**Phood Buddy**

**Concept of Operations**

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Team Name: The Phoodies

Team Members:

* Timothy Flowers
* William Funk
* Evan Glazer
* Jorge Rodriguez
* Lyudmila Sandomirskaya

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* Healthy eating advice (ie. <https://www.heart.org/HEARTORG/HealthyLiving/HealthyEating/Healthy-Eating_UCM_001188_SubHomePage.jsp>)
* Online grocery purchase (ie. <https://www.hy-vee.com/grocery/> - <http://grocery.walmart.com/>)

The Proposed System

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**The Current System**

There exists no current system that offers the combined list of features that this system will create. Each individual category used in the proposed system does exist by itself in one form or another. It doesn’t link these other features together, however. Following are a list of examples of existing systems, what they accomplish, and how our system will either replace or use these features to our system’s advantage.

There are a number of recipe sites available on the web; some offer search filters based on ingredients currently in the user’s refrigerator, while others find recipes based on health concerns or specific tastes. [www.supercook.com](http://www.supercook.com) and [www.recipe-finder.com](http://www.recipe-finder.com) are only a couple of examples of what is out there—the former finds recipes based on specific ingredients and the latter offers a variety of multimedia support to the available recipes.

Part of the proposed system is a way to track health goals through food (not mandatory for all users). Depending on user’s goals, they can have recipes specific to their needs. Current sites offer healthy eating advice like [www.heart.org](http://www.heart.org) along with a variety of other health tips to better one’s condition. Sites built around hardware such as [www.fitbit.com](http://www.fitbit.com) keep track of the user’s current health status as well as exercise completed.

Another key component to the proposed system is the easier facilitation to getting the ingredients to the recipes offered. Major companies offer online ordering of said ingredients like [www.walmart.com](http://www.walmart.com) and [www.hy-vee.com](http://www.hy-vee.com).

Though these “individual” sites offer vital services, they make a user hunt down each one of these places to do what should be congregated in the same place. Maintaining a healthy lifestyle is difficult enough as it is, and **Phood Buddy** will remove some of the obstacles currently in existence.

**The Proposed System: Needs**

Going to the gym, finding acceptable choices of foods to eat, counting calories, and avoiding the monotony of the same meals day in and day out all have one thing in common: they discourage people from achieving a healthy, happy lifestyle. Life has become a race from one responsibility to the next. Time is scarce, and many of us don’t have the requisite time it takes to hunt down health facts, prepare ornate meals, and remember what exercises were done and still need doing. **Phood Buddy** levels the playing field.

This system will take existing technologies and interweave them into a single source of assistance for the everyday person. It starts as a recipe finder. Instead of parsing through hundreds, sometimes thousands, of recipes online, we offer an autonomous system that caters to each specific user’s needs based on eclectic tastes or chronic illness restrictions. We remove the troublesome need to inject variety into everyday life by providing it at a click.

From recipe to purchase of the needed ingredients to tracking what is already in the kitchen, this system obliterates all of those pesky barriers--short of cooking the meal itself. With online support through existing social media platforms, and access to crucial health tips, excuses won’t have a leg to stand on.

**The Proposed System: Users and Modes of Operation**

The Spartan User:

This is a person who casually uses the product. Maybe they only want an occasional recipe suggestion without having to look too hard. Perhaps they prefer the health tips of what foods their condition is averse to but already have their preferred list of safe recipes from which to cook. It could be they only want the centralized location for their health tracking. This is not a person who wants to pay for the product, and may only check in once a week or less. Contributions would be at a minimum from this person.

The Food Fanatic:

This is a person who has found a love in food. From taste to smell to the eye watering color combination, they can’t get enough. This user is expected to spend most of their time accessing the recipe advisor, rating those recipes after trying them, and later entering recipes of their own design. Were it a paid product, they would either make the purchase or take advantage of the crowd-sourcing contributions for greater access. Their interest to the support network and health advice would be peripheral at best.

The Health Guru:

The offered recipes would be a means to an end for this person. Their main focus would be on the health advice, health tracking, and perhaps the support network. They would cater their taste profile for maximum nutritional value, rather than the savory flavor it provides. These users would be split as to whether they would pay--were there a paid version. They would, however, access the site often to check on their fitbit status and get the latest health news.

The Fully Invested:

Here is a person who sees how all the pieces come together as a benefit. They are tired of redundant, rotating meal choices, and desperately need to mix it up. They might despise long trips to the grocery store, searching for a laundry list of ingredients to a single recipe. Sticking with their health goals often ends in backsliding because the energy needed to keep up with the system is more hassle than gain. A support network may be exactly what they need to keep going. This is a user who accesses the system’s entire arsenal of features. Many of these people would probably pay within the first couple of weeks if there was a paid version, but may be a crowd-source solution if their loyalty is secured.

The above user classes are from low investment starting at the top to the more invested lower down in the list. All classes of users will have the ability to access all features the system has to offer, though the amount of content they have access to will grow based on points earned (through rating recipes, posting recipes, posts of encouragement that are well received by other users, etc).

There is no paid version of this system as the desired goal is to publish this application to the Android Mobile market, the Windows Mobile market, and a central web version. It is not the desire of this group to manage a business based off of this system, and offering a paid version would require a fair amount of legal consideration, business paperwork, and money management that isn’t a desirable consideration at this time. Each version of the system will have the typical advertisement connections (Google-Adwords, etc).

Two modes will exist in this system: mobile and web-based. All of the features available in the system will be accessible to both modes, however the mobile devices will be able to scan barcodes while the laptop/desktop (web-based) modes without a camera would have to manually enter a UPC number to access the same data. Also, a few styling difference will exist from Android Mobile, to Windows Mobile, to the Web-based mode due to certain restraints existing in those environments.

**The Proposed System: Operational Scenarios**

Features Available:

Most of the features have been mentioned in earlier sections, but can be found in greater detail below:

Recipe suggestion is the key component to this system. This somewhat random meal chooser will use an algorithm fueled by a taste profile and any health considerations entered in by user, to offer anywhere from individual mealtime suggestions to a coordinated meal plan. Calories can be tracked, and nutritional information offered at a single click.

Health advice is offered in general to users if that is something they elect to have, or it can be more specific based on a condition mentioned in the user’s profile. This data could directly affect which recipes are chosen. A person with high cholesterol probably won’t receive a suggestion for a red meat recipe with a side of buttery shrimp scampi. A person with a peanut allergy will have a lower chance of getting a suggestion for deconstructed peanut butter pie. Disclaimers will be in place to inform all users that it is impossible to completely eliminate conflicts with their health problems, and caution is advised with every meal.

Online grocery orders will be funneled through the system, linked with a list of ingredients for the chosen recipe, and can be automatically ordered if user entered in their access info to a cooperating site such as is available with Walmart.

Ingredient inventory tracker. If user chooses to track the ingredients they already possess (to avoid purchasing more than what is needed), they can manually enter in what they have or use the barcode reader available through mobile (UPC number via web-based version).

Social networking will be used (ie. Facebook) to connect users with a wider community where supportive posts can be made or received to help users achieve their goals. This would be done through existing API available with these third-party systems, or made from scratch if one of the versions (Android) requires a more custom approach.

Typical Scenarios:

User requests a recipe at random. They are given a recipe based off of taste profile, and filtered by health conditions. They are shown an image of the finished product, a list of ingredients, and a series of instructions on how to prepare the meal. The user is offered the chance to purchase the ingredients online or print out the recipe info package to a local printer.

User requests recipes for anywhere from a whole day to an entire week. They are given a varied list of recipes based on taste profile, filtered by health conditions, and also filtered to ensure recipes are not repeated during the week to avoid redundancy. The same offers would be made as in the individual recipe request mentioned above.

User posts a recipe using the form template provided. Their input is verified and incorrect information alerts the user and waits for correction. This will store the proposed recipe into the database, where it will be labeled as untested, and awaits the bold user to try it. Once it has been rated a minimum of three times, it will be released into the main recipe collection for common use. User will be rewarded with points for their contributions as will those who used and rated it.

User posts the need for support through social media connection. The post is processed, and filtered for obviously negative content. After successful filter, it is posted on user’s registered media networks. Responses from “friends” and fellow Phoodies will be scraped, formatted, and placed in their social network folder inside Phood Buddy (this is a “Would Like To Have” feature).

Atypical Scenario:

User requests a recipe containing conflicts with their health profile. Disclaimers have already been read and agreed to via automatic hard-coding for all users. However, user notices issue and posts to support using the available “report error” feature. Programmer will inspect recipe manually, comparing it against list of medical issues listed by user. If conflict exists, corrections will be made to filtering criteria. If issue is due to user error (ie. didn’t actually enter that health data into profile, or misspelled, etc.), then user will be notified of this mistake and informed on how to rectify it for future use.

User receives erroneous health tips (bad input). The user will have been warned via hard-coded disclaimer and agreed to it. They can notify us via “report error” feature and Programmer will verify if concern is legitimate or user is misinformed. If system error, filter will be corrected. If user error, user will be notified and additional resources provided for supplemental health education.

User tries to order ingredients to a recipe via the system, but order won’t go through. User will be offered a chance to re-enter their sign-in information for the third-party, online grocery order application. If that fails to rectify the situation, user is given the chance to open third-party site in a different browser tab where they can manually enter their order using list provided by Phood Buddy recipe. “Report error” feature will alert programmer to issue, and will be subsequently resolved.

User is told they don’t have the ingredients needed for a recipe, though they are certain their stock is full. “Report error” feature alerts programmer. The database is checked and tested to ensure there is no data loss. If database is functioning within parameters, programmer will check to see if error notifications are being made to user (whether software related or connection related) when an input to database (barcode or UPC entry) is made by user. If this doesn’t resolve concern, programmer shall try to use similar device as that of user’s to repeat issue. Further investigation is required beyond this point.

**The Proposed System: Operational Features**

Must Have:

* Recipe Suggestion
* Recipe Ratings
* Recipe Posting
* Health Tips
* Online Grocery Orders
* Ingredient Inventory Tracker

Would Like to Have:

* Social Support Networking
* Advertising
* Point Reward System

**The Proposed System: Implementation**

This system will be developed on three separate platforms: Android and Windows Mobiles, and Web-based. In their respective orders, the languages used will be Java, C++, C#, JavaScript, PHP, SQL. This system will use a Parse database backend. For the most part, business logic will be conducted on client-side, while a large amount of user data will be stored server-side.

This system will require an internet connection to use (especially the Web-based version) as most of the user data is located server-side, but also because many of the features are accessing online resources (ie. Online grocery purchases). The Android and Windows Mobile developers currently have some experience with their respective platforms, but a short learning period will still be required. The Web-based languages are well known to those working in this section, and the learning period should be minimal.

This system will be both mobile and stationary via mobile, tablet, and desktop/laptop. For now, this application will be specific to a North American audience, though it will be accessible to users worldwide. The cultural and language focus, however, will be for US and Canada.

The disadvantages to both Android and Windows mobile platforms consist of difficult development periods and a rapid upgrade pace. There are many versions of the Android mobile platform floating around and any serious app must try to accommodate as many of them as possible. Windows mobile has issues related to its app store and limited developer support network due to the mere 6% worldwide user base. The advantages to using these platforms are a rich cross-platform design, and Androids 60+% user base worldwide. Our Web-version is meant to capture the remaining market of users whether without smart phones or iO-based. As this platform has been around for ages, the disadvantages are anticipated to be minimal.