# Microsoft Interview Experience | Off Campus Internship 2020 Summer

Difficulty Level :\nMediumLast Updated :\n24 Aug, 2020

# 1. ONLINE ROUND [ONE TEST 2019] [90 mins]

- This round was open to students from all the Institutes across India.
- This round had 3 coding questions.
- Coding questions were very straightforward and were mostly implemented based on little logic required.
- One of the questions was
  - Given a JSON string find the max depth of the string.
  - Example \xe2\x80\x9ca:{b:{a:\xe2\x80\x98z\xe2\x80\x99, b:\xe2\x80\x98y\xe2\x80\x99}, c: {z:[2,3]}}\xe2\x80\x9d.
    - Here the max depth is 3.
- I was able to solve and submit all 3 questions within 15 or 20 mins.
- After a month or, so I got a call for Online Interview.

# 2. ONLINE INTERVIEW [45 mins]

- This round focused on Data Structures, Algorithms, and Implementation.
- Only one question was asked in this round.
- Problem: Implement a DS that supports 3 operations.
  - Insert
  - Delete
  - Get Random Element (Return a uniformly random element from the set of elements)
  - It is guaranteed that the elements are unique.
  - I was asked to implement DS that supports all these operations in O(1) time.
- After 15 mins or so I was able to come up with an optimal solution and was able to implement the same within 20 mins.
- After a week I received a mail for Onsite Interview.
- My Solution.

### **ONSITE INTERVIEW**

- The interview was at Hyderabad.
- Onsite Interview consisted of 2 Rounds.
- In my batch, there were 25 students out of which 9 got selected for the Internship.

#### 3. ONSITE ROUND 1 [TECHNICAL] [75 mins]

- This round was majorly focused on System Design but 2 DSA questions were also asked.
- Question 1 Given a matrix find a submatrix with the maximum sum.
  - The naive solution takes O(n ^ 4) time.
  - This is a standard DP question and can be solved in O(n ^ 3) time using \xc2\xa02D Kadane Algorithm.
  - I gave both solutions.
- Question 2 Given a row-wise and column-wise sorted matrix find a given element.
  - The naive solution takes O(n ^ 2) time.
  - Can be solved in O(n \* log n) time by applying binary search in every row or column.

- Can also be solved in O(n) time by starting the search from the top right element.
- I gave all 3 solutions.
- Both questions were asked in the first 15 minutes of the interview and the rest of the Interview was focused on System Design.
- Question 3 Design a Restaurant Management System.

# 4. ROUND 2 [TECHNICAL + HR] [40 mins]

- During this round, Interviewer asked related to resume and my projects.
- Question 1 Tell me about yourself.
- Question 2 Given two very big numbers (each more than 500 digits), multiply them.
- Question 3 In one of my Internships I had created a website (along with one friend), So he
  asked me to explain my entire process of website development from requirement gathering till
  deployment.
- Similar questions were asked regarding my other projects.
- I have done an Internship in my summer vacation of the second year at Samsung R&D Bangalore, So Interviewer asked me whether Samsung offered me an Internship this year and also asked me about my experience there.
- The Last Question Three Qualities why we should hire you?
- It is a standard question and I gave the answer that I read online.

I was selected for the Summer 2020 Internship, also received a PPO at the end of my Internship.

All the best for your interviews.

My Personal Notes\narrow\_drop\_up

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