

Amazon Interview | Set 104

- Difficulty Level : [Medium](#)
- Last Updated : 20 Jun, 2019

Online round:

20 MCQs on mathematics, probability, operating systems, DBMS, compilers and basic DS concepts.

Coding questions (Full code required):

1. [Given an array containing zero and non-zero elements, modify the array such that it has the 0s at the end and the non-zero elements at the beginning. Print the number of swaps required and the number of non-zero elements.](#)

2. [Given a pattern and a text print the indexes of the text where any anagrams of the pattern occur.](#)

```
Input:
abcdad (text)
abcd (pattern)
Output:
0, 1
```

1st technical:

1. Given a linked list reverse the even nodes in one pass and in $O(1)$ space.

So 1->2->3->4->5->6->7->8 should be converted to 1->8->3->6->5->4->7->2.

2. Given an array containing integers, modify the array such that the 5s are at the end and the rest are at the beginning (maintaining the same order).

2nd technical:

1. 5 minute discussion about my OCR project.

2. Given an undirected graph, count the number of cycles with 3 nodes.

3. What is a spanning tree? Difference from tree, if any.

4. How to find the minimum spanning tree of a graph?

5. Given an array convert it to another array such that the following condition holds:

$a < b > c < d > e < f > g < h$ where the modified array is {a,b,c,d,e,f,g,h}

Input: 1,2,3,4,5,6
Output: 1,3,2,5,4,6

3rd technical:

1. What do you know about memory management in Operating Systems? What is segmentation? What is paging?

2. Design problem: Given a station with n platforms. So each platform has one line. But these n lines join into one, after leaving the platform (on both sides). Each train has to wait a minimum of x minutes in the platform. Trains arrive from both ends. If all the platforms are occupied they wait. There is also a point beyond the end of the platform (on both sides). This point indicates that an incoming train has to wait at that point until a leaving train (from that end) passes that point. Design the whole system.

3. How are big files stored in memory? What are the uses of B-tree? How is it more useful than BST?

4. Given one billion file indexes and said that n files are missing. How would you identify the file indexes of those who are missing?

4th technical:

1. Given an array of integers. This array denotes our own ascending order of the elements. So if the array is {2,3,1,4}, by mathematics we can say that $2 < 3 < 1 < 4$. Given another array, sort this new array in ascending order. Let's say the new array is {1,2,4,3,5,4,9,2}, output will be {2,2,3,1,4,4,5,9}. Note that since 5 and 9 do not occur, they are sorted by actual ascending order at the end. 2. Integers are coming in a stream. A special integer (say -9999) denotes reset. Design a data structure such that when the special integer comes the previous elements are printed in a zigzag way and all the elements are deleted (reset). And then continues to accept other integers. What DS will you use?

Say the input is 1,2,3,4,5,6,7,8,-9999,0,1,100,-9999,-9999,500
Output will be 1,8,2,7,3,6,4,5 0,100,

If you like GeeksforGeeks and would like to contribute, you can also write an article and mail your article to contribute@geeksforgeeks.org. See your article appearing on the GeeksforGeeks main page and help other Geeks.

[All Practice Problems for Amazon !](#)

My Personal Notes *narrow_drop_up*

Add your personal notes here

Save