Truminds Software Systems

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Round 1 - Online Assessment (1h 15m)

- Platform: **HackerEarth** - they sent a practice test link as well on which we could familiarize ourselves with the platform before the actual test.
- MCQs based on quantitative aptitude, logical reasoning, code output, time and space complexities, CSA, OS, CN.
- 1 coding problem - Given N strings and Q queries of the form: L R K, for each query, find the K-th character in the string formed by concatenating the strings in the range of indices [L, R] and then sorting it. (Detailed problem statement is at the last page).

Round 2 - Technical Interview (1h)

- Platform: **MS Teams**
- Interviewer went through my resume and asked questions related to subjects I studied, and what I learnt from them.
- Then it led to an in-depth project discussion (I had projects on IPC mechanisms and compiler design which he found interesting). Most of the interview consisted of project discussion. He asked me to explain what I have done, and show relevant code snippets relating to the keywords that I had mentioned in my resume.
- Asked basic OOP questions (what is constructor, what is a destructor, etc).
- Some language specific questions (e.g.: What are macros in C++?)
- At the end, he complimented me on the way I explained things.

Round 3 - Technical Interview + HR Round (30 mins)

- Platform: **MS Teams**. Two interviewers, one was the CEO.
- Started with discussion on one of my projects on Web Scraping, which quickly led to questions on Networking:
    - HTTP protocol, HTTP port number, Client-Server Communication Overview, HTTP vs HTTPS (since I mentioned TLS here, the discussion shifted to the Transport Layer)
    - TCP vs UDP, name any field in TCP header (and he asked counter questions based on my responses).

- Explain what happens when you switch on a computer (the complete booting process).
- Two processes want to communicate. How will you accomplish this?
  - This was an open-ended question. Make sure to discuss various options depending on the use-case and type of communication required. (e.g. pipes are useful for one-way communication; sockets for two-way communication over a network, etc).

- He asked whether I use Linux or not. I said yes, and there were a few basic questions on that. How did I learn to use it, what does the **top** command do, etc.
- What do you know about Truminds?
- What domains of CS interest you the most?
- Discussion on Family Background.

Verdict: Selected for 6 months Internship + FTE

Tips:

- Make sure to go through the projects you've listed on your Resume before the interview.
- The interview can go off on a tangent depending on what you speak, so make sure to choose your words carefully.
- The day of the interview is likely to be quite exhausting. Sleep well before the day of the interview and stay hydrated.

OA Coding Problem

Given a list that contains **N strings** of lowercase English alphabets. Any number of contiguous strings can be found together to form a new string. The grouping function accepts two integers **X** and **Y** and concatenates all strings between indices X and Y (inclusive) and returns a modified string in which the alphabets of the concatenated string are **sorted**.

You are asked Q questions each containing two integers L and R. Determine the **K** th. character in the concatenated string if we pass L and R to the grouping function.

Note: It is always guaranteed that the Kth position is valid

Input Format

- First Line: N(number of strings in the list)
- Next N lines: String **s_i**
- Next line Q(number of questions)
- Next Q lines : Three space-separated integers L, R and K

Output Format

For each question, print the **K** th character of the concatenated string in a new line.

Sample Test Cases

Sample Input

- 5
- aaaaa
- bbbb
- ccccccd
- eeeee
- ddddd
- 3
- 3 3 3
- 1 5 16
- 3 5 15

Sample Output

- c
- d
- e

Explanation

- Q1 Grouped String *cccccd*. 3rd character is c
- Q2 Grouped String *aaaaabbbbcccccddddddeeeee*. 16th character is d
- Q3 Grouped String *cccccddddddeeeee*. 15th character is e

Input

- 5
- zpqrs
- efghi
- jklmn
- abcde
- 2
- 3 3 3
- 1 5 6

Output

- g
- f