TECHNICAL REPORT: PHASE 1

foodforthoughtt.me

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Motivation

The goal of this website is to provide a place for users to build a more healthy diet by drawing correlations between certain foods and diseases and also providing some restaurants to find these foods. By allowing users to see and understand the risks behind consuming these certain foods we can notify more people about food-related diseases.

User stories

These are the user stories we received from our customers.

1. Create 3 pages for each of the 3 models with information and links to instances of other models
2. Create a navigation bar that allows the user to easily navigate to home, each model, and about
3. Create an about page with each developer, their statistics, and a photo
4. Create 3 model pages with links to each of the instances of that model
5. Create a home page that links to each of the 3 model pages

These are not the user stories we were supposed to receive so our team has developed a couple for the meantime

1. Customers will probably want to filter foods by their nutrition stats such as carbs.
2. Customers will probably want to be able to filter foods by disease relevance so they know which foods would help the condition and which ones to avoid.
3. Customers will probably want to filter restaurants by distance, price, ratings.
4. Customers will probably want an easy way to find restaurants that sell the foods that will benefit their selected disease.
5. Customer will probably want to apply multiple filters on 2 models to produce a list of relevant targets e.g. picking a disease and selecting foods that would benefit it and then showing restaurants that sell it by proximity, price, rating, etc.

These user stories will probably take us the semester to build up a smart filtering system that would allow clients to find the most relevant information to them. This is an important function of our website though because a lot of information already exists on these topics and to set us apart from the competition we need to deliver this data in a relevant way.

RESTful API

We designed our RESTful API around our three models, foods, diseases, and restaurants. The API contains GET requests for our three models. This design will be implemented in the future to provide results to the client in the form of multiple results per page. For example, the client may click on our website wanting to view all of our foods and these requests would be able to accommodate that. We also have GET requests for a single instance using an ID or name to identify them. Finally, we added a POST request to each model for when we eventually have search functionality. These POST requests will use the client's search string to find relevant instances.

Models

Our three models consist of Foods, Diseases, and Restaurants. Each of these models has various attributes that will allow us to create many similarly-structured instances.

Foods

Our foods model will contain nutrition label information because this information is standardized and abundant. This convenience will allow us to catalog many of them for comparison. The Food model consists of the following attributes:

1. Name – The name of the food.
2. Serving Size – The recommended serving size in grams.
3. Calories – Number of calories per serving.
4. Total Fat – Total fat in grams. It includes saturated and trans fats.
5. Carbohydrates – Total carbohydrates per serving in grams.
6. Protein – Protein per serving in grams.
7. Sodium – Sodium per serving in milligrams.

Diseases

Our disease model currently contains multiple attributes but diseases don't follow such a convenient standard like the food's nutrition label example. This can make databasing the diseases harder but another solution could be to rely less on database storage and more on front-end data entry. Currently, without implementation this model represents some of the information we wish to convey to each client but the delivery and structure are subject to change. The Disease model consists of the following attributes:

1. Name – The name of the disease.

2. Specialty– The medical specialty this disease is listed under e.g. infectious diseases
3. Symptoms – The symptoms associated with this disease.
4. Causes – How patients typically contract the disease.
5. Diagnostic Method – How the disease can be identified in a patient.
6. Prevention and Treatment – Prevention/treatment methods to protect against the disease.
7. Frequency – How many people are afflicted in the U.S. each year.
8. Deaths – How many people die from the disease each year.

Restaurants

Our restaurant model consists of typical information our clients would expect. These attributes will allow us to provide our clients with a restaurant. The Restaurant model consists of the following attributes:

1. Name – Name of the restaurant.
2. Location – Address of the restaurant.
3. Rating – Overall customer review rating on the scale of 1-5 stars.
4. Cuisine – The type of food sold by this restaurant.
5. Cost – The relative cost on a scale of 1-3 money symbols $$$ as seen on sites such as Yelp.
6. Phone Number – The contact number for the restaurant.

Tools

1. Gitlab for version control and keeping track of our progress and todos through issues. It is also used as a source to pull statistics to the about page on the website we are hosting.

2. AWS was the host we decided to use for our website. We used this amazon service to remotely handle many of the backend requirements that our website has. AWS also provides many applications and tools to assist in this endeavor, namely S3, Cloudfront, Certificate Manager and IAM.

3. Slack is our main tool for team communication. This application helps us keep our conversations organized and declutter our GitLab. We are considering integrating Slack with our GitLab so it keeps us more in check with issues and statuses of this group project.

4. Postman was what we designed our API on. This tool allows us to design an API that embodied the functionality our website would provide. This is extremely useful because it provides us with a clear vision of what we need to create without fully committing to the overheads of development.

5. React is our main front end tool using bootstrap as a framework. Using React we will be able to aesthetically organize our information and allow clients to search and filter through various pages.

API

1. Zomato API has a database of over 1.5 million restaurants in over 10000 cities. It also contains detailed information about their respective menus. This API best represents our model because using the detailed information on the menu, we can track which foods we can recommend, and how suitable a restaurant's menu is for someone suffering from certain conditions.

2. Healthfinder.gov API is hosted by the U.S. Department of Health and Human Services. This source is probably the least controversial and provides a wealth of information related to diseases. Not only does it provide information on health conditions and diseases, but it also has information for nutrition and advice on healthy living. This provides us with options to extract the data we need for our models, but also to tie them together.

3. Edamam API contains the nutritional analysis of foods, meal recommendations, and recipe search. This will assist us in pulling stats of foods and cross-referencing them with restaurants and health conditions, which is another useful way to create ties between our 3 models.