Project Proposal

Team No Stress

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What The Food? (Education Oriented Mobile App Surrounding Food)

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Overview

- What The Food? is an educational mobile app, designed for Android, that allows users to scan an item and obtain any information related to the item. Whether it be understanding the nutrition label in a condensed manner or breaking down the ingredients and understanding the benefits or downsides, What The Food? allows users to quickly analyze and understand the product they scan without the hassle of looking at nutrition labels. Our product will help educate the population on the products they consume.

Version Support

- This application will have a target SDK version of API level 30(Android 11), to be in compliance with the Google Play's Stores standards. The minimum SDK version will be API level 29(Android 10).
- In the event a newer version of android is released during development, immediate action need not be taken, as newer versions of android are compatible with all older API's. If an update to the newer version is required do to a shift in Google Play Store's requirements, their step by step migration page will be followed.
- https://developer.android.com/distribute/best-practices/develop/target-sdk#pre11
- This application will be limited to devices with a front facing camera, as it is required for use of core features.

Goals (Pain point resolved)

- Make food education simpler.
- Give consumers an easier way to understand what is in their food.
    - Condenses complicated nutrition labels as well as ingredients to a simple manner.
    - Categorizes products for users to have an understanding of what they are consuming.
- Display the pros and cons of various foods and chemicals within said foods.
- Provide users with the latest news surrounding food all in one place.
- Give the user a simple way to calculate their needed calorie intake.

Creating Account/Log-In (Core component)

- Allows users to register an account using Email.
- Once an account is made, the user must login using their username and password.
    - Login information can be saved by choice by the user.
- Any data obtained or contributed by the user is stored in a database.
    - Password information will be stored in a hash+salt format

Internet Connection:

- The application is contingent on having a stable wifi or cellular data connection in order to access the project database and search functions.
- Upon login, if the user cannot reach a stable internet connection the application will notify the user that the app's functions cannot be used at the moment due to no internet connection and to find a wifi connection in order to proceed.

Specifications/Value

Scan Food:

- Scan the ingredients of the product by scanning the barcode of said item.
    - If an item does not have a barcode, users will also be given a manual input option.
        - Users will type in the name of the product by text and the app will search the Internet for products that match the name of the information inputted. There will be pictures alongside each suggestion made so that users can have an easier time finding their product.
- Categorizes food according to FDA standards mentioned here:
    - https://www.fda.gov/product-categories-and-products
    - Informs the user if the scanned item is vegan, vegetarian, gluten free, and/or keto friendly.
- Defines long chemical ingredients under nutrition labels and condenses information into user-friendly text.
    - Vitamins that are listed can be displayed by its health benefits as well as its faults.
        - https://www.fda.gov/food
    - Lists similar food products that contain the same chemical ingredients.
        - Over time a database will be developed based on products that are scanned into the app.
- Recommends articles and websites related to product.

Food Comparison:

- Compares food to other options:
    - After looking at a specific product users can search for similar products by one of the following tabs. After a tab is selected and the user presses continue the application will display up to 5 products that are similar to the original product, but with the modified search parameter. One to all of the tabs must be selected for the continue button to be clickable.
        - Lower calories (at least 15% lower per serving)
        - Lower fat content (at least 15% lower per serving)
        - Lower sugar content (at least 15% lower per serving)
- Once chemical compounds have been analyzed, we can introduce other products that contain the chemicals and explain them.
- We will recommend items from the database created from both the developers and accumulated data of users.

Food Filter/Food Flag:

- Users can specify a list of ingredients and nutrients they are seeking from a product.
    - Users can select from a list containing the top 10 most common ingredients/nutrients according to the Department of Health. Additionally, users can manually search for what they are looking for.
    - The software will take these items and return a list of products meeting their criteria.
        - Users can select a category to look for to narrow search parameters, such as chips, breads, fruits, veggies.
- This feature works in both directions. Users can also input a list of ingredients/nutrients they wish to avoid. This will become a list of flagged items.
    - Users can specify up to ten nutrients or ingredients they wish to mark as flagged and the software will provide a list of products that do not contain the flagged items. When users go to flag new items, they will be presented with the 10 most common ingredients that other users are flagging. If not enough information is available to produce a commonly flagged list, the application will default to a list containing common allergens as well as generally unhealthy ingredients such as high fructose corn syrup. Additionally the user can manually search for any ingredient using the search bar and add it to their flagged list.
        - Users can select a category in order to narrow search parameters, such as chips, breads, fruits, veggies.
        - If the user scans a product containing an ingredient they have flagged, they will be alerted that the said product contains a flagged ingredient and informed of which ingredient it was. The program will then offer substitutes to the scanned product.
            - Substitutes will be items within the same category that don't have any of the ingredients that are currently flagged.
- We will describe nutrients as defined by the Department of Health:
    - https://www1.health.gov.au/internet/publications/publishing.nsf/Content/canteen-mgr-tr1~nutrients
    - https://www.accessdata.fda.gov/scripts/interactivenutritionfactslabel/nutrition-glossary.cfm
- We will be listing all ingredients as listed here:
    - https://world.openfoodfacts.org/entry-date/2016-08/ingredients

Personalized Daily AMR Calculator:

- Displays the user's estimated required Calories needed per day to maintain current weight. This app does not track the user's calorie intake, and instead is just for the edification of the consumer.
- Can change the percentage of daily calories from a food label to fit the user's daily calorie goal.

- As long as the user has not used this feature, upon attempting to use this feature the user will be prompted to either “Find your estimated daily Calorie consumption (AMR)” or “Set a custom AMR”.
    - Daily Calories will be calculated by finding the user’s Active Metabolic Rate (AMR), calculation for which can be found here: https://www.verywellfit.com/how-many-calories-do-i-need-each-day-2506873/
    - Option for the user to input their own custom AMR (if the user has a more accurate number from a nutritionist or a similar professional).
- This feature will provide an option where the user can switch interchangeably between estimated and custom AMR through this function as they see fit.
- All products that have been scanned and their calories recorded, will be graphically shown to a user with their other scanned items within their history. This allows the user to visually see where this scanned item stands in terms of calorie count per serving and gives them a frame of reference to where the product stands. The graph will show the 5 most recent items, with the option to add or remove additional items regardless or not if they are in their history. If a user does not have a history yet, the graph will compare to a default set of staple items. Milk, Beef, Chicken, Ice cream, cereal. Calorie count for default items comes from the USDA website.
    - https://fdc.nal.usda.gov/
    - The graph will be presented as a bar graph, with the x-axis being the food names and the Y-axis being the calories per serving.

History:

- Any previous scan that was made by a user is stored in a history tab which users can access at any time.
- The history feature will allow the user to scroll through the previous five scans they had made. Once the end of this short list has been reached it will give the user an option to load five more scans, until a max of 25 has been reached.
- A user’s history will remain indefinitely with a cap of saving the most recent 25 scans.
- Users will be able to search for a certain product by typing in the name of the product and see if it has been recorded in their history. In addition, users can filter it by category of food, such as fruit, veggies, or grains.

Reviews:

- Performance Reviews:
    - On every 10th recommendation, the user will be asked to rate from 1-5 stars (1 being worst, 5 being best) how accurate the recommendation is.
        - This will be aimed specifically at the food comparison and food filter/food flag features.
        - User feedback will be used to train an algorithm on how to make better food recommendations.
- Product Reviews:
    - Allows users to rate from one to five stars(1 being worst 5 being best) and allows users to write reviews on scanned products.

    - Users will review products based on how healthy they felt the product to be. Whether this be taste, physical reaction to said product, or overall delivery, users will be able to give an opinionated review on how they feel about the product.
    - Total rating is displayed as an average score from multiple websites. Total rating can be inspected to show individual ratings from different websites.
        - Credit websites for reviews include but not limited to
            - https://www.consumerreports.org/food/food-and-drink-food-safety-guide/
            - https://www.thespruceeats.com/food-reviews-4690365/

Aggregated News:

- Pull news headlines from credited sources related to health trends as well as latest discoveries on food.
    - Credit sources include but not limited to
        - https://www.sciencedaily.com/news/health_medicine/nutrition/
        - https://www.cleaneatingmag.com/clean-diet/food-health-news/
        - https://www.fda.gov/news-events/fda-newsroom/
- Link these headlines to the original article.
- Over time through user scans and searches a hidden “User Profile” will be built to cater more relevant news to the user. For example, a user with many “healthy” scans and searches related to what is considered “healthy foods” so more health related food articles will be pushed to them and other less “healthy” food articles will be withheld.
- The news will be aggregated every 2 hours in order to keep the user updated with the most relevant, up-to-date information.

Consumer Privacy:

- During account creation, users will be given the choice to opt out of data collection. If a user changes their mind and later wishes to change their choice, an option to do so will be available in the settings.

Competitors (What gives us the edge, how is it different)

- Fooducate: Allows users to scan by barcode and returns a grade on said product. This app is free to download as well as available online.
- Bloomsbury Dictionary of Food: Provides users with a search engine dedicated for food techniques and dishes as well as specific products.This app must be purchased for use
- Food and Drug Administration (FDA) News Reader: Informs users on up to date information on what has been considered safe and healthy. This app is free to download and use online.
- **Our product focuses on providing consumers with the necessary information to make educated choices surrounding food products. We do this by providing transparency about common ingredients as well as providing the latest news. All while never telling the consumer what they should be eating, putting the power of choice back into the consumers hands.**

Intended Audience

- The app intends for those who want to have a simple yet deep understanding of what they are consuming.
- The app is made for any average consumer who is simply curious about what they eat and would like to learn more.

Vision

- From a programmer's perspective, our app incorporates countless numbers of products and categorizes each into an organized manner. Furthermore, the review feature of our app allows products to be filtered by popularity. Additionally, our app will provide educational resources based upon food labels scanned in the real world. As the field of nutrition continues to develop, our users will stay up to date on the latest dietary facts of their food.
- In a business sense, our product can start locally and expand. The app's intended audience is the everyday consumer who is curious in understanding their product at a local market in a detailed yet simple description. By having consumers more involved and educated with their food products, it will lead to more informed consumers and give them more power over their choices.