Individual Dashboard Project
DAT 560E Sec 29
Ying Chen
502466
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Dataset Description

The dataset is downloaded from Kaggle.com(https://www.kaggle.com/datasets/rinichristy/2022-fuel-consumption-ratings). This dataset is about the fuel consumption of the latest models (2022) from different brands. It contains 946 observations and 15 attributes: eight of them describe the cars, and the rest is about the fuel consumption. In my analysis, I mainly use "Fuel Type", "Make", "Model", "Vehicle Class", "CO2 Rating", "Smog Rating", "Fuel Consumption (City(L/100km))", and "Fuel Consumption (Hwy(L/100km))". It has 4 fuel types, 39 makes, 715 models, and 14 vehicle classes. The "CO2 Rating" and "Smog Rating" is the tailpipe emission of carbon dioxide and smog-forming pollutants rated on a scale from 1(worst) to 10 (best).

Design Concepts

This project contains three charts and one dashboard.

The first chart is called "Rating" because we can see the "CO2 Rating" or "Smog Rating" by different dimensions from this chart. I set two parameters "Select a Measure" and "Select a Dimension" to choose measure ("CO2 Rating" or "Smog Rating") and dimension ("Make", "Fuel Type", and "Vehicle Class"). And I also create two correspond calculated fields for them. In the chart, we can see the percentage of each score of each category (i.e., make/ fuel type), so we can clearly see the distribution of each score. And I also mark the average score for each category, color and change the shapes of them based on whether it is greater than 5, and add a reference line of 5. Therefore, we can clearly see which category perform good and poor from this chart. For example, I can tell that those luxury brands such as Bugatti, Lamborghini, Maserati, and Rolls-Royce perform extremely bad in both Smog Rating and CO2 Rating. So, we might conclude that the emission and fuel consumption are not the main concerns of these luxury brands.

The second chart is called "TOP N" because we can choose to see Top N category in selected dimension by the "CO2 Rating" or "Smog Rating". I continue to use the "Select a Measure" and "Select a Dimension" parameters created in the first chart and add one new parameter "Top N Parameter" to adjust the number of N we would like to see. The main idea in this chart is to see which category perform well and what the exact average score is.

The third chart is called "diff between city and highway". It compares the city fuel consumption and the highway fuel consumption in liters per 100km. I continue to use the "Select a Dimension" parameter in this chart, so we can still choose a dimension from "Make", "Fuel Type", and "Vehicle Class". Generally, the city fuel consumption is greater than highway fuel

consumption. Therefore, I create a calculated field called “Gap” to show in word that how many liters per 100km that city fuel consumption is more than the highway fuel consumption. And then I sort it by the field “Gap” by descending order. We can see Bugatti, Rolls-Royce, and Lamborghini are the makes that have top three large gap between the city and highway consumption. On the other hand, Mitsubishi, Kia, and Toyota are the makes that have least three large gap. In my opinion, those economy cars take this balance into consideration more. I also color the city and highway fuel consumption with different colors, so we can compare the city and highway fuel consumption across category visually.

The dashboard contains the three charts I describe above. All of them share the parameter “Select a Dimension”, but you can also adjust the parameter “Select a Measure” and “Top N Parameter” on the right panel if needed. The worksheet filter is in “Diff between city and highway”: if you click one category in the list, the other two charts will only display the one you just select. The dashboard filter action is added to “Rating”, so when you click one category listed in “Rating”, you can see the exact average score from the “Top N” chart if it is included in “Top N” and you can see the city and highway fuel consumption as well as the difference in between from the chart on the bottom right corner. The dashboard highlight action is added to “Top N” chart. So, when you select one category in “Top N” chart, the chunk for this category in “Rating” and “Diff between city and highway” will be automatically highlighted.