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Info 498 A Interactive Information Visualization

Assignment 3

Final Write-up

Storyboard and Description of Data Domain:

Our data domain, nutritional information about food and beverages, is often blurred or distorted. Certain drinks contain enormous amounts of calories that could suffice as an entire meal for a day, while others contain almost an entire daily dose of caffeine in one serving. Because this information is so unknown, we decided to create an interactive information visualization that will shed light on the number of calories and caffeine (in milligrams) of different coffees, caffeinated beverages and even some foods. We obtained our dataset of this information from a database from the website "Information is Beautiful". The data was collected from a couple of different sources, including the World Cancer Research Fund, the Starbucks Beverage Nutrition Guide, and Calorie Counter Database. Our goal is to present this information in such a way that viewers can see the calories and caffeine for all of the beverages in the dataset. Specifically, we will give viewers the ability to filter the beverages presented to them by the type of beverage, such as coffee, frappuccino, energy drink, or different espresso variations. We decided to have a dropdown menu with all of the beverage type options because the type of drink is categorical data and is therefore easily filtered in this way. We will also allow viewers to filter the beverages presented by the number of calories or milligrams of caffeine with different sliders. We decided to allow viewers to filter these data with sliders because they are both quantitative data types. This sort of data type is easily filtered with a slider because the data range is continuous.

To prototype our interactive visualization software, we created a quick visualization of the dataset using Tableau (pictured below). We made a scatterplot of the data, with Caffeine mapped to the x-axis, and Calories to the y-axis. We made the type of drink map to color, as we will do in our final visualization as well. This initial prototype of our software allowed us to see how a user may interact with our application, and how effective our design choices would be. We liked the storyboard and interactions we foresaw with the prototype, and decided that it would be a good starting point for our final visualization software. In order to enhance the visualization with interactions we thought would be appropriate, we asked ourselves: 'what do we want the data to tell us?' We realized this answer would be based on personal preferences for certain calorie and caffeine contents in a food or drink item. Naturally, we decided to pursue sliding scales to allow the user to refine the data set to a certain caloric range, a certain caffeine range or a combination of both resulting in a quick dynamic query of what the user is searching for. In addition, to enhance the color mapping for 'type' from our prototype, we decided to implement a dropdown menu to allow the user to select and filter by type.

Changes between prototype and final implementation:

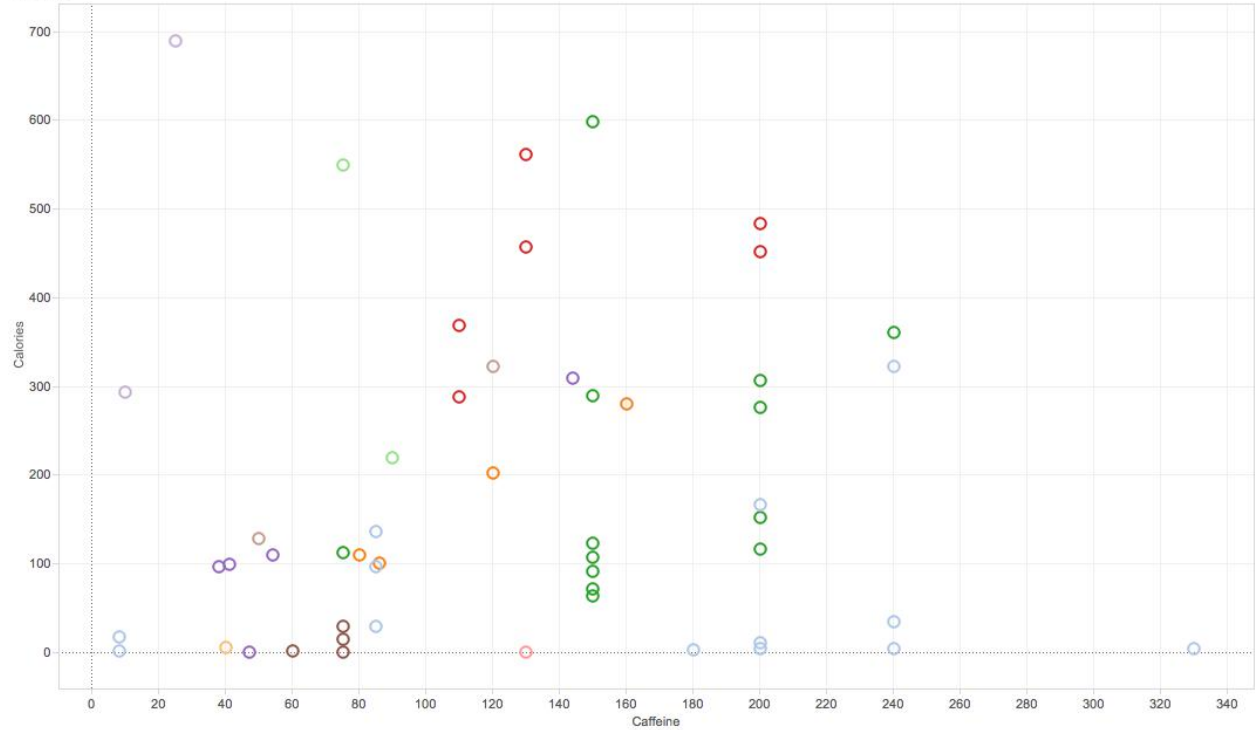
We basically used all of the same concepts from our prototype in our final visualization software. We mimicked the tooltip aspect of our implementation in tableau with the automatic mouseover function. In our final implementation however, we decided to place the tooltip the appeared on mouseover in the top right section of the sidebar with interaction tools. This was to allow the user's view of the visualization to not become obstructed when mousing over different data points. We also changed our color scheme for the data points in the visualization to coincide more with the beverage that they are representing. Rather than choosing colors at random, we selected them from a Color Brewer palette. In our final implementation, we also moved the dropdown menu for the type of beverage to be below the sliders, so that when the menu drops down, it does not obstruct the user's view of the sliders current positions.

Breakdown of work division and development process:

We both participated equally in the data exploration process, and collectively decided on a data domain and set after about 2-2.5 hours of searching for the perfect dataset. Dillon worked on the initial storyboarding and prototyping in Tableau, while Conrad worked on the initial coding in HTML and javascript. We both worked together on the formatting and layout of the actual page, but Dillon was primarily in charge of the CSS stylesheet. The prototyping took around 1-2 hours, and the actual coding took approximately 8-10 hours. This process was easily the most time-consuming aspect of the process. Getting the drop-down menu and both sliders to work dependently with each other were the most difficult and longest aspects of the development process. The final write-up was worked on by both partners, and took approximately 2 hours to complete.

Prototype from tableau:

Sheet 1



Type

- Coffee
- Energy Drink
- Espresso
- Espresso with Milk
- Food
- Frappuccino
- Pain Reliever
- Soda
- Steamed Drink
- Tea
- Tea Latte

Sources:

<http://www.informationisbeautiful.net/2009/caffeine-vs-calories/>

http://www.starbucks.com/menu/catalog/nutrition?drink=all#view_control=nutrition

<http://www.wcrf-uk.org>

<http://caloriecount.about.com/>