MacroManager

A CPSC 481 Project by G1T02W19: Alan Fung | Elvin Limpin | Kevin Vo | Jack Xie

The problem

Healthy eating is a goal common to many people in the western world. Many health-conscious consumers elect to cook at home, meal prep, or visit only select trusted restaurants because they would then have more control over the quality and nutrition in their meals. This can often be inconvenient, expensive, and time-consuming. However, many convenient fast food restaurants have started to provide a range of menu items with some more healthy than others.

Our project idea is to create a mobile application designed to help consumers determine which menu items are healthy, cheap, and offered at a nearby convenient restaurant.

How it solves the problem

The users we have in mind are users who have some previous experience with technology and mobile applications. Other users that we may target are those that are nutrition focused or are on a diet for health or lifestyle choices. They might be familiar with similar nutrition focused applications, but such familiarity is not required.

Character profiles

We have used character profiles in the form of proto-personas to help us determine what specifications we would want in the app in order to only display important features.

Character profile 1: Bradley Jackson (goes by Brad)

Fig 1. Bradley Jackson

Brad wants to

- Bench press 3 plates
- Maintain his physique
- Get abs in the summer

Brad...

- Is 23 years old
- Started working out when he was 15
- Goes to the gym 5-6 times a week after class
- Took a gap year
- Uses phone in the gym often for snapchat
- Lives in an apartment near Chinook Mall
- Used to track calories but lost motivation
- Tries to consume 200g of protein everyday
- Majoring in Geology
- Doing his 5th year
- Works part time at Sportchek (weekends)

Character profile 2: Karen Andersen

Fig 2. Karen Andersen

Karen wants to

- lose 15lbs
- “Eat healthy”
- Convince husband and children to go vegetarian

Karen...

- Is 42 years old
- Is health conscious
- Enjoys yoga in the morning
- Has two kids
- Is Vegetarian
- Lives in the suburbs; takes Deerfoot to work in her minivan
- Uses phone mostly for Whatsapp and Candy Crush
- Tries to cook every night, but often busy
- Does marketing for an oil and gas firm

Character profile 3: Gary Caesar Lee

Fig 3. Gary Caesar Lee

Gary wants to...

- Find healthy-ish cheap meals close to campus
- Find meals even late at night
- Cut back on sweets

Gary...

- Is 19 years old
- Does kickboxing once a week on weekends
- Goes to the gym 2-3 times a week in the morning
- Doesn’t really track his calories
- Drinks with friends occasionally, but still wants to keep healthy
- Gets acne when he eats dairy
- Goes to the University of Calgary
- Lives in residence; recently moved out
- Majoring in History and Political Science
- Knows his in and outs with technology
- Watches a lot of fitness youtubers
- Doesn’t work at the moment

Scenarios

We expect our app to be used for two different scenarios:

- Deciding where to have a meal with friends on the spot
- Planning and saving meals to order later

Users would then want to filter and sort by location, price, and “health factors” such as high protein or vegan products. They will also be able to search directly for specific restaurants or meals. Once an appropriate meal is found, users may then “bookmark” and organize meals as they wish for later access.

Speculated specifications

We have speculated the following “health factors” to be important to certain consumers:

- High protein per calorie
- High calories for the price
- Low fat per calorie
- Low sugar per calorie
- Low sodium per calorie
- No dairy
- Vegetarian
- Vegan
- Pescetarian
- Ketogenic
- Kosher
- Halal
- Lent-friendly
- No beef

We used these speculations as a basis for one of our research methods (the survey). We sent out surveys to a wide range of possible users including these character profiles to confirm whether they would consider these health factors important, and how important they are.

Stakeholders and Users

Users

We have researched possible users by creating the above character profiles. These users all have some experience with mobile apps. Users without much experience, we presume, would elect to use more traditional methods of determining how healthy their meals are. These character profiles, however, have related but differing goals:

- Losing weight
- Gaining strength and muscle
- Finding cheap, healthy, and convenient food in general
- Following a regimented diet

Their knowledge on what “healthy” food mean may vary, and so our application must be flexible to different interpretations and other possible features. Age, gender, and stage of life may also vary greatly.

Other Stakeholders

Other stakeholders might include restaurants, nutrition API providers, and the developers.

The goal of us developers is to make a mobile application that helps healthy eating become cheaper and more convenient. This affects the design of the system by giving us the requirement of consulting users for the features and specifications that they would want to see.

In order to provide a more comprehensive and detailed dataset of foods and for the convenience of users, we would need to encourage restaurant and nutrition API providers, through partnerships.

Restaurants will be encouraged to provide their nutrition facts and perhaps offer more healthy options to nutrition API providers, who would provide the data to the developers.

Our research

Secondary research

We chose this method to determine similar competitors and what we can do to make the experience better, or if we can fill a niche that has not been touched upon. There have been a few mobile applications that health conscious individuals have used to aid with their nutritional goals. These can be seen as competitors, although we found no direct competitors through our basic research in the specific niche our app occupies.

However, we have identified that the most popular mobile application used for tracking meals and nutrition is MyFitnessPal. Some of the key features of MyFitnessPal include:

- Tracking and logging meals
- Tracking and logging exercise
- Helping determine optimal caloric and nutrient intake for one's goals
- Gamification and community for motivation and inspiration
- Various tools for measuring fitness state and progress
- A database of over 6 million foods (including user entered fast food items)

Some features unique to our app from MyFitnessPal come with our idea of filtering for health factors and restrictions, as well as a focus on providing specific workflows rather than acting as a fitness companion.

Survey[1]

The second method we chose to gather information is creating a survey. The reason this method was chosen was to gather many responses as possible to be able to form a general overview of the interest of this project as well as include some open and closed questions to judge every answer on a scale as well as normalizing the results. The open questions allowed us to refine our ideas towards more specific goals.

A survey was created to help us narrow down features and priorities for our targeted audience. We sent out the survey to friends and connections we knew were fitness-minded, as well as clubs or organizations with fitness-minded members.

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[1] Fast Food Nutrition App [Google Form]. Retrieved from https://goo.gl/forms/NP3uJY3AZqjV6tx02

Our questions

The survey was organized with the following sections:

- How likely one is to use a mobile app with specified features
- How important it is to filter for food with specified restrictions
- How important it is to sort for food with specified health factors
- If they have used MyFitnessPal, and how helpful it has been to achieving nutritional goals
- If they have used a similar app, and how helpful it has been to achieving nutritional goals
- Subjective questions on what healthy food is and how to find affordable healthy food

Results

How likely one is to use a mobile app with specified features

There is no consensus between tracking meals, but no one had done it consistently (Fig. 4). There was some interest in being able to browse menus from multiple fast food restaurants and ordering online. There were split opinions finding healthy options at fast food restaurants and finding nearby restaurants. The most interest in responses was being able to filter search results according to ‘health factors’ and planning meals. All responders found it somewhat important to very important to be able to filter, search, and sort foods by price. Some responders found being able to filter, search, and sort foods by location somewhat important

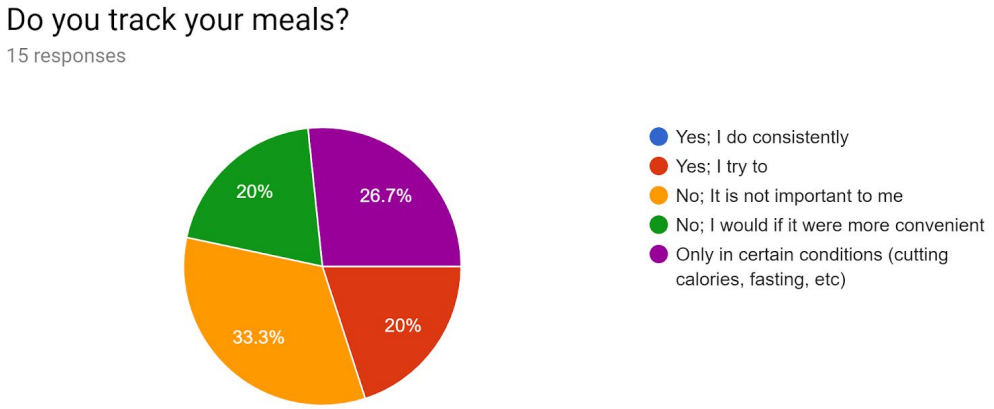


Fig 4. Responses to “do you track your meals” showing that no responder consistently tracks meals

How important it is to filter for food with specified restrictions

Diets restrained by religious practice had little interest and importance in the responses. Popular diets such as keto have more interest; similarly, interest in dairy-free and beef-free foods are small. The largest interests are in vegetarian, vegan and pescetarian foods. Additional restrictions offered by the survey takers were foods with allergies or support for more macronutrients such as carbs or fiber. Of our previous macronutrients, high protein was deemed very important to filter by (Fig. 5).

Fig 5. Responses to sorting importance of macronutrients

Use of MyFitnessPal and Similar Apps

Approximately, 25% of our survey participants have used these apps to supplement their health goals. However, none of these apps has helped a user budget to find affordable healthy food.

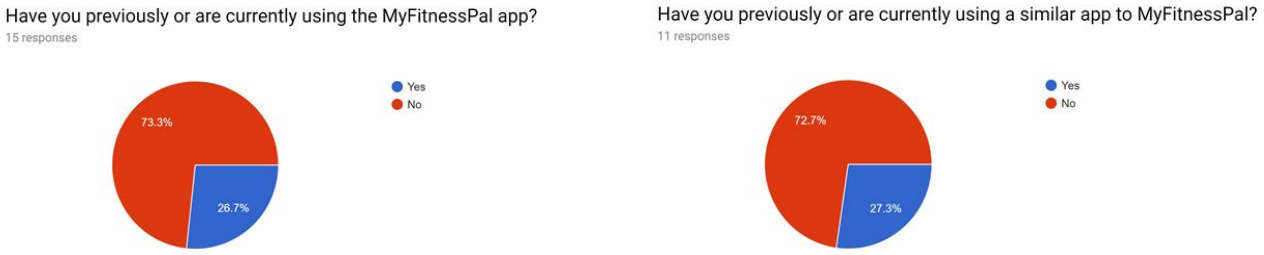
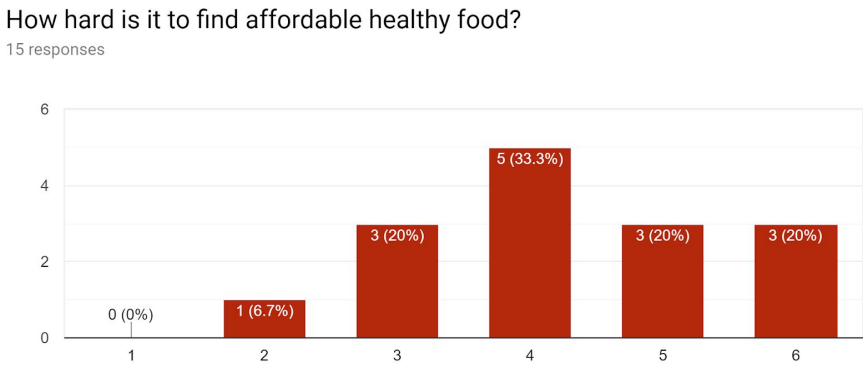


Fig 6. Usage of apps

Healthy food is and How to Find Affordable Healthy Food

Most users find healthy food by buying groceries themselves after either checking the nutritional facts, or doing research online and asking friends and family; these responses also try to find many deals either online or in person at the grocery store to make it affordable to them. Many users also report making and testing with their own home cooking. A few users, however, claim to be unable to find affordable healthy food.



In addition, most responses find that healthy food is a mixture of balanced nutrients and avoiding poorer nutrients such as saturated fats. There is a slight challenge to find healthy foods.

Fig 7. Finding affordable healthy food

Takeaways

Effectiveness of our methods

Personas:

We were unable to interview the ‘Karen Anderson’ persona type, which may have skewed the results as we mainly interviewed college students, who are more constrained by cost and free time. Despite narrowing our interview group to individuals that we thought would be receptive to nutrition tracking apps, the majority of our respondents do not use any of these applications. Based on their responses, it seems like time devoted to ‘eating healthy’ is spent by selecting appropriate groceries and sometimes meal prepping. A greater focus on tech-oriented individuals might have changed the survey results, assuming they would be more responsive to tracking results on their mobile devices and have stronger opinions on what they need.

Surveys:

Our initial assumptions of cost and proximity being high priority were verified by the results of the survey. A wide range of nutrient-filtering options should be included to account for different priorities and preferences. Allergies and gluten free choices were highlighted by several respondents while diets such as the keto diet were almost unanimously rejected.

The survey results were able to rule out some choices and reveal factors that we did not previously consider. However, we neglected to find out why our fitness oriented users are not using nutrition tracking apps or other fitness apps. A more pointed question on what users would like to see or be able to do with an application may have been beneficial.

Limitations:

We could have interviewed more people and a greater variety of people. From our two selected methods there was not enough information to suggest a preferred workflow. Walking the respondents through a paper prototype, or observing their shopping habits may have revealed other health factors or desires we missed out. It could be argued that cost and time savings would always be appreciated, so surveying for the importance of those factors was less important than questions that would have uncovered why users are not using fitness applications or what they feel is missing.

Conclusions from the results

Although “Fitness-minded” individuals were targeted with our survey, their responses to our questions were highly varied. From the survey results there are a few results where the respondents agreed:

1. the high importance of cost and close proximity
2. specific trending diets such as ketogenic diets are unimportant

A wide number of filtering options should be provided, as nutritional priorities vary highly. We have also failed to consider other health factors and restrictions in our surveys, namely allergies and gluten restrictions.

Task Examples

The main objective of our application is to monitor and track user's daily nutritional intake and allow users to determine which food items are healthy, cheap, and offered at a nearby restaurants.

Task	**Description**
Exit Application	The user can navigate to the homepage at any time and exit the application. This feature provides complete control to the user over the app. Any unsaved data would be lost unfortunately.
Get the user's current location	The system will access the mobile's location service to determine the user's current location.
View Profile Page	An user is provided a profile page that displays information such as their daily macronutrients goal, their calorie intake goal, their weight, etc.
View Dietary Info	The system intends to provide users with a database of food items with their corresponding nutritional information.
View Home Page	The user can navigate to application's home page whenever required.
Enter dietary info	The user can enter their own nutritional info on food items that don't exist in the database.
Search for food	The user can search the database for a food item.
Sum up and display daily calories	The system will track total daily caloric intake and display it for the user.
Sum up and display daily macronutrients	The system will track total daily macronutrients (Carbs, Protein, Fats) intake and display it for the user.
Set/update daily caloric goals	The user can set or update daily caloric goals(minimum or maximum).
Set/update daily macronutrient goals	The user can set or update daily macronutrient goals(minimum or maximum).
Search for nearby food items	The user can look up menu items in nearby restaurants
Set food search filters	The user can filter search results based on specific criteria: gluten free, high protein, etc.
Find nearby restaurants	The system will access a maps api to see which are the closest restaurants
Track and Update personal info	The user can update and track personal info such as their weight, daily caloric goals, daily macronutrient goals.