

Amazon Interview questions

1. Given a Binary Search Tree, write a program to print the kth smallest element without using any static/global variable. You can't pass the value k to any function also.
2. What are the 4 basics of OOP?
3. Define Data Abstraction. What is its importance?
4. Given an array of size n. It contains numbers in the range 1 to n. Each number is present at least once except for 2 numbers. Find the missing numbers.
5. Given an array of size n. It contains numbers in the range 1 to n. Find the numbers which aren't present.
6. Given a string, find the first un-repeated character in it? Give some test cases
7. You are given a dictionary of all valid words. You have the following 3 operations permitted on a word: delete a character, insert a character, replace a character. Now given two words - word1 and word2 - find the minimum number of steps required to convert word1 to word2. (one operation counts as 1 step.)
8. Given a cube of size $n \times n \times n$ (i.e made up of n^3 smaller cubes), find the number of smaller cubes on the surface. Extend this to k-dimension.
9. What is a C array and illustrate the how is it different from a list.
10. What is the time and space complexities of merge sort and when is it preferred over quick sort?
11. Write a function which takes as parameters one regular expression (only ? and * are the special characters) and a string and returns whether the string matched the regular expression.
12. Given n red balls and m blue balls and some containers, how would you distribute those balls among the containers such that the probability of picking a red ball is maximized, assuming that the user randomly chooses a container and then randomly picks a ball from that.
13. Find the second largest element in an array with minimum no of comparisons and give the minimum no of comparisons needed on an array of size N to do the same.
14. Given an array of size n, containing every element from 1 to n+1, except one. Find the missing element.
15. How do you convert a decimal number to its hexa-decimal equivalent. Give a C code to do the same
16. Explain polymorphism. Provide an example.
17. Given an array all of whose elements are positive numbers, find the maximum sum of a subsequence with the constraint that no 2 numbers in the sequence should be adjacent in the array. So 3 2 7 10 should return 13 (sum of 3 and 10) or 3 2 5 10 7 should return 15 (sum of 3, 5 and 7)
18. You are given some denominations of coins in an array (int denom[]) and infinite supply of all of them. Given an amount (int amount), find the minimum number of coins required to get the exact amount. What is the method called?
19. Given an array of size n. It contains numbers in the range 1 to n. Each number is present at least once except for 1 number. Find the missing number.

Amazon Internship Interview Round 1

1 There are two urns A and B and an equal number of red balls and blue balls. How do you place the balls in the urns such that the probability of picking up the red ball is greater?

2 Two trains enter at the opposite sides of a tunnel of length L with speeds ' V '. A particle enters the tunnel at the same time with a speed ' v ' and it vibrates in the tunnel [i.e. if it reaches the end of the tunnel then it comes back]. What is the position of the particle by the time the 2 trains meet?

3 Write an sql query to sort a table according to the amounts in a row and find the second largest amount.

4 How do you kill a process?

5 What is the functionality of a top command?

6 Given an array of size $n+1$ which contains all the numbers from 1 to n . Find the number which is repeated in $O(n)$ time. How do you proceed with the same with floating numbers from 0 to 1 instead of 1 to n ?

7 Design a datastructure to represent the movement of a knight on a chess board

8 Write an algorithm to traverse a knight covering all the squares on a chessboard starting at a particular point.

Amazon Internship Interview Round 2

Why do you like to work with us?

What work are you expecting?

Tell me about any of your experience ?