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## Microsoft Interview experience | Set 179 (On-Campus)

- Difficulty Level : [Medium](#)
- Last Updated : 08 Aug, 2018

### Round 0: Coding Round

3 coding questions :

Platform cocubes (ui is very bad and be prepared to code in a very small text editor which can't be enlarged).

1. Find average of ascii values of stream of characters (1 mark).
2. Evaluate a given infix expression consisting of numbers and operators.
3. Linked list question : insert the reversed linked list of nodes at odd position at alternate places.  
1->2->3->4->5 to 1->5->2->3->4

(Other Questions were ) {

2. regular expression matching

find how many substrings match that 10\*1, exist in a given string.

3. [Trim the BST so that it contains nodes with values within a given range only.](#)

}

### Round 1: Pen and Paper Round

2 questions were given and correct code was expected to be written.

1. [Trains arrival and departure time was given and u have to calculate the max. platforms required so that no train has to wait.](#)
2. Set the next pointer of all tree nodes.

(next pointer should point to node right to current node at same level).

### Round 2: Technical Interview 1

1. Asked me about my project.
2. Construct BST from preorder and optimize it . Write correct code for it . (I also had discussion with interviewer why the complexity can't be decreased than  $n \log n$ ).
3. [Rotate matrix by 90 degrees](#) (she asked me if i had already done it, to which i replied yes and she gave me an easier one ).
4. [Check if all leaf nodes of a tree lie on same level](#) . Write code also

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### Round 3: Technical Interview 2

1. Asked me to write a random() for hashmap to return a random key in  $O(1)$  time .

He helped me through it and i talked about all the pros and cons of solution as we were constructing the solution.

2. Asked me to write code to construct Trie.

3. Asked me question about calculating Bandwidth of network as a application level programmer.

$BW = \text{data transmitted} / \text{time delay}$  (he asked but i didn't agree and i talked about all the delays and retransmission and stuff involved in time delay than he gave hint about files read/write )

so application point of view ::

$\text{time delay} = \text{file read/write time} + \text{propagation delay}$

so  $BW = \text{data transmitted} / \text{propagation delay}$ .

4. [Gave me 25 horses problem to which i politely replied that i know it already.](#)

5. Then he asked me how many matches will be there if every person is to have a match with every other.

ans :  $nC2$ .

6. [How many matches if there are knockouts in a tournament.](#)

ans :  $n/2 + n/4 + n/8 + \dots + n/2^{\log n}$

#### Round 4: Technical Cum HM Interview

1. Discussion about the projects , what i did and what my teammates did. What did i learn from it.
2. Infix expression evaluation. Why do u need 2 stacks he asked .
3. Design Patterns
  1. What design pattern i used in my project
  2. what do u know about Singleton design pattern
  3. write code to implement Singleton design pattern
    1. I wrote 4 approaches with their pros and cons.
4. Write a function getCallHandler() for a call center consisting of 10 employees 1 lead 1 call center head.
  1. Calls had to be transferred to lead only if no employee available and to call center head only if no employee and lead is available.
  2. Then he asked when will my solution fail and i talked about multi threaded programs and race around condition for shared variable .
  3. he asked me to write code for synchronizing it.
5. Asked about os i use and if i have used any of its api . Asked me about ubuntu.
6. Why do i wanna join microsoft ?
7. what about technology do u like?

#### SUGGESTIONS :

1. Don't spend too much time on writing code and being silent throughout . Write half the code, discuss your approach and its cons. They will spare the coding by having a look at even your half written code.
2. If u can't fake that you have already done a question then straight ahead tell the interviewer.

3. Discuss things with the interviewer about your ideas and approach, they can't help u if they don't know where r u stuck . Also it gives them an impression that u can solve a problem with some other person or u can cooperate (team player).

My Personal Notes

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