North South University
Department of Electrical & Computer Engineering
Project Proposal
Group No: 12
Fall 2020
Project Name: Fit Foodie
Course No: CSE 299 **Sec:** 02
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Git Repository: https://github.com/NSU-FA20-CSE299-2/Group12

Introduction

Nothing beats a hearty meal after a hectic day, that is unless it contributes to your waistline. It becomes extremely difficult to keep track of what you eat, when you eat, and where you eat amidst your busy day. We believe this should not be the case, and one should easily and reliably be able to plan their nutrition intake.

Our application is designed to recognize the type of food you are eating simply through an image taken on the phone, approximate the nutrition and quantity of said food, and keep track of it. Furthermore, it will recommend foods that it finds deficient based on your history/habit and your selected preference.

For example, if you have been eating solely vegetables the past week and your selected preference is “Gain Muscles”, it will recommend high protein meals as your next goals. Moreover, it will also have GPS integration that will be able to recognize the current restaurant you are at when you go outside, and quickly pull down any relevant information regarding the type of cuisine, suggested menu items, nutrition etc.

Social Impact

Our application attempts to do away with the cumbersome process of manually tracking your food habits. This frees up the busy schedule of a user. Nutrition information can also be very dense and requires some scientific background to interpret. By automating this process, we give the user an accessible way of following good food habits.

Could there be any unintended consequences? Possibly. It might accidentally cause our users to overestimate their confidence in their diet and thus forgo any medical advice from professionals. We will combat this by explicitly stating that this app is simply a guideline, NOT a definite replacement for medical advice.

To summarize, not only are we freeing up the users time, but we are also making it simpler for her/him to diet. I believe this will encourage more people to pick up healthy eating habits, which is a net positive social impact.

Intended Features

- Federated identity - any one of Google, Facebook, Twitter etc. can be used to sign-up
- User account to store user information such as all the meals taken past month and nutrition count.
- Ability to choose multiple goals - users can choose between options such as “Gain Muscles”, “Lose Weight”, “Increase Calcium”, “Increase B Complex”, and “Heart Healthy”.
- Ability to upload image and weight of food from which our app automatically builds a nutrition profile of the meal.
- Ability to track and see progress.
- Ability to upgrade to a Pro account that will give access to advanced user statistics.
- Ability to recognize restaurants based on GPS location.
- Ability to suggest/recommend meals based on cuisine preferences and selected goals.
- Planning features such as a to-do list, event calendars etc.
- Companion website.

Intended Technologies

I hope to make this project multiplatform. Thus I will be using the following technologies. However much of these are tentative and subject to change.

Website Frontend

- HTML
- CSS (Bootstrap Framework)
- Javascript

Android Frontend

- Java Android Studio

Backend

- Python
- Database will be done in Django

API's and Additional Technologies

- Google Cloud Vision API
- Nutritionix API

Monetization

This will be a freemium product. We will allow the user to upgrade to a Pro account that will permit them to view advanced statistics and patterns in their food habits.

Status of Completion

Because of the unfamiliarity of the technology used and time constraints, much of the intended features remain unfinished. However, here are some areas of the project that have been achieved.

- Models: Models for User Profile and Food Items have been created. Their many-to-one relationship is reflected in the models.
- Frontend: A simple working frontend featuring responsive elements and collapsible navbar.
- User Authentication: Successful User Authentication and Logout. This can be extended to include Google or Facebook login.
- User Authorization: Pages such as 'Profile View' are not accessible unless the user is logged in. The guest is then redirected to the login page.
- Update Profile Information: Users can update their related information.

Since a decent groundwork has been laid, I believe further iterations of the project can quickly and seamlessly incorporate many of the intended features.

Challenges and Critical Analysis

Not only did I have to learn an entire new programming language (Python), I also had to learn its associated framework (Django Framework). I underestimated the effort needed, and looking back I should not have tried picking up two new aspects of programming at once. Furthermore, I underestimated the time required to complete the frontend and backend components and thus misallocated my time unwisely. I should have learned to better use Github project boards and milestones for project management.

Rooms for Improvement:

- Better usage of Github Boards and Milestones.
- Better allocation of time; more into backend, and less into over analysing frontend.
- More effort into learning new programming languages.
- More effort into learning new frameworks or relevant technologies.
- More careful selection of technology/stack to use; should have chosen a stack with previous familiarity instead of choosing something that seemed exciting/cool.
- More effort into actual substances and features of the project rather than trying to over optimise minor parts of the projects.

Nevertheless, it has been a valuable learning experience which I hope will aid me further down the road.