INFO 3300 Project 2

Clara Lee (cl874), Kevin Lin (kl628), Mikayla Lin (ml953), Raj Sinha (ys458)

In Class Demo: Nov 10

Final Report: Nov 15 (no slip days)

a) Data Description

Our data visualization showcases the makeup of McDonald's menu items via colored circles that can be clicked into to list out the ingredients of the item. The nutrition facts of the items, including category, calorie, (total) fat, carbs, sugar, and protein information, were taken from https://www.kaggle.com/datasets/mcdonalds/nutrition-facts. The ingredient information for the items was scraped from https://www.canceredinstitute.org/uploads/2/3/8/8/23883109/mcdonalds_ingredientslist.pdf and converted into a CSV file https://docs.google.com/spreadsheets/d/1SzLXz3dUKuDD_L7LTAtt4UkJ6OsAUuZE5E0vCsDqXBs/edit?usp=sharing. Some items on the nutrition facts list, such as the Shamrock Shake, weren't on the ingredients list due to its seasonality. As such, they were not included in the final set of items we visualized. The common factor of the datasets was the items, which we used to integrate the datasets together. In order to consolidate the data in the code, we created an array that would have all of the items' information for each item.

b) Design Rationale

We decided to display our data as interactive circles as we wanted to quickly convey information about large amounts of menu items all at once. By seeing a group of circles that are larger if there are more calories and smaller if there are fewer calories, people will easily get an idea about the amount of calories in different products without having to read closely. Since the circles are too small and numerous to have labels on them, people can hover over any one circle to see the item's name and calorie count. If people want to look more in-depth at the item, they can click on it and see the ingredients listed out. Additional nutrition information concerning fat, carbs, sugar, and protein will also be showcased in a percentage circle with different colors for each nutrient type. The fat, carbs, sugar, and protein percentages are also written out on the side if people want more detailed numbers. We decided to allow for filtering of the items by food category at the top in order to help people find a specific item. In terms of finding specific items, it would be easier with a search bar. However, we decided to go by category filtering as we also wanted to make the number of circles users see at any time more digestible. If all items were shown at once and a search bar implemented, there would still be an information overload as there are 260 items. In this case, we traded off specificity for digestibility. Although we decided to in our status report, we ultimately decided not to color the circles based on their food category as it would be redundant with the filtering.

c) Interactive Design Rationale

As we wanted the information to be more digestible, we made it so you could click into the circle to learn about an item's ingredients and nutrients. We wanted first to give people a large overview and then allow them to choose to see certain items more in-depth. As calorie information is much easier to digest for dozens of items, we decided to first showcase that via the size of the items' circles. Furthermore, as people are less likely to care about the ingredients of the items that they're not interested in, we decided to make it so people could interactively choose which products to view. We indicated that the circles are interactive as, when hovered over, a label appears that says the item's name and amount of calories. When clicked, the circle becomes white to indicate selection. Furthermore, when paired with the relative amount of empty space on the colored

background, users are more likely to deduce that more information can be found. The interactions are interesting due to the new information it releases and the percentage circle, which draws in people visually. We added filtering based on categories to reduce the amount of information users see and allow them to find items based on their interests. For instance, some people might only go to McDonalds for breakfast, and others might be looking to diet and are more interested in the salads section. We made the filtering ability quite obvious by putting it at the top as yellow buttons that become red when selected. The black background further highlights the filtering. These colors are based on the official McDonald's color in order to reinforce the theme.

d) The Story

Our goal was to display the makeup of McDonald's menu items so people could know more about what goes into their bodies. As such, we wanted to include nutritional information in the form of calories and the ingredients of each item. As fast food is quick and cheap, people often might not stop thinking about what they eat. However, as people should eat 2000 calories daily and food from all 6 food groups, we wanted to make a visualization that allows them to see how a McDonald's meal would contribute to their health. We discovered that the amount of calories each McDonald's item has was not insanely high despite being labeled as fast food (unlike the Cheesecake Factory). McDonalds has very few salads, which is not surprising. Looking further into the ingredients list, there's an abundance of bread and meat but not many vegetables or fruit. We want users to understand that, despite having enough calories, the actual ingredients that make up the McDonald's menu items might not be the healthiest. It was surprising to see that the Coffee & Tea category had the most items, although it's likely due to the fact that multiple sizes for each drink are listed. Interestingly, some items in the Beverages category weren't made up of fat, sugar, carbs, or protein. Other items were all protein, which was news. People don't often think about what goes into their beverages, so we wanted to display this information for the user.

Tasks:

- **Clara:** Finalized the design plan with sketches and then assisted in data visualization execution/coding. Implemented the ingredient lists display that comes from clicking on an item. Made UI edits to enhance the user experience.
- **Mikayla:** Organized the data sets to reflect the same items so the code can filter accordingly. Converted the ingredient lists into parseable CSV files. Helped with coding up the visualization and added labels. Wrote up the final report.
- **Kevin:** Started coding up the initial visualization by displaying the calorie bubbles with sizes based on the calorie amounts. Coded the simulation to attract bubbles to the center of the display.
- **Raj:** Started coding up the initial visualization. Implemented filtering based on the product category and made calorie bubbles clickable to show their ingredient lists.
- **Time spent:**
    - We held working sessions to complete our project, of which each member was present. We spent approximately an hour developing and finding data for the project idea. We then spent approximately 20 hours implementing the visualization.
    - We spent the most time trying to display the interactive circles. We needed the circles to differ in size based on their calorie amount and to use force simulation to make them touch but not overlap.
    - Another significant challenge was integrating the two datasets with each other. It was difficult to initially figure out how to access data from each.