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Amazon Interview | Set 100 (On-Campus)

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First of all many many thanks to geeksforgeeks for such a great guidance. Amazon visited our campus for recruitment. Here is my interview experience.

Round -1
20 MCQs (C ,Aptitude,DS,DBMS,Networks)
2 programming questions were asked-
1.) Print all root to leaf path of a given binary tree whose path sum is a given value k.
Note: tree was given in the form of array (so no need to create the tree).
Input: Input contains two space separated integers K and L followed by 2^L-1 space separated values
Output: All root to leaf path which has a path sum = k.
Sample Test case :
Input :
40 4 10 11 13 # 15 28 6 # # 8 4 # 9 11 #
Output:
10 11 15 4
10 13 6 11

2.) Given few sets of intervals print out the entire intervals without overlapping, if they overlap then combine them into one.
Sample test case:

```
\r\nInput :    (5,7) (1 , 6) (2 ,4) (10 ,14) (8,9) \r\nOutput :   (1,7) (8,9) (10,14)
```

Group fly Round:
2 ques were asked in this round. We were asked to write code on paper very fast.(It was an elimination round.

1.) Given a binary tree as below

```
\r\n                                A\r\n                    /    \\\r\n                   B      C\r\n
```

Convert the structure of the tree like a left aligned tree whose each node contains a down pointer and a right pointer and looks like the below tree..

```
\r\n            A\r\n            |\r\n            B \xe2\x80\x93 C\r\n            |\r\n            D\xe2\x80\x94E\r\n
```

2.)The arrival and departure time of trains are given. Find the minimum number of platforms to accommodate all the trains.

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\r\nEg.        Arrival     Departure\r\n        7        11\r\n        8        10\r\n        13        14\r\n        4
```

Round 2. (F2F)
1. An array is given in which elements are first monotonically increasing and then decreasing.Search an element in the array. Working code was asked which takes care of all the edge cases. Also asked the time complexity of the code.

2. Implement queue using 2 stacks .
What would be the complexity of enqueue and dequeue operation. I told him O(1) for enqueue and O(n) for dequeue. Then he asked to optimize it. Then he asked the Average case time complexity.

Round 3 (F2F)
1. You are given a graph. Write a function to remove all the cycles. Means after the function call the graph must be converted into a connected acyclic graph(tree).
2. What happens when u send an email to someone.
3. What is socket ? What is port?
4. Which protocol is secure for mail transfer? Which protocol is used by Gmail?
5. What is the port number of SMTP?
6. Suppose u open notepad and type something and save it what would happen.
7. What is static member?
8. What is singleton class??
9. If a class has all its members as static would it be a singleton class? Compare them.
10. What is process scheduling? How does it happen? What are various queues maintained by the system? (Where does the scheduler process run ??- This ques was asked in 2nd round of DE Shaw & co).
11. Suppose various process are waiting for a particular resource? What is this situation called? How does the system overcome from this problem?
12. What the various ways of process communication?
13. What is thrashing ?How to overcome from it?

Round: 4.)(HR + Technical)
1. Tell me something about yourself
2. A long discussion on project. Brief description. How can you improve it?What changes will make if I ask you to develop it again? Give example of implementation of various oops concept in your project.
3. What is multithreading? Then he said that there are situations where there is no need of multithreading.eg- if I want to add two numbers then no point of using multithreading.So give an example where you can actually implement multithreading. (ANS \xe2\x80\x93 Fibonacci number)
4. Some behavioral questions like-
What are you good at?
What are you proud of?
What are the things you want to change in yourself?etc.

5. Various oops concept like encapsulation, abstraction, inheritance , etc. with example.

Suggestions:
\xe2\x80\xa2 Don\xe2\x80\x99t start writing the code immediately.
\xe2\x80\xa2 First tell him the approach .
\xe2\x80\xa2 Take care of all the edge cases.
\xe2\x80\xa2 Many times interview may give you hints so make the interview interactive.
\xe2\x80\xa2 Very Important \xe2\x80\x93 Don\xe2\x80\x99t focus just on a particular subject like only DS.
\xe2\x80\xa2 More or less give time to everything.
\xe2\x80\xa2 Study the concepts of OOPS and OS properly.
\xe2\x80\xa2 Have a basic Idea of DBMS and Computer Networks also.

All the best.

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All Practice Problems for Amazon !

My Personal Notes\n*arrow_drop_up*

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