b'

Microsoft Interview | Set 27

- Difficulty Level :\nMedium
- Last Updated :\n10 Jan, 2019

Round 1: (1 h)
==========

1. Q1. Design a Garbage collector like java. How would you detect depended reference loop?
   Hist : Class design, Cycle detection algorithms for disjoint graph(List of connected graph)
2. Q2. Find an element in a sorted rotated array in O(logn) complexity.

Round 2:(1.h 15min)
==========

1. Q1. Given a sorted array having duplicate elements,how would you find first index of a given element in O(logn).
   Write code for it. Change the condition to find out last index of that elements.
   [Hint Binary search]
2. Q2. You have a dictionary of words. Given a word, print all anagram are in dictionary . State the data structure to be used to solve this problem.
3. Q3. Design a Chip-Encryption system. Which will do following operation:
   - Take a word from user
   - Encrypt the word by some Private or public key cryptography or any other algo.
   - Transmit the encrypted word by TCP or UDp or SSL.
4. Design the class diagram using OOD. Which design pattern you are using to achieve this.

Round 3:(1.h 15min)
==========

1. Q1. In a plane n points (X and Y) is given. How will you find out maximum co-liner points. Extend this algorithms. it for point(x,y,z) in 3D plane.
2. Q2. Reverse a 32-bit integers. write code for it.
3. Q3. What the different issue in multi-threading ? What is the difference between mutex and semaphore.
4. Q4. You have a file with million words in it. Find most frequent 10 word in that file. Node that you can store all word in memory.
   (Note : Min-Heap + List)

Round 4 :
Skipped \xe2\x80\xa6 \xf0\x9f\x99\x82

Round 5(2h 30 min)
==========

1. Q1. You are given a Text, where all space, full stop and all punctuation mark is removed. You want to reconstruct the text by putting spaces between words.
   A dict is given and following API is also given.
   - Decide if the text can be converted a sentence with valid words or NOT.
   - Find how many way you can do the reconstruction of the text.
   - Find what is the minimum number of space can be used for this reconstruction.
   - For case (c) find out the indexes where you suppose to put a space.
   - Now recover the text to sentence in place .

Subsequent Question:

- 1. Why Greedy technique will not work for this?
- 2. yes ! Backtracking will work, what is the problem of using backtracking ?
- 3. Illustrate and explain how the solution is contracted from the Dynamic table ?
- 4. Write the correct working code for (c),(d),(e).
- Q2. Given a BST, find out the minimum length form root to leaf with sum S. Note that:
  - Path from root to leaf node.
  - Sum of node of the path is S
  - if multiple such path exist, print minimum length path.
  - What is advantage of BST rather than BT used for this algorithm, how it improve the performance. in BST, is it required to explore both side ?
  - Write working codes for it.

Status: Selected ! (The interview call was for SDE-I, but they offer me for SDE -II(L61) position)

Many many congratulations to the author. 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 Microsoft !

My Personal Notes\n*arrow_drop_up*

Add your personal notes her

Save

'