Localyze Coding challenge

The aim of this challenge is to get to know you and your basic coding skills. There's no time limit on the challenge.

If you have any questions, feel free to ask us by email (tech@localyzeapp.com).

What is expected of you?

- Choose **at least one** of the following challenges and complete it using **Ruby or Javascript** (unless the task requires the tech specifically).
- You can share your solution as a **GitHub/GitLab repository or a Github Gist**. If you use a private repository on GitHub, please give access to the following users: `pecavalheiro, TamerShlash, Javieratapiab, jvaladas, franziloew, oizuldan, apvale, rssilva`
- You must leave us **clear instructions on how to run your solution**.
- You can add test cases, documentation, etc. It's up to you.

What is NOT expected from you

We do NOT expect you to:

- Spends hours on your solution
- Show off your architectural skills. Basic clean coding principles are good enough. We expect you to be pragmatic

Challenge 1

Given a word, write an algorithm that returns the sequence of a specific character that appears the most in sequence. If there are many sequences like that, return the first longest sequence.

Examples:

- Given the input `"Pressuuuuuure"` the output is `"uuuuuu"`

- Given the input `"Pressuure"` the output is `"ss"`
- Given the input `"Boat"` the output is `"B"`
- Given the input `"A hot  dog"` the output is `"  "` (2 spaces!)

Challenge 2

Given a set of numbers, find the subset in which the sum of the elements is the maximum sum.

Example:

Given the set of elements `[2, -4, 6, 8, -10, 100, -6, 5]`

The maximum sum subset is: `[2, -4, 6, 8, -10, 100 , -6, 5]`

The program must return the position of the first and last element of the subset. In this example, the positions 2 and 5, considering the first position with index 0.

Challenge 3

Given a string `s` consists of some words separated by some number of spaces, return the length of the last word in the string. A word is a maximal substring consisting of non-space characters only.

Constraints

- `1 <= s.length <= 104`
- s consists of only English letters and regular spaces `' '`.
- There will be at least one word in s.

Examples:

- Given the input `s = "Hello World"` the output is `5`
- Given the input `s = " fly me   to   the moon  "` the output is `4`
- Given the input `s = "luffy is still joyboy"` the output is `6`

Challenge 4

Code a list of users with countries `type User = { name: string; country: string }` in React.js.
You should be able to filter users from a specific country.

What questions you would ask your product manager if you received this task?

Challenge 5

Given two arrays of integers (lengths n and m), find the symmetric difference between them. Items are unique within a single array.

Constraints

- `n, m <= 100`

Example:

Given the set `[1, 2, 3]` and the set `[3, 4]` the output would be `[1, 2, 4]`