Know Food Process Book

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Overview and Motivation

As busy college students, we often find ourselves turning to fast food to eat certain meals throughout the week. However, these meals, though quick and often relatively inexpensive, can be very unhealthy. We want to find a way to make informed and hopefully healthier choices while still visiting these establishments for their convenience.

Our project seeks to help college students make more informed decisions about fast food that they eat using several metrics. Most importantly, this website allows them to build a meal and to see the nutritional value of their meals. It also allows them to compare options from different restaurants or even the same restaurant.

Related Work

Ray & Joan: The Man Who Made the McDonald's Fortune and the Woman Who Gave It All Away
https://www.amazon.com/Ray-Joan-McDonalds-Fortune-Woman/dp/1101984953

- Mara read this book over Christmas break and found it interesting. This led to her being intrigued by different fast food restaurants.

Super Size Me (2004)
http://www.imdb.com/title/tt0390521/

- In this movie, the director eats exclusively at McDonald's for the month. He gains weight and experiences other side effects supposedly from this diet.
- The results depicted in the movie have not been able to be replicated by other studies, which made us curious about whether fast food can be consumed in a healthy manner.

Fast Food Restaurants and Nutrition Facts Compared
http://www.acaloriecounter.com/fast-food.php

- This website compares similar fast food items from different restaurants, and shows the best and worst option for each and why this option is the best or worst.
- The design of this tool is a little bit clunky and requires a lot of scrolling.

Questions

Initial Questions:

Which restaurants have the healthiest options?
How can we compare nutrition across different restaurants?
Can fast food be healthy?
Is a taco a sandwich?

Question Evolutions:

Can you build a healthy meal using fast food items from various restaurants?
Are some restaurants notoriously unhealthy?

New Questions:

How do healthier options compare in terms of price?

Data

Our data comes primarily from http://fastfoodnutrition.org/ , with some of the holes filled in from each of the restaurant's websites and our calculations. The website has nutrition information for menus of multiple restaurants listed on their websites, and we consolidated their data into one spreadsheet of our own. We had to clean up their data somewhat , because certain information was missing. We also added a restaurant, category and subcategory columns.

All of the cleanup and obtaining missing information was done manually, as we thought that would be the most efficient way to accomplish this type of data generation.

Exploratory Data Analysis

We explored our data using the graphs generated by Excel as well as filtering it in different ways in Excel.

Design Evolution

Originally, we wanted to see if there was a healthier way to eat fast food, and to see which restaurants in our data set have the best options in terms of health, and to be able to compare similar food items (potentially from different restaurants) based on criteria that is important to the user.

As the project progressed, we decided that the most important feature would be for a user to be able to build a meal (or several meals) and see how that meal would compare to the suggested nutritional intake for the day. We also have several visualizations to compare restaurants to each other, and a separate visualization to compare specific items based on their nutritional values.

Our concept for our project has become less about comparing restaurants to each other and more about the overall healthiness of the food that many college students eat. By choosing to include the suggested daily nutritional intake (for a 2000 calorie diet), we can show how just a few fast food items can quickly exceed (by a LOT) suggested daily nutritional intake. One of the biggest concerns with fast food especially is sugar.

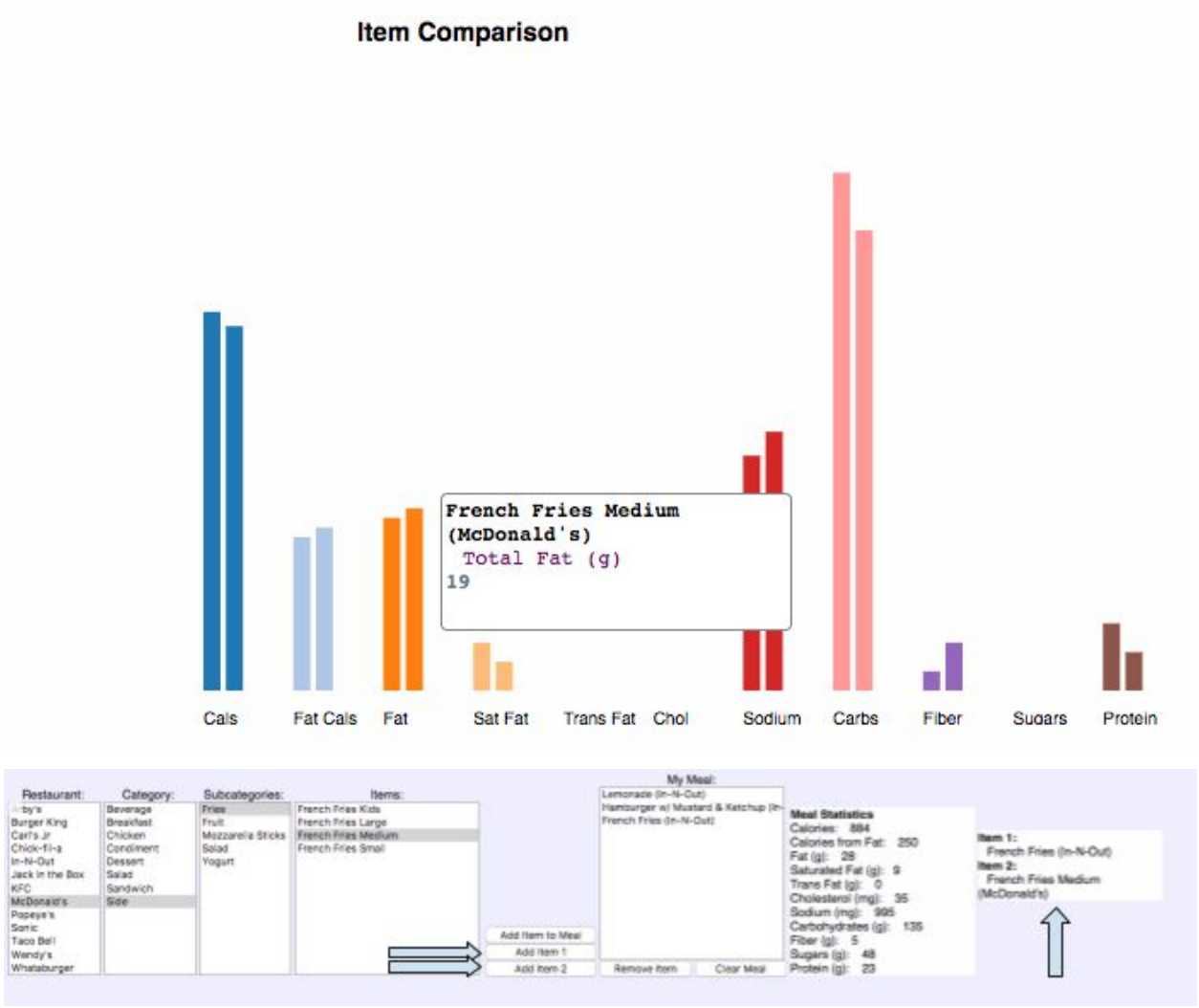
Implementation

We implemented four distinct visualizations.

1. Meal Nutrition Information

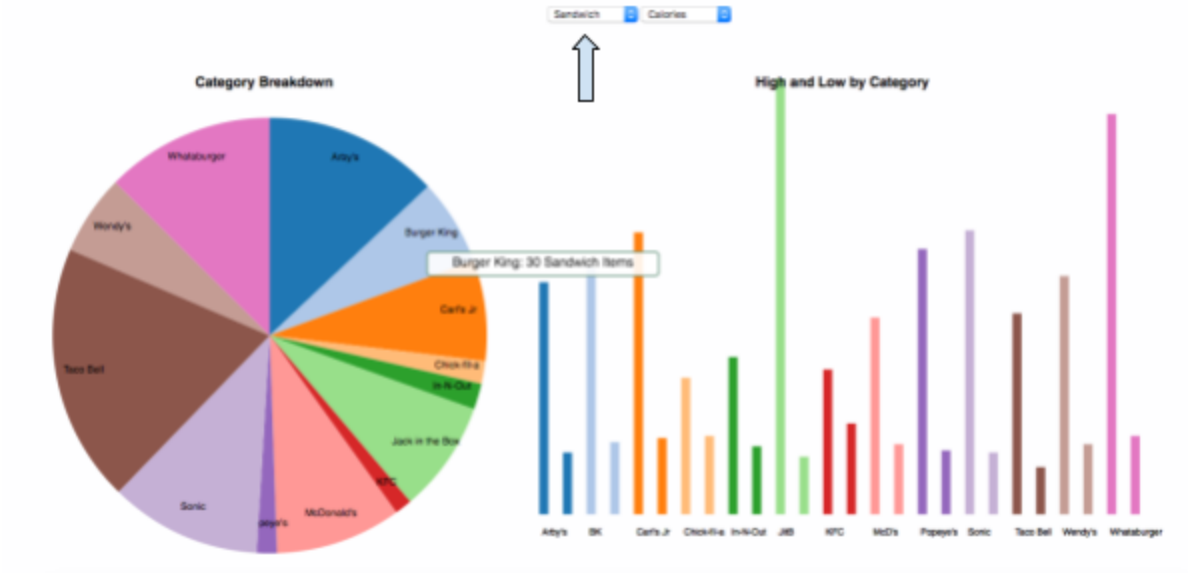
This visualization allows you to build a meal and see the sums of the nutrition values (as compared to the suggested nutritional intake based on the Department of Health's suggestions. If you hover over the red lines, it shows the suggested number for that specific metric. If you hover over the blue bars, the sum of that metric for your specific meal will show up. The chart updates dynamically based on which items you add to your meal using the selection boxes in the top bar. You can also remove items from your meal, and clear the entire meal. On the right of the top bar, there is a box that shows the statistics of the meal through text. The intent of this visualization was to show people how quickly certain nutrients can build up in fast food meals.

2. Item Comparison



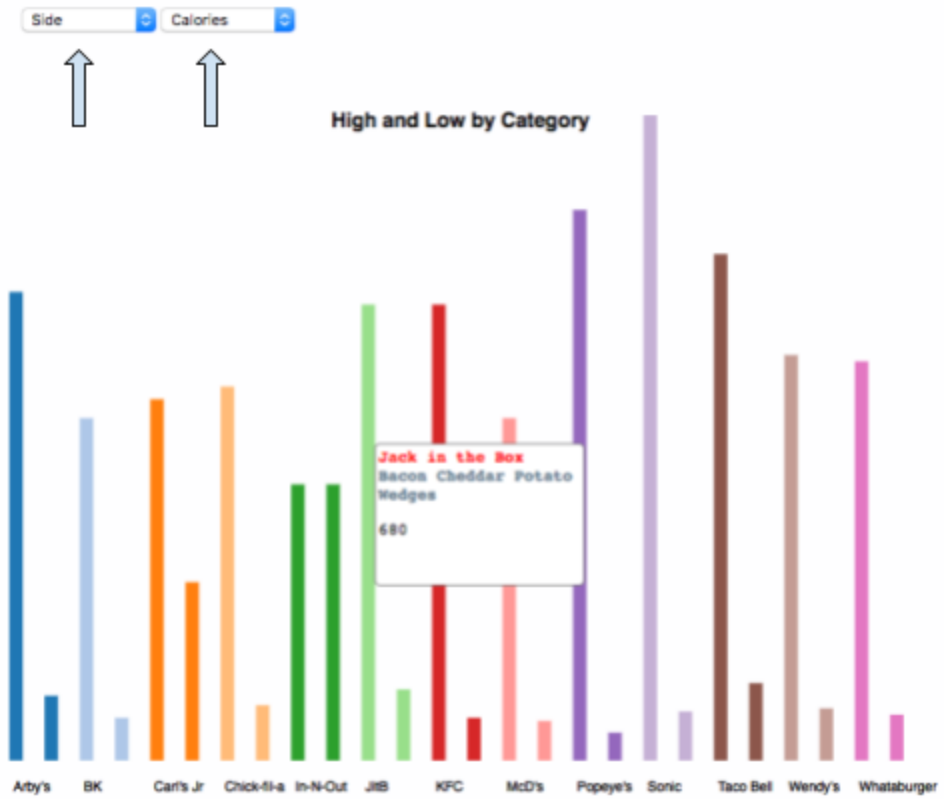
This visualization allows you to compare two fast food items on their nutritional information. If you hover over the bars, it shows the item name, the nutrient being compared, and the value for that specific item. You can select items using the selection boxes in the top bar. When an item is selected, it shows up in the box on the very right and the chart will update dynamically. The chart will not be drawn until two items are selected. You can change which items are selected by clicking “Add Item 1” or “Add Item 2”, which changes which items are selected.

3. Category Breakdown Pie Chart



This visualization allows you to see which restaurant has which proportion of the total items in a certain category. If you hover over the slices of the pie, it shows the restaurant name, the number of items in the selected category, and which category is being shown. The chart changes dynamically if you change the value of the selector with the arrow under it in the image above.

4. High and Low by Category Bar Chart



This visualization allows you to see the highest and lowest value of a certain nutrient for a restaurant for a certain category. If you hover over the bars, it shows the restaurant name, the item whose value is being displayed, and the value of the nutrient which is being displayed for that item. The chart changes dynamically if you change the value of the selectors with the arrows under them in the image above.

Evaluation

Using our visualizations, we learned that fast food restaurants do have some healthier options although there are many more unhealthy options. For instance, Taco Bell has a number of healthier options, while Jack in the Box is generally unhealthy. We answered our questions by comparing different items and restaurants and building different meals. We were also able to see which restaurants had the most options for different categories. Our visualization works well and can be used to build healthy meals and compare different items. We would improve the overall aesthetic of our site as well as adding more comparative visualizations for the subcategories of food.

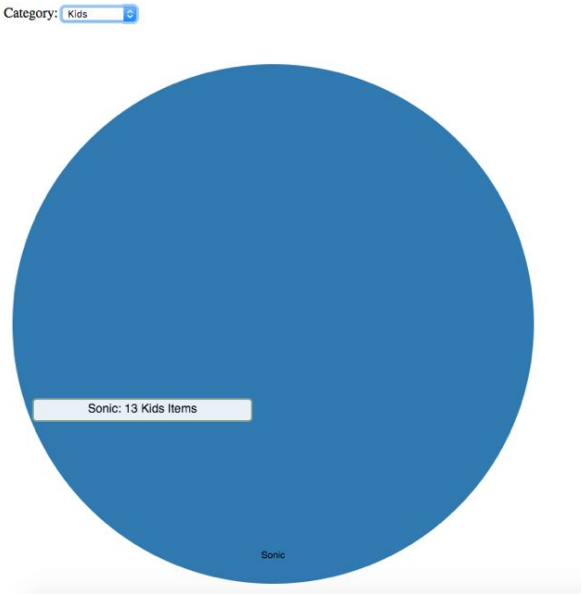
4/12
Working on High Low.

We decided that it'd be easiest to first work on the high and low graph because we could build off of our stacked bar lab. We also decided not to have an average of the restaurant for that category because it doesn't demonstrate specific food items.

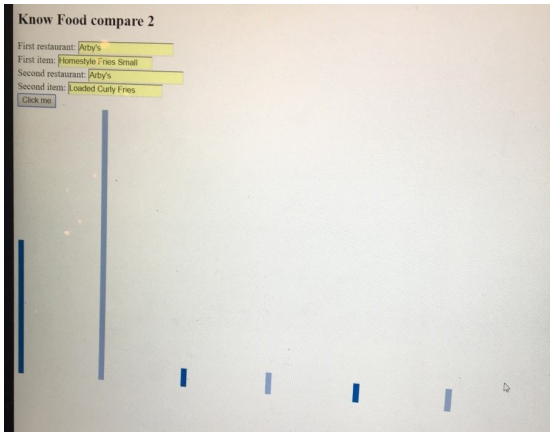
We decided to edit the dataset to just be Beverages and and Calories for our initial testing. We created a dictionary with all the restaurants and a min and max for the Calories.

4/15
Worked on pie chart and compare 2 items.

We've realized that we need to clean our dataset more, because there is a Kids category for Sonic that has not appeared elsewhere.



We also need to change the way that we have users put in items for the comparison because they need to know the name of the specific item at the moment.

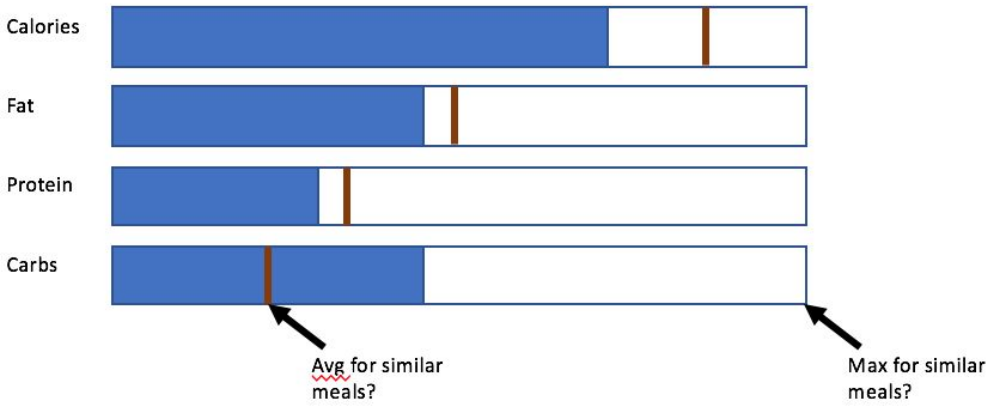


4/16
Sophie completed build a meal and Mara worked more on comparison and the high and low graph. We have decided that we will use the same format for getting items that we use in build a meal in our comparison between 2 items.

We need to come up with a visualization for build a meal and are considering different graphs.

4/17
We've realized there's a bug in getting the high and low items for our high and low graph and need to find out what it is.

Professor Ottley suggested a side bar graph for our build a meal visualization and we think we will implement something similar.



4/18
We received feedback from a classmate, which was generally positive. While he was able to complete the tasks that we set him, we realized that we need to make the interface more intuitive.

4/23
The bug in the high and low graph has been found and it is now obtaining the right highs and lows but not displaying correctly for all the categories of measurement.

4/24
The graph for build a meal has started to be implemented and we have worked on adding an x-axis to our other graphs. We figured out how to fix high and low so that it displays correctly. We have started to work on putting all of our visualizations onto one web page.

4/26
We are finishing up putting all of our visualizations onto one page and getting ready to submit our project.