

Ciena Interview Experience - (C/C++ Profile)

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Total Rounds: 4 (OA + 2 Tech. + HR)

Round1: Online Assessment(60 min.)

There were 2 different assessments set up according to the profile for which the students had applied (One for the C/C++ profile and the other for the Java profile).

- C/C++ Profile assessment had two sets of assessments, one set consists of 45 MCQs, while the other set consists of three coding questions.

I got a set consisting of 45 MCQs related to aptitude and reasoning, error finding in C codes, find output of given C codes and some CS core subjects MCQs.

Difficulty level: Easy to moderate.

Round2: Technical Interview-1 (45-50 min.)

The interview starts with introductory questions like where are you from, then he moved to the resume and asked about the projects mentioned in the resume he discussed thoroughly about them for 15-20 mins. like for one project - URL shortener, I used an API, he asked about how the algorithm work for the same.

Then, he moved to explain the OOPS concepts and ask if any project done, implementing the oops concepts as I have done a project in UG as Bank Management System, he further asked me to write a code for the same, after declaring a class structure, data members and functions he starts discussing about the working of methods and logics behind implementation.

Further questions asked are as follow:

- Discussion on pointers, smart pointers - weak pointers and shared pointers.
https://www.geeksforgeeks.org/auto_ptr-unique_ptr-shared_ptr-weak_ptr-in-cpp/
- Memory layout of C++ codes i.e, stack, heap, code and text section
- Process v/s thread.
- Synchronization algorithms in OS.

- What are static variables, how are they different from normal variables? Why are they used?
- He also gave tricky codes to predict the output and explain the overall flow control & working of coding, which were based on recursion, static and pointers.
- Dynamic memory allocation in C++.
- What are virtual and pure virtual in C++.
- Tic-tac-toe game approach and define a class for the same.
- What is BST? Algorithm for BST insertion and write a code for BST insertion.

Round3: Technical Interview-2 (40-45 min.)

This round was basically DSA Oriented.

She started with resume asked some questions on education background, and quickly moved to DSA questions.

Ques.1: Given an array of n elements, find a subarray of k elements with the max sum.

Brute force approach: Using two nested loops, find sum of k element using inner loop, store and return the maximum one.

She asked to optimise it, I told her the sliding window solution, she asked to write code on paper and discuss complexity for the same.

Ques.2: Check whether the given tree is BST or not.

Brute force approach: Perform the in-order traversal, if it is sorted then it is BST else not.

She further asked me to optimise it to check in one scan.

Actually i start thinking about the BST property i.e., left subtree value should be less than root and right subtree should be greater than root value, i kept on communicating things to her, and reached to the solution to check range for each node and update it for each node on left and right subtree. She also gave me some trees and asked to run algorithm and write range for each node start with root as [INT_MIN, INT_MAX].

Ques.3: Check whether linked list contains cycle or not.

Brute force approach: I asked her to further clarify the ques. and told her famous floyd's Cycle finding algorithm/ fast and slow pointer. Instantly, she abrupt me and told me think about any other approach.

I came to another approach using hashset, she discuss more about it and told me to write code on paper.

She further asked some questions as followed:

- How dynamic memory allocation is done in case of 1-d and 2-d arrays and write code for the same.
- What are pointer to an array and array of pointers.
- Some output question based on pointer to array, what happen in case of, if we increment the pointer with address resolution(asterisk) operator and without address resolution operator which points to an base address of array.

Round4: HR Interview(15 min.)

Ques1: Tell me about yourself, family background & hometown?

Ques2: Given a scenario where you as a team working on a project and your mentor left your team in mid of the project and a buddy is assigned to you for help, how will you manage to work if buddy is not able to help as expected?

Ques3: Other goals than professional ones?

Ques4: Why do you want to join Ciena?

Ques5: What were the recent projects done by you as a team, what was your role, what kind of challenges you faced during the project and how did you solve them ?

Ques6: Any other question you want to ask.

Here, I asked about the expectation of the company from the intern, learning opportunities for new joinee to get acquainted with work quickly.

Recommendations:

1. Don't sit quietly after listening to a question during an interview, keep discussing things with the interviewer even if you don't know the exact answer. He/she gives you the right direction if you approach to solve a given problem.
2. Don't hesitate to ask for clarification of problems and examples for the same.

