Technical Assignment

Congratulations,
You made it through the first stage of the process of hiring and were accepted for the technical assessment. The recruitment process will be finished after your technical evaluation is successful.

During the evaluation process, the member of our team who sent you this document is designated as your advisor. You can communicate with each other via email up until the conclusion of the evaluation and ask any questions you may have. When you inform your advisor that your tasks are complete, they should get the questions you have answered.

Please read thoroughly as we have described the key elements for a smooth process.

- The task list must be completed within a week, barring any emergency.
- The first, second, and third questions in the task set must be written in Go. In the task number 4 details, we have described what you would need and how to utilize what you can use.
- We ask that you upload your study to GitLab. Please keep in mind that sharing early on and using Git regularly will have a favorable impact on the outcome.
- Please don't be afraid to ask your adviser questions or perform online research. Researching is a talent that is extremely valuable in our firm's culture because it is just as vital as knowing something.
- For removing any possibility of confusion, these are the criterias that we are evaluating.
    - Process of project development
    - Usage of GIT
    - Project Structure
    - Variable and function naming schemes (In English)
    - Writing tests
    - Adding comments (In English)
    - Documentation (Readme etc, In English)
    - Ability to adapt to new technologies
    - Delivery timing
    - Communication with the advisor

We hope to hear from you soon,

With best regards,
Fill-Labs

Q1) Write a function that sorts a bunch of words by the number of character “a”s within the word (decreasing order). If some words contain the same amount of character “a”s then you need to sort those words by their lengths.

Input : ["aaaasd", "a", "aab", "aaabcd", "ef", "csssssd", "fdz", "kf", "zc", "lklklklklklklkl", "l"]
Output : ["aaaasd", "aaabcd", "aab", "a", "lklklklklklklkl", "csssssd", "fdz", "ef", "kf", "zc", "l"]

Q2) Write a recursive function which takes one integer parameter. Please bear in mind that finding the algorithm needed to generate the output below is the main point of the question. Please do not ask which algorithm to use.

Input : 9
Output : 2 4 9

Q3) Write a function which takes one parameter as an array/list. Find most repeated data within a given array.

Test with different datasets.

Input : ["apple","pie","apple","red","red","red"]
Output : "red"

Q4) Write a user management project which will include;

- A master view which will list all users in a data grid. This screen will assist users with all CRUD operations. User will be able to press 3 buttons (New,Edit,Delete). Edit and Delete operations will require row selection from the data grid.
- A detailed view which will show the fields as form. Form will have 2 buttons (Action, Back). Text of the action button will change according to the operation opened the detail view. For example if the "New" operation is selected from the master, the detailed view action button text will be "Create". Please see the mappings below.
    - New: Create
    - Edit: Save
    - Delete: Delete
- A REST service to support functions below. Please note that API paths and HTTP methods and HTTP Statuses are important for us.
    - Returns all users
    - Return the user with the desired "id"
    - Save the given user.
    - Update data of the user with the desired "id"
    - Delete the user with the desired "id"
- Backend must be written with Go. You are free to choose any database you desire. Remember all operations must be persistent.
- Frontend must be written with JS/TS using React.