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Amazon Interview Experience for SDE-2

- Difficulty Level :\nExpert
- Last Updated :\n06 Aug, 2019

1st Round :

Q 1. Given an input string (`s`) and a pattern (`p`), implement wildcard pattern matching with support for\xc2\xa0`\'?\'`\xc2\xa0and\xc2\xa0`\'*\'`.

\xe2\x80\x98?\xe2\x80\x99 Matches any single character.
\xe2\x80\x98*\xe2\x80\x99 Matches any sequence of characters (including the empty sequence).

Example :

Input:
s = \xe2\x80\x9cadceb\xe2\x80\x9d
p = \xe2\x80\x9ca*b\xe2\x80\x9d
Output:\xc2\xa0true
Explanation:\xc2\xa0The first \xe2\x80\x98*xe2\x80\x99 matches the empty sequence, while the second *xe2\x80\x98*\xe2\x80\x99 matches the substring \xe2\x80\x9cdce\xe2\x80\x9d.

Q 2.\xc2\xa0https://www.geeksforgeeks.org/min-cost-path-dp-6/

Q3 . Given an array\xc2\xa0`nums`\xc2\xa0of\xc2\xa0*n*\xc2\xa0integers, are there elements\xc2\xa0*a*, \xc2\xa0*b*, \xc2\xa0*c*\xc2\xa0in`nums`such that\xc2\xa0*a*\xc2\xa0+\xc2\xa0*b*\xc2\xa0+\xc2\xa0*c*\xc2\xa0= 0? Find all unique triplets in the array which gives the sum of zero.

Example:

Given array nums = [-1, 0, 1, 2, -1, -4],

A solution set is:
[
[-1, 0, 1],
[-1, -1, 2]
]

2nd Round

Q 1 Given an array A of strings, find any smallest string that contains each string in\xc2\xa0`A`\xc2\xa0as a substring.

We may assume that no string in\xc2\xa0`A`\xc2\xa0is substring of another string in\xc2\xa0`A`.

Example 1:

Input:\xc2\xa0[\xe2\x80\x9calex\xe2\x80\x9d, \xe2\x80\x9cloves\xe2\x80\x9d, \xe2\x80\x9cleetcode\xe2\x80\x9d]
Output:\xc2\xa0\xe2\x80\x9calexlovesleetcode\xe2\x80\x9d
Explanation:\xc2\xa0All permutations of \xe2\x80\x9calex\xe2\x80\x9d,

\xe2\x80\x9cloves\xe2\x80\x9d, \xe2\x80\x9cleetcode\xe2\x80\x9d would also be accepted.

Q 2\xc2\xa0https://www.geeksforgeeks.org/minimum-time-required-so-that-all-oranges-become-rotten/

Q 3\xc2\xa0https://www.geeksforgeeks.org/lowest-common-ancestor-in-a-binary-search-tree/

Round 3

Q1 Given an unsorted array, find the maximum difference between the successive elements in its sorted form.
Input:\xc2\xa0[3, 6, 9, 1]
Output:\xc2\xa03
Explanation:\xc2\xa0The sorted form of the array is [1, 3, 6, 9], either
(3, 6) or (6, 9) has the maximum difference 3.

Q 2
Input binary is given

Example :\xe2\x80\x9c010\xe2\x80\x9d
replace
0 with 01
1 with 10.
given k, m
k is iteration, m is index
tell what is present at m index

example k= 2, m=3
010
iteration 1\xe2\x80\x93011001
iteration 2\xe2\x80\x93011010010110

ans : 0 (value at 3rd index, 2nd iteration)

Q 3\xc2\xa0https://www.geeksforgeeks.org/egg-dropping-puzzle-dp-11/

Round 4 (Design)

Design Amazon Locker
HLD, class diagram, Scaling, security issues. how will you handle security issues.
Also design amazon lockers reporting Manager tool for developers (if developer wants to know any status of any locker\xe2\x80\xa6 then a detail report should be provided for developer)
Detailed discussion went for around 1.5 hours.
Tip : Make your design Asynchronous

Round 5 Hiring Manager

Q 1
Lot of Behavioural Questions
Biggest Achievement and failure
Conflict with Manager, how did you resolved
How can you improve your best work you have done till now

Q2
Design Snake & Ladder multiplayer game

HLD and LLD both were discussed in detail
How will you store your view on the server (Big discussion on it)
How will snake and ladders coordinates data will be stored on the server of current game session, if Snake and Ladder board is random for every game session (position of snakes and Ladders coordinate position should be random for every session of game)

Round 6 (Bar Raiser)

Q 1 Lot of Behavioural Question
Q2 Design Inventory for 1000 employees in Amazon for any product of your choice(like laptops etc) class level diagram, HLD
Main Emphasis was on Design patterns used in class diagram
Q3
Given a\xc2\xa0**non-empty**\xc2\xa0array of numbers, a0, a1, a2, \xe2\x80\xa6, an-1, where 0 ? ai < 231.

Find the maximum result of ai XOR aj, where 0 ?\xc2\xa0*i*, \xc2\xa0*j*\xc2\xa0<\xc2\xa0*n*.

O(N) complexity was expected
Example:

Input:\xc2\xa0[3, 10, 5, 25, 2, 8]

Output:\xc2\xa028

Explanation:\xc2\xa0The maximum result is\xc2\xa0**5**\xc2\xa0^\xc2\xa0**25**\xc2\xa0= 28.

Result : Hired !

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