Project Description:
Health Tracker

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Quantifying self [3] has become quite popular in the recent years as people track their activities and food consumption to gain insight into their fitness.

In this project you will develop an application to track food consumption and activities. Based on this data you will provide the user information about their performance in a given time interval. The USDA Food Database [1] provides an API that can be used to fetch food related nutritional data.

The user will be able to provide *profile* information, such as:

- Date of birth
- Gender
- Height
- Weight
- Notes: Goals, desired weight, nutrition, etc.

User must be able to update weight as they lose or gain weight. The various updates must be kept as a history. Other fields can be modified.

The user also be able to add information about *food consumed* and *energy expended*[1]. The food consumed will be entered using information from an external DB (such as [1]). User will be able to search and find the type of food and enter the quantity so that the application can determine the nutritional value.

Similarly, the user will enter information about energy spent by entering information about the type of activity and duration. The application will calculate total expenditure.

Based on the information provided, the system will compute information about the user's energy intake and output as well as the balance (in terms of calories). It will provide ideal requirements for the given profile for calories, gender, height). It will show information about the food in terms of its weight and percentage of recommended intake (based on published

[1] http://www.nutristrategy.com/activitylist4.htm

recommendations[2]). It will calculate BMI (Body Mass Index) [2] according to

$$BMI = \frac{Mass(kg)}{Height(m)^2}$$

The system will also keep a list of foods that a person has had before (*My Foods*). The user will be able to search and browse these items and see their details.

Finally the system will show the trend of nutritional and energy output for a given interval.

An important consideration is to gain and keep the attention of the users so that they enter data regularly and improve their fitness. User experience must be motivating.

The system may be developed using Tomcat/Java or Tornado/Python.

References

[1] N. A. Library. Usda food composition databases – agricultural research service. `https://ndb.nal.usda.gov/ndb/doc/`, 2016. Accessed: 2016-09-20.

[2] Wikipedia. Body mass index — wikipedia, the free encyclopedia, 2016. [Online; accessed 21-September-2016].

[3] Wikipedia. Quantified self — wikipedia, the free encyclopedia, 2016. [Online; accessed 21-September-2016].

[2] see `http://www.fda.gov/Food/GuidanceRegulation/GuidanceDocumentsRegulatoryInformation/LabelingNutrition/ucm064928.htm`