QMarkets – Senior engineer – home exercise

Hello there,

The exercise is to create efficient user search over SQL DB. In this exercise you will get tables with information of 100 users (random information) but your solution should be aimed to at least DB with 500K users.

For your solution you can modify those tables or add more tables to have the efficient user search algorithm.
If you need you can add more users to demonstrate your logic.

Think of UX/UI aspects of your solution.

Attach SQL dump to create two tables
1. Users table that includes:
    a. uid – User id
    b. name – Username
    c. mail – email address
2. Profile values that include.
    a. Id - Unique id
    b. uid – User id (same as in the users)
    c. fid – Profile Id,
        i. '3' stand for the User Full name
        ii. '4' stand for the region of the user
        iii. '5' stand for the department

The requirements are as follow:
1. The user search base on the "full name", "email" and "username" only and by that order, the result of "full name" is double weight then "email" and email is double weighted than "username"
2. The search is on the prefix of the values (meaning 'start with')
3. The values should be split as follow:
    a. Full name should be split by space.
    b. Email search should ignore the email address after the '@' and should be split by '.'
    c. Username should be split by '_'.
4. The partial parts have the same weight, for example split the full name you will have first name and last name so the first and the last have the same weight.
5. The search is not case sensitive.
6. The weight of the specific user is sum of all weights
7. The search should start only after typing 2 letter or more.
8. The result should be limited to top 5 results

Example: input 'xyz abc'

The search will find all values start with 'xyz' or 'abc' (order not important – 'abc xyz' will have same results) sum the weights per user and present the 5 top users for this search.

Optional requirement (just as bonus) add filter by region and department.

When you return the solution, please write how long did it took you.

Feel free to ask any questions by mail,

Good luck and may the force be with you.
QMarkets engineering team