Developer Interview Round #3

Project: Net Calorie Tracker

Instructions

Congratulation to the application development round of your interview process with LMD Consulting India Pvt. Ltd. We are glad that you are taking this assessment. The purpose of this exercise is to see your thought process on software development. The project should not take more than 1-2 days of your time and it must be runnable.

You can create a git account of your own and upload your code and any database scripts along with data for your application. This application needs two collections for which the Excel sheets are provided. You can download this document along with the Excel sheets to complete your exercise. You are given 7 days to complete this task. After 7 days and after you have checked in the code and given us git clone access, an interviewer from LMD Consulting will schedule a call with you to go over your code and your thought process behind the code.

We are interested in seeing how you develop and think, so there is no right structure or answer, but you should be able to reason/defend your style of work.

Project Overview

The objective of this project is to develop a net calorie tracker. Net calories are based on the following formula:

Net Calories per day = Food Calories per day – Basal Metabolic Rate – Activities Calories per day

Food that you eat adds to the calories per day; activities consume calories per day and basal metabolic rate (BMR) is the calories your burn without doing anything (by just being alive).

You would need to create a full project for this assignment (we will tell you what technologies to use for this web/app development) do the following:

- Enter user information from the frontend screen to a database
- Load food data table using a database script (XLSX file attached)
- Load activities data table using a database script (XLSX file attached)
- Create a form to enter information for a particular date (you should be able to select up to 30 days in past)

Formulas

Formulas you need:

Men's BMR = 66.4730 + (13.7516 x weight in kg) + (5.0033 x height in cm) – (6.7550 x age in years)

Women's BMR = 655.0955 + (9.5634 x weight in kg) + (1.8496 x height in cm) – (4.6756 x age in years)

Calories out for activities = MET Value * weight in kg * duration in hour

Frontend Requirements

The front-end screen should have:

- Ability to enter user information and then display a list of users – allow View Detail and Delete functionality (Edit is not necessary)
- Once you select a user from the list, allow food data to be entered for that user for a specific day (you should be able to select up to 30 days in past):
    - Calories in:
        - Select food from a drop down, selection portion, and select time (breakfast, lunch, dinner or snack) – upon selection that should show the calories consumed
        - Build this list for a day and at the end show the total calories in
        - You should be able to enter multiple records for food consumed per day
    - Calories out:
        - Select activities from a dropdown, select duration in minutes, and show calories burnt
        - You should be able to enter multiple records for activities performed per day
        - Show BMR calories based on calculation for that day
    - Net Calories
        - Show difference of the two
    - Save all data for the day in your database
- Allow different dates to be selected and that will show data for that particular day

Backend Requirements

The backend needs to in technologies that you are comfortable with and you should build REST APIs for all of the functionalities of the frontend. Be able to show API testing with Postman.

Database Requirements

At least the following attributes should be there in your database for storing static users, activities and food. Additional tables/collections will depend on your application design.

User Collection –

- ID
- Name
- Weight
- Height
- Sex
- Age (based on birthday)

Activities Collection (for importing activities in your DB)

- ID
- Activity Name
- Activity Description
- MET Value

Food Collection (for importing food calories in your DB):

- ID
- Food Name
- Serving Size
- Calories per Serving Size

Next Steps

If you are done, please upload your code and database scripts on **github** and send us a URL to clone. We will call you to review your code with you.

You will be evaluated based on:

- Code quality
- Code structure
- Code economy
- Database design
- Performance consideration

If you have questions, please submit them to hr@lmdconsulting.com and we will get back to you with answers. There is no interactive conversation/Skype available for this project. Do the best you can with your understanding.