/10/17	Mercari(IITB), Flipkart (IITR), HSBC(IITK)
20/10/17	Paypal (IITBhu), Directi(IITG), SAP (IITG, IIT Bhu)
21/10/17	Mathworks Test Que(IITG), Microsoft (IITM)
22/10/17	Directi Skype(IITG)
23/10/17	Walmart(IITG), Next Education(IITD),microsoft (IITR)
24/10/17	Microsoft(IITB, IITG, IITK) , Flipkart(IITG), Oracle(IITKGP)
25/10/17	IBM(IITKGP), SamsungDelhi (IITG), Razorpay (IITM), Saavn(IITB)
26/10/17	VmWare(IITG), IBM(IITR), Qualcomm(IITR), Tesco(IIT BHU)
27/10/17	Fidelity(IITG), Texa(IITD), SRI-B(IITR), Tesco(IITH), Microsoft(IITKgp), EXL(IITK)
28/10/17	JPMorgan(IIT Kgp), Mercari(IITR), PayPal(IITB), Goldman Sachs
29/10/17	Nutanix(IITG, IITK), CISCO(IITK), Yodlee(IITK), Citicorp(IIT Bhu), SAP(IITK) Symantec(IITG), Cohesity(IITK)
30/10/17	Oracle(IITG, IITKgp), Rakuten(IITB), Alphonso(IITD),Deutsche(IITR), Tesco(IITG), VmWare(IITK, IITR), Flipkart(IITB), CISCO(IIT Bhu),Samsung Bang(IITM)

	(PTO)
31/10/17	
	KINDLY ADD ENTRY HERE, ONLY IF QUES ARE ADDED

Queries

Black Rock??

The Flipkart case was to be out in IITG on 16th (today). Could someone share the case here?
https://docs.google.com/presentation/d/1zOVS63rO-POvXI4Y_fHMxXQpdnN1XHMqafgHBDzeUsU/edit#slide=id.gd1a4321ff_2_23

-1) **Please make Separate page/sheet(inserted) for CTC, Cash-in-hand, Joining bonus, Service Bond, Job Profile, Location**
Please add CGPA criteria also(added, btw this doc is editable. You could have added it)
Make use of this sheet: https://goo.gl/Zyf3ZY
This sheet is not editable. - Now ?

1) Has Flipkart visited any IIT?
2)
    IITK -Yes
    IITR -Yes, PPT and Test on 11th October
    IITD - Yes, SDE and DS, Test on 10th October iWas DS profile open for MTech?Yes
    IITG -(Workshop was conducted on 12th October where we were told about the duties and responsibilities of an APM at Flipkart. Now we are supposed to register on a platform on 16th October, where we will be given a business case question. We have to solve the case and submit it by 23rd October. First round of shortlisting will be done based on this.Total number of people that will be hired for the role across all IIT's and BITS is 7-8.)
Case study is given individually or group? Any update on what the question is???

    IIT BHU - Workshop for APM on 12th October
    IIT Roorkee- Workshop for APM on 17th October
    Was Python allowed in the coding test? Yes

    2) Can Anyone give the contest link of Flock(DirectI) if available? it works during contest only. Well they will repeat the questions so just go through what is mentioned in the doc.

3) Has Visa or Goldman Sachs conducted test in any IIT? **Is there a minimum CG criteria for GS ? No**
    IISc-Test is today (25th oct) - **Please post the questions!**
    IITR- Test on 28th Oct   (GS or Visa ????) GS

IITK - Test on 28th Oct (GS)
IITB - Test on 28th Oct (GS)
IIT BHU - Test on 28th Oct (GS)
IIT H - Test on 28th Oct (GS)
IIT M - Test on 28th Oct (GS) GS profile in IITR, IIT BHU? Same as everywhere.

4) Is Oracle open for only CS?-NO, oracle is offering three profiles 1-for CS,EE other two for cs,ee,civil,mech and some other dept

5)**When is paypal test in all IITs? Dates please.**
IIT BHU- 17th Oct (which branches are allowed? B.tech. M.Tech. both?)
Yes open for both idd and btech
IIT Roorkee 15th Oct CGPA >=7.4. please add the questions once its done asap.
IITM 28th Oct

6) Has **Samsung Bangalore** conducted test in any IIT?
Ans6.) Conducted test in BHU yesterday. Look at the separate page for Samsung Bangalore.
IITD- Not yet (was scheduled on 28-sept, but later postponed)
IITK on 15th Oct!

7) Flipkart has offered only Associate Product Manager (APM) position so far in IIT Guwahati. Is Flipkart visiting for APM and SDE profile in any IIT?**IITB IITR IITK IITD IIT BH Yes both profile in IITB and IITR and IITM also**
Is it true that Flipkart won't be visiting IITG for tech roles this year?
False. Flipkart SDE just opened for CS/ECE/EEE/M&C.

8) What kind of questions are asked in Futures First test?
Futures First answers have been moved to it's page.

9) Qualcomm Anyone ??
 Visiting IITG on 10th October.

11. Any idea on what questions **VMWare** is asking.(coding preferably) ??

12. Has Tower Research and Goldman Sachs conducted tests in any IIT? If yes, please post the questions especially quant part. For GS All IIT test on 28th.

13. When is microsoft visiting in campuses? FOR WHAT PROFILES??
 21st October - In IITM   DATA SCIENTIST + REDMOND + IDC
What were the questions????? In IITM
Please post them
 23rd October - In IITD   **Software Engineer + UX Designer+Redmond**
 23rd October- In IITR   **Probable Test is 23rd Oct PROFILE??**
 24th October - In IITK   **PROFILE?? SW + Redmond + ML**
 24th October - In IITB   **Data scientist, UX designer, Sw engineer(US and India both)**

What about IIT(BHU), IITG?? 10 Nov SW profile
IITG- Dates not avail SW profile

14. Has JP Morgan visited any IIT?
IITB -test on 23rd October.. **Qs please??**

Ans 14) Answer Moved to J P Morgan Page. Cant see JP Morgan qs??guys please update
(Some info got updated, which is moved to JP Morgan page)

15.When is Amazon Visiting in campuses?
        21-oct iitk test //Postponed
        25-oct ko iitd me test h   (Please add questions IIT D)
        28-oct tentative date for test in iitr
        10-nov IIT BHU

19) Koi HSBC ka test diya? IITM/IITD ? Updates please
    HSBC IITK test: two simple codes sorting and printing pattern, basic apti and english

20) Has VISA visited any IIT? Or Scheduled dates please
Ans. IITB-Software Engineer

23)Myntra conducted test in any IIT?
IITR-Postponed

24) Anybody have idea about Goldman Sachs written test shortlisting process? Scoring more in one section is better or average in two ?
More in 1
There were even people in the top of shortlist who had entirely skipped one section

*average in 2 or most in 1 actually!

25) Has Mercari visited any IIT?
    IITD me test h 29-oct - Please post questions!
    IITR me
    IITB

26) Has Mercari visited any of the IITs in any of the previous placement season ?
IITB 15th oct -- I am not asking regarding this year, I want to know previous year's record
(check the docs avail in the pinned post of our Fb group) It has 2015 -16
Coming for the first time in IITB,most probably first time in any IIT. Yes, it is their first time in India.

27) IITK,M is done with HSBC, so plz tell the pattern and if any other IIT is also done with it plz tell.
Check 19

28) Is JPMC coming for analyst profile in other IITs? (They are giving CTC 16.75 in IITR open only for circuit branches)
Ans. 3 profiles in IITB including technology analyst
29) Myntra anywhere?? Not here in IITG,IITK, IITR-yes
30) CGPA criteria of Walmart, JP Morgan, and Oracle??
Ans JPMC, no CGPA criteria in IITB
31)Has Juniper conducted test in any IIT? // it is done with IITK

32) post the questions asked in SAP Labs (IITM/IITG/anywhere they have visited.)

33) Mathworks Test in any IIT ?IITG Test on 20oct (Support profile)

34) When is the TI test scheduled in all IIT's

35) SAP Labs IIT Bhu ??

36) Inter IIT placement Group on FB ? link anyone ?
https://www.facebook.com/groups/1540488506008368

37) Are there any *hidden* test cases? Like after we have submitted and clear all the test cases, do they run more and heavy testcases later? o.O

38) Please update sap labs questions?

(IITG , IITBHU, questions updated in sap labs page)

39) Tower Research Date in different IIT's?

> **IIT(BHU) - 29th Oct**
> **IITD - 25th Oct**
> **IITG - 25th Oct**

Can someone add tower questions? (IIT-G , IIT-D)

40) Uber date in different IIT's? +1

41) Post the questions asked by Capital One quant analyst during internships. The placements test is going to be the same.

- Are you sure? They may change the questions...

42)Microsoft in any IIT?? If yes post the questions. IITR-23oct, IIT BHU-3rd Nov

43.What's the profile of Deutsche Bank in IIT BHU??

44) Will Mckinsey visit campuses this time or one will have to apply off campus ?

45) Saavn test questions?

46) Has Tesco visited any IIT ? or scheduled dates ?

> **IITH-26th Oct .cpi cutoff?**

47) Any one up for mock interviews as it goes on interviewbit. We can use skype or hangout for that. For co-ordination a Whatsapp group will do. Opinions ???

48(a) ORACLE? Platform for coding and Is python allowed?
48(b) Kab hai Oracle ka coding round?

49) Bhai Texas Instruments ke dates batado na

50) Anybody has any idea about the type of questions(topic-wise/ difficulty level) asked in razorpay?

51) When is Exl visiting other IITs? please update the dates
Also, IIT ROORKEE guys, someone please provide the questions.

52)Can New tab be opened during the Next Education test on hackerearth platform?

53) Any idea about citicorp(bangalore) questions and test pattern?
54) Morgan Stanley test dates ??

55) IITM guys can anyone provide simplified solution to the Knapsack, (Directi) IITR have its test at 4:30 ????????? urgent

56. Does Direct i also take our codechef profile into account?

57. Estee Advisors and Voltaire Capital test anywhere except IITD? If done please post questions

58. Exl Verbal Section questions please?
Comprehension based 3 questions. Don't remember the passage. Others simple fill in the blanks(use of would, have/had, prepositions and articles), one/two synonym/ antonym questions(detest-> admire).

59. Please update with UBER dates ?

60. Oracle aptitude and logical questions tough/lengthy/easy? Give some examples for dbms and os questions?
See Oracle section

61) When is cisco test scheduled across IITs?

62) Has AXTRIA visited any of the IIT till now? If yesPlease post the pattern and questions.

63)Rakuten questions and what is the duration,platform for the test

64) IITM / IITB Samsung Bangalore Question !! Please !!!!

Since we are organising the sheet by companies, it became necessary to update [History of companies added].

Thanks for co-operation.

Check History Page for new company additions.

Goldman Sachs

IIT XYZ - 28th (Common to all)

3 sections : CS/ML/Quant

Note about test - held on Hackerrank, you are allowed to switch between sections. Each section has a separate timer, which will stop when you switch. One strategy could be to sacrifice some section (ML, since it was shit) and use that time for the other questions. Two sections can be done fully if you have some luck and you manage your time properly. Also note, GS will not use the entire test result to shortlist. Different teams will look at different things, so if you do really well in one section or two sections, you have a good shot at interview.

CS - 60 minutes, 5 MCQs, 2 coding questions. Each MCQ was +10/-3, Coding questions were +20, +30 with partial marking (although it wasn't specified how much, and Hackerrank does show how many test cases passed)

Coding questions :
(30)
You are given a list of n tourist bookings (start date, duration), and the total number of tourists that can simultaneously be in the country. When processing bookings, you have to check if the current number of tourists existing are more than number allowed, and if so, deny the booking. O(n^2) was obviously giving TLE, it is possible to do it in O(nlogn)
Similar : https://www.interviewbit.com/problems/hotel-bookings-possible/
Can someone explain how to do this ??
What i did -->
   1. created an array of size 1000
2.If A[start] < threshold then add 1 from start till end(of that particular tourist). And do num++.
3.At last return num.) what was wrong with my approach ?? It passed sample input but not even 1 test case :(!!! please help.

^^^This logic would fail if the immigration requests come in following order:
1-10
1-5
6-10
Your logic would give ans 1 whereas the actual answer is 2.
There was slight ambiguity in question. The actual objective was to maximise the number of immigrants in case more than 1 arrive on the same day.

Did all testcases run?
(20)

You are given a number (in the form of a string) and an integer k. You have to output the maximum palindromic number that can be formed from the given number and by using at most k changes to the number (replacing digits is the only allowed operations). Output -1 if it is not possible to get a palindrome.

MCQs :

1) You are given a BST (filled with some 6-7 values), and the question was that how many input orders could be given such that you end up with the same BST. (As in, you are given a stream of input and you make a BST out of them normally without balancing etc, how many streams will give same BST) Ans: 48 - Shouldn't the answer be 96 ? The answer was 96. How? It was 48 only..The tree was 5(root),3(left),8(right),1(left to 3),4(right to 3),0(left to 1),2(right to 1).First 5 comes,then 8 can be placed in any 6 positions,then 3 would be the only next number possible,then 4 can occur in any 4 positions,then 1 will be the only next number,now 2 & 0 can occur in any order.6 & 7 can occur in any order in the last.So,6*4*2*2=96. 6 & 7 kidhar se tapak gaye?

   The answer is 48. I wrote a brute force checker and it returned 48.
The link for the checker :   https://ideone.com/3pzEFZ
You haven't used 6 & 7 . The question was given a stream of integers from 0-8 , how many permutations of them would result in such a tree . So 6 & 7 need to occur in the last & in any order.
But then won't we have more nodes than there were in the original tree? Maybe it was a printing error and they meant how many streams of the inputs already present in the tree will give the same structure?
No,why would they then give such stream of integers.After this tree structure would be formed 6 & 7 can occur in the last only.

2) We wish to solve Sudoku filling using graph coloring, by putting edge between nodes that can't have the same number. What is the minimum number of nodes in this graph? Ans: 810

3) Given a number (n bit long), what is the complexity of finding if the number is a power of 2? Ans - **O(n)** (**stop correcting this to O(1). N is the number of bits in the number, you have to check every bit to see if it is 1 or not, since any of them could be 1 and the rest 0**)
   The answer is O(1). // `return n && (!(n & (n - 1)));` <- this is O(n) operation. Here, n is the number of bits!
   (I think ans is O(1). We only have to check if MSB of n and (n - 1) are same. If same then ans is No else Yes. any thoughts?) Yes!! Answer is definitely O(1) and given above. (Doing n - 1 is a O(n) operation in the number of bits. Stop confusing yourself for this.)
No, bitwise AND will be linear in the number of bits, hence it is O(n) i think. <- you're right
^^ this is wrong, all binary operations and operators take O(1) time. <- abey -_- binary operators take (logn) time at least, and here n is the number of bits so it will take O(n) time. Stop blindly parroting stuff. Just read what is written. The complexity is not in terms of the number itself but in terms of the number of bits. Read this answer for more clarity -
https://stackoverflow.com/questions/16915391/time-complexity-of-bit-operations

4) What is the extra space complexity for maintaining next min element in a stack.http://www.geeksforgeeks.org/design-a-stack-that-supports-getmin-in-o1-time-and-o1-extra-space/ Ans O(1)

5) What is a possible output for n |= n>>1, n|= n>>2, n|= n>>4, ... n|= n>>16, cout<<(n>>1) Ans: 127

ML - 10 questions, all MCQs, each +10/-3. Duration was 30 minutes

Notes : They were not ML, mostly statistics type. Went pretty shit for anyone who knew only CS type ML. Majak tha ML wala section. <- as in kisi ka nahi hua, not ki sabka ho gaya majak tha.

1) X1 ~ N(0,1), X2 ~ N(2, 4), what is KL (X1||X2)
2) Let w be an unbiased estimator for theta parameter in Unif(0,theta). Given n samples, what is an unbiased estimator for variance of w
3) X ~ N(0,1). Let p denote cdf of x. Define y is random variable, y = s(log(p) - log(1-p)). What is cdf of y? Ans: $1/(1+e^{-y/s})$
4) Given n samples of a vector (X,Y), what is an unbiased estimator for cov(X,Y). The options were in terms of H, defined as the covariance of the sample.
5) 3 people Alice, Bob and Charlie. Alice can shoot with probability 0.2, Bob with 0.5 and Charlie with 1. What is the probability of Bob surviving if they all were shooting in cyclic order. Ans: 13/30
6) What kind of normalisation(mean, min-max) is applied before cosine similarity of word vectors. Ans - nothing, as it would lead to information loss (tentative answer)
7) In time series, which method is used for testing? Window method, Shuffling method or k-fold cross validation. Ans - should be window I think, because everything else will destroy sequential nature of dat
8) Another question on cosine similarity. Matrix of MxN. Whether the similarity would lie between [0,1] or [0,1) based on whether the rank of matrix was N and M>N. -
9) Given that there are two coins of bias p and q, you define "event" as choosing a random coin among the two, and then tossing them thrice. Given outcomes as {HTT} and {TTH}, do expectation maximization once to find values of p, q. Start with p = 0.4, q = 0.8

Quant - 10 questions. 9 MCQs and one numerical type, all were +10, the MCQs had -3, numerical had no negatives.
Notes : All probability based. Make sure you practice linearity of expectation and random variables. Otherwise a bit of revision of 11th/12th JEE type questions.

1) Straws weigh a random amount in unif(0,1). A camel can take a total weight of 1 before its back breaks. What is the expected weight of the last straw that breaks the camel's back.
   Ans : 2-2/e = 0.64
2) What is the expected number of straws that can be placed before the camel's back is broken Ans : e
3) Geometry question, obtuse triangle ABC was given (B being the obtuse angle). D was midpoint of BC. Angle ADB = 45, Angle ACB = 30. Find tan B Ans: -2-sqrt(3)
4) Matrix was given, entries in first row were cos 1, cos 2, cos 3, ... and so on, for n^2 entries. What is the limit as n tends to infinity of the determinant. Ans: 0
   https://math.stackexchange.com/questions/1003453/a-limit-determinant-question
5) M, N are drawn from unif(1,100) integers. What is the probability that $7^m + 7^n$ is divisible by 5. Ans : 0.25

6) What is the probability that the first toss was heads given that r heads were observed in n tosses of a fair coin Ans : its r/n

7) A and B play a game with each other. P(A wins) = 2/3. The loser of each round gives the winner 1$. What is the expected number of rounds they will play if A starts with 1$ and B starts with 2$. Ans : 15/7

8) Another determinant simplification problem, you had to do basic R1 -> R1 - R2 type operations and extract common elements. Ans : You had to get a simplified form, of the kind of expressions in the determinant ANs: 7

The matrix was

(1+a^2-b^2)   -2ab   -2b
2ab   (1+a^2+b^2)   2a
2b   -2a   (1+a^2-b^2)

Its determinant value is (1+a^x+b^y)^z. What is x+y+z?. Ans:7

9) Number of minimum length of set such that there exists a subset that has sum divisible by 11. Ans : 11

https://math.stackexchange.com/questions/1939620/prove-that-there-is-at-least-one-subset-of-11-numbers-whose-sum-is-divisible-by

10) $x^2 + 2bx + c = 0$ - what is the probability that this has real roots, given that b, c are drawn uniformly randomly from [-1, 1]. (Real distribution) Ans - 2/3

Test in all IITs to be held on 28th.
Atleast post solutions for sample test.

There is a 16x16 matrix with all entries +1. At each step, a player can invert the sign of exactly one entry in the matrix. After n steps, each entry will be either +1 or −1. Let C_i be the sum of all entries in the Ith column and R_i be the sum of all entries in the Ith row. What can be a possible value of $\sum C_i + \sum R_i$

Pick one of the choices

⚪ 42

⚪ 44

⚪ 45

⚪ None of these

Ans to this question????? 44 ?? Kaise kiya??

Aaj ML me wo time series wale ka kya ans tha?
Window ya both cross validation and window :

What about that normalisation question? Z normalisation or mean normalisation?

I think they are both ambiguous questions with no exact right answer.
For time series refer here:
https://machinelearningmastery.com/backtest-machine-learning-models-time-series-forecasting/
Which says no direct method of applying cross validation.
- It should be sliding window because all the other methods would destroy the sequential nature of data.

For normalisation these two can be referred, but again it is ambiguous:
https://www.quora.com/How-can-I-use-cosine-similarity-in-clustering-For-example-K-means-clustering
https://stackoverflow.com/questions/5841282/clustering-from-the-cosine-similarity-values/
Most likely ans is No normalisation should be applied

Can someone explain suduko question?
In Su-Doku, each row and each column have distinct numbers and also each 3x3 grid
Thus, 9*(9C2)+9*(9c2) + 9*(9C2) (for each row, column and grid)
This number is something in 900s and since there are few overlapping cases if you think about it . Thus the only logical answer was 810 as the rest were more than the answer with overlapping cases.
 https://brilliant.org/problems/sudoku-graph/#!/solution-comments/

Also share nLogn approach of booking coding question.

Was anyone else facing Wrong answers in Tourist Booking question with brute force solution?

Walmart Labs

https://ideone.com/6shrps

IIT BHU (27/08/2017)

Q1. **Sum of Sub-Array**

Given an array of size n and an integer k. Find the maximum possible sum of
Length of all the contiguous subarrays formed such that k is the maximum element in that sub array and
none of the subarrays are overlapping .
Solution: https://ideone.com/ZwxIRn

Short Solution: http://ide.geeksforgeeks.org/RFZTCS

http://www.geeksforgeeks.org/maximum-sum-lengths-non-overlapping-subarrays-k-max-element/

30 Marks

Q2. PANDA XOR

given the size of an array n and an integer x and each element in the array is defined as
A[i]=x+2*i-2 .Find the xor of all the elements .

t(Soln anyone?)+6

http://ide.geeksforgeeks.org/qgeUD9 (is it working?) NO

Working Solution : http://ide.geeksforgeeks.org/bK1icn

Please provide solution for any <O(n) complexity.   **This can
be done in O(1).**

Let say , x = 3, n = 5. A = {1,3,5,7,9}   **(shouldn't it be {-1,1,3,5,7})??? NO => A[i] = {x+(2*i)-2}**
**Xor(A) = Xor(Xor(1,2,....,9), 2*Xor(1,2,3,4)) (This will give the correct answer) (what is the logic behind this? ...
k*xor(p)** **We are expecting O(1) solution, so this hint doesn't matter. Read sol below.**
 is not equal to xor(k*p) right?)
**Xor(2,4,6,8) = 2 * Xor(1,2,3,4) Check this. This will come true. I have checked this for some cases. (does this have
some formula (i mean a generalization) or is i
t just working in this problem?) Check below full solution (yeah i understood what u are doing ... but why is 2*
xor(1,2,..n)= xor(2,4,....2*n) ... does this have a basis or was this intuition (a pattern u found)?) Just an intuition -**

It will hold for 2 (idk about other numbers) coz in way u are just right shifting by 1 bit each no in xor(2,4,..,2*n) then taking xor and in 2*xor(1,2,..,n) u are taking xor and then right shifting by 1 bit and so it won't cause any change in result.

Solution:
a = xor(1,2,.....,A[n])
b = xor(1,2,......,A[0]-1)
c = xor(1,2,....,n)
Final ans = xor(a,b,2*c)
Its not giving correct answer??

I.e we compute xor of all number from 1 to n, and again xor with even numbers in that range.
Xor(A … B) , i.e xor of elements in range A to B can be computed in O(1). Please google.

If A contains even terms, then set A[i] = A[i]++, we just add 1 to LSB side, so it won't affect the answer.

Solution Logic: O(1) solution (x>1 or x>0 is required for this solution to work)
There are four cases for the first element which is A[0]=x-2, depending upon (x-2)%4
Case 1: remainder is 0 i.e. last two bits of x-2 is 00
In this case, the last two bits of second number(A[i]) will be 10 and all the other bits will be same. Again, third and fourth will have all bits same except last two bits which is again 00 and 10 respectively. This means, xor of first two number will be 10 i.e. 2 and next two will be again 2. In other words, first four number will have xor zero and it will repeat in cycle of four numbers starting.
So, in this case , answer will be= xor of last n%4 numbers
Case 2: remainder is 1 i.e. last two bits of x-2 is 01
In this case, the last two bits of second number(A[i]) will be 11 and all the other bits will be same. Again, third and fourth will have all bits same except last two bits which is again 01 and 11 respectively. This means, xor of first two number will be 10 i.e. 2 and next two will be again 2. In other words, first four number will have xor zero and it will repeat in cycle of four numbers starting.
So, in this case as well, answer will be= xor of last n%4 numbers
Case 3: remainder is 2 i.e. last two bits of x-2 is 10
In this case, exclude the first number and the last two bits of second number(A[i]) will be 00 So, starting from second number this case will be same as first one
So, in this case as well, answer will be= xor of last (n-1)%4 numbers and first number (as we excluded this number)
Case 4: remainder is 3 i.e. last two bits of x-2 is 11
In this case, exclude the first number and the last two bits of second number(A[i]) will be 01 So, starting from second number this case will be same as second one

So, in this case as well, answer will be= xor of last (n-1)%4 numbers and first number (as we excluded this number)

30 marks

Q3. Total Cost

An area is formed by enclosing N logs. The x,y coordinates of each log is given. There are houses to be constructed on all the integral points lying in the area. The construction cost of each house is 25. Find the total cost of all the houses constructed.

solution: Use pick's theorem , shoe-lace formula and number of integer points between two points you will find the number of integer points inside the polygon

Are the coordinates given here ordered in some manner (clockwise or counterclockwise) to get the area of the polygon? (if u take the absolute value the order doesn't matter) . But it has to be provided in some manner obviously?

If it is not given in some definite order (either clockwise or anti), then it is impossible to calculate.

Can someone suggest some test cases please?

40 Marks

IIT HYD (11/10/2017)

CGPA criteria is 8 .

3 Coding Questions on Hackerearth (90 mins)

Question 1 : (30 Marks)

Given a number N, find the Nth binary palindrome. (N can be a very huge number)

Can someone explain the logic (other than that on GfG)?

Solution :

http://find-n-th-number-whose-binary-representation-palindromewww.geeksforgeeks.org//

Brute force won't work.

Geek for geek solution is O(1), but hard to understand,

https://ideone.com/Kx7Ahz easier O(logn) solution using binary search. Please test and comment if I missed any case?

https://www.codeproject.com/Articles/1162038/Finding-nth-Binary-Palindrome-in-Csharp

Question 2 : King's Land Sale(30 Marks)

The ruler of byteland is selling the land of the kingdom.

Given the N number of rectangular coordinates (a,b) , (c,d) which are diagonally opposite, the rectangular area is in accordance with the rectangular axes.

Two area can overlap each other. Find the total area that KIng can sell.

1<=N<=20

-10000<=a,b,c,d<=10000

Example :

Input :

First line contains N and then following N lines contains values of a,b,c,d

2

0 0 2 2

1 1 3 3

Output :

7

Explanation : Total Area is : 4+4 = 8

            Common Area is : 1 (between (1,1) and (2,2))

            Answer = 8-1 = 7

Was line-sweep algorithm required or a less optimal one was passing? Sweep-line algo not required, less optimal was passing (Please share your solution +2)

Solution :

https://www.hackerearth.com/practice/basic-programming/implementation/basics-of-implementation/practice-problems/algorithm/area-of-union-of-rectangles/

Question 3 : Max 1's (40 marks)
Given a matrix NXM, containing only 0's and 1's, only one operation is allowed in the matrix that is to
swap the columns. We have to find the largest size of rectangular submatrix containing only 1's.
Output the number of 1's in the largest rectangular submatrix and the minimum number of swap
operations required to get that.

IITG (23/10/17)

Perfect mind game and ashamed that I fell for it. They would instruct saying that, if u change/open new
tabs(other than exam window) = ur session will end.
No such thing will happen, do whatever you want.
Link for the Questions:
https://goo.gl/An29eV

Problem 1 Solution : https://ideone.com/rYXReV

Problem 2 Solution : http://ide.geeksforgeeks.org/HcHMAN

All the best

Zendrive

CTC : 15 LPA
Base : 10 LPA

IITM (13/09/17)

Open for?

20 ques in 60 minutes. Nothing related to programming, only maths,stats and m/c learning ques. Level : super high.
cauchy distrib, classifiers, like LDA and PCA diff, poisson distrib, normal distrib, some probability ques, various other classifiers(new to us), data was given we had to tell which classifier will be best ....
all were very tough.

Elastic.

IIT BHU

https://pasteboard.co/GIUXpiw.png
https://pasteboard.co/GIUXCbS.png--how to solve this ?
https://pasteboard.co/GIUXRSH.png --solution please

Is there any better method other than brute force for the first question?
For the second question, is there any better method, other than applying bfs whenever query 2 is called?
(BFS is most efficient way to solve that !!)

Find prime factorization of N(in logn)
N = (a^p1)*(b^p2)....
p = min(p1,p2,p3…) and now if all p1, p2, p3…. Are divisible by p then we can write N = x^p.
Now if number of divisor of x is y then solution exist. (http://www.geeksforgeeks.org/count-divisors-n-on13/)

Indeed

IITD (12 - 09 - 2017)

Q1. https://www.careercup.com/question?id=6229105402970112
(Any better way than checking all possible combinations ??)
Q2. http://www.geeksforgeeks.org/find-the-maximum-of-minimums-for-every-window-size-in-a-given-array/

Q3.Given an array of prices of products . Discount on ith product is equal to the product price less than or equal to ith product and to the right(right of ith). If no such price exist then discount is zero. Give the final total price.
Eg.
Input : Prices   =   5 3 3 2 4
Method : Discount =   3 3 2 0 0
Output : {5-3}+{3-3}+{3-2}+{2-0}+{4-0} = 9

This question is same as find the next smaller or equal element (very common question is find the next greater element.) Use stack to get this done.
In This question for every ith element, we just have to check (i+1)th element or all the element to its right side ? -NO, all elements to its right.
I am not sure but I think only the immediate next one.

Can someone explain why discount for 5 (first element) is not 4 but 3. What does right of ith exactly mean do we have to take first smaller or the smallest in the right of i?

IITK

Hackerrank - 90 minutes - 4 questions

Question 1

Given a Tree in form (child parent) tuples.
Return Bracket Notation of Tree.

Also had to return different errors(if any) in the given tuples like Multiple roots,cycles, etc.

Example:
Input : (A,B) (A,C)
Output : (A(B)(C))

Anything better than O(n) ? Nay!

Solution: Construct tree, and then do preorder traversal. Correct, if there is some mistake, or in case of some better approach.

Question 2

Brute-force

Doubt : (Using BFS ???)

Given a graph, find all TRIOS. TRIO defined as triangle in Graph.

Trio ABC = Edges: AB BC CA

Was it asked to find the number of triangles?

The number of triangles is trace(A^3)/6 for undirected graphs.. So was that the answer

It will take O(n^3) time to compute A^3. Then what is it's use. You can directly do it in O(n^3).

Question 3

Question based on priority_queue and sliding window

Question 4

Given an array of N elements which consists all integers from 1 to N (a permutation). Return minimum number of swaps required to sort the array. (Minimum no. of SWAPS not INVERSIONS)

Seems easy, but it is not.(really ? :D)

Any tricky test case ? - NO.

Return minimum number of swaps required to sort the array. (Read again - minimum number of SWAPS not INVERSIONS)

IITM

 4 Questions

1. An array A of balls with velocity Ai and position i was given . All balls start at the same time and move towards right indefinitely. A faster ball can overtake a slower ball ahead of it . this overtake creates a collision for the ball being overtaken . Given a position x, find the number of balls that overtake it or the number of balls it overtakes.

(Doubt : The collision has any effect on their velocities ??) No

(Is it simply addition of all numbers having greater velocity and on back of position x + having less velocity and in front ??) Yes

(doubt : can anyone add a test case)

2. An array having a performance score for each employee was given .
   The manager selects 'x' employees the team in the following way
   (a) Manager chooses the employee with the highest score on the first 'm' among the array , or the last 'm' from the array
   (b) If they scores of the person from the first m and last m are same , give preference to the shorter index
   (c) After choosing, the employee is removed from the array
   (d) If there are less than 'm' in the array then choose the largest score.

3. A string was given, a single operation was a 1 character left rotation of the string. How many such operations are required to obtain the lexicographically smallest rotation of that string.
//what do u mean by lexicographically smallest rotation? Is it same as lexicographically smallest string that can be obtained by rotating it ? yes
Constraints ?? none explicit- ran into timeouts without using Suffix arrays

4. A grid is there with cheese scattered in random locations . Some locations in the grid are blocked and Tom cannot pass through them . Tom starts from 0,0 and has to collect all the cheese and give them to Jerry in the end who is at location (x,y) . Tom can pass through the location that holds the cheese (that location is not blocked).
//this is same as travelling salesman? What are the constraints?

Flock (Directi)

IITM (16/09/2017)

Ques 1)   [Variation of Knapsack]

 You are given N stones, labeled from 1 to N. The i-th stone has the weight W[i]. There are M colors, labeled by integers from 1 to M. The i-th stone has the color C[i] (of course, an integer between 1 to M, inclusive).

You want to fill a Knapsack with these stones. The Knapsack can hold a total weight of X. You want to select exactly M stones; one of each color. The sum of the weights of the stones must not exceed X. Since you paid a premium for a Knapsack with capacity X (as opposed to a Knapsack with a lower capacity), you want to fill the Knapsack as much as possible.

Write a program that takes all the above values as input and calculates the best way to fill the Knapsack - that is, the way that minimizes the unused capacity. Output this unused capacity. See the explanation of the sample test cases for clarity.

 Input

The first line of input contains the integer T, the number of test cases. Then follows the description of T test cases. The first line of each test case contains three integers, N, M and X, separated by single space. The next line contains N integers, W[1], W[2], W[3] ... W[N], separated by single space. The next line contains N integers C[1], C[2], C[3] ... C[N], separated by single space.

Output

An optimal way of filling the Knapsack minimizes unused capacity. There may be several optimal ways of filling the Knapsack. 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. Output T lines, one for each test case.

Constraints

1 ≤ T ≤ 10
1 ≤ M ≤ 100
M ≤ N ≤ 100
1 ≤ W[i] ≤ 100
1 ≤ C[i] ≤ M
1 ≤ X ≤ 10000

Sample Input
4
9 3 10
2 3 4 2 3 4 2 3 4
1 1 1 2 2 2 3 3 3
9 3 10
1 3 5 1 3 5 1 3 5
1 1 1 2 2 2 3 3 3
3 3 10
3 4 4
1 2 3
3 3 10
3 3 3
1 2 1

Sample Output
0
1
-1
-1

Explanation

In the first test case you can select stone 2, stone 5 and stone 9. The knapsack will be completely full. Of course, there are several other ways to select stones such that the knapsack is full. The unused capacity in all such ways is 0.

In the second test case you cannot select stones such that the knapsack is completely full. You can select stones {1, 4, 9}, such that the unused capacity is 10-1-1-5 = 3. But there is a better way. Select stones {2, 5, 8}. The unused capacity is 10-3-3-3 = 1. This is the optimal way. There is another way that is optimal. Select stones {1, 5, 9}. The unused capacity is 10-1-3-5 = 1.

In the third test case there is only one option. Select stones {1, 2, 3}. The total weight will be 11. This is more than what the knapsack can hold.

In the fourth test case there is no stone of color 3. Thus, there is no valid selection of stones possible. The answer will be -1.

Attention

The constraints are designed such that a brute-force solution will fail. You can apply dynamic programming, similar to the standard Knapsack problem. Hint: Consider DP[c][w], which is true, if and only if, the weight 'w' can be exactly achieved by only using stones of color 1 to 'c'.

Please put any tricky test case if any.


```
/*
can be solved using dp. The main objective in this problem is to collect all colored stones. So make a dp[X][M] and at
any point say dp[i][j] we need to find whether there are  stones to pick of color from 1-j that weights to i.
⇒ dp[i][j] = t; where t is calculated as shown below!
t = false;
for (every stone having color j and having weight <= i)
        if(dp[ i - weight[that stone] ] [j-1] is true/possible)
        {
                Then t is true;
        }
*/
```

Can someone check if this solution is correct or not, plz? → <u>Link</u> (Wrong solution)

Input:
1
100 10 1000
41 67 34 0 69 24 78 58 62 64 5 45 81 27 61 91 95 42 27 36 91 4 2 53 92 82 21 16 18 95 47 26 71 38 69
12 67 99 35 94 3 11 22 33 73 64 41 11 53 68 47 44 62 57 37 59 23 41 29 78 16 35 90 42 88 6 40 42 64
48 46 5 90 29 70 50 6 1 93 48 29 23 84 54 56 40 66 76 31 8 44 39 26 23 37 38 18 82 29 41
4 6 10 9 5 1 8 7 4 7 2 6 5 3 1 10 8 4 8 3 7 1 2 7 6 8 6 5 2 3 1 1 2 5 7 1 8 2 8 8 8 4 4 6 10 10 9 2 9 3 7 7
1 4 9 1 2 3 6 1 10 5 8 9 4 6 2 3 1 2 7 5 1 7 2 9 10 9 5 2 5 4 10 9 9 1 9 8 8 9 4 9 4 8 2 1 8 4 5
Expected output:
104

Ques 2) [Kruskal's Algorithm] or Prim's Algo.

In a country, the king is also low on budget. There are N cities and M bidirectional roads. Some of the roads of the country are broken and need repairing. The king of the country wants a good transportation system, so he at least one path to reach a city he wants that all the cities of the country must be connected i.e. there must from any other city. So he wants to repair the roads in such a way that the cities of the country must be connected and the cost of repairing is as minimal as possible.

You have to find the minimum cost of repairing the roads such that the cities become connected.

Input Format:
First line of each test case contains two integers N and M denoting the no. of cities and no. of bidirectional roads. Each of next M lines contains the description of a road in following format:

U V 0
OR
U V 1 X

First two integers U and V denote the cities that are getting directly connected by this road. If third integer is 0, it means the road is OK and needs no repairing. If the third integer is 1, it means the road needs repairing and the cost of repairing that road is denoted by a fourth integer X.

Output Format:
For each test case, output a single integer denoting the minimum cost of repairing in order to make the cities connected.
Note:
2. There is at most one road between any two distinct cities.
1. The input always guarantees that there is at least a way to make all the cities of country connected.
3. There is no road from a city to itself.

Constraints:
1 <= N <= 10000
1 <= M <= 100000
1 <= U,V <= N
1 <= X <= 1000

Examples:
Input:
4 6
1 2 0
1 3 1 4
1 4 1 1
2 3 1 2
2 4 1 5
3 4 1 3

Output:
3
Can we solve it using Minimum spanning Tree? Yes!
Can someone from IIT M give the 3rd problem ? looks repeated here.

Only 2 questions it seems. (Need Confirmation from IITM)

Catch The Train | Problem Code: **CATCHTRA**

You are walking down the escalator to catch a subway train. The escalator itself moves at a speed of **Ve** meters per minute. You can walk down the escalator at a relative speed of **Vy** meters per minute. The length of the escalator is **L** meters. Trains arrive **T** minutes apart. Let t be the time between your arrival to the station if you stand still on the escalator and the arrival of the last train before your arrival. Assume that **t** is a random variable uniformly distributed between 0 and **T**. Return the probability of catching an earlier train if you choose to walk down the escalator instead of standing still on it.

Input :

The first line of the input contains an integer **Tc** denoting the number of test cases. Each test case contains the following 4 lines

Ve - velocity of escalator
Vy - your relative velocity with the escalator
L - length of escalator
T - Time Period of Trains

IIT BHU (08/10/17)

- Knapsack Problem
- Flock(Media.Net) IIT Kanpur Ques 1.
- Flock(Media.Net) IIT Kanpur Ques 2.

Flock (Media.Net)

IITM (21-09-2017)

Question 1: Lost Cake [BFS/DFS]
Our chef just started working in a huge hotel. The hotel can be thought of as a set of R rooms, numbered from 1 to R, interconnected by C connections represented as a (ri, rj) - room ri and rj are connected. To establish himself, he prepared an awesome cake for some very important 6 guests. However, the delivery boy made a mistake. Instead of delivering the cake to room D, where those important guests are staying, he delivered the cake to room S. After much searching our Chef found the cake in room S. Now, he has to know the minimum of rooms that the Chef will need to travel through, to reach room D(including the final room).

What was the input like? Did dfs/bfs pass all the test cases?

CAN SOMEONE PROVIDE SOLN OF ABOVE PROBLEM??

Question 2 : Colored Diamonds
There are N boxes placed in a row and M diamonds are distributed in these boxes such that each box contains at least 1 diamond into it. Each diamond is of certain colour and has a certain value. Formally, diamond i has colour C_i and value V_i. Each diamond is put in a certain box denoted by B_i. Now your task is to take exactly one diamond from each box such that total value of diamonds taken is maximum and diamonds taken from two consecutive boxes are of different colours. If it is impossible to satisfy the conditions, output -1.

Will O(nm) pass all testcases ?

http://ide.geeksforgeeks.org

Best Solution : http://ide.geeksforgeeks.org/Es38eq

Question 3: Maximum Tree Width
You are given a preorder traversal of a binary search tree. You have to select a subset of nodes from the tree such that sum of the values of the nodes in the subset is maximized. Note that no two nodes in the selected subset should be connected directly. Two nodes are connected directly if one node is a parent of the other.

Algorithm : Get the inorder traversal by sorting preorder traversal. A unique tree can be constructed from inorder and preorder traversal. Now this problem is reduced to this one.

Code : http://ide.geeksforgeeks.org/tH7y0j

IITK (03-10-2017)

Q1) Question   Solution
Q2) Question   Solution
Q3) Word Ladder Problem

IITG (20-10-2017) - online test

11 students (all those who solved at least two questions) were shortlisted for the 3 algorithm rounds (via skype).
Q1. Question Solution
Q2. Question Solution
Q3. Question Solution

IITG (22-10-2017) - skype interviews

There were 3 algorithm rounds after online test and you need to clear at least 2 algorithm rounds. If you will clear first two algorithm rounds then there will be direct final round for you on 01-12-2017. You have to give optimal algorithm with proper code to clear any algorithm round.

Q1. Undirected graph, n nodes , e edges, 2 players A & B. They move alternately where they can move from their current position to an adjacent position. A is at p and B is at q. A has to reach p' and B has to reach q' . At any point in the game, they must have a separation greater than d. Find if it's possible or not?
Constraints on n and e ? If n is upto 1000 then , we can apply n bfs to find all pair shortest path, then do recursion , dp[i][j][x] = 1 if A is at node i, B is at node j, and x = 1 if current move is for B, else 0. Only thing which is left is to recurse and memoize. **- No such constraints were provided in the interview.**

Q2. Convert n-ary tree to binary tree :
- Siblings shouldn't be ancestors to each other
- Order of ancestors shouldn't change
- Insertion of dummy nodes is allowed.

Q. What exactly we have to do? Minimise the number of nodes with these constraints?
A simple solution would be , if one node "A" has 5 children let say "B" to "F", then create something like
"A" (Dummy1(Dummy2("B","C"),Dummy3("D","E")),Dummy4(Dummy5("F",null),null))

So the main idea is for each value of K, where K is the number of children , compute such subtree and reuse it whenever we find another node with K children. This method will not minimise the number of dummy nodes. If the goal is to minimise the number of dummies, then there will be some tricks, hard to explain here - At first the interviewer didn't ask me to minimise the number of nodes. I provided a random solution. Then he asked me to improve the space complexity and do something better. I took 10-15 minutes in providing another solution using k - 1 dummy nodes where k = number of original nodes.

Q3. http://www.geeksforgeeks.org/given-an-array-arr-find-the-maximum-j-i-such-that-arrj-arri/

Q4. http://www.geeksforgeeks.org/find-maximum-dot-product-two-arrays-insertion-0s/

Q5. http://www.geeksforgeeks.org/maximum-size-rectangle-binary-sub-matrix-1s/

Q6. http://www.geeksforgeeks.org/maximum-product-increasing-subsequence-size-3/

Q7. http://www.geeksforgeeks.org/weighted-job-scheduling-log-n-time/

Q8. Probability of Knight to remain in the chessboard

Q9. http://www.geeksforgeeks.org/find-smallest-range-containing-elements-from-k-lists/

IITR(28 oct 2017)

There were different slots. In my slot these 3 problems were there-
1. Standard knapsack
2. https://www.codechef.com/DI17R136/problems/WORDCOMM(exactly same problem)
3. Similar to this- http://www.geeksforgeeks.org/dynamic-programming-set-6-min-cost-path/

IBM Research

CGPA criteria? No CGPA criteria in IITM

IIT-KGP

CGPA>8.5 considered. All those who applied (EC Mtech, idk abt other depts) with cg < 8.5 were shortlisted for test too, they might consider the criterion during shortlisting after test. Anyone less than that needs to have a publication and a LoR from a full time Prof. about his research exp. Needs to also have 1 year of research lab experience.

It was a **Pen and paper** test with time constraint of **1 hour. Max marks 60**

1) Array of strings given. Find pair of strings who have no character in common. If there are multiple answer possible, return pair with the maximum value of product of length of two strings. **(10 marks) -> EXPECTED COMPLEXITY ANYONE?**
2) You are at nth step of stair. Find no. of ways to get down. (from each step, you can take either take 1 step down or 2 steps down). ANS: fibonacci number(DP) **(10 marks)**
3) kNN and kMeans (machine learning), similarity or difference with example.(asked whether they are similar or different, which things are similar and which are different, explain with example) **(10 marks)**
4) Some Hotel review question. You have to prepare a model(seems similar to IITM Q.3, I didn't attempt it, so not sure) **(15 marks)**
5) A string S can always be written as T^N where T is a string. Find max value of N. (T^N means T concatenated N times) **(15 marks)**
   Ex: "abcabcabcabc" = "abc"^4. (Return 4)
           "aaaaaaaa" = "a"^8. (Return 8)
           "Abcdefgh12345" = "Abcdefgh12345"^1 (return 1)

   Idea: Think in terms of KMP algorithm (O(n) time and space). Any other efficient approach is welcomed. Regex? Divide n Conquer ?

IITD

Q1. given an array A of size n with elements from 1 to k and another Array B of size k with elements 1 to n . show that they have a subarray of same sum. Solution ??
Q2. 1000 doors puzzle
Q3.http://www.geeksforgeeks.org/a-linked-list-with-next-and-arbit-pointer/
Q4 - case solving type long question (I didn't read it)
Q5. Your model attains an accuracy of 96% for cancer detection training data. Why you should not be happy about it? What will you do to solve this problem?

IITM - 26-09-2017

CGPA Shortlist? They let everyone give the test

5 questions in 1 hour

Question 1: Detect the presence of error in a linked list where the last node (supposed to be pointing to null) got merged to the list. (is it cycle detection???)

Question 2: Suppose your model has low bias and high variance. What model should be adapted to overcome this problem.

Question 3: Given review of the hotels along with some meta information like location, hotel room, facilities etc. Return the hotel which best satisfies a user query like "i would like to stay near beach, cheap hotel" and don't like "breakfast facility". Design a model which can suggest hotels on such queries.

Question 4: Given an unsorted list of even numbers, partition the list into 2 equal sets such that the sum of the 2 sets is nearly equal.

Question 5: Given a string and dictionary of words. Find out whether the string can be formed from the dictionary words.

IIT Roorkee is having a written test for IBM. Was it the same for other IITs as well?Yeah it will have the same format as KGP, D and M mentioned above. The hotel question has repeated.

IITR

 -4 question 1 hour written test 55 marks
  1. Hotel Question(same as in other iits) 15 marks
  2. Given a string(has alphabets and other characters too) reverse the string(characters other than alphabets should remain at same position) 10 marks
  3. http://www.geeksforgeeks.org/dynamic-programming-set-5-edit-distance/ 10 marks
  4. This q. Had subparts, ML based general questions -20 marks(5 mark each part)

Samsung (Delhi)

IIT Bhu (03-10-2017)

  1. Graph coloring problem (with 2 color) (STL was allowed) -> NO IT WASN'T, CHECK THE GUIDE before attempting
     Query - STL was allowed or not??

IITK (13-10-17)

1. Same as above (graph coloring with 2 colors) but STL was not allowed

IITG(25-10-2017)

1- Cycle in a directed graph (one cycle is enough in case there are multiple cycles)
NO STL was allowed. Only iostream, malloc.h, and stdio.h was allowed.

Samsung R&D (Noida)

http://www.geeksforgeeks.org/samsung-interview-experience-set-30-campus/ (from 2016-17)

Solution please someone?

Query: Was STL allowed in this question??
Query: DP solution required or naive got accepted?
DP or naive??????????????

IITK (11-10-17)

1 question : 3hr
Given a directed graph. Find any cycle present in the graph and print it's nodes in sorted order.
Ex. If '4->2->5->4' is a cycle then print '2 4 5'

Note: There may be many cycles present in the graph. You just have to print one of them. If no cycle exists then print -1.
// Was STL allowed ??
 //I think it wasn't allowed
No STL allowed in Java and C++. Coding is in their own software.

SAMSUNG BANGALORE

Bond of 3 years like they do have every year??

CGPA criteria?   **7.25**

Only one question?   **YES**

Test duration?   **3 hrs**

Was stl allowed?!!!!!!!!!   **No, iostream was allowed**

Any limit on submission count ??

one slot will contain only one fisherman ?? Yes

Result of the test case ?

Solution Anyone ?

Test cases please.

IIT BHU

can anybody provide solution of this question?

BHU people! how did u solve ? plz help.

DP se hoga kya?

Solution anyone??

Please elaborate the question.

What do you mean by "the fisherman will find the best slot." ? Doest that mean he will choose the nearest empty slot ? (Greedy) Yeah best slot means closest one, but there can be one on left and other on right at same distance. So you have to consider both cases for the last fisherman at the given gate.

On a riverbank there are N slots for fishing and 3 gates.

For example 10 slots

Slots →   1 2 3 4 5 6 7 8 9 10

Gates at slot no-> 3 6 8

Fisherman at

      Gate1 - 5

      Gate2 - 2

      Gate3 - 2

There are some fisherman at each gate and sum of fisherman is less than equal to total slots.

Cost of fisherman to reach from a gate to any slot is how many slot he has passed + 1.
For example if a fisherman enter from gate 1 and settle at slot no 2

Then cost is → (3-2) + 1

At a time only one gate is opened and if a gate is open then all of the fisherman at that gate will go inside one by one and will find best slot

So we have to find order in which gate is opened and best possible arrangement to minimize the cost.

Problem description

Given:
Fishing Spots: 1 to N
3 Gates with gate position and number of fishermen waiting to get in
Distance between consecutive spots = distance between gate and nearest spot = 1 m

Fishermen are waiting at the gates to get in and occupy nearest fishing spot. Only 1 gate can be opened at a time and all fishermen of that gate must occupy spots before next gate is open.
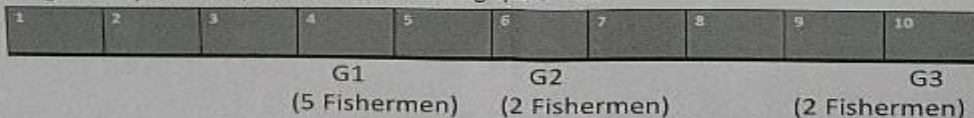There could be 2 spots closest to the gate. Assign only 1 spot to the last fisherman in such a way that we get minimum walking distance. For rest of the fishermen, ignore and assign any one.

Write a program to return sum of minimum distance need to walk for fishermen.

Distance is calculated as gate to nearest spot + nearest spot to closest vacant spot.
If the gate is at position 4, then fishermen occupying spot 4 will walk 1 m, fishermen occupying spot 3 or 5 will walk 2 m (1m for gate to spot#4 + 1M for spot #4 to spot #3 or 5).

Ex: 3 gates at position 4,6 and 10. Total fishing spots = 10

1	2	3	4	5	6	7	8	9	10

G1
(5 Fishermen)
G2
(2 Fishermen)
G3
(2 Fishermen)

########There was a photo of the question here, please don't delete it (Replicated from backup) Plz do inform in future also :)

// duaao me yad rakhna ;)
Something Similar :
https://cs.stackexchange.com/questions/79671/minimum-sum-of-distance-from-entrance-gate

Solution ?? Soln. yar??
https://ideone.com/5M1uVj
(This ideone link solution is wrong)
test case:

i/p:
1 (no of test case)
10
4 5
6 2
10 2
expected o/p:18

Actual o/p: 20

IITK (15-10-2017)

Problem description

Given:

Fishing Spots: 1 to N

3 Gates with gate position and number of fishermen waiting to get in

Distance between consecutive spots = distance between gate and nearest spot = 1 m

Fishermen are waiting at the gates to get in and occupy nearest fishing spot. Only 1 gate can be opened at a time and all fishermen of that gate must occupy spots before next gate is open.
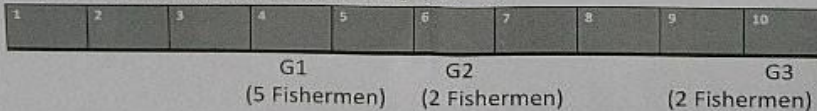
There could be 2 spots closest to the gate. Assign only 1 spot to the last fisherman in such a way that we get minimum walking distance. For rest of the fishermen, ignore and assign any one.

Write a program to return sum of minimum distance need to walk for fishermen.

Distance is calculated as gate to nearest spot + nearest spot to closest vacant spot.

If the gate is at position 4, then fishermen occupying spot 4 will walk 1 m, fishermen occupying spot 3 or 5 will walk 2 m (1m for gate to spot#4 + 1M for spot #4 to spot #3 or 5).

Ex: 3 gates at position 4,6 and 10. Total fishing spots = 10

1	2	3	4	5	6	7	8	9	10

G1 (5 Fishermen)   G2 (2 Fishermen)   G3 (2 Fishermen)

^^^This fisherman question was in BHU right, assuming IITK had 2 coloring problem as given below? Why is the picture in IITK section?

Graph - 2 color

Query: STL allowed? // No STL was not allowed!!

DFS is easier and quicker to apply in this question.
In BFS, you will need to implement queue using array or linked list.

(Solution link for this, anyone ?)
THE MOST IMPORTANT THING -
"NO. OF TEST CASES" IS FIXED TO 10. YOU DON'T NEED TO SCAN IT.
YOU WILL HAVE A HARD-CODED LOOP WHICH WILL RUN FOR 10 TIMES TO SOLVE EACH TEST CASE.

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
· NOT dependent on any specific Platform/API

Duration	3 hours	
Allowed Languages	C, C++, Java	· 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)
Number of Questions	One	· The question details the problem, gives constraints and sample inputs.
Allowed Functions, Libraries	Basic memory mgmt, input, output	**Language** / **Memory** / **Input, Output** (see below)

Language	Memory	Input, Output
C	malloc, free	scanf, printf
C++	new, delete, malloc, free	cin, cout, scanf, printf
Java	New (memory freeing is automatic by garbage collector)	java.util.Scanner, System.out.print,println

· Other functions, libraries not allowed
· Test taker needs to write any required utility functions

| Allowed IDEs | · VS (C/C++)
· Eclipse (Java) | · Code can be written directly in server itself, compile and test also possible in server.
· For debugging on local Test-PC, IDEs can be used. IDEs Pre-installed on the Test PC/Laptop.
· Code must be saved regularly in server, and must be submitted in server for evaluation. |

Criteria for Passing Test	Pass all test-cases	· "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) · Prepare and test with additional test-cases (not given during test, but, may be run after test). Consider large data, boundary/corner cases, rare cases, high-speed requirement, complex combinations etc.

2) Preparation recommended

a)   **Before the Test: Candidate is requested to refresh topics on 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 websites for study/practice: geeksforgeeks, hackerrank, codeforces, topcoder, codechef, spoj, project-euler etc.

IITR

The question was based on an airplane game. The entire game map is divided in game zone and control zone.

> game map : NX5
> game zone : 5X5
> control zone : 1X5

There is an airplane initially at center of control zone (i.e. at index 2). The game moves as follows:

1. on each turn, the plane can either stay at its own position, or move left, or move right.

2. the last 5 rows of the game map form the game zone, and each time after the plane moves, each row comes down by 1 unit

3. each cell in the game map may contain a coin(represented by 1), an enemy(by 2) or is empty(by 0). when all rows come down, if the cell that meets the plane contains coins, the number of coins collected by the plane increases by 1, else if enemy hits, coins decreases by 1.

ex: N=3:
```
  1 0 0 2 1
  2 0 0 1 1  ==>>  1 0 0 2 1
  0 0 1 0 0        2 0 0 1 1
      | (plane)        | (since cell containing coin meets the plane, coin count becomes 1)
```

This way, the game continues till all rows are over.

4. the plane also has an option of using a bomb to blast all the enemies present in the current game zone before the airplane moves. (note that only enemies in the 5X5 game zone will be blasted) But this bomb can be used at max once.

5. If at any time the number of coins becomes -1, the airplane explodes.

Given a map configuration, find the maximum number of coins that can be collected; output -1 if there is no way the plane can survive.

How to include the bomb constraint in the DP solution? When to use the bomb??

IIT Delhi

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.
E.g
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

Output:
0
1

IITB please add the question!!!+2

IIT Madras

Input: number of vertex(n), number of edge(m). Then in next line m pairs of numbers representing edges of directed graph.
The question is to find if there is any cycle and if there is cycle then print cycle in ascending order of vertex number, involve in cycle else print 0 (if there are multiple cycles print any one)

Deutsche Bank

IIT Bhu

(profile?)(open for ?)
(questions from any other iits) ??

1. Sort numbers in increasing order of number of set bits in them.
   http://www.geeksforgeeks.org/sort-array-according-count-set-bits/
2. Given a set of strings we need to find the longest chain of strings such that 2 consecutive string differ by 1 in length and by removal of one character from the longer string we get the shorter one.
   For example given set { "a", "z" , "ghj" , "ab", "azb", "hhjk" , "apzb" } answer is
   { "a", "ab" , "azb", apzb" }.
   Solution: Sort strings by their lengths then use something like LIS.
   Solution2 :   1. Build a graph
                     2. If strings differ by 1 char and by removal of one character from the longer string if
   we get the shorter one then are adjacent to each other
                     3. Do DFS on graph

   http://ide.geeksforgeeks.org/O8IVKA

IITR

(profile and open for all ?)
1. String problem : even swap i.e even place (0,2,4,...)string can be swap
   Similarly ood swap i.e Odd place (1,3,5,...)string can be swap any number of time.
   Resultant string is "twin" if follow above mentioned property otherwise not
Exp. abcd and cdab are twins while abcd,badc are not So compare string and print "YES". if they are twin otherwise "NO".
   SOLn: sort characters in even places and odd places and compare the resulting strings. Will this work??
2. Given a graph, find the maximum friend factor of each trio.
   What is friend factor : for each trio (3 nodes that are all connected to each other), the friendship factor is defined as the sum of number of nodes that each of the three are connected to, other than each other.
   Brute force worked, constraint -> n<100

Oracle

IITD

It has 3 sections. Each section has 3-4 subsections. Don't remember exactly what was asked in each section and subsection.

One Section has Aptitude and Logical Reasoning
One Section has OS, DBMS, OOPs
One Section has Data Structures. Most of Questions are from AVL Trees, BST & Flow chart problem
No english comprehension
No negative Marks.
Time Management is very very very very important for this exam.(seriously this much important) (How much time for each section and overall test?)
(somebody please post questions from os and dbms).

Notes : each subsection is time limited, You can answer the skipped answer if you have attempted all the questions of the subsection (so answer the easy ones first and afterwards answer the long description questions) , once answered you cannot change your answer, Especially in the the programming subsection skip lengthy questions (were in the starting) answer the later simple ones and then attempt these.

Level of questions(on the scale from 1 to 5)?????

Query: There wasn't any coding section? If yes, can someone please tell the question. No coding section at IIT KGP.
(actually there was but it was multiple correct type, code was written and you have to ans question regarding that code. Don't remember the question. Questions were ime co)
.

IITKGP (24/10/17)

- All sections same as above
- No coding section
  (actually there was but it was multiple correct type, code was written and you have to answer the questions regarding that code. (in which language the codes were given?) Don't remember the question. Questions were time consuming. Oracle platform also sucks as once you leave a question page, you can never access it again :(that means either attempt now, or never.) Nopes you can skip them and access them later
- Coding MCQs focused mainly on AVL trees, Binary trees, Radix Sort, Circular queues

- Lengthy codes of AVL tree given, and about 15 numbers to be inserted were given, find no of left rotations, left right rotation and so on were asked
- DBMS 5 questions, OS+OOP 5 questions, Dbms contained SQL syntax questions + Query generation questions
- Time constraint made the medium difficulty test hard.
- Shortlist of this round will go for coding round to be held on 29/10/17 (tentative)

Query: Any negative Marking? No

Coding Round:
2 questions - attempt only one
Time: 1hr
- Given an array, return number of continuous entries of length m with a sum n
- Another question on graph - didn't attempt
- Divide an array into 4 subarrays such that sum = sum1-sum2+sum3-sum4 is maximum. (sum1 denotes sum of elements of subarray) Conditions: sum1 occurs before sum2, which occurs before sum3 subarray and so on. Also, sum1 sum2 etc can be zero(empty subarray).
  Eg: -1 2 -1 -1
  Ans: 5 (0 - (-1) + 2 - (-1+-1)) sum1 is empty, sum2 is -1, sum3 = 2, sum4 = -2. Not necessary to choose entire array. O(n^3) got accepted too.
  Also the platform sucks.

IITK

Programming part- d on array, one question on graph traversal (DFS), preorder travel of given binary tree that is given in form of array.question on min in BST, implementation of heap, bst implementation base

Query: These many coding questions? And in how much duration?
Query: Platform? (Someone please answer?) Oracle's own platform
Query: Was python allowed? There was no coding assignment at IIT d
Can someone post the questions from OOPS and DBMS,OS??(NAY !!)(Why?? :( ) :(

IITBHU

Pattern was same as mentioned before. Few things to add:
- Revise trees and array representation of trees. Almost all of the long code snippets given were in some way to modify a given tree and we have to give the final form of the tree after operations. Some of the operations were to mirror a tree, to calculate minimum and maximum values, to check if certain node is accessed or not, etc. It was taking time to understand the code.

- Attempt the flowchart questions in one go. Then you can easily fill in the empty boxes.
  - You can skip the questions and come back to them later. So, don't click on answer for guesses as you can't re answer the same qs again later.
- There were a number of SQL queries like and SQL functions like rand(), instr() and lcase().
- OOPs and OS qss were standard qs from gfg.

Coding Round:
2 very simple questions out of which I don't know why they had instructed to attempt only one!
Time: 1hr 15mins
- longest substring with unique characters
- number of ways to make sum N using only 1's and 2's with no consecutive 2's
(N/2 ways considering 1,1,2 same as 2,1,1 right ?? if different then fibonacci !!)
Everybody had same coding questions? yes

IITG (28/10/17)

(Refer Last Year Doc - available in Fb group pinned post) Same pattern

IMP Update: If any image is not loading in ques, close the browser immediately and reopen it.
Time will resume and images will also load. (Not applicable for coding section)

Section -1 Software Engg Aptitude
Sec 1.1 Maths Aptitude {
Sec 1.2 Data Analysis & Critical Thinking

Sec 1.3 Persistence Attention to Details Given a table, and list of choices, choose the choice which is correct/incorrect in table. (Key to clear is keep track of numbers in cell/data)

Sec1.4 Programming Ability (Full Flow Chart, only 2 ques(5sub ques) Total 10 ques.
A game is given and flowchart is given for output .Some blocks in flowchart are left empty ,based on the game or problem find the missing blocks,etc. Solve for all 5 blocks of a ques, by which u can answer further 4 ques.

Sec 1.5 Logical Thinking {Picture reasoning, Series,

Section - 2 Computer Science Knowledge

Section - 3 Coding Challenge

Flipkart

Please post the test questions for the Data Science profile.

(CTC -
APM - 26 LPA)

IITG (APM 12 - 10 - 17)

Apm case study session.
Two hours of session where they introduced about what is all about product manager, their role and for a given problem how do we formulate the hypothesis and analysis the data and design a product solution and prioritize the work.

Case study was:
Why do users uninstall flipkart app from mobile, and the given data was 1st time user was uninstalling at 2x rate is to 1x repeating user, where lot of solutions were discussed, nothing to submit in written in this workshop. They will send a separate mail for case study assignment where we need to make a 6 slides ppt and submit, based on that shortlisting will happen.

IITG SDE (23/10/17)

Link for Questions images: https://goo.gl/5AGVhW
Q1, Q2, Q3 same as asked in IITD even the order is same.
Practice all the flipkart questions from this doc (write code for each and every question). All the best guys.

☆ Monkey and Banana

On a sunny noon a lazy monkey was passing his free time. Suddenly he found a map which contains a lot of hidden bananas. After seeing that map the monkey wanted to collect all the bananas. But as he was lazy he wants to find the minimum time duration between his departure and arrival on his location after collecting all the bananas.

The map is a 2 dimension grid with size N x M where N is the number of rows and M is the number of columns. Each cell of the grid contains one of 4 kinds of symbols. Those symbols and their meanings are here-

- '.' - An empty cell
- 'm' - The initial location of the monkey
- 'b' - Banana
- '#' - Blocked cell

Monkey will start his journey from his initial location and in each hour he can visit any of his 8 adjacent cell except a blocked cell. Now you have to calculate the minimum number of hour(s) the monkey needs to complete his journey. If it is impossible to make the journey complete then the output will be -1.

Complete the *manekyBanana* function in the editor below. It has one parameter: an string array, *grid*. The function must return an integer denoting the minimum number of hour(s) needed by monkey to complete the tour.

Input Format

Locked stub code in the editor reads the following input from stdin and passes it to the function:

The first line contains an integer, *n*, denoting the number of elements in *grid*.

Each line *i* of the *n* subsequent lines (where $0 \leq i < n$) contains a string describing *grid$_i$* which represent the ith row of the grid.

Constraints

- $1 \leq n \leq 100$
- $1 \leq |grid_i| \leq 100$ (where $|grid_i|$ is the length of the ith row of the grid)
- for all i |grid$_i$| is same
- There will be exactly 1 *m* and at most 18 *b* in the grid.

Output Format

The function must return an integer denoting the minimum number of hour(s) needed by monkey to complete the tour. This is printed to stdout by locked stub code in the editor.

Sample Input 0

Sample Input 0

```
4
m...
....
bbbb
b.b.
```

Sample Output 0

```
9
```

Explanation 0

In this case monkey can complete his tour in 9 hours and this is the minimum time.

The route for the monkey is $(0,0) \rightarrow (1,0) \rightarrow (2,0) \rightarrow (3,0) \rightarrow (2,1) \rightarrow (3,2) \rightarrow (2,3) \rightarrow (2,2) \rightarrow (1,0) \rightarrow (0,0)$.

Sample Input 1

```
4
m...
####
bbbb
b.b.
```

Sample Output 1

```
-1
```

Explanation 1

In this case there is no way to complete the tour. So the answer is -1.

☆ Beautiful Subarrays

Given an array, a, of n distinct positive integers, we define the following:

- Subarray $a[i..j]$ contains elements $a[i]$, $a[i + 1]$, $a[i + 2]$, ..., $a[j - 1]$, and $a[j]$.
- Two subarrays, $a[i_1..j_1]$ and $a[i_2..j_2]$ are considered to be distinct if $i_1 \neq i_2$ or $j_1 \neq j_2$.

We consider the subarray $a[i..j]$ (where $0 \leq i < n$ and $i \leq j < n$) to be *beautiful* if it contains exactly m odd elements.

Complete the *beautifulSubarrays* function in the editor below. It has two parameters:

Name	Type	Description
a	integer array	An array of n integers.
m	integer	The number of odd elements to be present for an array to be beautiful

The function must return a long integer denoting the total number of distinct beautiful subarrays.

Input Format

Locked stub code in the editor reads the following input from stdin:

The first line contains an integer, n, denoting the number of elements in the array, a.

Each line i of the next n subsequent lines contains an integer describing a_i.

The last line contains an integer, m.

The locked stub code then passes the integer array a and the integer m as arguments to the *beautifulSubarrays()* function.

Constraints

- $1 \leq n \leq 2 \times 10^5$
- $1 \leq a[i] \leq 10^9$, where $0 \leq i < n$.
- The array consists of distinct positive integers.
- $0 \leq m \leq 2 \times 10^5$

Output Format

Output Format

The function must return a long integer denoting the total number of distinct beautiful subarrays. This is printed to stdout by locked stub code in the editor.

▶ **Sample Case 0**

▼ **Sample Case 1**

Sample Input

```
4
2
5
4
9
2
```

Sample Output

```
2
```

Explanation

Array a = [2, 5, 4, 9] has two distinct beautiful subarrays with exactly m = 2 odd elements:

1. a[1..3] = [5, 4, 9]
2. a[0..3] = [2, 5, 4, 9]

Thus, the function returns 2 as the answer.

▼ **Sample Case 2**

Sample Input

```
4
2
```

☆ **Crossing the Street**

Consider a road of length n that is indexed with position markers from 1 to n. There are m vehicles driving from left to right along the road, and the starting and ending positions of each car i are given as arrays of m integers named *start* and *end* where car i's starting location corresponds to *start*; and its ending location corresponds to *end*. For example, consider the following diagram:

Positions that will contain cars at some point are *red*, and positions that will always be open are solid *green*.

You must find the length of the *widest gap* in the road that never contains a vehicle. In the diagram above, there are two such gaps; one has length 2 and spans from marker 3 to marker 4, and the other has length 1 and spans from marker 7 to marker 7. This means that, in this scenario, the widest gap would be 2.

Complete the *widestGap* function in the editor below. It has three parameters:
1. An integer, n, denoting the length of the road.
2. An array of m integers, *start*, where the value of each *start*; denotes the starting position of vehicle i (where 0 ≤ i < m).
3. An array of m integers, *end*, where the value of each *end*; denotes the ending position of vehicle i (where 0 ≤ i < m).
The function must return an integer denoting the length of biggest empty space where you can cross the road safely.

Input Format

Locked stub code in the editor reads the following input from stdin and passes it to the function:
The first line contains an integer, n, denoting the length of the road.
The second line contains an integer, m, denoting the number of elements in *start*.
Each line i of the m subsequent lines (where 0 ≤ i < m) contains an integer describing *start*;
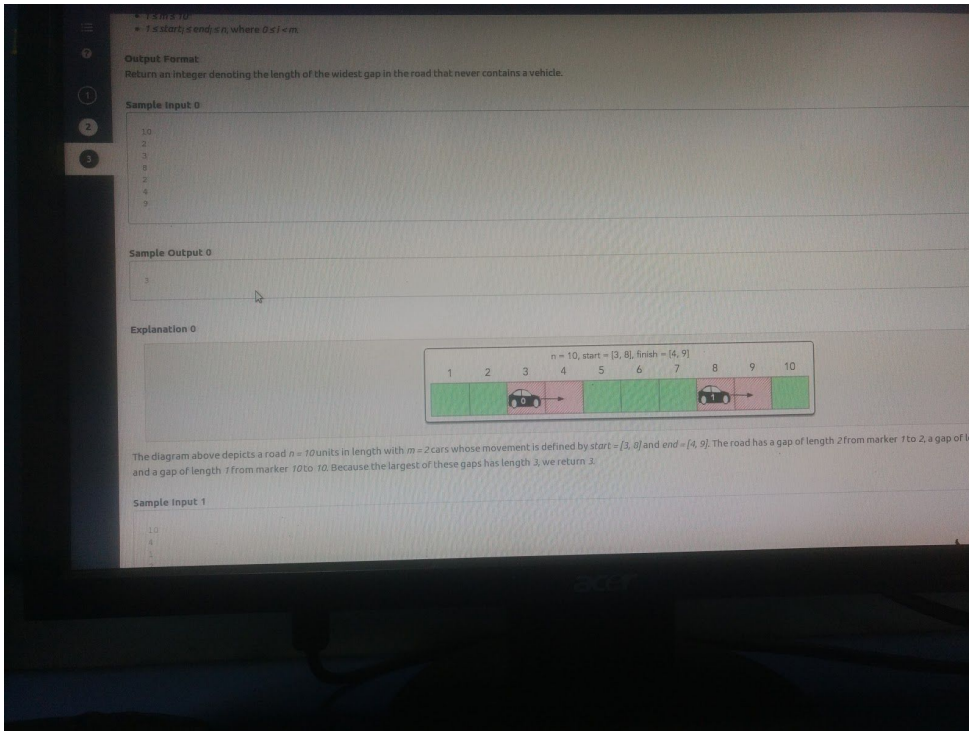The next line contains an integer, m, denoting the number of elements in *end*.
Each line i of the m subsequent lines (where 0 ≤ i < m) contains an integer describing *end*;

Constraints
- 1 ≤ n ≤ 10^9
- 1 ≤ m ≤ 10^5
- 1 ≤ start; ≤ end; ≤ n, where 0 ≤ i < m.

Output Format

- 1 ≤ m ≤ 10
- 1 ≤ start_i ≤ end_i ≤ n, where 0 ≤ i < m

Output Format
Return an integer denoting the length of the widest gap in the road that never contains a vehicle.

Sample Input 0

```
10
2
3
8
2
4
9
```

Sample Output 0

```
3
```

Explanation 0

n = 10, start = [3, 8], finish = [4, 9]

The diagram above depicts a road n = 10 units in length with m = 2 cars whose movement is defined by start = [3, 8] and end = [4, 9]. The road has a gap of length 2 from marker 1 to 2, a gap of len... and a gap of length 1 from marker 10 to 10. Because the largest of these gaps has length 3, we return 3.

Sample Input 1

```
10
4
3
```

IITK

Coding Round - 90 minutes - Hackerrank

Problem 1
Given an array of **N** integers. Find number of of sub-arrays with **M** number of odd integers.
(Solution?) → **https://discuss.codechef.com/questions/103416/contiguous-subarray**

https://github.com/cem3394/HR-Haskell
https://stackoverflow.com/questions/45645728/given-an-array-find-the-number-of-sub-arrays-with-m-odd-numbers (NOTE: the O(n) solution given here doesn't work when m=0)

It says distinct subarrays, how to handle that ? (Distinct subarray means start or end of subarray should be different, which will be handled by this solution(https://discuss.codechef.com/questions/103416/contiguous-subarray))

Problem 2

N gears were given each with their own cost ci and radius ri. One extra gear was also given with radius r1. A distance d was given and we had to find the gear with minimum cost following the below conditions:-
1) ri +r1>=d(if there are multiple gears satisfying this condition than see condition 2 for those set of gears satisfying condition 1)
2) Minimum cost ci(if there are multiple gears satisfying this condition than see condition 3 for those set of gears satisfying condition 1 & 2)
3) Find the gear with larger radius(if there are multiple gears satisfying this condition than see condition 4 for those set of gears satisfying condition 1 & 2 & 3)
4) Choose the gear with smaller index.

(Solution ?) - Simple Sorting problem bases on the given conditions. Was using vectors allowed? - Yes

Problem 3

Graph problem.
Based on Union find.
Can be done without union find also.

+

There is a city with n areas, and we need to build clinics in the city such that all the areas have access to the clinics.
The road between the cities might be damaged or broken.
The cost for repairing the road is R and the cost of building the clinic is C.
Find the minimum cost such that all the areas have access to at least one clinic.

For example(If the city is divided into three areas such that the roads between those areas are damaged that either we can build the clinics in all three areas or build the clinic in any one area and connect the other two areas with it by repairing the roads between them.)
(https://www.hackerrank.com/contests/world-codesprint-8/challenges/torque-and-development)

This was not for APM role, correct? No it wasn't.

IITD (10 - 10 - 2017)

Coding Round - 90 minutes - Hackerrank

Problem 1 [Dynamic Programming]

A matrix is given with following details. Each cell can have one of the four values.

'M' - Starting position of monkey

'.' - Empty cell

' #' - Blocked cell

'B' - Banana.

From any point, monkey can move in all 8 adjacent directions. Find min number of steps required to collect all bananas and at last monkey have to come back to its starting position. For exact problem statement see above image. Monkey can't cross blocked cell.

Constraints : Max grid size = 100*100, max B = 18

Is there any banana which is not reachable from Monkey? - Yes

((sol please) If someone has solved this, please share in gfg ide.)+1

This is nothing but Travelling salesman problem (NP hard) - only brute force will work - have to check for all permutation. No, travelling salesman problem has a constraint that every city can be visited exactly once, but here we can visit one lock twice. Yet you are right that brute force will work. I also could think of brute force only.

Wrong Solution :

I think this problem is NP hard for large values of B counts. Could anyone confirm? Yes, it is

All I can think of is to generate B! Ways of reaching out all bananas, and picking the minimum answer.

1.Count no of bananas,let it be B.Run dfs or bfs and check whether all bananas are reachable from the starting point.

2.if there is a banana which is unreachable from starting point return -1.

3.else do bfs from starting point(same cell can be visited any number of time) until you get B no of bananas.Since we are using BFS the first such point will be minimum no of steps.(Not sure) Nope. This doesn't work. Try with an example. Nope this method is wrong.

We can use bfs to find answer for this problem if it is a tree. For a graph it won't work.

Can we do it using backtracking and maintain min steps? : Yes, but it may exceed the time limit.

One solution could be to maintain dp[i][j][k] as the min number of steps to end up with k points(each banana is one point) and final position is matrix[i][j]. As precomputation, find distance for each pair of bananas.

Query : I think this is right but how do we fill the table dp[][][]?

Problem 2 [Two Pointers](two pointers not required)

Given an array of **N** integers. Find number of of sub-arrays with **M** number of odd integers.

Note : m=0 was also possible , so handle it specially.

Solution : 1, 2
 Did it say distinct subarrays ?
Not sure (I think distinct subarray in the question means distinct (start,end) index pairs.
Not by the value. Otherwise we will have to insert subarray in a set every time and check
whether it was already in the set or not. And that won't make sense at all)

Problem 3 [Greedy (Sorting)]
Given an n length road and m cars with their start and end points(between 1 and n). Find the largest
empty gap (length of the road where no car is present).

(PLEASE PROVIDE A TEST CASE. THE QUESTION IS NOT CLEAR TO ME.)+1

**Sorting by start points and checking difference between adjacent intervals will work right? - Yes
No,**
**after sorting, you have to maintain one maxReach variable and if the starting point of next car is
greater than maxReach, then there is a gap and update result if gap>result.**

IITR (11 - 10 - 2017)

Problem - 1
A array contains N numbers all of which are a power of 2. Count the numbers possible to form using sum
of array elements such that each element can be used at max once in the sum.
eg:{1,4,8}=>possible sums are {0,1,4,5,8,9,12,13}=8.

(Are there any duplicates?)+1

(Won't this have O(1) solution since using n-1 elements you can never obtain nth element? Answer to all
case would be simply 2^n provided all the elements in the array are distinct.) In distinct number's case, I
think you are right because each number will represent a unique bit position(1) and we can make different
numbers by taking different different bit positions.

http://www.geeksforgeeks.org/find-distinct-subset-subsequence-sums-array/

Problem 2
Same as IITD Problem 2

Problem 3
Same as IITD Problem 3

IITM (12 - 10 - 2017)

Same as IITR

IITR (APM 18/10/2017)

Initial part was same as IITG - Intro to the role, expectations etc. Then a long QnA session.
Sample Case Discussed - Take for example WhatsApp. Mention 3 things you like and dislike about it.
Prioritize the points that you dislike and solve the topmost one. How will you solve it? If you find a
solution, how will you validate it?

IITB(30/10/2017)

2 Coding question and 1 SQL Query.
1 Coding Question was pretty easy.

☆ Game time

Letty and Walter are playing a game. Walter thinks of a number between 1 and N.
Letty then starts to ask him questions of the type: Considering an interval [l,r], $1 \le l \le r \le N$, is the number in the interval [l,r] ?

There are a total of N*(N+1)/2 distinct questions. This means there are $2^{(N+1)*N/2}$ possible sets of questions Letty can ask. You should count for how many of these sets Letty can always uniquely identify the chosen number.

Complete the *CountQue* function in the editor below. It has 1 parameter:
　1. An integer, *n*.
The function must return an integer denoting the number of sets Letty can always uniquely identify the chosen number.

Note: If the result is X, return X mod 1000000007 => X%1000000007.

Input Format
Locked stub code in the editor reads the following input from stdin and passes it to the function:
The first line contains an integer, n.

Constraints
- *1 ≤ n ≤ 100*

Output Format
The function must return an integer denoting the number of sets Letty can always uniquely identify the chosen number. This is printed to stdout by locked stub code in the editor.

Sample Input 0

```
2
```

Sample Output 0

```
6
```

Sample Input 1

```
3
```

Sample Output 1

```
48
```

Sample Input 2

```
6
```

Sample Output 2

```
1937004
```

☆ Investments in 2012

An insurance company maintains all the policy data in the *INSURANCE* table. Write a query to print the sum of the total investment values in the year *2012*, to a scale of two decimal places, for all policyholders who meet both the following criteria:
- They have the same *TIV_2011* value as one or more other policyholders.
- They are not located in the same city as another policyholder (i.e., the (latitude, longitude) attribute pair must be unique).

Input Format

INSURANCE		
Name	Type	Description
PID	Integer	This is the ID of policy holder's policy. This is the primary key.
TIV_2011	Float	This is the total investment value in the year 2011.
TIV_2012	Float	This is the total investment value in the year 2012.
LAT	Float	This is the latitude of the policy holder's city.
LON	Float	This is the longitude of the policy holder's city.

Output Format

The result should contain the sum of the total investment values in the year *2012*, to a scale of two decimal places, for all policyholders who meet both the following criteria:
- They have the same *TIV_2011* value as one or more other policyholders.
- They are not located in the same city as another policyholder (i.e., the (latitude, longitude) attribute pair must be unique).

The result should be in the following format:

```
SUM_OF_INVESTMENTS
```

Sample Input

INSURANCE				
PID	TIV_2011	TIV_2012	LAT	LON
1	1449866.88	1338076.34	30.285202	82.105835
2	1849.32	1987.47	31.285202	82.105835
3	1812.32	295022.71	31.285202	82.105835
4	1449866.88	369024.45	31.285257	82.139542
5	1849.32	4657.86	32.285257	82.139542

Sample Output

```
1711758.65
```

Explanation
- For PID *1*: It has the same *TIV_2011* as PID *4*. It does not have any matching (latitude, longitude).
- For PID *2*: It has the same *TIV_2011* as PID *5*. It does have a matching (latitude, longitude) pair with PID *3*.
- For PID *3*: It does not have the same *TIV_2011* as anyone.
- For PID *4*: It has the same *TIV_2011* as PID *1*. It does not have any matching (latitude, longitude).
- For PID *5*: It has the same *TIV_2011* as PID *2*. It does not have any matching (latitude, longitude).

Hence, the sum would be *1338076.34 + 369024.45 + 4657.86 = 1711758.65*.

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**   ✕

☆ HackLand Election

There are *n* citizens voting in this year's *HackLand election*. Each voter writes the name of their chosen candidate on a ballot and places it in a ballot box.
The candidate with the highest number of votes wins the election;
if two or more candidates have the same number of votes, then the tied candidates' names are ordered alphabetically and the *last* name wins.

Complete the *electionWinner* function in your editor. It has *1* parameter: an array of strings, *votes*, describing the votes in the ballot box. This function must review these votes and return a string representing the name of the winning candidate.

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 an integer, *n*, denoting the size of the *votes* array.
Each line *i* of the *n* subsequent lines (where $0 \le i < n$) of strings contains a citizen's vote in the form of a candidate's name.

Constraints
- $1 \le n \le 10^4$

Output Format
Your function must return a *string* denoting the name of the *winner*. This is printed to stdout by the locked stub code in your editor.

Sample Input 1

```
10
Alex
Michael
Harry
Dave
Michael
Victor
Harry
Alex
Mary
Mary
```

Sample Output 1

Output Format
Your function must return a *string* denoting the name of the *winner*. This is printed to stdout by the locked stub code in your editor.

Sample Input 1

```
10
Alex
Michael
Harry
Dave
Michael
Victor
Harry
Alex
Mary
Mary
```

Sample Output 1

```
Michael
```

Explanation 1
votes = {"Alex", "Michael", "Harry", "Dave", "Michael", "Victor", "Harry", "Alex", "Mary", "Mary"}
Alex, Harry, Michael, and Mary are all tied for the highest number of votes. Because Michael is alphabetically last, we return his name as the winner.

Sample Input 2

```
10
Victor
Veronica
Ryan
Dave
Maria
Maria
Farah
Farah
Ryan
Veronica
```

Explanation 1

votes = {"Alex", "Michael", "Harry", "Dave", "Michael", "Victor", "Harry", "Alex", "Mary", "Mary"}

Alex, Harry, Michael, and Mary are all tied for the highest number of votes. Because Michael is alphabetically last, we return his name as the winner.

Sample Input 2

```
10
Victor
Veronica
Ryan
Dave
Maria
Maria
Farah
Farah
Ryan
Veronica
```

Sample Output 2

```
Veronica
```

Explanation 2

votes = {"Victor", "Veronica", "Ryan", "Dave", "Maria", "Maria", "Farah", "Farah", "Ryan", "Veronica"}

Veronica, Ryan, Maria, and Farah are all tied for the highest number of votes. Because Veronica is alphabetically last, we return her name as the winner.

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   ✕

Optiver Amsterdam

IITK

1. Quant Quest

Time series analysis on stock market data.

It was a 20 day long contest.
2 problems. http://quant-quest.auquan.com

2. Speed Test
8 minutes 80 questions
simple + - * / were asked.

Shortlisting based on quant quest performance and resume.

Speed test was to test mental calculation ability. You need to be above certain level.

When was the quant quest test ? Is this for trader or researcher ?

For both. Quant quest was an open contest held by them for two-three weeks or so, they also did shortlisting from within campus.

Did they declare the shortlist? Did they have further rounds? What were they?

Qualcomm

(CTC??,CTC/Job Profile with details??)

IITG (ECE+EEE)   10-10-2017

3 sections 60 questions
1.section-Aptitude(20) 2.basic C input/output problems(20) 3.computer science/electronics/communication(20)
Questions in Communication was easier compared to others. Check out basic poisson distribution, sum of poisson, fourier series expansion, BPSK, Change in AM signals with change in frequency, Given eigenvalues of A find eigenvalues of inverse A, Fourier series of ramp function

IIT BHU   9-10-17

Same as IITG + eee/ece were not allowed to do the CS section in the third part.-atleast give some idea of the questions???

Please tell me all questions of input/output are based on C only or C++ also??? Mainly c :enum,structs, do check operator precedence table(many question on that) -thanku

Please Can you tell me the type of question asked in Electronic part??
555 Timer.
Given R1, R2, C values either find the duty cycle or frequency of the circuit

IITK   26-10-17

Same as above 2 IITs three sections 20 questions each 30 mins each - Aptitude, Programmings (given a pseudo code tell the output), computer science/electronics/communication.
Programming part was easy most questions were based on operators precedence table few on enum, structs etc.
Electronics part was easy too, questions were on Flip-Flops, Boolean Expression, Hexadecimal system, 555 timer (find frequency), concentration of holes given some parameters etc, Noise Margins, counters etc.

Futures First

CTC/Job Profile with details - Trainee Market Analyst (CTC - 1240000 and Base Pay - 840000)

IITG 10/10/17

General aptitude questions are asked basically you have to take care of the time as questions would be easy only time management is important and in the first section don't skip questions as it would be written 6 min for 40 questions but there would be only 12 questions and u can't go back to the previous question.and similarly in the next section there would be 30 minutes test with 20 questions i guess simple aptitude and memorization based, pattern filling
Can you post few questions here for futures first? Anyone????????

-> 1000^2+300^2+20^2+1
-> sqrt(ab.cd) upto two decimal places
-> Find the next number in series
-> Find the next pattern
->there were two questions, A random figure will come, question will ask to remember it and figure will disappear in around 6-7 sec. After that there will be 6-7 apti qus and then there will be questions from that figure. You have to remember that figure (it's better to write what u seen in the figure just after disappearance.) The questions will be like
->sum of the numbers present in the figure
->arrow pointing to which object
->Number of circles in that figure
->among the following which icon was not present
->which characters were present in that figure.

->some questions were of 2 marks and some were of 1 mark. Negative of ⅓ was also there for wrong answers. If u skipped question then there was no way to go back.Also number of questions remaining won't be shown.Time management is key
->advised to skip question which has 3-4 lines of english. The end questions in my set were easy. I hope it will go same. (More risk more benefit) Did you have any progress bar at the top which showed the percentage of exam completed?
->Progress bar at the top will show the % progress of the whole test...but it will not provide you the progress of the individual section. So tracking how many questions are done is impossible for individual section.

Basically the questions were like the ones asked in sof (fake olympiads :P)

VMWare

IIT BHU   13/10/17

Test consisted of 4 sections (Total 90 minutes)
Section-1   Aptitude Test- 10 questions- 15 minutes

Section-3   Language- 15 questions - 15 minutes   (5
questions on each of the three languages i.e JAVA, C++, PYTHON). Attempt questions of only 2 out of
the 3 languages.
Section-4   Coding- 30 minutes - 1 question (Given two array in ascending order, merge the two arrays
such that the resulting array remain sorted and print the output array. Print "Invalid Input" if   1). array is
not in ascending order   2.) n(size)>450 or is not an integer.
// Handle the case where n is not integer such as 56.689 or 't'
Query: How can n be not an integer? Someone please clarify the question.
   ● MIGHT BE THE CASE THAT THEY HAVE GIVEN THE FLOAT VALUES AND THEY WANTED
     THE OPERATION ON THE VALUES WHICH HAS FRACTIONAL PART EQUIVALENT TO
     ZERO !!!
#Section-2?? (+1)
Neg marking for mcqs???

IITG (26-10-2017)

Aptitude questions
OS, Networks, OOPS
2 languages (Java, C++, Python)
1 coding ques:
Given a string. Find the maximum length substring which forms positive sequence. And print its length
too.

Question language was not clear. They actually meant to find maximum length substring, which is consecutive and increasing.
e.g : I/O 23623789
O/P 789
Neg marking for mcqs???

IITK (30-10-2017)

Aptitude - 10 q, 15 min ; Less time; skip lengthy q's
Technical- Basic Coding, OS, Networks, OOP
Same 2 language
1 coding q.

Given a no . find maximum power of 2 in difference between no and its reverse. (No need to use array. Works with int also)

(PLS MAKE THE QUESTION CLEAR)

Neg marking for mcqs???+1

IITR (30-10-2017)

Same as IITK.

Mathworks India

IITG (10-10-17)

open for Btech?? - yes

Please update what non-tech ques are asked in the offline video interview?

Questions that Mathworks is asking in their video interview :
1) What about this position interests you?
2) What about your background or experience makes you a good fit for this position?

3) Tell us about a time when you worked on multiple projects / tasks at the same time and how you handled it?

4) What is your cumulative GPA?

Profile: Associate in Engineering Development Group

Paisa: 11-14 lakh(CTC) (Monthly fixed salary: 83333.33)

Visited IITG and held a ppt in which they told us about all the responsibilities of an engineer at Mathworks and other general info. about the company.

Now after 2-3 days we have received an e-mail from the company

Here is the body of the e-mail:
===
Here are 3 important steps that we would like you to perform to confirm your
interest in this job -

(1) This is an offline video interview (link will be active till October 15, 6 PM
ONLY) where you answer a set of pre-recorded non-technical questions. Keep your
webcam & microphone ready before you begin. The entire interview should only take
~15 minutes.
Click on the link below to begin your video interview:
https://mathworks.hirevue.com/openvue
(2) Complete this simple survey (link will be active till October 15, 6 PM ONLY)
which will help us process your application faster. Simply click on the web page
address below or copy and paste it into your web browser -
https://www.customersat3.com/e.asp?IID=xxxxxxxxxxxxxxxxxxxxxxxxxxxxx
(3) After successfully submitting the survey, last step is to apply to the most
relevant position below (you will need to use your MathWorks Account to login).

Position Overview -
 Link
https://www.mathworks.com/company/jobs/opportunities/xxxxxxxxxxxxxxxxx

It is important that your resume is on our system for us to consider your
candidature for our interview process.

We also encourage you to go through the below links -

Why EDG? -
http://www.mathworks.com/company/jobs/opportunities/students/infographic.html

Why MathWorks? -
http://www.mathworks.com/company/jobs/students/index.html

Mathworks Test

===
90 minutes
Mandatory : 10 multiple choice on Quants and CS questions - questions were on probability, difference between structs and unions etc.
Choose any two of Java, C , C++ : each has two coding questions.
  1. C: Given two numbers left, right and another number k , find maximum xor of a,b less than or equal to k such that left<= a< b<= right ;
  2. C: Given two strings like abcgh and def return a resultant ⇒ adbecfgh . that is alternate characters till one string exhausts and append the remaining.
  3. C++ : Implement three classes Circle, Rectangle and Square with methods to calculate area and constructors with parameters.
  4. C++ : Given a number N return the number of beautiful arrangements possible with .numbers 1 to N . An arrangement is said to be beautiful if ith element is divisible by i or i is divisible by ith element. (i is 1 based index).
Choose any one of Matlab or Python : (for python a coding question was given to solve)
For Matlab : (more than one correct option)
1. A is a 4x 3 matrix, B is a 3 x 3 matrix which of the following is valid : [A B], [A ; B] , {A, B} , horzcat(A, B) , vertcat(A, B) .
2. Clear B; B(3)= 1 → what will appear on the command window.
3. A=ones(6) B= rand(6,1) C=2 → which is valid : B*A, C.*B , C*B'*A, etc.
Two more similar syntax based questions were asked.
For Core engineering track → 51 questions in total. One section on control theory, signal processing and embedded systems MCQ's , Math and aptitude section, Coding MCQs , one coding question of C,C++,JAVA . → it was to find redundancy in linked list in C++; . FInal section Matlab or python.

iManage

Profile?(??????)
CGPA criteria? Above 5

IITM - 14/10/2017

2 sections, only MCQ , No Coding

Aptitude Section - 30 Questions - 20 Minutes

Technical MCQ - 20 Questions - 30 Minutes

      Had questions on ordered traversals of binary tree

Alphonso.tv

IITB

Job Profile:Technologist
CTC 30lacs+Benefits Open For : CS, ELEC
Cpi cutoff???
No CPI cutoff

Test 1: 30 questions, 75 mins
Questions were multiple correct answers type or fill in the blanks.

Questions based on unix commands(command to create a file without editor, command to make tcp connection, check if remote pc is on), write a command to extract first 6 character from every line in given file, java/c++/python related problems(read about pointers, global variables, access specifiers), 1 puzzle(adding up to 100, 2 players taking simultaneous move, in each move choosing any number between 1 and 10(inclusive), who wins with optimal play?) ,1 javascript problem(what this javascript code do), 1 DFA question(find the regular expression given a dfa), counting sort, heap deletion problem, 1 question related to network bandwidth required?, output of given program etc.

All logical problems.

IITK

One question on deadlock, one on output of c code, what is complexity of binary search. if array is almost sorted which is the best sorting algo.
Test 2: 2 Questions, 60 mins

Q1. Millions of users, thousands of servers in a server farm. What are the potential issues and some solutions?

Q2. A Question related to Synchronization (OS), for implementing FIFO queue - socket- read-write

IITD

Test 1: same as IITB
Also there was negative marking even in subjective questions In subjective questions only correct option was not sufficient.

Test2: 2 Questions 60 mins

Q1 Job sequencing problem with profits and different time required for different jobs
Q2. The client software which performs hashing for audio clips and communicate that with the server .
What are the potential issues and some solutions?

JP Morgan

IITG (13 - 10 - 17)

JP Morgan visited IITG for Analyst - Quantitative Research profile and conducted ppt on 13th Oct, where they told that they will take one test in which they will test coding skills and general mathematics such as probability and stochastic calculus etc. Based on that they will shortlist people for interview. The test is scheduled for 16th October (Test now postponed). CTC- INR 2520000.00(Base salary: INR 1800000.00)

Also, it came for 2 profiles- Quantitative Research Analyst and Data Science. The test has 2 parts basically quant (which involves lot of maths, probability) and 2 coding questions. For quant role, 65-70% weightage to quant section and 30% for coding. In case of Data science, 50%-50% weightage.

Is it open for all Btech? And Is there resume shortlisting based on CGPA?
- Yes, its open for all b.tech with cgpa >=7. Yes, the resume shortlisting is based on CGPA, branch and projects.

Rest of breakdown: 40% of Base (annual variable) + 75,000 (relocation)

Guys can you post the questions of quant? Sure, After the exam.

Exam was supposed to happen on 16th right? ->(Test Postponed to unknown date) Please upload the questions _/_

Please add question _/_ _/_ _|_ :(

IIT KGP (28/10/17)

3 Sections (Platform - CoCubes)
1. Math : 60 Questions - 30 Minutes (+1 , -0.25) Marks
2. Programming MCQ : 30 Questions - 15 Minutes (+1, -0.25) Marks
3. Coding : 2 Questions - 30 Minutes (+5 Marks)

Note : Time management is very very very important. Literally, you have 30 sec for each question. Don't read lengthy questions at all (time waste). First attempt all small questions and try to attempt as many as possible as nobody can attempt all questions. It is not possible to read all the questions also.

1. Math :

Topics - Basic Math, Probability, Permutations & Combinations, Integration, Differentiation etc.
- Starting questions are lengthy, skip them and first try to solve easy questions.
- Questions are same for everyone but order is different for everyone.
- BEWARE OF NEGATIVE MARKING

2. Programming MCQ :

Topics - C, C++, No Java (OOPS, Pointers, Trees)
- Questions are same for everyone and order of questions is also same.
- Questions are like code will be given, you have to tell the output of that code.
- Most of the codes given are very lengthy (15 - 20 lines). So, first attempt those questions which have less code
- Most of the questions are in C++. No single question is in Java. So, java people at least make sure you know the syntax of C++ classes and objects.
- Be careful of pointers.

3. Coding :

- Sum of Specific nodes in a binary tree (Difficulty - Hard)
    - You are given a binary tree, a node(n) and some distance(k). Return the sum of the values of all the nodes that are at a distance of k from node n.
    - http://www.geeksforgeeks.org/print-nodes-distance-k-given-node-binary-tree/

- Relative Sorting (Difficulty - Medium)
    - You will be given two arrays (arr1, arr2). And swapping is defined as arr1[i] can be swapped only with arr2[i]. Return the minimum number of swaps required such that both the arrays should be in strictly ascending order. Return -1 if both the arrays cannot be made in strictly ascending order with any number of swaps.

- Trimming Binary Search Tree (Difficulty - Easy)
    - Given binary search tree and a range (min,max), return the binary search tree that has the values only in this range.
    - http://www.geeksforgeeks.org/remove-bst-keys-outside-the-given-range/

- Least Common Ancestor (Difficulty - Easy)
    - A binary tree and 2 nodes are given, you have to return the least common ancestor of the given 2 nodes.
    - http://www.geeksforgeeks.org/lowest-common-ancestor-binary-tree-set-1/

EXL Pvt Ltd

IITR (13-10-17)

Can someone also mention the CTC offered (base 8.5lpa)
CGPA cutoff? 7.271 to be exact. 200 selected out of all applied.(around 400)

Could you please provide us with questions of individual sections?

CTC- 11.2 lacs
45 min 40 question @IITR

Marking Scheme :- +1, -.25

Test is conducted on cocubes platform, one can find some mock papers of cocube available online
Questions division :- 20 quant, 10 LR, 10 English
Difficulty level: Avg and above for quant. English and LR were relatively simple
In quant, revise ratio and mixtures properly
Also questions on sum of factors, nos. of factor of given no. (see formula)
Try attempting anything above 35

IITK (25-10-17) (Consultant Profile)

CTC- 11.2 lacs
45 min 40 question
Marking Scheme :- +1, -.25
Test is conducted on cocubes platform
Questions division :- 20 quant, 10 LR, 10 English (everything same as IITR)

What about the verbal section? How was it? (could you please post the questions of verbal sections also)

Sample Questions(Quant)

1) Number of factors of 400 except 1 and 400
2) Number of numbers of 4 digit divisible by 4 from 1,2,4,5, repetition allowed.
3) Number of zeroes in 632 factorial
4) a+b+c=0 , a3+b3+c3=?
5) Hypotenuse=20, find other sides if they differ by 4.
6) There were two DI paragraphs (total 5 ques.) based on calculating percentages.
7) There are two sets each consisting of 10 different objects. How to choose objects from two sets such that you have to select at least one object from each set

Verbal Section Questions:

Comprehension based 3 questions. Don't remember the passage. Others simple fill in the blanks(use of would, have/had, prepositions and articles), one/two synonym/ antonym questions(detest-> admire).

ISRO

IITG

Open for EEE, ECE and Mechanical Dept. at IITG.
Only for BTech people
No test.
Just resume shortlist and interview.
CPI cut off 6.84.
Open.for Dual Degree? -----> No dual degree in IITG
CTC = Base Salary = 9.6 LPA
 M.TECH students are allowed???? -NO

Everyone who filled the form was shortlisted for interviews which are to be held in November 1st week or so

PayPal

IITR

- Total test duration was 90 minutes, 10 MCQ's + 1 coding question.
- MCQ's were based on OOPS, Data structures and Java, C++.
- Platform ? **Hackerrank**

- **Coding Question**
  There are n students that need to be arranged in a queue for the morning assembly. Given that queue will always start from student no. 1. There is an interaction matrix $[A_{ij}]$, where Aij stands for the interaction between student i and j when 'j' is standing at the immediate back of 'i'. (Note: Aij and Aji need not be same). Find the optimal arrangement such that the total interaction between the students is minimum. (if the arrangement is [1,2,3], then total interaction is given by A[1,2]+A[2,3]).
  Constraints: 1<= n <= 16 ; 0<= Aij <= 1000.
  [Backtracking or bitmasking dp were enough]

  Only check for the minimum sum of all interactions, if the interaction sum of the current queue is greater, no need to check further. Stop backtracking of that permutation. Try the question once, its easy.
  Won't it exceed time limit? 16! Permutations max to check. Or when we backtrack it executes within given time limits? The test cases were weak. Even the least optimal solution using DFS cleared 6 out of 10 test cases.

  ```
  // Simple backtrack
  // There could be some minor mistakes, as I have not tried writing the actual code.
  Int ans = MAX
  recurse(int idx, int mask, int currans){
          if(idx == n && mask == 0) ans = min(currans, ans), return;
          if(currans > ans) return;
          for(int i = n-1 to 0){
                  if(mask & (1<<i))
          {
                          recurse(i, mask^(1 << i),currans + (idx==-1)?0:A[idx][i] )
                  }
          }
  ```

Do we have to print the arrangement also ? No
All test cases passed using backtracking? YES

// Alternate Solution (All cases are passing)
Use Bitmask DP
Make 2d array: dp[mask][i]:
represents the minimum cost of this mask(binary number) when the person at front is the ith person. Mask will be a number with bits set that represent the corresponding person in the current solution.

E.g. mask = 0001011 i.e. only 1st, 2nd and 4th person are present in the current solution

Dp[mask][i] = min{ Dp[mask][i], Dp[mask_after_removing_ith_bit][j] + interaction[i][j] }

Can we do it using greedy approach? Maintain an array arr[n] where arr[i]=true indicates i is already in queue. Lets say we have a queue of i students and we need to (i+1)th student , then we need to find min(summation over j, A[i][j]+A[j][i] and arr[j]==false). (No, I tried it but was not giving ac for all test cases).

IIT(BHU) 17 oct

Given a set of nonnegative distinct integers, and a value K, find out number of subsets of the given set with sum divisible by K using exactly M integer elements of array.

It can be done using 3 state dp.l
dp[i][j][k] = number of subset till i index using j number of elements in current subset and k as current modulo.

```
long solve(int i,int j,int k)
{
        if(j==M)
                return k==0;
        if(i==n)
                return 0;
        if(dp[i][j][k]!=-1)
                return dp[i][j][k];
        return dp[i][j][k] = solve(i+1,j,k) + solve(i+1,j+1,(k+a[i])%K);
}
```

IIT Bombay

Total 10 MCQ
1. Number of colors required to color planar graph
2. https://www.completegate.com/askus/157/question-on-circular-queue

1 question in SQL
3 more questions on C++/Programming

Given three arrays, a, l, r. Array a contains integers. Array l and r contains left and right boundary. For each element from l[i] to r[i] in array a , calculate result[i], where result[i] = Sum of distinct prime divisors of all elements in a (From l[i] to r[i].)
Ex
A = [2, 3, 10, 5,6]
L = [1,2]
R = [2,3]
For first test case L= 1, R = 2, So result[1] = 1+1 = 2 (Number of unique prime factor for 2 = 1, for 3 = 1)
For second part, L = 2, R = 3, so result[2] = 2+1 3 (Number of unique prime factor for 10 = 2, for 5 = 1)

HSBC Analyst

IITM (Platform)

(cgpa cutoff for test??+5 >=7)(ctc? 14lpa)

Exam had 6 Sections
Each had individual time limit
First one was aptitude which had around 20 questions (Please specify the major topics)
Second was Verbal and Logical Reasoning
Third one was English
Fourth one was Coding round. They stressed on perfect code which passed all test cases**(plz elaborate regarding questions: Everyone had different questions, they were simple though if you are preparing for coding companies)**
The fifth one was round based on Mathematics.It had questions of JEE level in probability,limits etc..**(plz specify topic? Definite Integral, Differentiability as well? Yeah basics of them and kinds)**
Last one was like a psychometric round where a problem was given and we had to choose best and worst possible answers.

Everyone had a different paper, time was not an issue but needed to be accurate.

IITK

AMCAT test,prepare for math section that is tough-two simple program like prime no, question on matrix mult. , string. , remove duplicates from arrays

Was there any cgpa criteria in IIT K? I guess not
Can we use stl here?? No

Mercari

IITB(15/10/17)

Two very easy online coding questions in 1 hour. Each candidate got a different set of questions. (what were some of the questions ??)(Which platform?)(Which language?)

Add two numbers given in base (-2).
Number of subarrays of length 3 , which are AP.

Given a string, consisting of digits, spaces or dashes(-), convert the string into block of numbers such that there is a dash after every 3rd digit. Space has to be removed. If the last block has just one digit, modify it, such that last and 2ndlast block consists of 2-2 digits.
 Ex: 203 984- 940-   -> 203-984-940
      203 984- 9   -> 203-98-49

IIT Roorkee

Q 1. Given top face of n dices find the minimum no. of steps so that each dice has same value. Value of n ranges from 1-100

Q 2. For an array a, k is defined as 2^a[0]+2^a[1]+...+2^a[n-1]. Find set bits in 3*k. Length of array 1-10000. Value of a[i] ranges from 0-1,000,000,000. O(1) space complexity. O(n) time complexity.
Number of 1's in the binary representation of 3*k??

Capital One

Test on 24th OCT '17

Is there a change in pattern/type of questions, as compared to last year's?
Query : post the last year pattern please(Last year it was Data Interpretation and nothing else, if you can calculate percentages correctly for 35 questions, you would be in) 35 questions in 30min all DI -- **Is this pattern followed for ML profile too??**
Which areas to prepare for Machine Learning profile?????
Is the pattern same for both ML and Analyst profile??

Same for both ML and Analytics Profile

35 mins 10 questions DI, 20 questions Logic and Math. Slot 1 in IIT B

For last years ques, please refer the docs posted in the Pinned post of our FB group.(Has this been updated yet , Couldn't see any link regarding this)
Where?
Last Year Docs = (Kindly read pinned post completely)

IIT KGP(23/10)

ML Profile: 26 Questions, 30 Marks, 35 Mins
Two Sections: 1. Data Interpretation 2. Reasoning + General Maths
Each section has individual cutoff so it's important to attempt each of them.
Section 1 - 3 parts: 1. Pie-chart, 2. Line charts 3. Bar graphs
Section 2 -Quant
(Time management is very very important,it makes all the difference,dont waste much time on single question)

Same Question Paper for both ML and Analyst Profiles.
Section A(DI) had 10 questions, section B (LR+Quant) 16 questions.

DI was fairly simple, Quant was slightly difficult considering the time per question.

SAP LABS

IITG (20/10/17)

Topics:

33 Questions in 75 minutes. (Coding involved DP and graph, and others questions were time taking.)
Too tough to complete in the given time frame. One question on modified DFS/BFS..one question on DP. No STLs allowed.
Quantitative Aptitude (10) [percentage, Data interpretation]
Logical Reasoning (10) [Coding & Decoding, Series, visual reasoning]
Guesstimates (1) (Single question, Around 14 statements were there from which you have to infer the result.)
Computer Knowledge (10) [SDLC={Vmodel, horizontal, vertical model}]
Coding questions (2) [Didn't attempt, no ques repetition]
1. You have to count the no. of nodes in a tree. Where each node is having a value 'v' assigned to it. Each node will have a maximum of (v*v+1) % M child, with value assigned from 0 to (v*v+1)%M - 1. The value of root node is=2.
    Input : No. of levels, value of M.
    Output : No. of nodes in tree.
[Practice DP & graph].
I can think of O(v*levels*M) DP? Anything better.
Wasn't there questions from OS, Networks, DBMS?-->os, 1 dbms. NO
On which platform was the coding test conducted? Sap labs is premium subscriber of mettl platform.
Check queries page for all issues by mettl. Practice once in mettl. (Worst platform ever) -(check tricky part of IIT Bhu sap labs)
I don't remember seeing python. (**Python was available**)
Do well, all the best :)

IIT BHU

Other parts were same as above

Coding part:
1. Given a tree,in which we have to calculate value of node, which is defined as r_val_currNode - l_val_currNode + value left subtree, where each l_val and r_val are given for each node. Root node was not given, we had to construct tree from given inorder and preorder traversal array. Then perform the required calculation.

2. Simple BFS based question: Given a 10x10 binary matrix, where each row defined a state, binary 1 in (i,j) means we can jump from i'th state to j'th state.Find minimum number of steps   needed to go from one state to another.

Tricky part: The platform sucked in coding part.Read only part of 1st question was wrong,hence was just waste of time for those who attempted it.

And in addition to this there was some problem with Java editor,so Java guys didn't solve any coding question.
>True that

Both the problems were correct and solvable.

IIT KGP (21/10/17)

75 min, Mettl Platform
Quant - 10 Questions
LR - 10
Guesstimate - 1
Computer Knowledge - 10
Coding - 2

Level of Toughness (Informal) : Lag gayi bhai. Phatt gayi, literally!(True)
Arey bhai bhai bhai bhai

Level of Toughness (Relative):
Coding>Computer Knowledge > LR > Quant ~ Guesstimate

Coding Questions:
1. Given inorder traversal, level order traversal of a binary tree and number of nodes, you have to find out the minimum height of the tree.(Did you construct the tree here ?) - you dont need to, send in recursion parts of arrays which are subtrees.
2. Given the number of rows and columns of a binary matrix, find number of perfect matrixes possible, a perfect matrix is defined as, if a binary matrix can be converted into all 1's on any number of steps. In one step you can tap on any block then the values of all elements in same row and column of that block flips.(Are we suppose to count no. of ways to convert matrix to all 1's ??) No , we have to count how many matrix have solution.(all possible combination of 0 and 1 to construct a matrix with given no. of rows and column which are perfect)
(How to do this^)

Note : You can use stl(Dude editing was not possible outside the function). I have edited the header files. You can add your own functions, header files as required.(i added) Nowhere it is mentioned that u cannot use stl. The header files are outside the read-only section of the code. So u can edit the header files.(True)

IIT Kanpur(21-10)

75 min, Mettl Platform
Quant - 10 Questions
LR - 10
Guesstimate - 1
Computer Knowledge - 10
Coding - 2

Coding:

Applications   Places   System

Online

🔒 https://tests.mettl.com/test-window/9a9ff70#/testWindow/4/0/2

SAP

SAP Labs IIT Cam

Section 5 of 5 | Hands on prograr ▾

Question # 1   ✏️ Revisit

How to attempt?
Question :

Beautiful Beads

There are N people standing on a ground holding beads. All the beads are
connected together via threads in such a way that there exists at least one path
from each bead to every other bead. The beads are immovable.

The beauty of this structure is that if you grab any one bead, say X, and hang
the whole structure via X, then a tree is formed with X as the root node and
every node below the root node being its successor.

You have to find out the number of beads that can be made the root node, given
that the height of the resultant tree must be less than equal to K.

Input Specification:

input1: N, the number of beads.
input2: A[N - 1][2] array, where each tuple is represented as (a, b),
denoting bead a is connected to bead b.
input3: K, denoting the upper bound for the height of the resultant tree.

MICROSOFT : IDC

Guys can you post the questions of quant? Sure, After the exam.
Exam was supposed to happen on 16th right? ->(Test Postponed to unknown date) Please upload the questions _/_

IITM

There were different set of Papers.Platform Cocubes.Time 70mins 3 Questions
- Simple problem on String Manipulation(If string has A in ith position and E in i+2th position remove the i+1th character in string and return the reduced string)
    - - expected output for AAEE? Ambiguity :D
    - Shouldn't it be AE?(maybe replace blocks of Es with one E and then operate)
- http://www.geeksforgeeks.org/dynamic-programming-set-13-cutting-a-rod/
- http://www.geeksforgeeks.org/count-distinct-subsequences/
- Given a number, find max prime factor of it.
  Any constraints? Does sieve work? Yes sieve works.
- Given a Binary Tree , nodes having weights , find maximum path in it
(how to solve this ? soln)
https://leetcode.com/problems/binary-tree-maximum-path-sum/description/
- Sol: http://www.geeksforgeeks.org/find-maximum-path-sum-in-a-binary-tree/

#was java allowed in microsoft test?
Yes --> java, c++, c#
#was STL allowed in microsoft test?: YES
Collections in java were allowed : YES
#was python allowed in microsoft test?: NO
C, C++, C#, Java

Q. 4th question had just one number or N queries?
Q. In 1st question do we have to check it recursively after deleting the character?
Q. In 4th problem are they expecting pollard rho? Or simple bruteforce / with without sieve? - Don't think sor , Sieve Worked

Q. Test contains only coding questions or aptitude is also in test ?

There are 2 tests of 2 different profiles. One for Data Scientist, another for Software Engineer. Please post the test questions asked separately for each profile. How were the 2 tests different? (+1)

Q.What is the syllabus for aptitude written test(Quant or CS subject(including data science ,linux)) ?

IITR

- Question number 1,2, 3 and 5 same as IITM.
- http://www.geeksforgeeks.org/level-order-traversal-in-spiral-form/
- http://www.geeksforgeeks.org/diameter-tree-using-dfs/
- http://www.geeksforgeeks.org/given-a-number-find-next-smallest-palindrome-larger-than-this-number/
- http://www.geeksforgeeks.org/dynamic-programming-set-18-word-wrap/
- Largest prime factor of a number
- Rod cutting to maximize profit
- Max path sum in a binary tree

IITB

There were different set of Papers.
Platform Cocubes - **BEWARE don't change tabs, (they monitor your tab activity, many people who opened tabs were asked to leave.**,
Time 70mins 3 Questions
- Last Digit in Factorial
    - www.geeksforgeeks.org/last-non-zero-digit-factorial/
- Rod-Cutting
    - www.geeksforgeeks.org/dynamic-programming-set-13-cutting-a-rod/
    - DP Solution only works
- Maximum expression in a string with numbers and "*" and "+"

- ○ www.geeksforgeeks.org/minimum-maximum-values-expression/
- Maximum sum path
  - ○ http://www.geeksforgeeks.org/maximum-path-sum-matrix/
- Count distinct subsequences
  - ○ http://www.geeksforgeeks.org/count-distinct-subsequences/

IIT Kanpur (24/10):

IDC / Redmond - 70 minute coding round on Cocubes platform.
There is compiler on the platform, but the test cases seemed very weak. It is recommended that after solving and seeing that you have passed all system tests, you try to make sure your algorithm covers all edge cases. Also note that the **cocubes ide sucks**. You cannot enter a custom test case. Java compilation was taking too long. C++ recommended for compiling and testing quickly.

3 questions, one easy, two medium from the following pool :

- Given a string, remove characters that have a preceding 'A'/'a' and a succeeding 'E'/'e'
- Find the missing term in a AP sequence O(n) or O(logn) required?- it can be done in logn
- Find last non-zero digit of n!
- Given a tree, find number of subtrees with diameter = k (solution?)
- Max sum path
- Given an array of bushes containing strawberries, you can pick all the strawberries from bushes, except you can't pick from consecutive bushes. What is the maximum amount of strawberries that can be picked (within limit maxlim). If not possible, return 0
- Max value of expression containing '+', '-'
- Max value of expression containing '+', '*'
- Start from any point in first row of matrix, you can only go downwards and move left/right at most one unit (from a[i][j] -> a[i+1][j], a[i+1][j-1], a[i+1][j+1]). What is maximum reward possible
- Some question of employees needed in each month, cost of hiring employees, and cost of firing employees - find min cost hiring policy

(Can someone post how to solve it ?)

The questions will repeat with very high probability, so make sure you revise all these questions before going to the round. They have a common set of questions which are asked everywhere. Also, they use C style arrays (not strings or vectors), that could be annoying. **Yes It was -_- (+1)**

Data Scientist / ML Role - 60 minute aptitude test on Cocubes platform

~50 questions, 3 sections. First section had ~20 questions, +1/-0.25. Second section had ~15 questions, +2/-0.5. Third section had ~15 questions, +3/-0.75

Questions in first section mostly focussed on basic probability distributions (properties of normal, t-distribution), calculate entropy of a set, and some basic machine learning related questions.
Second and third section focussed on machine learning more, questions like what terms mean in soft margin SVM, whether K-means is deterministic, etc.

Points to note :
-   A good fraction of questions were around graphical models. Which of the following (junction tree, message passing) is an algorithm, what is kalman filter, stuff about conditional random field (definition only), markov random field etc.
-   Most ML questions will be of the form : Which of the following is true, which of the following is false, in such a scenario what is best algorithm. The questions will be straightforward if you know the material.
-   Numericals - focus on probability basics only. Stuff like how to compute maximum of n random variables etc.
-   Time will be sufficient, if anything it will only be lack of knowledge that stops you. It is like a GATE exam based on probability, linear algebra, statistics, and machine learning.
-   Thanks

IITG (23/10/17)

Same pool of questions as IITK

- Last non zero (from right) digit of the Factorial of a big number.
- Diameter of tree
- Maximum sum path in a tree
- Maximum sum path in a matrix
- Given an array of size n with given capacities of items in it, a robot with maximum capacity max has to pick nearest number of items less than max while also it cannot pick items from consecutive positions in array. Return max num of items it can pick.

  CAN SOMEONE PLEASE EXPLAIN THE QUESTION PROPERLY?

  Any link for this question or/and solution?

Did O(n^2) solution work? Yeah(My DP solution worked just fine)

Can you explain your DP soln??

- http://www.geeksforgeeks.org/minimum-maximum-values-expression/
- An array consists of number of employees required for each month. 'Hire' is the cost of hiring an employee and 'serv' is the cost of removing an employee. What is the minimum possible total cost for the 'n' months.

  Question unclear. Link appreciated.

IIT KGP (27/10/17)

See all the questions asked in different IITs before the exam. Poora same question hai bhai! Literally same paper.

All are repeated questions from above list.

- Largest Prime factor of a number
- Maximum Value of an expression
- Cutting Rod Problem
- Distinct Subsequences
- Missing number in AP
- Last non-zero digit in n factorial
- Strawberry Problem (Solution??)

  Sol: modify knapsack. k[i][w]=max(k[*i-2*][w-arr[i-1],k[i-1][w]) sort of stuff.
- Company Hiring Problem: An array consists of number of employees required for each month. 'Hire' is the cost of hiring an employee and 'serv' is the cost of

removing an employee and 'sal' is the cost of retaining an employee for a month.Cost for each month will be (no_hires * hire + no_fired * serv + no_retain * sal) Given, the requirement for any month will strictly lie between 1 and 41. What is the minimum possible total cost for the 'n' months. Modified KnapSack problem. Brute Force solution is also accepted in the test.

- Maximum expression in a string with numbers and "*" and "+".
- Maximum path sum in matrix
- M.L. problems- type of error based on ROC

Backpropagation algorithm, different types of error function, some probability questions and some algebra. Svm and KNN based question based on their boundary shape with varying input data.

Next Education

IIT D

1. Format -- 20 objectives (puzzles, output of code) , 2 design questions(subjective), 3 programming quesions.

2. Platform -- HackerEarth , Time -- 1 hour 30 minutes

3. Questions--
a) Estimate number of school teachers in Delhi.
b) Design an app to track school buses . Explain Client Server model for this application. Functionality and technical details something like that.
c) Given N numbers from 1 to N. you have to change sign of exactly floor(N/2) elements such that the resulting sum of whole array should be 0.
   Sol-- N*(N+1) should be divisible by 4.

d) Longest non decreasing subsequence for a given array.(note since it's non decreasing elements can be repeated).
   Note--- O(N^2) solution results in TLE. so use segment or BIT tree.

e) Given N consecutive buildings find maximum amount of water which can be filled between two buildings. Suppose if buildings i and j are selected then all in between buildings will be removed. I.e amount of water will be min(h[i],h[j]) * distance between them.   Ex. 2 3 4 (select 1st and last building. Distance between them is 1 so ans is 2).
   Note -- O(N^2) solution results in TLE. so for every index **i** find the farthest right and left index such that value as those index is greater than value at index **i (can be calculated in nlog(n) using binary search and two array Lmax and Rmax where Lmax[i] = max(h[0] …. h[i-1]) and Rmax[i] = max(h[i+1], … h[n-1]).** Then try to fill water between i and those farthest index**es.**
http://www.geeksforgeeks.org/trapping-rain-water/
Can New tab be opened during the test?

Societe Generale

IITD - 24/10/17

Sections - Aptitude,Software Testing questions,English, Java/C# Questions
Time - 70 min
Aptitude - Was moderate   **Topics? Is it Quant or LR? Or general Aptitude?**
Quant - Level >=medium,English-Easy,Software Engineering-Testing and Models-Medium
Revise Oops concept .

No coding questions? **No**
Can you list some questions?
Question on software development, types of model (eg. waterfall model), types of testing (eg. unit testing, integration testing etc) and related.
Platform ?

IS THERE ANY CG CRITERIA IN SHORTLISTING FOR SOCIETE GENERALE??6.00
Topics of aptitude questions ? anyone ?

RAZORPAY

IITM

10MCQ + 3 Coding Questions
MCQ were covering one question from each of oops dbms networks os aptitude dsa etc..
1)Chef loves lucky numbers. Everybody knows that lucky numbers are positive integers whose decimal representation contains only the lucky digits 4 and 7. For example, numbers 47, 744, 4 are lucky and 5, 17, 467 are not.Find number of changes which needs to be made to a integer to convert it to a lucky number
2) Problem based on 2variable array sorting.
3)A number is lucky number if it contains only digits <5 and all are in ascending order. Find number of such lucky numbers till given n. N can be upto 10^18

Stl allowed?

IITR

10MCQ + 3 Coding Questions

1)Chef loves lucky numbers. Everybody knows that lucky numbers are positive integers whose decimal representation contains only the lucky digits 4 and 7. For example, numbers 47, 744, 4 are lucky and 5, 17, 467 are not.Find number of changes which needs to be made to a integer to convert it to a lucky number (Same as iitm)
2) http://www.spoj.com/problems/RATING/
3) Question on basic dp

Saavn

CTC ?

IITB

1hr - hackerank

http://www.geeksforgeeks.org/minimum-number-of-manipulations-required-to-make-two-strings-anagram-without-deletion-of-character/

http://qa.geeksforgeeks.org/2038/count-number-of-power-numbers-in-the-given-range

http://www.geeksforgeeks.org/element-1st-array-count-elements-less-equal-2nd-array/

4 MCQ questions -
Data struct for Level order traversal
Complexity of a code given
Complexity of DFS
Which algo doesn't need backtracking - Knapsack , tower of hanoi, n queen etc

Tesco

IIT BHU

Hackerrank platform, 60 mins, 2 coding questions
1)   Simple question based on stack, some application of next number larger than current
2)   String question: Lexicographically smallest substring that starts with a vowel and ends with a consonant. n^2 solution passed 8/10 test cases Test case? What if the string is abc?ab or ac? In case of substring only contiguous seq should be considered . ab is anyway lexicographically smaller than ac . for test case efgach, the answer should be ach ??
For efgach, why not 'ac'?
(Length vs Lexicographic order, which one should be prioritized?)
Length doesn't matter

Any one from IIT BHU can clarify the 1st Q. properly??
An application of this
http://www.geeksforgeeks.org/next-greater-element/

What was the cpi cutoff?anyone??

IIT Hyderabad (26/10/2017)

Hackerrank platform, 90 mins, 2 coding questions
1)   Given a number N, write a function to express N as sum of two or more   consecutive positive numbers.
2)   Tom and Jerry in a maze https://www.careercup.com/question?id=5749266532270080

Tom & Jerry problem- If someone has solved this, please share in gfg ide.

IITG (30/10/2017)

(IITG Friends, kindly rephrase and improve the ques) Better?
1)   Given an array which may have duplicates, you have to make the array unique by increasing the numbers such that their sum is minimum.
Eg:
For, arr = {2, 2, 4, 5} arr[1] is not unique. Make arr[1]=3 to get min sum, which is 14.
For, arr = {1, 5, 6, 5, 6}. The unique arr for minimum sum would be {1, 5, 6, 7, 8}. Therefore, the sum would then be 1+5+6+7+8 = 27.

2) Given a string "acdapmpomp", find two palindromic subsequence, such that the product of length of the two subsequence is maximum and the two subsequence should not overlap.
   Suppose, 1st subsequence (start, end) = [1, 6], 2nd subsequence = [3, 8] ==>overlap

"acdapmpomp" = "aca"(3) multiply "pmpmp"(5) ⇒ 15(answer)

Fidelity

IITG

CTC??? 11LPA

Fixed order(1-32 in 45 mins , 33rd in 30 mins , 34th in 15 mins)
Test done on HirePro
2 coding questions(easy)(one question 30 minutes other 15 minutes)(10 test cases each) Coding questions??
32 MCQs in 45 minutes(quants , basic english , C/C++ programming , one question on scheduling , one on DNS servers, 2 Comprehensions)
No negative marking

TEXAS INSTRUMENTS

IITD

There were 3 profiles, Software Engineer, Hardware Engineer, and Software & Hardware Engineer. You were allowed to take the test for only one profile. I applied for Software Engineer.

Test duration: 1.5 Hours
Total Questions: 20
10 apti (Basic time, work and distance questions, find the missing term in series, odd one out, Permutation Combination, Mixtures)
10 Technical (basic C++ DS and OS (Round robin scheduling, tlb hit-miss time), sieve output)
There was enough time for the test and level of questions was average.
Analog - Questions based on RC circuits, Op-amps
Digital- Even Parity Generator, Self Complementing Codes, Encoders, R-2R DAC
(HARDWARE QUESTIONS PLEASE?) +1
LEVEL OF HARDWARE QUESTIONS ????????

Nutanix

IITK & IITG(same) 29-10

2 Coding Questions

75 Minutes

Dead Man's Chest

Captain Jack Sparrow and Davy Jones are having a furious sword fight to gain the key to the chest containing Davy Jones' heart. Jack wants to kill Davy Jones and live forever as the captain of The Flying Dutchman. On the other hand, Davy Jones wants to save himself from death. A string of lowercase english characters (a-z) is hanging between them. With each strike of a sword, they can strike down any one character from the string. If at any point of time before striking down a character, either of them is able to make a palindrome from the characters of the string **(any anagram of the string)** , he can strike down the entire string in one shot and defeat his opponent. It is known that **Jack** gets the **first chance** to strike and strikes are made alternatively by both of them.

Given the string that is hanging between them, determine who wins the fight provided that both fight to achieve their target i.e. fight optimally.

Input

The first line of each file contains T, the number of test cases.
Each of the next T line contains a string S consisting of only lower case characters (a-z).

Output

For each test case, print in a new line the winner of the sword fight - "JACK" or "DAVY JONES" (quotes for clarity only).

Constraints

1 <= **T** <= 100

1 <= **length of string S** <= 100000

Sample Input

2
aba
abca

Output

JACK
DAVY JONES

Explanation

For 1st test case JACK will win because the input is a palindrome and can be striked out in a single move.

For 2nd test case if Jack wants to win then by playing optimally he removes 'a' from the string. Else 'aca' or 'aba' will be formed by removing 'b' or 'c' respectively, which can be cut in one go as they are palindromes by Davy Jones where he would win. So Davy Jones will be left with 'bca'. Now all are distinct characters, in which he removes any one of the three. In next turn Jack removes another character and finally Davy Jones gets only single character where he wins.

Firewall Authenticatir ×   Kanpur 2018 FTE hiri ×

https://www.hackerrank.com/tests/b5qtfe3dk18/questions/gkf7883ra2p

Kanpur 2018 FTE hiring Test   01h : 04m : 37s   0/2 Attempted   Debabrata Ghosh
                                      to test end

☆ Sort The Array

Question:
You are given an array of length **n+1**. It contains number **1 to n** (all distinct). There is an empty space at the end. You can do only one type of operation on this array i.e. moving an element to the empty space. You have to write a program to find and print the minimum number of operations required to sort this array, and the empty space must be at the end of all the operations.

Input:
You will input **n** as the first input value, and then **n** integers, each integer separated by a space as the second input.

Output:
An integer representing the minimum number of operations required to sort.

Sample Input:
3
3 1 2

Output:
4

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

ⓘ For help on how to read input and write output in C++, click here.

Original code   C++

```
1 ▾ #include <map>
2    #include <set>
3    #include <list>
4    #include <cmath>
5    #include <ctime>
6    #include <deque>
7    #include <queue>
8    #include <stack>
9    #include <string>
10   #include <bitset>
11   #include <cstdio>
12   #include <limits>
13   #include <vector>
14   #include <climits>
15   #include <cstring>
16   #include <cstdlib>
17   #include <fstream>
18   #include <numeric>
```

Kanpur 2018 FTE hirin...

---

separated by a space as the second input.

Output:
An integer representing the minimum number of operations required to sort.

Sample Input:
3
3 1 2

Output:
4

Explanation
This is how the array with empty space will look 3 1 2 _
To sort the arrays here are the steps
1. Move 3 to empty space
   _ 1 2 3
2. Move 1 to empty space
   1 _ 2 3
3. Move 2 to empty space
   1 2 _ 3
4. Move 3 to empty space
   1 2 3 _
Array is sorted and the number of operation is 4

Envestnet Yodlee

CTC??

IITK: 29th Oct

(open for?)(CSE, EE, Maths n Computing): 2 Profiles-IT(MTS) and Lead Data Scientist
41 questions 50 marks

20 Apti in 30 minutes (Basic Apti)
10 systems and Java in 10 minutes
10 Code snippets and output answers (two sorting based questions) in 25 minutes
1 coding question in 25 minutes
No Negative marking
Coding question: Given link e.g. `<a href="http://www.codeproject.com">CodeProject-For those who code</a>`
Output `http://www.codeproject.comCodeProject-For those who code (extract the URL and text part).`

CISCO -

IITK

Simple aptitude and probability questions and some questions on microprocessors. 60 minutes 50 questions. (can you elaborate on what kind of qns were asked in aptitude and probability?)
- Very easy stuff. Ratio, permutations combinations. Some simple puzzles.
  No real need to practice for this part.
- Can you describe something more on the microprocessors part? What to study? +1
  (IIT Kanpur)(Did they ask on Networks?) +2
  For microprocessors, they asked what certain instructions meant / did. Do not recall if there were Network questions.(I am a math major. I might not have recognized them).
Do you mean MIPS instructions??
(^^^^Can someone from elec shed more light on this??)+2

Were microprocessor questions compulsory for everyone? Or was it only for non-cs background?
- Test was common for all the depts

IIT BHU

Same as above^^
Regarding microprocessor, there were 2-3 questions. Which mode of operation in 8255 PPI, 8095 machine instruction to clear flag, how many chips required to design 64k of memory when individual chips had 12 bit address line and 4 bit data line, simple questions related to NOR gates and boolean algebra.

Citicorp(Bangalore)

IIT BHU

3SECTIONS: platform:amcat
1. Quant :
      16 questions-16mins, very easy, just maintain your speed to attempt all questions
2. DI: 10 questions 20 mins
        (2 sets of 5 questions each)
3. Critical Reasoning: 22 questions 30mins

   NO negative.

In our portal the total duration of test for citicorp is mentioned to be 120 min.So does it contain coding problem of 60 min as well or not?

Symantec

IITG (28/10/17)

10 MCQ
2 coding ques.

1. Given n sentences of max of w words in each sentence. M queries having 1 or few words, you need to output index of sentences where you can find these words.

Ex:
3
John likes Tom
Tom likes Mary
Mary and John are friends
2
Likes
Mary likes

Output:
0 1
1

2. Given matrix with 1's, 0's, -1's. 1 - diamond, -1 wall, 0 no diamond but you can travel through it. You need to start from (0,0) , go to (n-1,n-1) and return back to (0,0) with max diamonds.

Once collected the diamond there will become 0..

Cohesity

IIT Kanpur(22-10)

(Open for CSE,EE and MnC)
One coding question: 1hr and 15 minutes
Shortest Snippet: You are given two strings S and Q. Each string has multiple words separated by single spaces. Each word in S is given an index, starting from 0 for the first word. You have to find the smallest range [l,r](both inclusive) in S which contains all words in Q.
No duplicate words in Q.
All lower case characters.
E.g.
Input:
S: what about the lazy brown fox that jumped over the other brown one which lazy dog ate the food of the fox
Q:lazy brown dog
Output: [11,15]
Example test cases?
Constraints???

Was Python allowed?

Rakuten

CTC??
-> Gross 3600000.00 JPY; CTC:4500000.00 JPY
Is it in rupee or JPY ??
Will we know all the test cases Or are there any hidden test cases?

IIT BOMBAY

Platform - Codility
1Qn - 1 Hr

There were many sets for the exam.
My question was
I am using ^ symbol for bitwise XOR
Given 2 integers M, N where(M<=N)
Calculate M^(M+1)^(M+2).....^N
Conditions: O(log(n)) worst case time complexity; O(1) space complexity

They defined an adjacent pair of elements in an array as 2 elements such that there is no element between them in the array. e.g. Given U and W, U and W are the array elements, if there's no V in the array such that U < V < W. (Note: U is strictly smaller than W) then U and W are adjacent.

Given an array of integers (may have repeated elements and multiple adjacent elements) find the maximum distance between adjacent pair of elements (i.e diff of the indices in the original array should be max)

Any more questions and what is the duration of the test??

AMERICAN EXPRESS ???

(PLEASE SHARE THE QUESTIONS)

Myntra

-Roorkee walon myntra ke updates de do

Test has been postponed

Auctus Advisors

Coming to IITB, shortlist methodology will be similar to Bain, BCG, ATK

Amazon

IIT DELHI- PLEASE GIVE INFO OF AMAZON TEST

(Test has been postponed)

MasterCard Advisors APT

Can anyone share the process details here ?

Deloitte

Questions anyone??
Please post questions or exam pattern?

Yahoo Japan

Any test in IIT's till now?

Nasdaq

Questions Anyone???

AB InBev

Questions Anyone??

AXTRIA

(Technical Analyst/ Business Analyst)
IIT (BHU)- test on 31st oct

Please update the details for this company.

Uber

Questions Anyone??

Honeywell

Pattern and questions Anyone?