Senior Project: Project Specification and Planning

I. Project Overview

I will create a web based application to assist individuals in obtaining their weight loss or weight gain goals. This program will allow users keep track of all the foods that they eat everyday. In addition, it will allow them to monitor their progress towards their goal by keeping track of body measurements like weight, body fat percentage, and circumference measurements. It will also allow users to make note of any comments on their day that may provide clues to what “diet” works best for them. The will also be able to rate subjective indicators of health like mood, alertness, and energy levels. Users will then be able to run reports on the collected data and, hopefully, see some correlation between their dietary choices and their physical well-being (or lack thereof).

Keeping a food log is a very important first step toward reaching one's weight loss (or weight gain) goals. But I will also implement a feature to allow users to preplan their meals ahead of time if they choose. Then logging their daily intake will be as easy as stating whether or not they followed the plan. If they did, they can check a box to show they followed it perfectly for the day. If they only partially followed the plan, they can check the meals, or even just the foods, that they did eat and change the rest. This will make logging a days worth of food very quick and easy. Users will also be able to rate foods, meals, and even daily plans on a scale from 1 star to 5 stars and save them to for later use. This will make planning their daily meals go much faster as they figure out what works best for you. To assist with meal planning, users will be able assign rules to their diet. An example might be “Carbs must be at 60% ± 2% of daily intake” or “Protein must be greater than 30 grams per meal.” They can save these sets of rules for later use.

Finally, I would like to add a shopping list feature to the meal planner. Users enter a range of dates and get a shopping list of foods and quantities they will need. Also, I would like to add a feature to enter the costs of each of the foods purchased. This would enable users to run a report which ranks inexpensive, high-rated meals.

II. The Competition

There are a lot of desktop applications available for monitoring food intake. They range anywhere from $20 on the low-end and go up to around $80. The obvious problems with desktop applications are they are platform specific and licensing usually prohibits installation on more than one machine.
There are also a lot of web based applications available. But the free ones like Fitday.com and LiveStrong.com are not very flexible or even easy to use. They usually dictate to you what your diet should be like. Unfortunately, what works for some will not work for others, so flexibility is a must. These sites also allow users to enter their own foods into the database, so the accuracy of the nutrition data may come into question. Some sites, like SparkPeople.com, do give you a meal plan to follow; but again, what works for some people will not work for others.

I aim to be as flexible as possible in order to meet anyones dietary needs.

III. Implementation

I will implement this solution with a MySQL database with a PHP and JavaScript frontend. Allowing access from any Internet connected browser gives it an advantage over the desktop applications. Being available as a monthly subscription for a small fee is also more attractive than a large up front cost for a desktop application.

I will get my nutrition data from the U.S. Department of Agricultures website. Their database has over 7600 foods. All users will have access to this data. If a user needs to manually add their own food they can, but it will only be available to them. This eliminates the problem of a single user's error affecting every user in the database.

IV. Time Line

Week 2 – April 7th and 8th
    Present plan to class.

Week 3 – April 15th
    Have “food”, “users”, “aliases”, and “measurements” table in database complete and all necessary data imported from the USDA. The USDA data uses many abbreviations that a user would not be expected to know. Therefore, I will create a table of the abbreviations that will allow a user searching for “cheese spread” to find the data which is actually located under “CHEESE SPRD,PAST PROCESS,AMERICAN,WO/ DI NA PO4” in the database. And, since the latter is very ugly and probably has more information than is really necessary, I will allow the user to enter a user-specific alias for this item which will kept in an “aliases” table.

Week 4 – April 22nd
    Have “log in or create a new user” page completed. Complete add new user “wizard.” This will allow users to enter all their starting statistics and give the walk the user through calculating their body fat percentage, metabolic rate, daily maintenance calories. Of course, flexibility is the key so the users will not be restricted by these calculated maintenance calories.

Week 5 – April 28th and 29th
Create “meals” table in database. Allow users to navigate to different days and log their daily food intake for that particular day. Also, enable users to leave comments regarding their day and rate their energy levels and mood. Allow foods to be given “aliases” which will appear on the meal plan and be included in the search results anytime that user searches for foods to add to their log.

Week 6 – May 6th
Begin adding meal planning functionality. After logging in, users will see a monthly calendar that shows which days have meals planned, meals logged, and/or comments saved. Remember, creating and following a meal plan is optional. The users can just log their daily food intake if they choose to. If they navigate to a day on the calendar that does not have a plan, they will be given the choice to create a meal plan or simply log their food for that day. If they go to a day with a meal plan, they will be given the option to edit the plan, or log their food for the day.

Week 7 – May 13th
Continue working on meal planner. Add functionality to allow converting between units. For example, if the food in the database is measured in cups (a unit of volume), we should be able to change tablespoons or other units of volume. Add ability to save meals or days of meals so they can be easily copied to other days in the planner.

Week 8 – May 20th

Week 9 – May 27th
Add report functionality for monitoring progress (body fat loss, weight loss/gain, circumference measurements), calorie consumption, mood tracker.

Week 11 – June 9th
Add shopping list functionality. Finalize project.