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Amazon Interview | Set 9

- Difficulty Level :\nExpert
- Last Updated :\n28 Apr, 2017

How did it start?

I completed and submitted the 4 programs at the link: https://amazon.interviewstreet.com/challenges/dashboard/#problems

Later on I came to know that the recruitment through this link is over. So I contacted a few of HR persons at Amazon, and I got a new link for online programming test.

Online Programming Round: (5 methods, 2 hours)

1)\xc2\xa0\xc2\xa0\xc2\xa0\xc2\xa0 A sentence is given which contains lowercase English letters and spaces. It may contain multiple spaces. Get first letter of every word and return the result as a string. The result should not contain any space. Complete the following method:

static String getFirstLetterWord(String text) {\xc2\xa0 }

2)\xc2\xa0\xc2\xa0\xc2\xa0\xc2\xa0 Given an array. Iterate it for the given number of times. And then return the summation of the resultant elements.

Ex: Array is { 1,2,5,6}, N=2

After 1st iteration: {2-1, 5-2, 6-5}={1,3,1}

After 2nd : {3-1, 1-3}={2,-2}

Sum is 2\xc2\xa0 + (-2) = 0

If only one element remains in the array, the element remains the same after applying the iteration. Complete the method.

static int iterateSequence(Vector<Integer> a, int N) { }

3)\xc2\xa0\xc2\xa0\xc2\xa0\xc2\xa0 Find Nth largest element in the BST. Complete the method.

staticintnLargeBST(Node root, int N) {}

Given that

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\r\nclass Node\r\n{\r\n    Node left, right;\r\n    int data;\r\n    Node(intnewData)\r\n    {\r\n        left = right
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4)\xc2\xa0\xc2\xa0\xc2\xa0\xc2\xa0 Swap adjacent nodes in the linked list. Change the links, not the data. Complete the method.

Ex:1, 2, 3, 4

o/P: 2, 1, 4, 3

ex: 1,2,3,4,5

op: 2, 1, 4, 3, 5

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\r\nclass Node {\r\n  Node next;\r\n  int val;\r\n}\r\n\r\nstatic Node swapAdjacentNodes(Node head) {}
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5)\xc2\xa0\xc2\xa0\xc2\xa0\xc2\xa0 Find length of the Longest-Increasing-Subsequence.

e.g.1.
i/p: 1, 2, 3
o/p: 3
explanation: the sequence is increasing

e.g.2
i/p: 4,5,6,7,8,1,2,1,2,3,5,4,6,7,8,9,0,6,7
o/p: 8
xp: 1,2,3,4,6,7,8,9

e.g.3
i/p: 1,2,9,4,5,10,7,8
o/p: 6
xp: 1,2,4,5,7,8

e.g.4
i/p: 20, 3,22, 5,50, 34, 49, 91,110
o/p:6
xp: 20,22,34,49,91,110
OR
3,5,34,49,91,110

Complete the method.

static int lengthLIS(Vector<Integer> sequence) {}

Telephonic Interview 1:

1)\xc2\xa0\xc2\xa0\xc2\xa0\xc2\xa0 A M x N matrix, filled with 0s and followed by 1s. Find the row which contains minimum number of 0s. E.g.

0 0000 1

0 0 1 111

0 00 1 11

The answer is 2nd row. (Row index: 1)

2)\xc2\xa0\xc2\xa0\xc2\xa0\xc2\xa0 Find whether given two strings are anagrams of each other.

3)\xc2\xa0\xc2\xa0\xc2\xa0\xc2\xa0 Given an array of size N, move the first d elements to its last.

e.g. {1, 2, 3, 4, 5}, d=2

- output: {3, 4, 5, 1, 2}

Telephonic Interview 2:

1)\xc2\xa0\xc2\xa0\xc2\xa0\xc2\xa0 Given a BST, find the node which contains the value which is equal to (or lowest greater than) the input value.

2)\xc2\xa0\xc2\xa0\xc2\xa0\xc2\xa0 Kadane\xe2\x80\x99s algorithm for 1 dimensional array.

3)\xc2\xa0\xc2\xa0\xc2\xa0\xc2\xa0 Given a point P and other N points in two dimensional space, find K points out of the N points which are nearer to P.

Face-to-face Interview 1: (Hyderabad, Date: November 08, 2012)

1)\xc2\xa0\xc2\xa0\xc2\xa0\xc2\xa0 Given a Singly Linked List which contains integers, bring odd values in the beginning and even values at the end. The relative order of odd values, and that of even values should be maintained as it is.

e.g. 34, 45, 78, 10, 33, 5

- o/p: 45, 33, 5, 34, 78, 10

2)\xc2\xa0\xc2\xa0\xc2\xa0\xc2\xa0 Given N sets of integers, remove some sets so that the remaining all sets are disjoint with one another. Find the optimal solution so that the number of sets remaining at the end is maximum.

Face-to-face Interview 2 (with a manager):

1)\xc2\xa0\xc2\xa0\xc2\xa0\xc2\xa0 Given an array of size N, a window of size W slides over it by increment of slide S. If the window reaches to the end, we should stop there. Find a formula in form of N, S, W so that we can find the number of valid windows. Write a program to find minimum in every window and print it. Optimize it.

e.g. {1,2,3,4,5}, W=2, S=1
first window: {1,2} min=1
second window(increment by S=1): {2,3}, min=2

\xe2\x80\xa6

last window: {4,5}, min=4
The array might not be sorted. I have taken sorted array for simplicity.

Face-to-face Interview 3:

1)\xc2\xa0\xc2\xa0\xc2\xa0\xc2\xa0 Trim the Given BST by given min and max values. It means remove the nodes which have values less than min or greater than max. Write iterative and recursive \xe2\x80\x93 both the solutions.

2)\xc2\xa0\xc2\xa0\xc2\xa0\xc2\xa0 Given an array of strings, find the string which is made up of maximum number of other strings contained in the same array.

e.g. \xe2\x80\x9crat\xe2\x80\x9d, \xe2\x80\x9dcat\xe2\x80\x9d, \xe2\x80\x9cabc\xe2\x80\x9d, \xe2\x80\x9cxyz\xe2\x80\x9d, \xe2\x80\x9cabcxyz\xe2\x80\x9d, \xe2\x80\x9cratcatabc\xe2\x80\x9d, \xe2\x80\x9cxyzcatratabc\xe2\x80\x9d
Answer: \xe2\x80\x9cxyzcatratabc\xe2\x80\x9d
\xe2\x80\x9cabcxyz\xe2\x80\x9d contains 2 other strings,
\xe2\x80\x9cratcatabc\xe2\x80\x9d contains 3 other strings,
\xe2\x80\x9cxyzcatratabc\xe2\x80\x9d contains 4 other strings

3)\xc2\xa0\xc2\xa0\xc2\xa0\xc2\xa0 Find integer value of sqrt(N). Do not use any library functions or any mathematical solution.

Face-to-face Interview 4 (with the manager of the unit of opening):

1)\xc2\xa0\xc2\xa0\xc2\xa0\xc2\xa0 Given a 2-dimensional array of integers, find the value 1 in the array, and set all those rows, and columns to 1, which contains one of the values as 1.

2)\xc2\xa0\xc2\xa0\xc2\xa0\xc2\xa0 Suppose you are working in companies like naukri.com. You need to collect email Ids and contact numbers of all the Software Engineers aged between 25 to 40, in India. How will you do that?

3)\xc2\xa0\xc2\xa0\xc2\xa0\xc2\xa0 Suppose a person of the age of your grandfather works on computer. He knows little about the computer. And he complains that it was working fine, but for last 2 days, it has become very slow. How will you solve it? What could be the reasons?

4)\xc2\xa0\xc2\xa0\xc2\xa0\xc2\xa0 Design an IVR system for a Restaurant in which customers can book their tables for lunch and/or dinner. Advance booking for 2 or 7 days/as you wish. After the request from user, respond to him that you will confirm the request within 5 minutes. Check availability and send SMS confirming the same. If the SMS is delivered then assume that the customer is genuine. If the SMS is not delivered properly, discard the user request, as it is not genuine.
i)\xc2\xa0\xc2\xa0\xc2\xa0\xc2\xa0\xc2\xa0\xc2\xa0 How can you take names and email Ids of the customers during the process?
ii)\xc2\xa0\xc2\xa0\xc2\xa0\xc2\xa0 What can you do for repeat customers? How will you identify the repeat customers?
iii)\xc2\xa0\xc2\xa0 If there is request for a team size greater than the table size, what will you do? E.g. request for 10 persons when table sizes are 6, 4 and 2.

All the Best!

Thanks to **Hitesh** for sharing Amazon Interview experience. 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.

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