Group 7: Costco Design Idea for Visualizations
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Visualization 1: Bar Chart by Product Count and Category (Altair)
This visualization uses a single blue color as a mark, since the bars all represent the same value— the quantity of products in each category. The gray horizontal lines make it easier for the viewer to interpret the values at a glance (though they may also hover over the bars to get the specific values if they choose). Furthermore, the labels on the x-axis are tilted at a 45-degree angle to improve the readability, as they can get fairly long.

Visualization 2: Heatmap by Product Price Range Distribution by %
This heatmap was designed to provide an intuitive and visually engaging way to understand Costco's product pricing distribution across various categories. A blue green color palette was chosen to create the blue color for Costco's brand with a distinct contrast that helps guide the viewer's attention darker shades indicate higher concentrations of products within a given price tier. The layout arranges product categories along the vertical axis and price tiers from bargain to luxury along the horizontal axis, aligning with how people naturally interpret increasing values from left to right. Percentage labels were included directly within the cells to support readability without overcrowding the chart.

Visualization 3: Bar plot showing the relationship between price and ratings (D3)
The interactive bar chart was designed to visualize the relationship between product ratings and price ranges across different subcategories. Color was used to reflect a gradient from green to blue representing the progression from lower-priced (bargain) to higher-priced (luxury) products. Each bar represents a distinct price tier, and hovering over the bars reveals average ratings and product counts, adding depth to the exploration. The interface includes a dropdown menu to filter by subcategory allowing users to explore how pricing and satisfaction vary across departments.

Visualization 4: Side-by-side scatterplot showing the relationship between price after discount and ratings
This side-by-side scatterplot was designed to clearly visualize the relationship between product price (after discount) and customer ratings, segmented by discount status. By separating "Full Price" and "Discounted" items into two panels, the layout reduces clutter and allows for a cleaner comparison. The color scheme of red for full-price items and green for discounted ones was chosen with Costco's red, white, and blue color scheme. The clean white background has good contrast and readability, while consistent axis scales across panels allow for fair visual comparison. The dot size and transparency were adjusted to minimize overlap in denser regions, and the zoom in and out regions allow for more accuracy of specific points.

Visualization 5: Occurrences of Food Marketing Terms in Costco's Products, by Price Category (Tableau)

This visualization uses different colors for each marketing term, so viewers can compare the values for each term across the 3 price categories. For example, the orange bars represent the number of "kosher" products, and the viewer can easily see how this value differs for low, mid, and high-priced products, by looking at all of the orange bars. The darker gray horizontal lines separate each price category from each other, and the lighter gray vertical lines help the viewer interpret the product counts for each marketing term.