You should create a project proposal with the following information:

1. Describe what data is stored in the database. (Where is the data from, and what attributes and information would be stored?)
2. What are the basic functions of your web application? (What can users of this website do? Which simple and complex features are there?)
3. What would be a good creative component (function) that can improve the functionality of your application? (What is something cool that you want to include? How are you planning to achieve it?)
4. Project Title
5. Project Summary: It should be a 1-2 paragraph description of what your project is.
6. **Description** of an application of your choice. State as clearly as possible what you want to do. What problem do you want to solve, etc.?
7. **Usefulness**. Explain as clearly as possible why your chosen application is useful. Make sure to answer the following questions: Are there any similar websites/applications out there? If so, what are they, and how is yours different?
8. **Realness**. Describe what your data is and where you will get it.
9. Description of the **functionality** that your website offers. This is where you talk about what the website delivers. Talk about how a user would interact with the application (i.e., things that one could create, delete, update, or search for). Read the requirements for stages 4 and 5 to see what other functionalities you want to provide to the users. You should include:
    1. **A low-fidelity UI mockup**: What do you imagine your final application's interface might look like? A PowerPoint slide or a pencil sketch on a piece of paper works!
    2. **Project work distribution**: Who would be responsible for each of the tasks or subtasks?
       List of the person responsible for which exact functionalities in section 6. Explain how backend systems will be distributed across members. Be as specific as possible as this could be part of the final peer evaluation metrics.

The database stores information on common foods and products. Specifically, the nutritional breakdown of thousands of consumables. This includes data on a food's protein, carbohydrate, and fat content as well as a further breakdown to show the specific types of protein, carbohydrates, and fats that make up the food item. Details on the number of calories, amount of cholesterol, and amount of water are in the dataset as well. The data also includes vitamin and mineral content. In total, there are over 70 attributes to describe each item of food in terms of their macronutrients and micronutrients. This dataset is from Kaggle and can be found publically. Link: https://www.kaggle.com/datasets/trolukovich/nutritional-values-for-common-foods-and-products.

Creative Component:
We are planning to customize the user's diet based on their individual requirements and utilize visualization diagrams to remind users of their goals.

Project Title: BodyWatch

Summary

BodyWatch is an app that allows you to track all you eat and all you do on a daily basis. Moreover, it will also be able to utilize This app will utilize data from the Apple Health App and an open source nutrition database on Kaggle. The database for this application would be composed of the health entity, user entity, nutrition entity, diet recommendation entity, and app functionality text and images entity. Furthermore the application will be using a basic recommendation algorithm to recommend diets to the users using their health and nutrition data (upon gaining the user's permission to do so).

We will be using a MySQL database, a frontend android UI, and a Spring Boot based support for the web app hosted over GCP (Google Cloud Platform). The primitive schema of the database can be found under the Functionality section of the Proposal. We plan on keeping the UI simple and apt, but building a recommendation system and database handling capabilities in the backend in order to achieve the MVP.

Description:
We aim to develop a mobile application that provides personalized health diet recommendations to users based on food nutrition and user preferences. Additionally, we envision incorporating a visualization component to display the popularity of food items among users. Our focus will be centered on these two main functions in the development of the application. Moreover, users will have the option to register on the platform, where the system will customize a healthy diet tailored to their specific needs.

Usefulness:
The application has three main use cases. The first is for those with medical concerns or those who need to closely monitor certain aspects of their health. For example, the application will be able to track one's cholesterol consumption and can alert the user when their cholesterol intake

surpasses a certain threshold. Another example is the application's ability to track one's carbohydrate consumption and send out alerts upon detection of high sugar intake. The second use case is for those striving to maintain a balanced diet. The application will be able to display and record the overall food consumption of the user. These reports can aid in diet and fitness control. For example, an athlete will be able to monitor their protein intake and choose meals to meet their diet goals. The final use case is for those looking for food recommendations. The application will have the ability to make food recommendations based on certain filters that the user may input. For example, the user may crave a low-calorie snack, and the application will be able to produce a comprehensive list of different foods that meet the user's specifications.

There are numerous similar websites and applications that perform similar functions. MyFitnessPal is the most popular application for diet tracking. Our application is unique from MyFitnessPal and others because of its ability to make food suggestions and health alerts. These two functionalities make our application appropriate to a wider audience as well. Additionally, we plan to incorporate fitness data from smartwatches into our application in order to provide more accurate reports. This would also be a unique feature as the user would not need to manually input fitness data and the application would be able to make real-time suggestions based on this information.

Functionality:
The database structure consists of the following tables:
USER(userid, firstName, lastName, contactInfo, caloriesGoal), FavoriteFood(userid, foodName, foodcal), Food(FoodId, FoodName, totalFat, calories, ...), and DailyGoal(userId,caloriesGoal, FoodId). The application supports CRUD (Create, Read, Update, Delete) operations as follows:

Create:
Users have the ability to create an account on the application.
Users can create a daily goal for their dietary needs.
Users can create a list of their favorite foods.

Read:
Users can access food information through queries and searching for specific food items.

Update:
Users can update their profile information within their account.

Delete:
Users have the option to delete food items from their list of favorites.
In the event that a user no longer wants to use the app, they can delete their profile and terminate their account.

Group work distribution:

Shiqi Liu will be responsible for the implementation of code on the front-end, including the design of the user interface, connecting with the back-end, and updating changes on the front-end.
Manit Niwas will be in charge of the code implementation on the back-end.
Tanishq Khurana will focus on the implementation of the customized diet algorithm and offer assistance with code implementation on both the front-end and back-end.

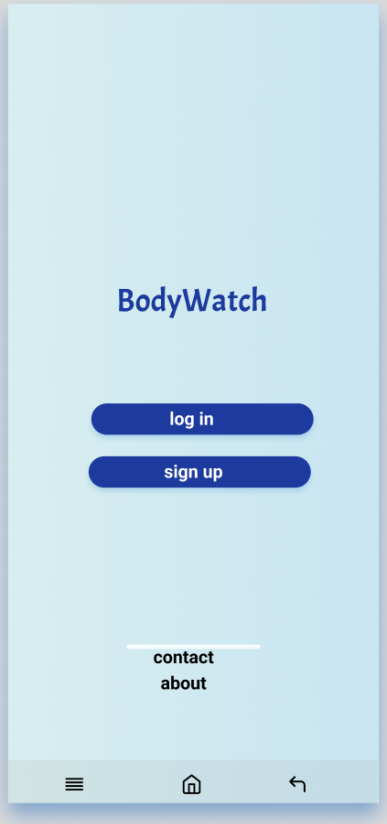
Realness

The activity data is being gathered through the Apple Health App. The app allows a user to export their activity data. This data is in XML form and contains a comprehensive guideline on the metadata to make it more navigable. The data itself contains everything from the source of the data to duration, start and end times, and even the effectiveness of the activity in the form of calorie expenditure during that duration.

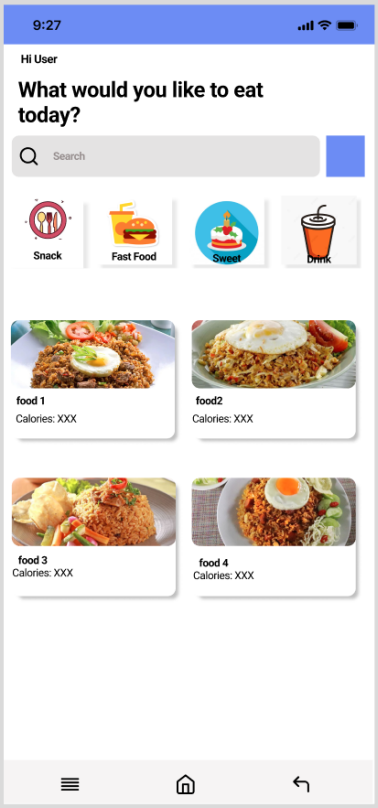
On the other hand, the nutritional data on the food items the user inputs would be achieved by running them through a Kaggle nutritional database: https://www.kaggle.com/datasets/openfoodfacts/world-food-facts, a heavily renowned nutritional dataset based on UK and French nutritional databases. Giving us a tremendous amount of information on the foods that the user is inputting, along with the images, made it an obvious choice for us to use. It has over 100 columns and about 75500 food items with their images (and many more without).

Mockup UI:

Front



Menu



Food Details