# Housing Interview Experience -Vishal

## Round 1 - Online Assessment

Platform - Mettl (15th Sept 2022)
Time - 2hrs
- Total 4 sections were there
- 3 sections - MCQ on Time complexity, DS, Algo, DBMS
- DSA section - 4 Coding questions
    - Given an integer n, find the factorial.
    - Given an array of 0's and 1's, return the length of the longest subarray with an equal number of 0's and 1's.
    - Given the preorder and inorder traversal of a tree, return the postorder traversal of the tree.
    - Given an array of integers, return the sum of the maximum sum subarray with only positive integers (including 0).

## Round 2 - Technical Round 1

Platform - Google Meet & Leetcode Interview section (16th Sept 2022)
Time - 1hr 15 min
- The interviewer was very friendly and helpful. He started with his introduction and gave the overview of the round as follows
    - Introduction and project discussion
    - DSA Questions
    - Questions I want to ask.
    then asked me to introduce myself.
- After Introduction he asked me about my internship -
    - Projects done while in the internship, Tech Stack used, Working of tools used(like GPT-3), Implementation of various functions.
    - Difficulties faced while working & their resolution
    In this project discussion, he asked me for in-depth details about everything which I had done and was so much interested in as he

was also working on the same concept.
- Then he asked about my project which was related to machine learning
    - How did you implement this and various other follow-up questions?
    - Problems faced while working on it and how I resolved them.

This whole project and internship discussion part went so well, for about 30 min then the interviewer unwillingly interrupted me to stop and said that we have to follow the procedure and had to do 2 DSA questions also. (After this part he seemed so satisfied and happy)

- Then he asked a DSA question related to Binary search - https://leetcode.com/problems/find-first-and-last-position-of-element-in-sorted-array/
I told him the efficient approach directly (as he stated the solution must be of log n time complexity )and he asked me to code!
Some platform issues were also resolved during this question which took time.
- The second question was about Level order Traversal of binary tree Here he asked about approach first then why queue? then Time and space complexities.
Then he went on to ask various ways we can implement a tree in cpp and also asked some cs fundamental questions like the difference between structure and class.
Some basic oops questions and then asked me to code quickly as we already exceeded the deadline.
While coding, time was up so he asked me to stop while saying you are definitely going to the next round don't worry.

# Round 3 - Technical Round 2

Platform - Google Meet & Docs (16th Sept 2022)
Time – 1hr

- The interviewer started by introducing herself and asked me to do so.
- Then she asked some questions related to my project.
- Then we moved on to the DSA part the problem statement was so vaguely defined.
  Problem - Given an ArrayList or vector of string and a word you need to give the next most occurring word of the given input word.
  {{She like orange}
  {She like apple}
  {She eats orange}
  {She like an apple}
  {she has apple and orange}}

  Input: like
  Output: orange
  Explanation - (orange, an, apple) comes next to 'like' in the strings given and orange is the most occurring hence output should be orange.

  Input- eats
  Op - orange

  Input - she
  o./p - like

- I started with the brute and then told an approach using hashing she didn't say anything and asked me to think again. Here I tried to hit the question with various other ways including an approach using graph that can we use topological sorting which she denied by saying you are going too far this is not that hard.
- Then I tried some other ways and felt kind of struck as the only solution I was ending up was using hashing only and I explained her

in detail why I think so and how I am going to approach then she seemed busy with something so asked me to code it whenever I feel comfortable with my approach and said she will come back in 10 min. I started coding the solution while explaining each and every step and asked her in between that am I going in the right direction, she seemed so confused and didn't say anything.
After coding it up she still wasn't satisfied and wanted me to think of another approach.

- At this point, I was so tensed and couldn't think of anything else so I asked her for a hint & she replied that can we preprocess the string in some way! This gave me a thought of pattern search algorithm but I wasn't able to think much.
- So she asked me to move on to the next question as we were running out of time and I said okay!

  The next question was a puzzle -
  https://www.geeksforgeeks.org/puzzle-9-find-the-fastest-3-horses/

- I started with the simple approach and tried to solve it in various ways but wasn't able to come up with the exact solution.
- So, in the last 10 min, she asked any questions?
- So I asked her about the approach for solving both of the questions.
- She gave the approach for the puzzle and asked me to check out on gfg after the interview and
- For the first question, she started with dfs over the tree to which I replied I couldn't think of making a tree from the given string. And she realized that she has asked me another question and then she said you just needed to use the hashmap and explain her approach to me to which I got confused and calmly replied, that's what I have done mam, and explained the whole approach with the code line by line and in detail and now she understood the whole thing and said yeah that's correct and was satisfied completely.
- Later I asked some more questions related to the company, culture, and her journey as she mentioned she is our alumni.
  She seemed happy after the discussion.

I wasn't much confident after this round and had my hopes low as more than half of my time went for one single question. But was quite satisfied with the happy ending.

# Round 4 - HR Round

Platform - Google Meet (almost 1 hr)
- Background talk (Family, siblings, etc)
- Future goals
- Experience and projects talk(cv)
- Some scenarios
- Strength and weakness
- Any Questions?

# Tips

- Always be confident and have faith in your preparation.
- Be thorough with your resume, Mention only those projects about whom you are most confident and can lead to a fruitful discussion.
- Try to involve the interviewer whenever possible, and avoid silence during an interview.
- Try to be truthful to the answers you give as much as possible, especially for the HR round, and be prepared with the justification or reason about everything you say.
- Never give up while in an interview, try to come up with as many solutions as possible, keep calm and composed, if you get stuck and ask for more test cases and try to grasp hints provided by the interviewer.