

Placement Preparation Tips and Tricks (Company Wise)



- PG2 (M.Tech 2013-2015)

करत करत अभ्यास के, जड़मति होत सुजान
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General Preparation Tips

The preconceived notion about placements is that you only have to do problem solving and you are through. This is not exactly true and it takes more than problem solving to get placed.

You have to prepare subjects as well because they will play crucial role in interviews as well as written. There are only few companies that have only problem solving as their main focus, so we will suggest you to prepare other subjects as well just in case.

Having said that, it is experienced by us that projects are equally important and many of us got selected because of the projects we have done in B.Tech and M.Tech, so the subjects you will take in future semesters are equally important and the quality of projects does count a lot.

To sum it up, these are the areas which you have to focus on-

1. Problem solving - Competitive programming, take part on codeforces weekly rounds, you will have 2-3 hours in which you will be asked to solve 4-5 programming problems. This is similar kind of environment which you will face during placements. Similarly take part in monthly challenges on codechef and hackerank, and you can prepare for ICPC on SPOJ. Practicing on SPOJ alone will not help you because there's no time limit on SPOJ, so practicing on codeforces, codechef, topcoder and hackerrank is a must. Also u can solve leetcode for practice if SPOJ is too heavy for you. It has around 150 basic questions which will cover every topic asked in the interviews/coding rounds.
Our Advice - leetcode + codeforces/hackerrank + codechef
If preparing for ICPC as well - above + SPOJ
2. Operating Systems - GATE type questions are asked in written round, you can go through your GATE notes, the syllabus include Process Management, Semaphores, Deadlocks, Disk Scheduling, Paging and Segmentation, Virtual Memory concepts.
For Semaphores you can refer this book -
<http://www.cs.ucr.edu/~kishore/papers/semaphores.pdf>
For GATE notes -
<https://www.dropbox.com/s/97i4uza528ckacx/Operating%20Systems.zip?dl=0>
3. DBMS - Similar case as with OS, the main focus is on SQL queries, Transaction management, Indexing, etc. There is a course in 2nd semester in which you will

be asked to develop a naive kind of Database Query Engine which will help you in interviews, so do it seriously.

For GATE notes -

<https://www.dropbox.com/s/zp6khfiehcfc7/DBMS.pdf?dl=0>

4. OOPs - OOP concept alongwith C++ is really important, written rounds have questions regarding C++, just go through C++ concepts from geeksforgeeks, here's the link-
<http://www.geeksforgeeks.org/c-plus-plus/>
5. Computer Networks - Computer Networks are mostly asked in written rounds and only few companies ask in interviews, you can go through the GATE notes for preparing CN. Here's the link -
<https://www.dropbox.com/s/helh6s86h1decb/ComputerNetworks.pdf?dl=0>
6. Design Patterns
7. System Design Questions(Refer Career Cup)
8. Projects - Search Engine (IRE), Major Project in IRE, DB Project as mentioned above, IAS project, Data mining project, Cloud Project. They are equally important. Take care of all the subjects that are taught in 2nd and 3rd semester, they are equally important.

NOTE : Improve your CGPA, it plays decisive role.

Adap.Tv (Smita Kumari)

There were total of 6 rounds, 1 written, 1 programming and 4 interviews.

Round1 (written):

First round was written, needed to write the answer in space provided on question paper itself. There were 30 questions, 20 of them included questions like c/c++ output questions, objective questions from binary tree, searching, sorting. 10 of them were puzzles/mathematical types of problems whose answer needed to write(not complete solution).

Round 2 (programming): I don't remember the exact question, but It was a very simple straightforward one. Something like given list of advertisements which were comma separated string containing advertiser id, ad id, ad_cost. And needed to output cost for the advertiser given advertiser id.

So as much as I remember, it was more of input parsing of comma separated string and maintain some value count on map and show that count in output.

*Please update if anyone remember exactly.

Interview round 1:

Question were mix of HR and Technical. First asked some questions from the resume, about the tools and technologies used. Also asked about the projects. Few of the technical questions I remember:

- What is difference between php and javascript (I had php and JS in my resume), what is there we can/cant do using JS and PHP.
- What is garbage collection. Give example. Also asked something about synchronization.
- Write a working code(C or C++) on paper that implements strcmp function of C and then modify the program to implement strncmp function.
- Write code - An array consists of elements which are among three different color component R, G, B. Sort the array such that all R's comes first, then comes all G's and in end all B's. You need to sort in same array, new array should not be created.
 - After writing this, they tweaked the problem and said R, G, B are objects and so are different from each other, just type are same. So sorted array should contain original elements(R,G,B objects) with same relative position among all R's, all G's and all B's.
 - For example original array is [R2, B1, B2, R1, G3,G1,B3,R3] then sorted array should be [R2,R1,R3,G3,G1,B1,B2,B3]. O(n) complexity expected.

Interview round 2:

It was completely technical and main focus was on data structures (graphs and tree mostly). Interviewer asked two questions:

- Given a list of cities with lat,long. Find the nearest city to a given city. (shortest path in graphs). They will ask to optimize the solution as much as possible.
- I don't remember exact question, but it was something related to common ancestor problem in tree, needed to use the approach of backtracking in recursion.

Interview round 3:

- Again asked questions from projects mentioned in resume. More of technical questions from projects.
- Asked question from the round 2 (programming round), what approach did you use and why. Also asked to optimize the solution given big data set.
- Asked what do you know about Adap.tv (I said not much I know, then he explained)

Interview round 4:

It was a HR round, almost all questions from my background. Why doing Mtech, last experience, some questions of projects. What kind of are you expecting etc.

Asked one technical question, which was related to topological sorting in graphs. Then asked the algo of topological sorting.

Amazon (Harshad Jalan)

Written round -

Few objective questions

Coding questions had a one-dimensional dp problem and a problem on graph which could be solved using DFS.

Interview 1

Two questions on trees. One of them was <http://www.geeksforgeeks.org/boundary-traversal-of-binary-tree/>

The second one was quite doable too.

Interview2

Apart from one design patterns question, all questions were based on CV and projects taken.

Interview3

Implement LRU cache.

Divide and conquer based questions.

American Express (Avanti Gupta)

The drive started with a presentation. They wanted it to be more and more interactive. So better to display your interest in the company by asking and answering questions. As it will bring you to their notice, and may work in your favour.

Written test 1 hour Written test.

Sec1 - Apti MCQ (not easy, and time consuming)

Sec2 - Technical MCQ (moderate)

Sec3- Had to write time complexities of 4 code snippets (pretty easy)

Sec4 - Had to write a program which takes a number as input and we have to convert it into words.(easy but lengthy, wrote only important parts of the code)

There was negative marking.

Interview My interview was held in 2 rounds.

Round1 -

He went through my resume, and asked about my past TCS experience, about the projects I did.

Then he asked about the programming languages I mentioned - java oops concepts (about), html/css (difference between html and css) , he asked what tools I have used for XML parsing, and if I have to make my own custom tool, how will I implement it.

He asked a simple candle burn puzzle. How to find if a no. is even or odd without mod by 2. Some more technical questions, which were quite easy to answer(don't remember exactly)...He didn't ask any GeeksforGeeks kind of questions.

Then his interest shifted towards my TCS project experience - how I was as a team player, did I lead any team, how I dealt with situations where manager differed from my opinion, did I have any conflicts in the team.

Then some general questions followed: What I think, my friends think of me. What I think of my college. What is the best thing about it. About my family. What location I prefer and why. Did I ask any questions during the presentation, or answered any questions. He asked me if I had any questions for him.

I asked about the work culture and why Amex is considered among the best companies to work with. He told about the work life balance which the employees maintain at Amex, and told about his own experience.

The round-1 ended at this point, and he asked me to wait for second round. Overall I didn't feel that my technical interview was going on, it was more of a discussion, and the interviewer was quite friendly. After some time I was called upon for round-2.

Round2-

The round-1 interviewer was joined by the HR. She asked me to tell me about myself. Just general questions on - hobbies ,interests, family, team player, leadership.

Then she said that they have a bond of 2 years and whether I was agreed to fill it. I said I was ready to do so, and she asked me to wait for sometime outside.

She called me back after few minutes, and told me that there is no bond, she was just trying to test me :P. Then she shook my hand , said congratulations and told me that they are offering me a position in credit risk management team. It was one of the happiest moments of my life :)

CipherCloud (Krishnakant Vishwakarma)

Elimination Round: Around 30 mcq aptitude and java questions. Java questions were mainly about Casting, Strings, Equals and == for Objects, Boxing and Unboxing, Constructors, Exceptions, Threads. Scjptest.com is a good resource for preparation for such questions. The Further rounds were conducted in very unusual manner.

Coding Round: Consisted of 3 on the spot coding questions with each question having individual time limit and elimination after each question. Your choice of language.

- 1) For every number between 1 to 100, print 'Cipher' if the number is multiple of 3 or print 'Cloud' if it is multiple of 5 or print 'CipherCloud' if it is multiple of both. (**10 minutes**, print the output same as asked, don't print extra info like line number)
- 2) For a given string print the index of a space-character from start and from end. (**10 minutes**, take care of edge cases also like Null string)
- 3) We were supposed to implement a Data Structure (a HashMap) with following 8 functions. (**45 minutes**)

```
void put(int key,int value)
int getValue(int key)
void delete(int key)
int getMinKey()
int getMaxKey()
int getFloorKey(int floor)
int getCeilKey(int floor
int[] getKeyRangeIn(int start,int end).
```

Choice of language was very important for this question. Do not give up, implement as many functions you can. Rationale behind your implementation was more important for them.

Personal Interview Round:

(The top candidates were each interviewed by group 4-5 interviewer for around 45-60 minutes. The discussion were mainly focussed on the projects , questions about their choice of subjects.

As it was too late in the night the last 3 candidates were interviewed simultaneously in separate rooms by 2 interviewers.)

Question1

Introduced 2 terms 'Aliquote number' and 'Amicable Pairs'.

Aliquot number : The sum of all the proper divisors of a number.

Amicable Pairs: Two numbers A & B are amicable pair if $\text{Aliquot}(A)=B$ and $\text{Aliquot}(B)=A$.

Question was to find all the amicable pairs between 1000 and 9999. ($O(n)$ complexity preferred)

(He was more interested in design thought for optimization and reusability of functions.)

- Next he asked to write code for finding 'Aliquot number' of a number.

- Then some Java questions:

- What is Dynamic Method dispatch in java, its need and example.
- Difference between Abstract Classes and Interface.
- Usage of Interfaces.
- Why a Parent class is called a 'Super' even though a Child class has its own attributes and can access attributes of Parent class too.
- What is composition.
- synchronized keyword usage.

Then Few HR questions in between: Previous experience, Feedback about the interview process, do you have any question for me?

Then after some time the 2nd interviewer came and asked few questions:

- about my branch (Computational Linguistics), what were my subjects
- how expressions used in program are represented. Gave me a big mathematical expression and asked to represent it in form of a tree.

Code_Nation (Ahmedali Durga)

Coding Round: Two questions on hackerrank. One maths (probabilities and stuff) and other a graph problem (Don't remember exact question but it was related to no of unique paths in a directed graph). Don't try to do everything. Make sure whatever part you do, maximizes the number of test cases you pass, even if for a single problem.

Technical Rounds (3) (All on Google hangouts):

Round 1:

- Find if a given tree is height balanced or not. Used collaborative editor. Basic approach with repeated height calculation. Mentioned the optimal approach, but not asked to code that.
- Design Question: Basically a recommender system. Specific scenario: While writing a mail, as user fills in the first recipient, I want the user to be recommended from his contact list to whom else might he want to mail.
- Discussion on the above question led to IRE project and then discussed along those lines.

Round 2:

- Straightaway started with design question: For designing a text editor, discuss data structures and algorithms that can make read/write/search optimal (he wanted all in linear/sub-linear time complexity).
- Discussed three approaches: Linked list based, hashing based and finally, using tries, and discussing (no actual coding) each of the operations and how to implement them.
- Finally, general interaction and question/answer session.
- Try and reason out as best as you can. More than exact solutions, a logical derivation from a basic to advanced solution, even though not completely accurate leaves a better impression.

Round 3:

- Completely focussed on project discussion.
- Data-mining project discussion. Methods employed and why. Even discussed the python library for the same.
- Then asked about interests. Mentioned distributed and cloud computing.
- Cloud computing project discussion, leading to internals of spark, hadoop, hive etc.
- General interaction.

DeShaw interview experience

Arpit Bhayani

Total rounds: 3

1st Technical:

Project:

1. Looking at my resume the first question was about any one of the project. They chose project randomly.

C++ OOPS:

1. importance of virtual keyword.
2. How is virtual keyword implemented in backend.

Algorithms:

1. Given a linked list I was asked to remove every alternate nodes.
2. A question on linked list: Given a linked list you need to delete every alternate node.
3. A question on bit operators: How will you find if a given integer n is a power of 2.
4. A naive approach to find if a given number is power of 2. [Using iterations]

Data Structure:

1. Given a binary tree, your task is to find out the largest BST present in it.

NOSQL:

1. A question about NoSQL (mongodb) [since it was on my resume] and difference between SQL and No SQL
2. Give a scenario where NoSQL performs better than SQL

Web Programming:

1. Describe MVC architecture and why it is useful in webapp development.
2. Give one project that you did using MVC architecture [I explained Web2Py project]
3. A question about JSP: What is the life cycle of a JSP page.
4. What is REST architecture.
5. One more question regarding web development: You need to design a webpage that paints a table dynamically without refreshing the page. The content of the table is given by the JSON data object which is exposed by some REST URL. So how will you go about doing this. What all things will you use.

The answer I gave was to use AJAX and jQuery

1. What is AJAX and Why ajax
2. Why JQuery and not JavaScript

3. Write a sample code to hit a URL using AJAX call and fetch the content. [This question was asked to check if I am not bluffing]
4. What is jquery.min.js [because I introduced jQuery in the answer to the previous question of mine]

Design Patterns:

1. A question about Singleton design pattern
2. Implement a Singleton class in either C or C++
3. Implement a Singleton class in JAVA

Databases:

1. SQL Query: find the most populated state in india [complete table was given and only max entry was required]

General Puzzle:

1. Given two sand timers that can be used to calculate the time = 7min and 11min. Task 1 : calculate time = 4 min. Task 2 : calculate time = 3 min.

Technical 2:

C/ C++ concept:

- How will you write a function that will accept a variable of any type. [void pointer]
What is the use of function pointer.

Datastructure:

- Given a binary tree, print its level order traversal without using a queue.
Given an unsorted linkedlist, convert it to balanced binary search tree.

Design:

- Design a generic sort function that can sort any array having any datatype.
Now modify the sort function to handle Linkedlist as well.

OS:

- When a function is called; a stack frame is pushed on to the stack. So who pushed it ?

HR round:

- One tricky question: How will you find the total number of pencils in Hyderabad.
Such questions are called Guesstimate question. They only see your approach in such scenarios.

Directl (Swapnil Patil)

Round 1 (Coding):

Two questions on HackerRank.

- Given a binary tree. We can traverse the tree by going left with probability 0.5 (so to right by 0.5). Find the number of possible traversals.
- [Can't recollect now. Will update later]

Round 2:

Only coding. Nothing else.

- Given a 2-D space with points with colors R, G, B. Find a triangle with maximum area such that corners of the triangle have different colors. Also one of the side of the triangle is parallel to X-axis or Y-axis.

Discuss and write pseudo code on paper.

- Given a set of strings. We need to put these into a trie.

Now rearrange each string i.e. choose a permutation of a string, such that the number of nodes in the trie is minimum.

Discuss and write pseudo code on paper.

Round 3:

Only coding.

- Given an array consisting of Blue and Red cells, each cell has a value (+ve or -ve). We need to find contiguous cells which will have maximum sum and even number of blue cells.

Asked to write the proper c/c++ code.

- Given an array of integers of length N, we need to find M non-overlapping windows of length K, such that sum of numbers in all windows is maximum.

Asked to write the proper c/c++ code.

Round 4 (Technical): Google Hangout. Went on for two hours :(

In this they covered everything - DB, OS, c/c++, coding (again).

I had work experience in C#, so he asked what are differences between C# and C++.

Regarding OS, he gave me a couple of small programs and asked to make them thread safe. He gave me a scenario in cricket. Given statistics of bowlers in a match, find out most economic bowler. He wanted end to end working solution. The problem was easy but he looked at key aspects of program like initializations, proper syntax, memory leak etc. I had to write on a shared notepad so he could see what I type and what mistakes I do. In the end it was a grilling interview which I could not crack. :(

Epic Systems - Off campus(Sajal Sharma)

Applied for Epic Systems offshore(Madison, Wisconsin) in December 2014, got the call on 6th January.

Applied through their career option on their website, IIIT tag will help you get the call.

Round 1(Introductory Interview - Telephonic)

The first round took place on 16th January, earlier they asked me about my availability and I responded by providing them a particular date. The call came from their New Jersey office. It was a normal chit chat about my area of interests, the projects I did, their overview. Then he asked me whether I have any doubts or questions related to the kind of work that Epic does, I asked various questions to which he responded. Came to know that the interviewer was from IIIT H itself(B.Tech).

Round 2(Online Assessment)

I was notified through an email about being through the first round and now I have to go through an online assessment exam conducted by ProctorU. They gave a link which was hosted by ProctorU(i suppose it is hiring agency that takes online assessment exams), at that link I had to pick the time for the assessment exam. This round took place on 26th January.

At the allotted time, I logged in the link given by them and the initial setup took around 30-40 minutes. This includes verifying the identity, verifying the surroundings where I am giving the exam, they monitored me through the cam and I was not allowed to even change the tab.

The Assessment had 4 parts :

Part 1 : Quant and Logical Reasoning(Untimed)

15 questions, MCQ type.

Part 2 : Technical Ability/Knowledge(Untimed)

It was somewhat comprehension paragraph kind of section. A new language was designed and rules were written for this new language, according to these rules MCQ type of questions were asked.

14 questions

Part 3 : Speed Ability

You will be given 2 minutes and 10 questions have to be answered. You have to do as much as you can. These questions span from Normal Mathematics to Logical Reasoning. I did 6/10.

Part 4 : Coding Section(Untimed)

It comprises of 4 questions that need to be solved. These are standard programming questions with a twist that there's no Judge, i.e. there won't be any test cases for you to test the validity of your solution, you can't compile/run your code and of course as I mentioned earlier you can't use your terminal(you have to code in their text area only, this is kind of annoying). But you can write pseudo codes as well instead of actual codes. They will judge how well you can construct algorithms. They don't judge you on correctness of the program but how you divide and structure your code. Having said that, your code needs to be genuine, i.e. plain structured code which is incorrect won't let you anywhere, so be judgemental about it. I remember $\frac{3}{4}$ questions that were asked to me, these were :

1. You will be given a string, containing both uppercase and lowercase alphabets(numbers are not allowed). You have to print all permutations of string with the added constraint that you can't change the uppercase alphabets positions.
2. There is a $n * n$ square board, there's a new kind of game which is played on this board. there are pieces on the board which can only move horizontal and vertical any number of squares until it encounters an opponent piece, when it does so, it replaces the opponent piece at that position and the turn alternates. The input will contain a $n * n$ matrix with 1,2 and 0 in the cells. '1' denotes your pieces, '2' denotes opponent pieces, and '0' denotes free space. One of your pieces has fallen from the board and neither you nor your opponent remember its original position, so you collectively decide that you can place it anywhere you want to, so its upto you to place it at a position where you can maximize the number of opponent pieces you can cut. Output the x and y coordinates of such position. If multiple positions exists, output anyone.
3. You have to print all possible combinations of phone numbers. The length of the number will be given. Also 3 digits will be given, which can not be used. No two consecutive digits can be same. A number containing 4 would always have 4 in the beginning.

Questions that were asked to other candidates:

1. Suppose all months have 30 days. There are 12 months in a year. February would have 31 days in a Leap year. condition for leap year is defined as $(\text{year} \% 40 == 0)$ is leap, $(\text{year} \% 200 == 0)$ is not leap, $(\text{year} \% 1000 == 0)$ is leap. Given a date as MM/DD/YYYY, find the next Leap Day.
2. Print matrix in spiral order.

3. Given a number, get all possible substrings using the digits of this number and if the product of digits in one subset is same with the another, then return false, else return true.
 e.g. $345 = \{3, 4, 34, 45, 35, 345\}$
 products are $\{3, 4, 5, 12, 20, 15, 60\}$ hence true
 $3426 = \{3, 4, 2, 6, 34, 42, 26, \dots\}$
 product $= \{3, 4, 2, 6, 12, 8, 12, \dots\}$ hence false. (products of 34 and 26 are same)
4. To print the perfect ordering string of length N.
 eg "achq" is one of the example of length 4, since $a < c < h < q$ in lexical order.
5. In a given string replace article 'a' by article 'the',
 eg. "He is a citizen of America"
 and: "He is the citizen of America""
6. You have been given two sorted grocery lists, your task is to merge these into sorted list such that no duplicates.
7. abc is Well-Ordered number iff $(a < b < c)$ eg. 456, 247. Given length of number, print all possible well-ordered numbers.

The result came after 20 days and I cleared this round.

Round 3(Personality Test):

After 2nd round result, they sent me a link where I have to give a personality test. It was a normal MCQ kind of questions where they gave some common scenarios and I was asked to give my best response to them (took 20-25 minutes). This was not an elimination round.

Round 4(Technical Interview - Telephonic):

They gave me one week window to choose 3 options when I will be available. On the interview day(23rd February), they called at the precise time, so the interview started with normal questions like How to get the nth node from the end in a Linked List, etc. They asked very normal algorithmic questions. After these, he asked me one project to discuss. I discussed the Search Engine. The discussion spanned from Algorithms used from first phase to the last phase and all the technologies involved. Discussed about the future improvements for the project and in between he kept asking questions related to the project.

This round took 50-55 minutes.

Round 5(HR Round - Telephonic)

Immediately after Round 4, HR called(it was informed to me that Round 4 and Round 5 will be taken back to back). The HR asked the normal questions like : How did you

came to know about Epic, why do you want to work in healthcare industry, whether I have any other job offers or not.

In the end she discussed about the work visa(H1B) and the possibility that I might not make it in the april and my willingness to try for 2016 in adverse cases. She said that the result will be conveyed within 1-2 weeks.

Took 20-25 minutes.

Result came after 3 weeks and unfortunately I couldn't make it, but I am writing this as it was worth an experience to be shared and might help others if they choose to apply for epic.

PS : Before applying I would suggest you to read about Epic Systems work environment and the technologies they use on quora, it will help you take decision in case you get selected.

Flipkart Interview (Neel Jinwala)

Programming Round:

- Given a set of hats. Hats are conical in shape with a given height and radius. Find out the total number of possibilities where hat from set 1 can be stacked on hat of set 2.
For hats to stack the apex of the cone of both the hats should not touch and radius of hat from set 1 should be less than radius of hat of set 2.

Interview Round 1 (Technical):

- Given a linked list, reverse alternate K nodes of the list
<http://www.geeksforgeeks.org/reverse-alternate-k-nodes-in-a-singly-linked-list/>
- Given a list of start and end times of a meeting, find out the minimum number of meeting rooms required.
Something similar to this : <http://www.careercup.com/question?id=5142448749674496>
- Puzzle: Given a triangle of some area say 'X'. Divide the triangle in 'N' parts such that each part has area exactly 'X/N'
- i don't remember this one but it was fairly simple.*

Interview Round 2 (HR):

- Scrolled through resume and asked a few question about projects and B.Tech college.
What difference do you see in your B.Tech college and IIIT. A question related to my internship experience.
- Which three companies would you like to work with and why?
- Name any three of your colleague/friend/anyone you know with whom would you like to work with and why?
- What is the most important thing that is needed in a development team that would help the team to deliver the project on time?
- What would you do if you missed a deadline?
- How will you work with someone who does not deliver his/her work on time?

All these questions were meant for grilling because whatever answer i gave him, he counter argued with some opposite opinion. Key is to remain calm and back your opinion with good argument

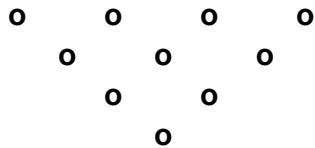
Flipkart Interview Experience (Shashank Juyal)

First Round (Programming):

Same as Neel Mentioned above.

Interview Round 1 (Technical):

- 1) No Intro or shit. Started directly. Level Order Traversal. Started with the basic and asked all the variations in it. Zigzag traversal, reverse level order, alternate levels etc. Asked to write the code for all.
- 2) Boundary Traversal of Tree. Again asked to write code.
- 3) Same Puzzle as Neel. Given a triangle of some area say 'X'. Divide the triangle in 'N' parts such that each part has area exactly 'X/N'
- 4) Largest element of an array which is increasing first and then decreasing.
- 5) Puzzle: Invert the below presentation by moving three circles.



- 6) Few questions on Work Experience.

Interview Round 1 (Technical+HR):

1. Say something about your work experience.
2. The he threw up some random puzzles just to check logical ability.
 - a) Make smallest number possible using only two digits. Answered
 - b) Now using four digits. Answered
 - c) Now largest number. Answered again quickly. He said this was just for fun.Now main interview starts :P
3. LRU Cache implementation (both S/W and H/W version)
4. Don't remember. But some implementation of Kadane.

Then he started scanning through the resume and asked question on everything he found peculiar. Some projects, academics related questions, questions on technologies.

5. Write command for commit in git and also to commit in other branch.
6. Describe one of the projects from Resume. And asked some questions based on it.
7. How you have tackled big issues during earlier work experience. And similar questions regarding prev work exp.
8. In what domain you would like to work in future.

Stay calm. They will ask coding questions mainly from geeks4geeks. Be ready to solve puzzles. Try giving the interviewer alternate versions of your solutions with different complexity. Think loud. Keep on saying everything you are thinking to let interviewer know your thought process. Make sure you know everything what is on your resume. Last and most important is confidence. Good confidence means half work done.

Best of Luck!!

Flipkart Interview (Sushant)

Technical Round:

Introduction.

Discussion on the resume.

- 1) Median of continuous stream of integers.

Standard Solution using two heaps.

- 2) K'th Smallest/Largest Element in Unsorted Array

<http://www.geeksforgeeks.org/kth-smallestlargest-element-unsorted-array/>

<http://www.geeksforgeeks.org/kth-smallestlargest-element-unsorted-array-set-2-expect-ed-linear-time/>

- 3) Given an array arr[], find the maximum j – i such that arr[j] > arr[i]

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

- 4) sed command to replace a word in text with another word

HR round:

- 1) Two exactly identical robots are dropped on an alien planet at different locations. They have no means of communication.

Write an algorithm that will help them arrive at same location. The exact same piece of code will run on both the robots.

- 2) One puzzle on finding direction of rotation of a 2 coloured disc using color sensor.

http://www.experts-exchange.com/Other/Puzzles_Riddles/Q_26872192.html

- 3) Some behavioural questions

Flipkart Interview (Pravali Kondaveeti)

Only one round(Technical questions followed by HR questions)

Technical Questions

1. puzzle - a disk is rotating and it is half colored with black and half colored with white. you can place sensor anywhere and find the color. you should find in which direction the disk is rotating.
2. one more puzzle

X X X X
 X X X
 X X
 X

Invert the above diagram by changing only 3 Xs

3. coding sudoku
4. coding question related to merge sort

Try giving more than two approaches, I think they are not satisfied with one :)

HR Questions

1. why should we take you?
2. strengths
3. why flipkart?
4. some experiences while doing project

Company Name : Google

Interviewee Details:

Jigar Kaneriya

MTech CSE 2013-2015

No. of rounds : 3

a. Interview Round 1

Q1 Coding: Given list of n words find a pair of words such that they hold following conditions:

- Words in pair should not share any common letter
{gate,gold} is not valid, {ate,gold} is valid
- Multiplication of length of words should be maximum

Example: [dog, gate, cat, gold, toy,]

Ans: {cat,gold} => valid (with max length multiplication : $3*4 = 12$)

Expected complexity: $O(n^2)$ is acceptable in worst case but interviewer wants very good complexity in average case. By average case, he means most of time algo should run in sublinear time.

HINT : [hashing using bits for non repeating condition]

[use partition of input technique to get sublinear time]

Q2 System Design: Given very large table distributed over multiple system, design system architecture and algo to find Top m results.

Table is stored as <key,value> pair. Find top m records according to value.

example: <rollno,marks> find top 10000 students according to marks.

of entries in table ~ 10 billion

of entries expected in result ~ 10,000

Objective : Optimize in terms of Network traffic, Time and Storage.

b. Interview Round 2

Q1 Testing Question: Design technique to test software timer. (Timer is non-blocking)

- Define what are potential failure cases
- How to detect them
- Give solution to them
- Define criteria to evaluate timer performance

Q2 Math : Design function that gives fair random number in range of [1,n] inclusive with no repetition.

Every time function is called, it should return a random number in range [1,n]. Probability of getting every number should be same ($1/n$) at any function call and number should not get repeated.

Example: `getRand(1,100) => 90` (assume that first random no is 90)
now, total 99 numbers left in range [1,100].

Function should be designed such that all 99 numbers are equally probable for next selection and with probability of $1/100$ (not $1/99$).

Expected algo with optimal time and space complexity.

[Hint : don't miss the word '*fair*'; probability of getting every number should be $1/n$ at any point of time]

c. Interview Round 3

Q1 Coding : Find way from one wall to another wall in given room with sensor on floor. Sensor description contains location of sensor (x,y) and radius of sensing capability. Different sensors can have different radius of sensing capability.

If exists, find path from one wall to another such that it does not cross any sensing area of sensors.

Q2 API & System Design : Design API for Dictionary as service.

Dictionary is defined as collection of <Key,Value> pair.

Functionality : Search word, add word, add multiple values, remove, modify, download dictionary, etc....

Scenarios :

- Single user
- Multi user
- Personal dictionary
- Global dictionary / Shared dictionary

Objective : Reusability, Security, Storage, Cache management, Fair service to all users, Fair Billing strategies.

Write concurrent algo for Cache management in servers and prove correctness, fairness, mutual exclusion and time complexity.

Personal experience :

- Ask lots of questions, Because they appreciate logical and good questions. They only describes problem in one line and expect you to ask relevant questions to narrow down problem statement.
- Don't start solving problem till you get question completely.
- Discuss raw ideas before giving solution, because interviewer always give some hints or comments which tells a lot about 'are we in right direction?'
- You are reading this, means you're preparing for interviews. so, ALL THE BEST :)

Manish Jindal's Interview Experience

<https://ermanishjindal.wordpress.com/>

Mentor Graphics (Poorva Bhawsar)

Round 1: On paper , MCQ+subjective test , 1:30 hours

- Section 1: C,C++ output questions
- Section 2: Apti, puzzles
- Sections 3: programming.
 - Spiral traversal of 2D array
 - Width of binary tree
 - Find all pairs of numbers in array that have sum=k
 - Optimize the walk in an 2D array. e.g
RIGHT,RIGHT,DOWN,LEFT,UP can be reduced to one
RIGHT operation (solved using stacks)

Round 2: Technical interview. Puzzles

Q1. Given 4X4 matrix of numbers in which one cell was blank. had to find that missing number. After some trials found the pattern. ($\text{Col1} * \text{col3} + \text{col2} = \text{col4}$)

Q2. given 5 zeros (0,0,0,0,0) . you have to make number 120. You can apply any mathematical operation on 0's.

Ans: $(0!+0!+0!+0!+0!)! = 120$

Q3. A news paper has 60 pages. from this newspaper page number 23 and 42 are missing. Find other missing page numbers.

Ans 23, 24, (60-23),(60,24),41,42,(60-41),(60-42)

Q4. Gave a recursive program and asked to write its output.

Q5. Write program for run length encoding. aaabbbbcdde => a3b4cd3e

Round 3: Technical

You have a binary tree in which each node can be of either Red or Black color. You have to do an inplace modification in the tree such that each node satisfy following property. "A node can be retained if and only if it has a non-black child in hierarchy". In the final tree all leaf nodes will be of Red color. Gave a recursive solution.

```
bool MakeTree(Node *cur)
{
    if cur is a leaf node and of Black color
        Set cur to NULL
        return false
    if cur is a leaf node and of Red color
        return true
```

```
bool temp= MakeTree(cur->left) | MakeTree(cur->right)
if temp==false
    cur=NULL
return temp;
}
```

Round 4: Technical and Managerial

About previous experience, why M.Tech after work exp. Then asked to solve some of the incomplete questions from written test Apti section. Interviewer helped to solve some question by giving hints.

Round 5: HR round (informal)

about myself, family, previous experience, hobbies, why Mentor Graphics, what do you remember from PPT.

Microsoft (Uma KL)

Questions asked in each round

Round 1 : Objective C and C++

Round 2 : Coding round. There were 2 questions.

 1 on linked list and another on Trees.

 Students who did both in best time and space complexity was shortlisted.

Round 3 : Copy LinkList having Random Pointers

<http://www.geeksforgeeks.org/a-linked-list-with-next-and-arbit-pointer/>

The code written should not have any bugs.A 100% working code is what they expect.

Round 4 :

1.Questions on all the projects that was mentioned in resume

The interviewer extended the scope of some of the projects and asked how to implement them

2.Given a matrix of zeroes and ones find its sum.

 In this problem they basically evaluate your thinking process.

 Give many solutions , improving with every solution. For the above problem a $O(n^2)$, $O(n\log n)$, $O(n)$ solution can be suggested.Also explain the exact number of comparisons in each solution.

3. A logical problem was asked. Had to give both recursive and iterative solution and explain the pros and cons of each.

Round 5 :

Median of sorted arrays problem

<http://www.geeksforgeeks.org/median-of-two-sorted-arrays/>

System Design Question : Design a system that for any user will tell the nearest city based on his current location.Scalability of the solution is very important.Should handle all corner cases eg The user is somewhere in the Pacific Ocean and there is no nearest city.

Round 6:

Given a BST and a value K, return the node which has the value closest to K.

A Puzzle was asked to test lateral thinking.

Other typical HR questions

Round 7:

The interviewer was an expert in machine learning. Asked a lot of questions about projects done on machine learning,data mining,information retrieval etc.

Placement Experience (Mohd. Salman Khan)

1. GOOGLE :-

Round 1 -> 4 coding questions in 3 hours . Questions are simple but i could only solve 3 questions because of time limit .

Question 1 -> DP

Question 2,3,4 -> Simple Logic

Only those students were shortlisted who have solved all 4 questions . I could not qualify that round.

2. Microsoft :-

Round 1 -> 15 objective questions in 30 mins .Questions based on aptitude , data structure , networking , operating system .

Out of 250(around) students 70 students were shortlisted

Round 2 -> 2 coding questions in one hour .Questions are very simple (if u have solved geeksforgeeks) .

Question 1 -> Linkedlist (delete nodes according to some condition)

Question 2 -> Tree (sorted array is given convert it to AVL Tree)

Round 3 -> In this round , we have to write code in paper .Again , Question is very simple(geeksforgeeks copy of linked list) . I think everyone has written that code . I dont know how they shortlisted some candidates with that code (may be cgpa ,hand-writing , comments) . I could not qualify that round.

3. Vmware :-

Round 1 -> 3 sections of objective questions .Section 1 has logical questions , Section 2 has quantitative questions , Section 3 has computer science questions (including data-structure , networking , microprocessor , operating system)

Round 2-> Interview based on data structure . They asked very basic questions .

Question 1 – Check a binary tree is BST or not.

Question 2 – Find the intersection point of two linked list.

Round 3 -> Interview based on Operating System and data-structure. They asked many questions (i could remember few , simple questions) .

- Q1 – Difference between new and malloc.
- Q2 – What is virtual memory .
- Q3 – Differnce between thread and process.
- Q4 – Paging
- Q5 –overloading and overriding
- Q6 – Basic questions on linked list– Find middle element .
- Q7 – Process scheduling .

Round 4 -> This one is difficult round . Interviewer has depth knowledge in Operating System . He asked me about my fav.Subject . I told him Data-Structure .

Q1 – Diff b/w linked list and array . He just wants to divert the interview to OS anyhow .

- Q2 – Cache memory vs main memory . Faster why ?
- Q3 –Semaphores
- Q4 – Spinlock .
- Q5 – OS assignments (ls) .
- Q6 – How printf works internally .

I could not qualify this round .

4. CodeNation :-

Round 1 -> Written round of this company is very difficult .They asked two coding questions . Both are difficult.

Q1 – Maths Related question .

No one can even understand how to solve.

Q2 – Graph . We have to count the number of island which do not have more than one cycle .i.e. we have to count those islands which have zero or one cycle .

Luckily i could solve the second question completely . They have also shortlisted those candidates who solved this question partially .

Round 2 – In interview (via skype) he firstly asked about my projects . I told him about web2py (chess) project. He also has knowledge about web2py and asked some random questions about this project like What database u have used , python libraries for database.

Question – In mobile phone , when u want to send a mail , it is easier to select from list rather to write e-mail address . Suppose u already have send 2 mails to A@abc.com ,

B@abc.com , C@abc.com . 3 mails to this A@abc.com , C@abc.com , D@abc.com , 1 mail to this A@abc.com , B@abc.com , E@abc.com and so on . When i type A@abc.com what results it should show in selection of email-list .

5. **TeraData:-**

Round 1 – 20 Objective questions . Based on aptitude, data structure , microprocessor , operating system .

Round 2 & 3 – They asked questions on data-structure and database

Q1 – Write a function to remove spaces in string from last.

Q2 – With the use of above function remove spaces from start.

Q3 – Remove all spaces from string in one pass .

Q4– Count numbers between 500 to 600 in which digits are distinct(511 -> no , 508 ->yes) . I wrote but he asked to optimize and gave hint too . I wrote that too .

Q5 – When AVL is better than BST and when BST is better than AVL

Q6 – B tree

Q7 – Sorting comparision .

Q8 – Comparision between Quick and merge sort .

Q9 – In SQL when you assign 100 spaces for string and user provides string of only 10 characters then 90 bytes are wasted .How will you optimize it

Q10 – Projects .

Round 4– H.R Round . Questions on resume .

Finally they selected 5 students . Luckily , i was one of them .

Oracle (Divya Gurnani)

Round 1 (Online Test)

- Online test of 1 hour 15 mins with aptitude, verbal, technical(DBMS,OS..) and C/C++ qs.

Interview calls based on online test for Web Applications and Server Tech positions.

- Coding Round for Server Tech position:

1 Simple Question .

Interview Experience for Server Tech position:

Round 2(Interview 1)

1. Discussed about projects in brief.
2. DBMS concepts: Normal Forms,Redundancy.
3. Design e commerce system (ER Diagram): Questions about all entities and relations defined.
4. OS concepts: Scheduling, Batch processing.
5. Minimum Number of Platforms Required for a Railway/Bus Station

<http://www.geeksforgeeks.org/minimum-number-platforms-required-railwaybus-station/>

Round 3(Interview 2)

1. Questions related to linked list and trees. Write a code for it.
<http://www.geeksforgeeks.org/write-a-c-function-to-detect-loop-in-a-linked-list/> when will tortoise and hare algo end . If there are 2 /1 node what wil happen.
2. <http://www.geeksforgeeks.org/nth-node-from-the-end-of-a-linked-list/>
3. Modified children sum property and height qss on trees.
4. Practical questions based on deletion in DBMS transactions and data storage.(Data stored row wise and list of row no given for deletion sequentially such that on deleting a row data moves upwards eg if row deleted 2 then 3 row becomes 2 and so on)

Round 4(Interview 3)

1. Design of one of the projects. What all tables in Database. Further qs on joins and normalisation.
2. Client Server model. Design Push Notification system in which cricket scores are sent regularly to clients.
3. Design models: Basic questions.

4. Puzzle: You have 1000 wine bottles, one of which is poisoned. You want to determine which bottle is poisoned by feeding the wines to the rats. The poisoned wine takes one hour to work. How many rats are necessary to find the poisoned bottle in one hour?

Polycom (Sajal Sharma)

About Polycom

Polycom is a multinational corporation that develops video, voice and content collaboration and communication technology. Polycom employs approximately 3,800 employees and had annual revenues of approximately \$1.4 billion in 2013. It is the largest pure-play collaboration company in its industry. The company also licenses: H.264 video codecs, Siren codecs, session initiation protocol, Native 1080p high-definition cameras and displays, Native 720p and 1080p high-definition encoding/decoding, low-latency architecture and low bandwidth utilization, wideband advanced audio coding with low delay (AAC-LD), multichannel spatial audio with echo cancellation and interference filters to eliminate feedback from mobile devices, Optimized environmental conditioning to provide the audio and video experience; and inter-operation with legacy video conferencing.

Round 1(Written)

So, the procedure started with the written round, it had 60 questions consisting of quantitative aptitude, logical reasoning and technical(c/c++, operating systems, computer networks, data structures and algorithms).

Around 120 sat for this round and they shortlisted 17.

Round 2(Technical Interview 1)

The interviewer started from the basics, and then gradually elevated the difficulty level(overall it was easy), the questions asked by him were-

Q1. You are given a 32 bit unsigned integer and you have to set the 7th bit in the number.

Q2. Create a structure for link list and insert two nodes in it(write the code). (Since i know STL as well, first i coded it in C and then used STL as well)

Q3. You are given a pointer to a node in the link list(starting pointer is not given) and you have to delete that node.

Q4. Clearly explain the TCP/IP protocol stack alongwith the functioning of each layer.

Q5. How does a router routes a packet.

Q6. How does a router uses longest prefix matching to route a packet.

Q7. What is page fault.

Q8. How does a page fault is serviced. (had to tell all about demand paging, modification/dirty bit of a modified page to be replaced)

Then he asked me about any networking course i have taken in my Master's coursework, i told him that i didn't.

Round 3(Technical Interview 2)

The interviewer asked whether i am interested in networking or not, i told him yes i am, but i have only theoretical knowledge about all the protocols and procedures and have very little practical knowledge about it. He said it is enough to answer his questions.

Q1. How ping is implemented(told him about the ICMP)

Q2. How can you calculate the round trip time and bandwidth of the network using Ping.

Q3. Can you measure congestion in the system using Ping and how?

Q4. Explain different algorithms that applies in networking domain.

Q5. How Minimum Spanning Tree is useful in Networking Domain.

Q6. Define Articulation Points and what is its significance in networking.

Q7. You are given an array of 0s, 1s and 2s, you have to sort it. (calculating the number of 0s,1s and 2s is not counted as the solution for this problem).

Q8. What is Denial of Service attack and what is its remedy?

Q9. What is Distributed Denial of Service attack?

He was going through my resume and asked me about my GATE notes.

Round 4(HR)

They shortlisted 6 candidates and asked them to sit in a room and gave two sheets consisting of 50 statements each, the first sheet had 50 positive statements and the 2nd had 50 negative statements and we had to decide whether they are most significant/significant/least significant to us. (we had to answer any 15 of them).

After that they announced the results and finally selected 4 candidates and luckily i was one of them.

Practo Interview Experience

--by Rishi Mittal

1. Round 1

6 dynamic programming problems to be done in 4 hrs. I think what they are looking for is out of box thinking.

2. Round 2 (Interview) - (30-45 mins)

- a. Given a set of words , print the anagrams together.
- b. Typical Island question from graphs
- c. Given an array find the set of two numbers (and then he modified it to the 3 numbers), whose sum totals to a particular number or zero.
- d. Find out if the number is power of 2 or not ?
- e. Print the nth factorial number (he was looking for that log method).
- f. Design the movie recommendation system.
 - i. What is apriori algorithm ? How it could be used to improve the results.
 - ii. Design the database for the Movie recommendation system, then apply normalization, keys, and why?
 - iii. Features that you think are necessary for the basic movie recommending system.
 - iv. In the system , tell the different ways from which u will use the seed data , i.e from where does the initial results will arrive , since you have not started the learning process yet.
- e. Projects from my resume.
- f. One project was actually in the line of their work , so all the other questions were from that project.

Tip: Know your resume , lot of emphasis is given to the design questions.

3. Round 3

- About you
- Introductions
- Feedback over the process.
-

Practo Experience (Off Campus)

- Sajal Sharma

Applied for practo off campus in February, call came for first round on 20th february.

Round 1 (Coding Round):

The first round was coding. It was hosted on hacker rank. Had 6 questions which need to be solved in 2 hours. The level of questions were nice and contained 3 DP and 3 adhoc questions.

The level of the questions were high. The catch is you don't need to solve all the questions. I solved 2 questions completely and 2 questions partially($\frac{1}{2}$ and $\frac{4}{8}$ testcases) and that was enough to clear this round.

Round 2 (Skype Interview):

This round took place on skype. The interviewer shared a link for the scratchpad, it was hosted on hacker rank. This round was divided into 3 parts :

1. He gave me the following question to code:

Given a string, calculate the number of distinct palindromic substring. e.g. if the string is aabaa, then distinct palindromic substrings are a, aa, aba, b, aabaa. So the answer is 5.

Cleared 6/9 testcases, took 20-25 minutes to code this.

2. He was going through my resume and asked me to discuss any project of my liking(and he jokingly asked me not to discuss the search engine one). So I discussed “Sentiment Analysis” and how it can be connected to the kind of work Practo does. He showed interest in the project and to some extent was kind of impressed about the work. Discussed about all the algorithms and technologies involved in the project.

3. In the end he gave me a design question. He asked me to design a database schema for the ongoing cricket world cup which would be able to answer queries like “which bowler took how many wickets in a particular match”, “how many runs were scored by batsman abc in xyz match”, “how many no-balls were bowled in xyz match and at what position in the match and how many runs were scored off those balls”, “ball by ball update, the kind of delivery”, etc.

Hint : took idea from the way espnccricinfo displays an ongoing match summary.

This was it, this round took 1.5 hours, in the end he asked me whether i have any questions, i didn't have. He said I will receive a call from HR next day. The call didn't come, instead a mail came and i was lucky to get selected.

The complete procedure took 20 days.

Tip : Be thorough with your resume and the projects you do, it matters a lot. Needless to say about Competitive programming. Practice on Hackerrank, Codeforces and leetcode.

P.S. : Practice Dynamic Programming as much as you can.

Practo Questions(Round 1 - Off Campus)

Practo Engineering Test_1... 01:58:42 to test end 0/5 Attempted vikasbhandari0566@g...

String Transformation (Coding)

Given a string s composed of N lowercase English letters ('a'-'z'), create a new string, q , by performing an operation on s as follows:

Iterate through each character of string s , $s[0], s[1]...s[N-1]$. For each position i , count the occurrences of $s[i]$ to the left of it, i.e. in the sub-string $s[0]s[1]...s[i-1]$. If $s[i]$ is repeated k times in this sub-string, then cyclically increment $s[i]$ by k and put that in $q[i]$. Cyclical incrementing means that, for example, incrementing 'a' by 1 gives 'b', incrementing 'b' by 2 gives 'd', and so on, and incrementing 'z' by 1 gives 'a'.

Input:
The first line contains the number of test cases, T . Each test case, there are two lines, an integer N on the first line and a string of length N on the second line.

Output:
One new string for each test case on a single line.

Constraints:
 $1 \leq T \leq 20$ (number of test cases.)
 $1 \leq N \leq 100,000$ (length of each string.)

Sample Input:
4
r

Practo Engineering Test_1... 01:58:55 to test end 0/5 Attempted vikasbhandari0566@g...

Jumping Jack (Coding)

Jumping Jack is standing at the bottom of a long flight of stairs. The bottom of the stairs has number 0, and the steps are numbered sequentially from 1 to infinity. Jack will perform N consecutively numbered actions. For each action X , Jack can either jump exactly X steps, or pass and stay where he was before. So if Jack is standing on step Y when it is time to perform action X , then he will end that turn either on step Y or on step $Y+X$. If $X < N$ then action $X+1$ is performed next.

For example, if $N=3$, Jack will make three consecutive choices: whether or not to jump 1 step upwards, 2 steps upwards, and then 3 steps upwards.

There is exactly one step, numbered K , which is missing. Jack cannot jump onto this step. You are given the integers N and K . Compute and return the number of the topmost step that can be reached by Jack. You only have to complete the function given by the method signature; input and output stubs are already coded.

Stub:

```
int maxstep(int N, int K) {  
}
```

Input
Two integers N and K on two separate lines.

StringChain (Coding)

You are given a library with n words ($w[0], w[1], \dots, w[n - 1]$). You choose a word from it, and in each step, remove one letter from this word only if doing so yields another word in the library. What is the longest possible chain of these removal steps?

Input:

The first line contains an integer, n , that denotes the number of words in the library. Each of the subsequent n lines contain a string of lowercase ascii characters, the 'words'.

Output:

One integer that represents the length of the longest chain of character removals possible.

Constraint:

$n \leq 50,000$

$\forall i < n$, the length of $w[i] \leq 50$ and $w[i]$ is a string composed of lowercase ascii letters only.

Sample Input:

```
6
a
b
ba
baa
```

Resume_Vikas.pdf

Show all downloads...



Practo Engineering Test_1...

to test end

0/5 Attempted

vikasbhandari0566@gmail.com

Maximize Profits (Coding)

Mr. Sage wants to set up a new sausage manufacturing plant. The plant produces sausages of various lengths which are represented by array - lengths = {lengths[0], lengths[1], lengths[2], ...}.

The restaurants will only pay for sausages that have same length. Mr. Sage decides to standardize the length of sausages produced to L. Then he had to cut each sausage 0 or more time, so that he can maximize the profit. The remaining sausages whose length is not L will be thrown away. Price of N sausages of length L will be $N \times L \times \text{unit_price}$. Also note that for each cut made to a sausage, he had to pay cut_cost .

What is the maximum amount of money Mr. Sage can make?

Constraints

lengths will contain between 1 to 50 elements, inclusive.

Each element of lengths will lie in range [1, 10,000].

$1 \leq \text{unit_price}, \text{cut_cost} \leq 1,000$.

Input contains

cut cost

unit cost

number of sausages produced

length of each sausages in next n lines

Sample Input #1:

Resume_Vikas.pdf

Show all downloads...

Practo Practo Engineering Test_1... 01:58:09 to test end 0/5 Attempted vikasbhandari0566@g...

Friend Circles (Coding)

There are **N** students in a class. Some of them are friends, while some are not. Their friendship is transitive in nature, i.e., if **A** is friend of **B** and **B** is friend of **C**, then **A** is also friend of **C**. A friend circle is a group of students who are directly or indirectly friends.

You have to complete a function `int friendCircles(char[][] friends)` which returns the number of friend circles in the class. Its argument, `friends`, is a $N \times N$ matrix which consists of characters 'Y' or 'N'. If `friends[i][j] = 'Y'`, then i^{th} and j^{th} students are friends with each other, otherwise not. You have to return the total number of friend circles in the class.

Note: The method signature will differ by language. For example, Java will have `'int friendCircles(String[] friends)'` where "friends" is an array of strings which can be viewed as a 2-dimensional array of characters.

Constraints

- $1 \leq N \leq 300$.
- Each element of matrix `friends` will be 'Y' or 'N'.
- Number of rows and columns will be equal in `friends`.
- `friends[i][i] = 'Y'`, where $0 \leq i < N$.
- `friends[i][j] = friends[j][i]`, where $0 \leq i < j < N$.

Sample Input #1
YYNN
YYYY
NNYN

Resume_Vikas.pdf Show all downloads

The screenshot shows a Practo engineering test interface. At the top, it displays 'Practo Engineering Test_1...', a timer at '01:58:09', and a status bar indicating '0/5 Attempted' and the user's email 'vikasbhandari0566@g...'. Below the header, the main content area has a title 'Friend Circles (Coding)'. To the left of the title is a vertical sidebar with numbered steps from 1 to 5. Step 1 contains the problem statement about student friendship being transitive. Step 2 provides instructions to complete a function 'friendCircles'. Step 3 gives constraints on the input matrix. Step 4 notes that the method signature will vary by language. Step 5 lists sample input data. On the right side of the content area, there is a small preview of a resume file named 'Resume_Vikas.pdf'.

PS : These are not the questions that were asked to me(Sajal). Print Screen was deactivated by Hackerrank.

Samsung (Vinay Singri)

Coding Round :(1 hour)

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

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

Output: qty

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

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

Input: 10011abc10000001

Output: 3

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

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

Round 1 :(1 hour)

- Explain about your project (He asked my cloud computing and IRE projects and many tricky questions around it).
- Write a program to check if a binary tree is subtree of another binary tree.
- Write a program to find the log of a number.
- How would you implement a text editor and spell checker on it.(lots of discussions over data structures and algorithms around it)

Round 2 :(45 minutes)

- Write the program for merge sort. Once done, he asked me how would I parallelize it. As in, which part of the algorithm could I run in parallel cores and make the sorting faster and explain how does it work.

2. Which is the best algorithm for parallel programming and why?
3. Explain how would you classify images into predefined set of classes like dog,cat etc.This came out from machine learning discussion.
4. Write a matrix which would scale,translate and finally rotate a point in 2D.He gave all the constraints.

Round 3 :(30 minutes)

1. Given a matrix, write a program to do a reverse transpose of it(last row last column element becomes first row first column element)and do it in place.(Just play around the indices)
2. Write a program to find minimum number of parking slots required to park n cars,given their in time and out time.
3. It was more non technical and on my previous job experiences.

Other information :

1. Projects are very important when it comes to samsung interviews.So know what you have written on your Resume.

SAP Labs (Rishika Modi)

Round 1 (Online Test)

- Online test with aptitude, technical and two C/C++ coding questions.

Round 2(Group Discussion)

- A group of 5 members were created by SAP team and each group was given a problem to discuss upon. Design an ATM machine and explain it with respect to various areas such as its UML diagram, functional diagram, ER diagram, features, schemas, security issues and enhancements.

Round 3(Technical)

- Write a code to remove redundant character in a string in $O(n)$ time complexity.
- Some questions on linked list and C++ concepts.

Round 4(Technical)

- Questions related to linked list and trees. Write a code for it.
- OOPs concept: Abstract classes. Virtual functions, inheritance.
- Difference between malloc and free.
- Puzzle: Given a rectangular cake, one smaller rectangle cake has been cut. Now if allowed to make only one cut, how will you do so to cut the cake exactly into two equal halves.
- What is cloud, private cloud, public cloud and hybrid cloud.

Round 5(Managerial)

- Questions related to academic projects done and especially cloud project.
- Basics questions related to cloud.
- My expectations with SAP Labs.
- Discussion related to cloud projects in SAP.

Round 6(HR)

- My expectations with SAP Labs.
- Strengths and weaknesses.
- If I am the prime minister then top 3 areas of our country, I want to improve in.
- How do you feel Narendra Modi's work till now for our country.
- Working environment in SAP.
- Job location and job profile.

Teradata (Poorva Bhawsar)

Round1: On paper written MCQ's on Apti and Computer Science

Round 2: technical

Q1. A telephone operator office scenario. Telephone numbers range from 1 to 9999999999. Operator wants to sort the records for a day. But the file size can be very huge. Not all records can fit in memory. How will you sort them. I told about dividing records into multiple chunks. sorting each chunk using merge sort and then using K-way merge sort.

Interviewer asked to use some method that is not given in text books (other than insertion, selection, quick , merge, heap)..give some new sorting algorithm. I told the sorting method using a stack. (naive answer but interviewer was satisfied)

Q2. Given a table structure (structure of a record), how will you store it in memory efficiently. Suppose records has char(10),int, float.

I told, in the increasing order of their memory requirement : int (assuming 4 byte), float (4 byte), char (10 byte).

Q3. How will you handle varchar datatype. (variable length records).

Sol: Keep all variable length fields in end of the records and store the length tag before storing variable length data.

Q4. Asked to write the program to find second minimum in the array.

Q5. What data structure you will use to implement 'group by' query. (Ans: Map<key,value> Key being the unique group by column value and value holding the data that needs to be aggregated. Value can be a list of values)

Q6. Modified above question for the scenario when data is distributed. Table is stored on multiple nodes and a group by query needs to be executed on it. I used MapReduce concept here.

Round 3: Technical

Q1. Write a program to generate numbers between 500-600 in which all three digits are different. (Write code on paper)

Sol1: digit for first place is fixed. two for loops to generate 2nd and 3rd digits and check for all constraints. Interviewer asked the complexity of this program and asked to optimize it. each loop will execute for 0-9. hence 100 iterations

Sol2: used the sieve method. if 501 is a valid number, so as 510. In this case only half of the number will have to be checked.

Q2. Given string of 0's and 1's. Bring all 1's to the left.

Sol: used two pointers start and end and swap operation.

Asked to give some other solution: Count the number of 1's and regenerate the string.

What if you do not know the length of the string (suppose the string is delimited by a character 'B'): (traversing the whole string to get the length of string would be naive approach). You have to sort the string without knowing the length / end of string before hand.

Sol: Used two pointers both pointing at the beginning of the string initially. One pointer will always point to next zero , other would point to 1. if zero pointer is on the left of one pointer swap them. Keep moving right until delimiter is reached.

Round 4: Culture fit round

Tell about yourself, family, M.Tech entrance exam in IIIT. what do you expect from this job

Teradata (Shrikant Salunke)

Written Test :

General aptitude and computer science and some C/C++ questions. Questions were very basic and test your fundamental knowledge.

Interview Round

Round 1 :

I was expecting that it will be a technical interview. But after 45 mins also he hasn't asked any technical questions, so I was confused about the interview, but then interviewer told me that its a HR round so no technical questions.

In this round he asked general questions like what are your positive and negative points. Which subjects you like. How do you managed to get such a good pointer in IIIT, Have you interested in pursuing Phd etc.

Round 2 :

It was a technical round.

Question 1 : What is a tree and what type of trees do you know?

Answer : Given general definition of tree. Examples binary tree,BST,AVL tree,red-black tree,B-tree,B+ tree etc.

Question 2 : Given a BST how you will print the numbers in given range? e.g. Range is (20,36) print numbers that lie within this range.

Answer : First I explained him to use any traversal and print the node value if that fits in given range.

Then he asked me to optimize the above solution.

Answer: I optimized it using min and max value solution, or key1 and key2.

<http://www.geeksforgeeks.org/print-bst-keys-in-the-given-range/>

He was satisfied with the answer.

After that write down the code for same.

Question 3 : Given an integer check whether it is a palindrome or not. Don't use string for this solution.

Answer : First I asked him whether the integer fits in given language's integer. He told yes it will fit in the integer range and no need to worry about it.

I explained him modulus and division solution with 2 pointers. He was satisfied, so he asked me to code it. I wrote a code for same, he was checking whether I made any mistakes in code or not. Once done he was happy there were no errors.

After that he told me to give a simple solution as this was same as checking for string is palindrome or not.

I thought for 2 mins and gave him solution that reverse the given number and check whether reversed number is equal to given number or not. He was happy.

Question 4:(This was the last question in this round) You have an infinite stream of numbers coming one after another you have to store top 5 numbers at that moment. What data structure you will use and why?

Answer: At first i didn't understand the question, so I requested him to elaborate the question. So he told me that I have to store top 5 numbers e.g. 2,1,4,6,3,7,8,9 this is the stream till this moment then answer should be 9,8,7,6,4.

Once I got the question I gave him solution of linked list.

Reason : You can insert at any position and delete any node. And as we need only 5 nodes it will be done in constant time.

He was satisfied with the answer.

Round 3 :

Technical round.

Question 1 : How do you rate yourself in C/C++ language out of 10.

Answer : I answered 8.5 (Because most of the time interviewer is checking how confident you are so don't scale very less to yourself even if you are not confident).

Question 2 : What is the difference between a string and character array in C?

Answer : String ends with a special character '\0' while character array doesn't have any such delimiter.

Question 3 : Questions on Strings (I don't remember the questions right now)

Question 4 : Some Questions on Projects.

Round 4 :

This was a final HR Round. General questions where do you want to see you in next 5 years? Why you want to Join this company? etc.

Some tips :

When there are irrelevant questions or questions you won't understand, most of the time its a stress interview. Interviewer is checking how calm you can work under pressure. So don't be panic whenever you are unable to answer a single question in interview. Give your best and try till interviewer says to stop or asks another question that's enough.

VMware(Aayush Asawa)

Written: 60 mins

3 Sections

1. Apti 10 min 10 ques
 2. Technical 35 min 23 Ques. (Pattern same as GATE but not previous year questions topics: os, cso , database, networks, C,data structures)
 3. Java/c++ 15 min 7 ques (in java questions are mostly from inheritance and interface concepts)
- platform hirepro

Tech interview 1: 20 min

what are your interests and your favorite subjects?

(I said ds,os and Cloud computing)

Q1. What is cloud computing?

Q2. Difference between private and public cloud. What is hybrid cloud?

Q3. Asked about My BE final year project. Explain. Your Role and Responsibility . Any Problems faced.

Q4. How to find LCA in binary tree. Write code for binary search tree. Explain for 2-3 examples. Test with boundary cases.

Q5 given a string s1.replace space with string s="%\$#" inplace. Ex: inp=Aa yush out=Aa%\$#yush. Write code.

Q6.<http://www.geeksforgeeks.org/a-program-to-check-if-a-binary-tree-is-bst-or-not/>

Q7. Do you have any questions.

Tech interview 2: 50 min

around 15 mins discussion on cloud course project.

Q1. On a scale of 10 how much do you rate yourself in problem solving? I said 7

Q2.

<http://www.geeksforgeeks.org/a-program-to-check-if-strings-are-rotations-of-each-other-or-not/>

Though I know the solution I gave the brute force solution than after thinking for 2-3 mins above solution.

Q3.<http://www.geeksforgeeks.org/forums/topic/stack-with-max-push-and-pop-operations-in-o1-time-2/>

Q4. write exact code without errors for string reversal.

<http://www.geeksforgeeks.org/implement-two-stacks-in-an-array/>

Q5 <http://stackoverflow.com/questions/4770627/how-to-implement-3-stacks-with-one-array>

Q6 <http://www.geeksforgeeks.org/efficiently-implement-k-stacks-single-array/>

Q7 now assume these are hardware blocks instead of stacks how will you optimize. How OS takes care of free blocks.

Q8 will linked allocation be useful in this situations.

Q9 how locality of reference works?

Q10. Any questions.

Tech Interview 3: 45 mins

Q1.what is hypervisor? how it works?

Q2. What was the need for virtualization?

Q3 what is virtual machine?

Q4 difference between virtual machine and process?

we discussed it for almost 15 mins he was not satisfied with my answer and told me to read it.

Q5 what is paging?

Q6 LRU policy .Write code. Explain with one example.

Q7 where you will write this code in the system?

Q8 what is paging?

Q9 how paging provides security?

Q10 who manages page tables and dirty bits ?

Q11 there is a hardware unit who performs all this functions what it is called?

Q12 write a assembly code to move two numbers in a loop using direct addressing.

Q13 I write some address he asked this is physical or logical who generates it.

Q14 scanning my resume he asked what do you understand by cloud computing.

Q15 why you compared it with web servers?

Q16 how will you check any host up or not? (ping)

Q17 ping works on which protocol?(icmp)

Q18 how will you implement ping?

Q19 what happens when you type any url in a browser?

HR: 15 min

no tricky questions normal hr.

Walmart Labs Experience(By Meera)

Round 1(For shortlisting):

MCQs on technical topics

2 coding questions:

- Maximum sum such that no two elements are adjacent
- Number of different denominations and an amount is given. One should find the maximum value that can be formed from the given available denominations that is equal or less than the given amount.

Round 2(Technical):

Q1. The significance of n in $(n \& (n-1) == 0)$

Q2. Given an array. Print all the peaks in it. Then further, find the maximum of the distances between all the consecutive peaks and all the consecutive valleys. Write proper code on paper.

Round 3(Technical):

Q1. Given a graph with n vertices, what is the maximum number of edges it can have without forming a cycle? Further, if the edges are directed, what is the maximum number of edges possible without forming a directed cycle?

Q2. Given a number n, find the total number of set bits in the binary representation of the numbers starting from 0 to n. For example, for n=5, the total set bits are 7(0 in 0(000), 1 in 1(001), 1 in 2(010), 2 in 3(011), 1 in 4(100), 2 in 5(101)). Explain logic and write the code.

Round 4(Technical):

Q1. Initially, he asked about the projects I had done. Then he asked in detail about my favourite project.

Q2. Given a set of numbers. For all the subsets of the given set of numbers, print the sum of numbers in each subset. Write code for the same and mention the time and space complexity of the code. He wanted the exact number of steps in the complexity. Then further, for the same question, he said that duplicates are not allowed in the subsets. What changes should be made in the code? I explained it by using set(stl) in

C++. He asked again about the complexity of the code including the complexity which a set uses internally for maintaining the sorted order during insertion.

Q3. Intersection of two sorted series of numbers and its complexity.

Round 5(HR):

Conversation covering the following points:

- Myself and my hobbies
- My previous work experience
- Why Walmart Labs?
- My expectation from the organisation
- Regarding relocation to Bangalore
- My feedback regarding the recruitment process Walmart conducted

WalmartLabs (Swapnil Patil)

Round 1 (Coding, Objective C/C++):

Two Problems:

1. Similar to <http://www.spoj.com/problems/FARIDA/>
2. A problem related to denominations. Given different denominations and an amount. Find the maximum value that can be formed from the given available denominations that is equal or less than the given amount.

Round 2 (Technical):

Interviewer went through my resume and asked to explain few projects.

He asked if I know about REST. Explain. Why REST etc.

Asked few OS and Cloud Computing concepts.

Round 3 (Technical):

There were two interviewers. They mostly asked programming questions.

1. Find the hamming weight of a number i.e. number of set bits.
2. Find the maximum sub-matrix with all 1s.
3. Given an array where a number may be displaced by at most k positions, sort the array.
4. Given a set of bricks, where each brick is composed of blue and red parts. We can join two bricks if the endpoints share the same color.

e.g. Suppose bricks are

BRR
RBRB
BB

Then we can join them like BRR-RBRB-BB to form a brick of length 9.

Given a set of different bricks find the maximum length of such concatenation of bricks.

Round 4 (General Discussion):

Interviewer went through my resume. He noticed that I participate in competitive programming contests. So he told me to design system to host such programming contests.

Then he asked few general questions like why M.Tech. Do you know anything about Walmart? Why Walmart?

Round 5 (Technical):

First, interviewer asked me a question - Given a tree and a node value. Find all the nodes at distance k from that node. She asked if I already know solution to this. I said Yes!

Then she asked a different question.

Given a dictionary of words and a stream of characters, break the stream into a sentence with words from the dictionary. Return true if the given stream can be broken so that all the words are from dictionary.

Once I gave the solution for this she asked what changes would you do to print one of the possible valid sentence.

Then she asked me to write the code.

Round 6 (HR):

Interviewer asked following questions

1. Do know anything about Walmart?
2. Why Walmart?
3. Would you do a Ph.D? This was asked by another interviewer also.
4. What bothers you about India.
5. How would you use technology to improve it?
6. Asked feedback about the overall interview process.

All the best!! :)

Xenovus (Sumit Mishra)

First Round :

It was a very unique round, where we had to learn an unknown language Scala (may be next time they will change this language, but for us and for our seniors it was the same language) in 1 hour and then they asked us to solve 7 problems in this language.

- > First 4 problems were basic.
- > 5th and 6th problem had some good level.
- > 7th problem was to solve sudoku.
- > we had to write the solutions on paper.

firstly they asked to write all programs in Scala language but later on they allowed python as well. Actually Scala is functional Programming language and Python can provide the same using its “lambda” utility.

So all programs were related to functional programming. Many candidates left because of obvious reasons.

I was lucky in this round because my cloud computing project was on Scala language so i had some prior knowledge about this and i tried for 5 questions and solved them fully or partially.

It was a 5 hours marathon round where only 7 students were left in the lab at the end and they selected all 7 guys for next round (so i guess if u want to clear the first round of xenovus just keep calm and stay there for the whole time).

Second Round :

They announced the first round result in 2 hours. I was 5th out of 7 students who were selected for second round.

It was the interview round. They greeted me very warmly in hindi “Oh Mishra Ji aayiye baithiye”. I was bit shocked about their casual attitude.

After that they asked me some personal question that “where do you live?”, “father’s occupation”, “siblings and all”.

then they asked me to elaborate my projects , I did that and then they asked me why do you want to join us. My answer was “ because you people are working on machine learning domain and my 3 out 5 project are related to machine learning and I am very fond of ML, that’s why I would like to work with you people”

They said nice and then thank you.

Thats all! , the interview was over , no technical question , no algorithm , no puzzle nothing and after sometime they announced their final result where my name was not in the final list.

I don’t know why but this is my personal opinion that whatever this company do or wherever they are performance-wise, their selection process is not impressive.

Thank YOU!!! :) :)

Best Wishes!!!
You all gonna rock it!!!