

# OYO Rooms Placement Drive



Date : 17<sup>th</sup> August, 2018

## About

OYO is India's largest hospitality company operating in more than 230 cities across India, Malaysia, and Nepal. With over 4000+ exclusive hotels and 75,000 rooms in its network, OYO works in close proximity with its hotel partners while exercising full control over the hotels for ensuring a quality experience for travelers. Its network includes major metros, regional business hubs, top leisure destinations as well as pilgrimage towns.

## Job Description

**Profile :** Software Engineer (SLI + FTE)

**Good to have qualifications :**

1. Excellent in problem solving skills
2. Should be able to write high quality code - preferably in Java/Python/Ruby/C++
3. Strong computer Science fundamentals in object-oriented design, design patterns, data structures, algorithm design and complexity analysis, operating system
4. Exposure to MVC frameworks such as Spring, Django, Rails etc.
5. Should have excellent written and verbal communication skills
6. Data modelling, SQL and Databases knowledge
7. Exposure to Amazon Web Services or any cloud service.

## Eligibility

B. Tech : CSE | CCE | ECE

6.5 CGPA & above only (with no active backlog)

## Procedure

1. Online Test
2. Technical Interview Round (2)
3. HR Interview Round

## Result

No. of Selections : 13

Candidates : **Shubham Kothari, Priyanka Sharma, Shubham Jain, Yash Jain, Rachit Sharma, Mudit Garg, Sahaj Kodia, Khushboo Baheti, Sakshi Sachar, Divyanshu Agarwal, Jiten Sadhwani, ShreeRam Bansal and Harsh Bambhani**

## Feedback by Company

Strength of students: good internship and Project DS & Algo

Weakness of Student : computer science fundamental and problem solving

# Interview Experience 1

By:- Jiten Singh Sadhwani

Oyo had 4 rounds, one was coding around and 3 technical interviews:

## Coding Round:

It had 20 MCQs and 2 coding questions.

1. First question was to find the shortest path from source to destination in a matrix. It was simple BFS solution.
2. Second question was based on GCD.

30 students were selected in this round out of 163.

## Round 1:

The interviewer asked me about favourite subjects and technologies. Then he moved to DS and algorithms.

1. Given a stack with n numbers. Create a duplicate stack(same order of numbers and same size) without using any extra space(Recursion not allowed). Hint: Use a temporary variable.
2. Remove duplicates from unsorted linked list. <https://www.geeksforgeeks.org/remove-duplicates-from-an-unsorted-linked-list/>
3. Given a 2-D infinite matrix. Reach a point(x2,y2) from a source point(x1,y1) in minimum distance. You can move in 8 directions i.e. up, down, right, left and diagonals.

## Round 2:

The interviewer asked some basic questions on my project.

1. Find the kth largest element from the stream of numbers.

<https://www.geeksforgeeks.org/kth-largest-element-in-a-stream/>

2. A question on Trie was asked. As I had no knowledge about Trie, interviewer gave me hints and properties of Trie and asked me to give the approach.

3. Puzzle: <https://www.geeksforgeeks.org/puzzle-1-how-to-measure-45-minutes-using-two-identical-wires/>

4. Given n distinct numbers in an array. You need to implement a random function such that when the random function is called the number is not repeated until all the n numbers are selected once.

Questions were asked from DBMS and OS.

1. What is super key and candidate key?
2. Difference between candidate key and primary key.
3. Difference between unique constraints and primary key.
4. What is deadlock? Conditions which lead to a deadlock and how to avoid a deadlock.  
Some real time situations where deadlock is occurred.

## Round 3:

1. Find the maximum stolen value houses. <https://www.geeksforgeeks.org/find-maximum-possible-stolen-value-houses/> Solve it in O(n) and without using any extra space for both positive and negative numbers

2. Implement LFU (Least frequently Used) cache. Solve in O(n) time complexity and use LRU(Least recently used) page if frequency of 2 pages is same in the cache.

3. Given a number find the next smallest palindrome larger than this number for both positive and negative numbers. <https://www.geeksforgeeks.org/given-a-number-find-next-smallest-palindrome-larger-than-this-number/>

# Interview Experience 2

By:- Rachit Sharma

## Round 1:

The first round was an online test. Total points in the test were 161 out of which 130(80 + 50) belonged to the 2 coding problems and rest to 20 MCQ's. The MCQ's mainly focused on OS, DBMS and DSA.

Coding question 1:

Given a source and destination in a NxN maze find the shortest path between them, some of the cells are occupied which act as a block.

This was a simple BFS problem.

Coding question 2:

Given d, a, b and an array of integers. You can add/subtract a and b to d any number of times. Give the count of numbers which can be formed by applying these operations to d and are present in the given array.

Hint – think of linear equation and Euclidean GCD.

30 students were selected for the F2F interviews out of 150.

## Round 2(Technical F2F):

The interview began with the usual introductions and then the interviewer proceeded with asking me some problems. The interview lasted for about 50-55 minutes.

The first problem – <https://www.geeksforgeeks.org/add-two-numbers-represented-by-linked-lists/>

I told him two approaches to solve this problem. He asked me to code both of the approaches.

Second – <https://www.geeksforgeeks.org/shortest-distance-two-cells-matrix-grid/>

I told him that this question was already asked in the coding round.

Third – <https://www.geeksforgeeks.org/level-order-traversal-in-spiral-form/>

My first solution was using too much space so he asked me to optimize the space complexity, I wasn't able to arrive at a final solution but came close by using two deques to implement this. He appreciated that fact and after 5 mins I was told to come for the second round after lunch.

## Round 3(Technical F2F):

I was immediately called for the second round after lunch. He asked me to introduce myself and then gave me a problem to solve. The problem was a simple one –

<https://www.geeksforgeeks.org/find-maximum-possible-stolen-value-houses/>

I first gave him an  $O(n^2)$  solution he asked me to optimize this, then with the help of DP I was able to solve this in  $O(n)$  time as well as space complexity. Then he further asked me to optimize this solution to  $O(1)$  space. With the help of a few hints, I was finally able to arrive at the final solution.

Then he started asking some question from my CV like why I used NoSQL for my project and then the basic difference between SQL and NoSQL. Then he asked me to write some SQL queries on a database.

For the final question, he asked me to find a loop in an array where each element of the array points to that index and all the values given in the array are positive. I gave  $O(n)$  space solution for this but wasn't able to optimize it to  $O(1)$  space. He ended the interview as we reached the allotted time for the interview. The interviewer was very helping throughout the interview and provided hints to guide me to the solution.

I was asked to wait after this round, most of the other applicants had one more round of interview after this one. Finally, they selected 13 students my college and thankfully I was one of them.

# Interview Experience 3

By:- Priyanka Sharma

Coding Round: It had 20 MCQ's and 2 coding questions.

First question was:

Given a source and destination in a NxN maze find the shortest path between them, some of the cells are occupied and one cannot find path through them.

<https://practice.geeksforgeeks.org/problems/shortest-source-to-destination-path/0>

Second question was:

Given d, a, b and an array of integers. You can add/subtract a and b to d any number of times.

You have to find the count of array elements which can be formed by applying these operations to d.

## Round 1:

The interviewer was very friendly. The round began with introduction and then he asked me DS/Algo questions.

1. Implement a Data structure in which following operations can be done efficiently (a) find max element

(b) insert (c) delete any element

2. Write code for all operations of Heap data structure.

3. Find the sum of last n nodes of the given linked list <https://www.geeksforgeeks.org/find-sum-last-n-nodes-given-linked-list/>

4. Given a Binary tree where value of each node is either 0 or 1. Convert this to a tree where value of each node should be bitwise and of its left and right subtree. If a node has only one or zero child then value remains unchanged.

## Round 2:

After the introduction part he asked me OS related questions.

There was detailed discussion on what is Deadlock , conditions for deadlock, methods for removing deadlock.

Then he asked me some questions on my projects which I had mentioned in my resume. He told me to write all use cases of a project.

Then he asked some web related questions - what is tomcat server, what is difference between App server and Web server, what is AWS.

He asked me one design problem - Build a system where a student can prepare resume according to format specified by the University.

At last he asked me one coding question - Print all cycles in a directed graph.

# Interview Experience 4

By :- Khushboo Baheti

## Round 1

1. Print maximum sum Sub array, considering all the boundary cases with as less space completely as can be there.

2. Given an integer, print the next permutation if the given integer is at the highest of the permutation then print -1.

3. Design a parking lot (System Design). Give proper classes and appropriate class diagram. Apply design patterns where ever required. Give appropriate data structure so as to minimize retrieve of information regarding the no. of free parking slots available in the parking lot .

## Round 2

1. Give no. of connected & slands in m x n matrix. Which graph algorithm to use DFS or BFS. Des=tailed discussion on DFS & BFS

2. OS questions :-

Paging vs Demand paging

LRU Cache – Data structure used and approach

LFU Cache (which caching mechanism to use and when with example)

3. DBMS question :-

Indexing, how its done actually

B+ trees, inversion & detection

Why use B+ trees only why not AVL

# Interview Experience 5

By :- Harsh Bambhani

**Online round** consisted of 2 coding problems and around 20 MCQ's

First question was:

Given a source and destination in a NxN maze find the shortest path between them, some of the cells are occupied and one cannot find path through them.

<https://practice.geeksforgeeks.org/problems/shortest-source-to-destination-path/0>

Second question was:

Given d, a, b and an array of integers. You can add/subtract a and b to d any number of times. You have to find the count of array elements which can be formed by applying these operations to d.

**F2F Round 1:( 90 mins)** The interviewer asked me to tell about myself and my projects Then he asked me to explain one of my project which was on ML. Then he shifted his focus towards data structure and algorithms .He asked 3 problems

Problem 1 : <https://www.geeksforgeeks.org/even-numbers-even-index-odd-numbers-odd-index/>

Problem 2 : <https://www.geeksforgeeks.org/print-nodes-distance-k-given-node-binary-tree/>

Problem 3 : Given an array arr[] of size n and a number x . Count and print all sub- sequences with sum x.  
an easy version of this problem is attached <https://www.geeksforgeeks.org/subset-sum-problem-dp-25/>

The problems that were asked I found them a little bit tough to solve. Though i got to the exact solutions that was expected but i took my time and I found problem 2 to be toughest of the 3.

**Advice-** Be confident and take your time and keep on telling interviewer about what you are thinking and what your thought process is .He is more keen to see your thought process rather than your final solution

**F2F Round 2:** (135-150 mins.....a very long round ...even i was astonished ...though in this round only the interviewer got very impressed from me) :

Problem 1: <https://www.geeksforgeeks.org/count-pairs-with-given-sum/>

Problem 2: <https://www.geeksforgeeks.org/merge-one-array-of-size-n-into-another-one-of-size-mn/>

Problem 3: <https://www.geeksforgeeks.org/find-distance-between-two-nodes-of-a-binary-tree/>

Problem 4: <https://www.geeksforgeeks.org/sort-an-array-of-0s-1s-and-2s/>

Problem 5: <https://www.geeksforgeeks.org/kth-smallestlargest-element-unsorted-array/>

Problem 6: <https://www.geeksforgeeks.org/connect-nodes-at-same-level-with-o1-extra-space/>

Problem 7: <https://www.geeksforgeeks.org/lru-cache-implementation/>

I answered every one of them and i found them quite easy and by now i was more confident then ever and kept on answering with more confidence Now the interviewer shifted his focus on computer science fundamentals and asked me to explain the things that he is going to ask in detail

he started with DBMS

DBMS -Indexing, ACID properties, Normalization.

then he moved on to OS

OS- define Synchronization, define critical section, define deadlock, brief on bankers

algorithm, method to remove deadlocks, define paging.

Advice – Interviewers are always cool and they always ensure that the interviewee is comfortable.Its all about confidence and patience . Your hard work will always get rewarded.

They decided to take 3rd round for some students . Some students were already placed by now. I am so unlucky af but as it turns out your patience and hard work is always rewarded .

**F2F Round 3:( 90 – 100 mins )**

He started with 2 problems on designing stuff . I am not able to recollect both of them exactly but one was on designing minesweeper game

now he shifted his focus on data structures and algorithms

Problem 1: <https://www.geeksforgeeks.org/count-ways-reach-nth-stair-using-step-1-2-3/>

Problem 2: <https://www.ideserve.co.in/learn/find-minimum-length-sub-array-with-sum-k>

now he asked some basic things in OS and DBMS which were already asked to me in my 2nd round also I answered them very quickly

now he took a sort of HR round which lasted for 10 mins and basically he was asking about my self and also asked me if i want to ask something .I asked him about his work and daily life at oyo rooms

Round 3 over . Now comes the best part . I was given FTE at oyo rooms and my happiness was on another planet 13 students were given offer at oyo rooms.

**Final Advice** – Practice makes a man perfect.Keep on practicing and your hard work will always be rewarded.You just have to be patient and confident.

# Interview Experience 6

By:- Divyanshu Agarwal

## Online round

Consisted of 2 coding questions and 20 MCQ'S:

First question:

Given a source and destination in a NxN maze find the shortest path between them, some of the cells are occupied and one cannot find path through them.

<https://practice.geeksforgeeks.org/problems/shortest-source-to-destination-path/0>

Second question was:

Given d, a, b and an array of integers. You can add/subtract a and b to d any number of times. You have to find the count of array elements which can be formed by applying these operations to d.

I solved 1st question using bfs approach and completed MCQ's .31 students got selected for first round out of around 150.

**F2F Round 1:( around 105 mins)** The interviewer asked me to tell about myself and then he started things from my resume. Since I have a developer kind of profile and some good previous internship experience, he started with projects involved during my internships, their design patterns also asked to write approach involved in them. So with all this after around 45 minutes, he took around 2-3 min break, also offered me some cookies. I thought interview got over but then he shifted towards data structure and algorithms. He asked 3 problems :

Problem 1: <https://www.geeksforgeeks.org/find-maximum-vertical-sum-in-binary-tree/>

Problem 2: <https://www.geeksforgeeks.org/kth-largest-element-in-a-stream/>

Problem 3: [https://www.geeksforgeeks.org/find-the-element-that-appears-once-in-a-sorted-array/  
\(O\(logn\) approach\)](https://www.geeksforgeeks.org/find-the-element-that-appears-once-in-a-sorted-array-Ologn-approach/)

I solved all the three problems and he asked me to write code for each on paper. For second question he also asked me to draw a heapfied tree for each iteration as it involves heaps and then asked basic questions on heap. In the third question, I got confused but I discussed the approach with the interviewer and then finally after taking some time solved it.

So this was my first round, basic advice is that for every question take your time and try to discuss possible approaches with your interviewer and try to make it interactive on both side.

21 students were selected for the second round.

**F2F Round 2:( around 120 mins):** Interview started with the basic introduction, then he also started with my resume and asked most of the things that were there in my resume in detail.

He asked me about the inner mechanism of Elasticsearch in detail, Pros and cons of using NoSQL and SQL databases, why i have used a particular DB for my project, difference between monolithic & microservices and similar backend related stuff as my resume pitched me like this, it may be different if you have machine learning projects or android or anything else in your resume. Then he asked questions from DBMS like indexing. What are the advantages and disadvantages of multilevel indexing, rearrangements in multilevel indexing, B+ tree etc. He also asked why normalization for databases, it's different forms. Then in OS, he asked about basic concepts of paging, all the scheduling algorithms and basic of semaphores. Now it comes to ds/algo part, he asked me two questions.

Problem 1: <https://www.geeksforgeeks.org/policemen-catch-thieves/>

I told him the greedy approach and then he asked me to write the code for it.

Problem 2: <https://practice.geeksforgeeks.org/problems/largest-number-formed-from-an-array/0>

I told him related approach, he tried me to confuse by asking some counter questions on the approach, by giving different test cases but later he asked me to write the code for it.

With all this 2nd round got over. I was not called for the 3rd round but some people also had the 3rd round. After some time results were announced 13 were selected as FTE for OYO and I was one of them.

**Advice:** Mention only those things in your resume which you really know very well and be prepare with possible counter questions on them because you can't make fool of the interviewer. Be confident and take your time to understand and solve the problem and Final if it's your day no one can stop you to grab the opportunity

# Interview Experience 7

By Mudit Garg

## Coding Round:

It had 20 MCQ's and 2 coding questions. Total marks were 161 out of which 130 were of 2 coding problems and rest of 20 MCQ's.

Coding question 1:

Given a source and destination in a NxN maze find the shortest path between them, some of the cells are occupied and one cannot find path through them.

<https://practice.geeksforgeeks.org/problems/shortest-source-to-destination-path/0>

Coding question 2:

Given d, a, b and an array of integers. You can add/subtract a and b to d any number of times. You have to find the count of numbers which can be formed by applying these operations to d and are present in the given array.

30 students were selected for the F2F interviews out of 150.

**Round 1:** The interviewer was very friendly. The round begin with usual introduction and then he asked me 3 DS/Algo questions.

Ques1: Given an array A[] consisting 0s, 1s and 2s, write a function that sorts A[] using single traversal ie you can only traverse given array once.

<https://www.geeksforgeeks.org/sort-an-array-of-0s-1s-and-2s/>

Ques2: Given values of two values n1 and n2 in a Binary Search Tree, find the Lowest Common Ancestor (LCA).

<https://www.geeksforgeeks.org/lowest-common-ancestor-in-a-binary-search-tree/>

Ques3: Given a Binary Tree, print left view of it. Left view of a Binary Tree is set of nodes visible when tree is visited from left side.

<https://www.geeksforgeeks.org/print-left-view-binary-tree/>

He asked me to write the code of all three questions and check the approach with some edge cases. After these 3 questions he asked me some basic questions about Paging, Deadlocks and Indexing.

This round lasted around an hour. 21 students were selected for the second round.

## Round 2:

After the introduction part he asked me a DS question.

Given a binary tree, you have to implement three functions:

1. is paint() : This will return whether the node is painted or not.

2. paint() : This will paint the node if constraints allow it to be painted.

3. unpaint(): This will unpaint the node if constraints allow it to be unpainted.

A node can only be painted if all its parent's and children's are not painted.A node can only be unpainted if all its parent's and children's are not painted.

After this he asked me this puzzle.I was able to explain him my approach and he was happy with that.

After this he asked me about my projects.Then he asked me whether i am comfortable with OS and DBMS to which i replied yes then he asked basic concepts of OS like difference between Process and threads, what are deadlocks and semaphores etc. He then asked different type of Indexing and differences between them.

After this round many students where told 'no further rounds'. The rest around 10-12 including me were asked to wait for further round.

## Round 3:

It had only 1 question which was a Real Time Problem.

I was given a matrix representing the number of rooms and days.Matrix contained the values indicating the number of days left for that customer in that room.I was asked to come up with an algorithm to provide the customers the same room for all the days they had booked the room in such a way that i can accommodate maximum number of customers.

He was impressed with my approach and asked me to code it.Then he checked that with some corner cases and was satisfied with it.

# Interview Experience 8

By :- Sahaj Kodia

## Round 1:

The first round consist of 20 Computer Science Fundamentals MCQ and two coding questions. In MCQ importance were given to data structures and OS.

Coding Question 1 : Given a source and destination in a NxN maze find the shortest path between them, some of the cells are occupied and one cannot find path through them.

<https://www.geeksforgeeks.org/shortest-distance-two-cells-matrix-grid/>

Coding Question 2 : Given d, a, b and an array of integers. You can add/subtract a and b to d any number of times. You have to find the count of array elements which can be formed by applying these operations to d.

30 Students got selected for next round.

## Round 2 (F2F Interview):

The interviewer asked me to tell about myself and asked one question related to my project. Then two problem were asked.

Problem 1 : Search in a row wise and column wise sorted matrix. Interviewer was expecting an O(n) solution.

Problem 2 : Sum of leaf nodes at minimum level. Interviewer was expecting an O(n) solution. Interviewer was very friendly and was giving time for solving a problem. They were focusing on reducing the complexity of the code and once we achieved the logic for best possible complexity we were told to write a code for it. This round lasted around 45 minutes.

## Round 3 (F2F Interview):

The interviewer started by asking questions about my projects. He took a brief of all the projects in my CV. Then he started asking some basic concepts of OOP about polymorphism ( run time and compile time ) and inheritance.

After this he told me to tell design database tables for one of my projects with some added constraints to it.

Then OS concepts were asked related to paging and their algorithms. This computer science fundamental related interview goes for around 45 minutes.

Then some coding questions were asked.

Problem 1 : Design an algorithm for splitwise app.

<https://www.geeksforgeeks.org/minimize-cash-flow-among-given-set-friends-borrowed-money/>.

He was expecting an O(n<sup>2</sup>) solution but i was stuck at O(n<sup>3</sup>) solution. I was not asked to write a code for this approach.

Problem 2 : Given a linked list make an AVL tree. I gave a solution in which I sort a linked list and then went to middle element make it as root and now I am left with right subtree and left subtree and same process is repeated recursively. He seemed pretty satisfied with the solution and then told me to write a code for the recursive part.

This round lasted around 1 hour and 30 min. Interviewer were very much interested in the approach rather than just answers.

I was told that no further rounds will be there for me and results will be circulate through mail. Thankfully I got selected

# Interview Experience 9

By :- Sakshi Sachar

**Coding Round:** It had 20 MCQ's and 2 coding questions.

First question was:

Given a source and destination in a NxN maze find the shortest path between them, some of the cells are occupied and one cannot find path through them.

<https://practice.geeksforgeeks.org/problems/shortest-source-to-destination-path/0>

Second question was:

Given d, a, b and an array of integers. You can add/subtract a and b to d any number of times. You have to find the count of array elements which can be formed by applying these operations to d.

## Round 1:

The round began with brief introduction and description of projects mentioned in resume then he asked me DS/Algo questions.

1. Given two sorted arrays of size m and size m+n , in second array only m elements are present and the remaining n spaces are empty , we need to merge the two arrays in O(1) space such that the resulting array is sorted and time complexity should be O(n).
2. Given a binary tree , check whether it is bst or not.
3. Given an array and a value x , we need to find a pair with sum x in the given array in O(1) space.

## Round 2:

After the introduction part he asked me DS/Algo questions.

1. Stolen house problem

<https://www.geeksforgeeks.org/find-maximum-possible-stolen-value-houses/>

2. Given a linked list reverse it in groups of size k.

3. Given an array in which each array element denotes an index to which we should jump , starting from the first element , if the value at any index exceeds the array size , the movement stops , So we need to detect loop in the given array.

The interviewer expected space and time efficient algorithms in this round and also the edge and base cases.

Then he asked basic SQL queries and my knowledge about DBMS. Also there was a discussion on Normalization .

Then he asked me Why Oyo and if I had any questions for him.

# Question Bank

## Round 1

- 1) Given a matrix ,which is sorted row-wise and column-wise, one input is 'X' we need to find that 'X' is present or not in the given matrix and also time complexity.
- 2) Given a binary tree, find the sum of the leaf nodes which are at minimum level.
- 3) Question regarding experience and work regarding the projects.
- 4) Iterative post-order traversal using a single stack.
- 5) Extract the cycle in a linked list and also find the node where the cycle starts.
- 6) Search the lowest common ancestor in the binary search tree.
- 7) Water trapping problem.
- 8) Given the array of numbers, find the subarray with maximum sum.
- 9) Print bottom view of the binary tree.
- 10) Merge two sorted arrays with N and M elements respectively, without extra space.
- 11) Find the greatest sum from the given tree.
- 12) Given two intervals, find the intersection.
- 13) Room allocation system for hotel booking (algorithm and code).
- 14) Right side view of binary tree.
- 15) Sort the array in single traversal.
- 16) Convert 1 2 3 4 5 6 -> 1 6 2 5 3 4
- 17) Convert 1 2 3 4 5 6 -> 1 2 3 4 6 5
- 18) Given a sorted array where all elements are in pairs except one, we need to find that single element with time complexity less than O(n) and without using extraspace.
- 19) In a given binary tree find the sum of elements of a particular level.
- 20) From a given set of numbers find the Kth largest number.
- 21) Arrange the given array in such a way that all the odd elements are at odd positions and even are at even position.
- 22) Given a node of a tree, print all the nodes at a distance k from the given node in every possible direction.
- 23) Given an array, print all groups which is having sum equal to 'k'.
- 24) Buy and sell stocks, Given prices of stocks on Ith day and N number of trades are allowed. Given that all the trades are atomic(if new item is bought than you need to sell the previous one).
- 25) Find common elements from given two BST.
- 26) Distance between 2 nodes in a binary tree.
- 27) Magic pond puzzle.
- 28) Play a random song without repetition.
- 29) Given a BST you have to store it in a doubly linked list and retrive it back.
- 30) Build a Data Structure with following options :-
  - a) insert()
  - b) delete()
  - c) minelement()
  - d)maxelement()
  - e)midelemts()
- 31) Data structures which support ,insert, delete, and max input output
- 32) Find sum of N nodes from end
- 33) Convert a tree to hold and of its ,children (nodes can have only binary values)
- 34) Implement all functions of max heap
- 35) Remove duplicates form unsorted LL
- 36) 2-D infinite grid reach in minimum steps from (x1,y1) to (x2,y2)
- 37) Duplicate a stack in O(1) space
- 38) OOP concepts
- 39) Copy of stack Into another without using extra space
- 40) Form a group of elements in array which are less than a equal to given k. calculate the min swaps required for this
- 41) Traverse two linked list with node containing a single digit add these two and store in a 3 rd linked list.
- 42) Given source and destination in a n\*m maze find the minimum distance to reach the destination
- 43) Print a binary tree in zig zag order
- 44) Introduce yourself
- 45) Stock buy sell problem(modified) we can do only k trades
- 46) Find common elements b/w 2 binary trees

# Question Bank

- 47) Write code after explaining approach for both Array 2,2 3,3,4,4,5,6,6,7,7 (always in pair)
- 48) Find the lone element O(logn)
- 49) Power set of a string
- 50) Given stack perform min in O(1)
- 51) Print left view of tree
- 52) Print distance b/w two nodes in a tree
- 53) Reconstruct a bst using only linked list and no auxiliary space
- 54) Print the max and min of the stack at any point of time
- 55) Find the loop in a linked list
- 56) Intersecting point of linked lists
- 57) Distance b/w two points in an infinite grid
- 58) Create distinct elements linked list
- 59) Project work
- 60) Four array are given to you and a sum s given we have to find four indexes from all four arrays to get that sum s.

## Round 2:

- 1) Given a Doubly linked list ,can we make a binary search tree? Can we make an AVL tree?
- 2) Design a database for placement portal including non-key avg and key.
- 3) Question related to java overloading , private class ,etc.
- 4) Throttle concepts related to projects.
- 5) DBMS normalization.
- 6) Reversing the linked list in group of k size.
- 7) Difference between process and thread.
- 8) How to prevent deadlock.
- 9) Find the row with maximum number if 1 in a given matrix.
- 10) 4,6,10,15 -> These are rod lengths combine them all into one rod ,for example (a)combine 4 and 6 addition will result 10, so cost will be 10. so combine this into one rod of minimum cost.
- 11) Design a Data structure which give insertion Deletion O(1) and Max O(1).
- 12) Sticker thief problem.
- 13) Even level order printing from bottom to top.
- 14) Questions related to Dynamic programming.
- 15) DBMS and OS queries.
- 16) A set of strings is given, can we convert them into one another by changing odd to odd and even to even positions.
- 17) Questions related to MVC(Model View Controller) architecture.
- 18) Design and choose DS for following:  
Person ->friend ->friend  
Person like books  
Q1)given person return books he like  
Q2)return k most liked book in the network
- 19) Operating system  
Process ,thread, synchronizations, deadlock, busters, paging, LRU cache, Dbms  
Indexing, ACID properties,
- 20) Max element without adjacent
- 21) Design LFU+LRU
- 22) Next greatest element [both +ve and -ve]
- 23) Complete project discussion
- 24) Zomato and swiggy system designs
- 25) Cache memory
- 26) Reach from src to design in infinite grid
- 27) Structures for creating
- 28) Real time problem in this we have to find whether at a particular day we can allocate the room to the customer or not

- 29) Longest balanced string
- 30) All roots at a distance k
- 31) Parent of a node
- 32) Two rope burn at 60 min find 15 min puzzle