Junior Java Developer Technical Assessment

Instructions

In this document, you will find 3 different programming assessments that we would like you to complete at your own pace and you can complete it using any language and/or libraries that you are comfortable with. We will assess your solutions accordingly. However, please bear in mind that you should use the right tool for the right job. **You are expected to consult with sources including text books, internet, etc. and answer in your own words**, but be aware that we may ask about these solutions during the next interview, if we decide to proceed forward with you.

For each assessment, **please list the language, libraries, and frameworks that you are using in your submission as well. You may use a readme file or include it as a comment.** There is also one bonus challenge at the end as well in case you find this assessment easy enough! **We recommend that you read the whole assessment thoroughly before you start.**

Please bear in mind that we will assess your solution in accordance with the time it takes. If you take longer to finish the assessment, we expect the quality of the result to match that amount of time. It will also affect how we perceive your understanding towards programming skills, problem solving skills, your planning skills, and also your creativity as well. Make us feel your passion through your code!

Submission

To submit your assessment to us, push your finished solutions to a GitHub repository and please share with us a link to the repository. If there are any specific instructions in order to run your project, please let us know.

Assessments

Assessment 1: User management module

You are tasked with creating a module to manage the users in the system. You may relate it to any context you are comfortable with but your module has to be able to do the following:

- Create a user (user must contain username and password)
- Update user information
- User may log in using username and password

Your module must contain all the requirements above with a way to run through the whole process through main class, script, etc. and provide us with an instruction on how to run it. You do not need to connect this module with the database or save the data into a file but you may do so as well, otherwise, you can store all the data in the memory and provide us with a script to load your test data into memory. You may also expand on any functionality related to the requirement as necessary to make your solution as complete as you would like.

Assessment 2: Company home page

You are to create a landing page for the business in the same context that you are using for question 1. Your page needs to be able to do the following:

- Contain log-in form.
- Contain navigation bar.
- Contain information explaining about your business.
- Contain a form for the customer to be able to contact you via your email.

You may create it with any library or framework that you are comfortable with and you can be as creative as you want. Please know that if you use a pre-packaged solution like wordpress, shopify, opencart, etc. you will also be assessed as such as well. We are looking for a developer not a designer. Show us what you are made of!

Assessment 3: Report

You are provided with the following SQL create statements. You may use any RDBMS that you prefer. We only need to see the final SELECT statement. You may modify the create statements as you like, but they have to contain the same relation and column name.

```
CREATE TABLE user(
        id INT,
        name TEXT
);

CREATE TABLE activity(
        id INT,
        name TEXT
);

CREATE TABLE user_activity(
        activity_id INT,
        user_id INT,
        occurrence timestamp,
        FOREIGN KEY(activity_id) REFERENCES activity(id),
        FOREIGN KEY(user_id) REFERENCES user(id)
);
```

You are to provide the select SQL statement to get the report for the month of October with the following column:

- user_name
- activity_name
- amount
- first_occurrence
- last_occurrence

The goal of this report is to see what activity that this user does, when was the first time that he did it, and when is the last time he did it.

For example, the report may display as follows.

user_name	activity_name	amount	first_occurrence	last_occurrence
Priya	Login	15	2021-10-01…	2021-10-31…
John	Login	5	2021-10-01…	2021-10-15…
David	View	100	2021-10-01…	2021-10-31...

** … represents the timestamp format. It can be in any format as long as it displays date and timestamp.*

If you do not have RDBMS installed, you may use online SQL editor like https://www.jdoodle.com/execute-sql-online/ to test your solution.

Bonus challenge

You are to combine all 3 solutions that you provide above into the same scope working together. Outside of the instruction of the assessments, you can be as creative as you want and you may combine it with any context that you are familiar with. Let your creativity shine!