Introduction

Cereal is a quick and nutritious breakfast that is common in many households around the world. With such a large demand for cereal, there is bound to be many different suppliers. Most notably, Kellogg's, General Mills, and Post are three of the leading manufacturers in the cereal industry. They market many different cereal products to consumers that generate high sales annually. Yet with such a wide selection of cereals, it can be quite daunting for consumers to select the best cereal and brand to meet their health needs and preferences.

Our graphic visualization aims to help consumers compare the nutrition values of the top 10 best selling cereal brands. We do so by employing tools such as radar (or spider) charts, selective grouping of information, and meaningful scales and styling.

Description of Data

The original dataset was taken from the statistics library at CMU[1]. It contains information on 77 brands of cereals with their respective nutrient values. We only used a subset of this data and incorporated additional information regarding annual sales from another dataset[2].

We decided to visualize data on the top 10 best selling cereals (criteria determined by annual sales) and 6 properties of each cereal: calories, fat, fiber, carbohydrates, protein, and sugars. We selected these types of nutrients (variables) because they are the most common and meaningful to consumers.

Once we pulled data selectively from our two datasets, we had to adjust values so that the data uses a common scale. Originally, the values were based on different cup sizes, which make the data meaningless when compared to one another. We therefore used Excel to change the scaling to 1 cup, adjusted the values according, and converted the dataset into JSON format. There will be additional scaling done using JavaScript described in the next section.

Mapping Data to Visual

For the non-interactive data visualization, we drew radar charts inside circle elements for each cereal brand and positioned them selectively. We found radar chart and bubble examples from the bl.ocks.org webpage, which contains sample code for different types of data visualization. It was a great source of inspiration for us.

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[1] http://lib.stat.cmu.edu/DASL/Datafiles/Cereals.html
[2] http://www.foodnavigator-usa.com/Manufacturers/Cereal-blockbusters-America-s-top-10-best-selling-brands/%28page%29/1

Some design and style decisions we made for a better and more information visual:

Decision	Purpose
Scale circles by annual sales	To distinguish cereals that are most popular and least popular
Group circles by manufacturer and assign each group a color to distinguish them	To explicitly distinguish cereals by manufacturer so consumers can also compare between manufacturers in addition to cereal
Incorporate a key and sample radar chart	To unclutter visual of unnecessary text and to increase the legibility and aesthetic appeal of the graphic
Use a fun font!	To further project the fun and entertaining image of our cereal project
Separate the variables inside radar charts to good (right) and bad (left) nutrients on opposite sides	To clearly distinguish bad and good types of nutrients so viewers can easily compare the different cereals. For example, polygons that are heavier on the left are typically bad

We pulled code for drawing a radar chart and modified the file inside RadarChart.js[3]. Some changes we made to the original:

- Removed code that is non-static (i.e. mouseover)
- Used a for-loop to draw multiple charts
- Aligned charts with the circle elements
- Adjusted scaling of charts to match circles they exist in

We also used code for positioning and drawing the circles in the file bubble.js[4]. Some changes we made to the original:

- Removed unnecessary functionalities
- Adapted code to fit our data (include color coding by manufacturer)
- Gave each g-tag (each cereal) an unique id that can be referred to

When drawing the individual radar charts, we also scaled and adjusted the format of the data to meet the input requirements of the RadarChart function. For example, we

[3] http://bl.ocks.org/nbremer/6506614
[4] http://bl.ocks.org/mbostock/4063269

determined the max value for each variable and then calculated the percentages to replace variable values. These values are then used to draw the charts.

The Story

Our visual shows the top 10 best selling cereal brands grouped by manufacturers. It can help viewers answer the following questions regarding cereals:

- Which cereal is the most popular? Least popular?
- Which manufacturer produces the healthiest cereals? Least healthy?
- Which cereals are high in generally "bad" nutrients (sugar, fat, calories)? "Good" nutrients (fiber, carbohydrates, protein)?
- Which cereals are good for specific nutrition needs? (i.e. Raisin Bran is a good source of fiber)

Our visual therefore does not only provide information for specific brands of cereal but also for the largest cereal producers within the industry.

Breakfast is the most important meal of the day, and our visual is the perfect tool to help people make informed decisions regarding their cereal consumption!

Nutritional Comparison of Breakfast Cereals

The graph below shows the top 10 best-selling breakfast cereals of 2013.

Key

The right side of each chart represent healthier qualities while the left denotes unhealthier qualities

Axis Scales

Fiber: 0 – 7g
Fat: 0 – 4g
Protein: 0 – 6g
Calories: 0 – 160
Sugars: 0 – 16g
Carbohydrates: 0 – 33g

Circle Size

Sales: $0 – $555,897,000

Manufacturer by Color

Post
Kelloggs
General Mills