Higher the Price, Lower the Sound

Our group began discussing the differences in our vehicles compared to those on the road we see around Charlotte. We are looking into the comparison between engine size, car make, price to decibel levels produced. We are curious if the more expensive the car, the quieter it sounds.

We got both the Sport Car Dataset and the Car sound decibels were received on Kaggle.

Once we were able to load the csv files into jupyter notebook and MongoDB, we began combing through the data types to see how each individual data value was labeled. Many of the data types were objects. Our response to the massive amounts of data being numerical values, we tried setting them into float values.

Throughout this process we noticed where a lot of the individual data inputs were fastly unique. For example, having an input for Engine Size (L) being “6.2” another one would be “4.2 X”. This at first complicated our string replacements. We in turn decided to comb through and see what values we needed and did not for the purposes of our queries. We did manage to drop any abnormal data values so as to continue to fine tune an already inconsistent dataset. Afterwards, we renamed and replaced the abnormal values we needed into float data types, allowing us to perform our calculations.

Next, we loaded in the new data set of the merging of the two data sets into MongoDB. What we noticed was that many of the electric vehicles have an extremely low decibel reading in comparison to their diesel counterparts. This in turn does show a correlation with the increase in that vehicle's price range.

Looking at the averages of the prices, we noticed the correlation of the price of a car in direct correspondence with its cumulative increase in speed. Even if there was a vehicle with a higher price range, that did not guarantee they would produce a higher decibel reading. Many of the vehicles found to have a higher decibel reading were typically on the lower end of the price range, and not an electric car. This suggests that typically, electric vehicles higher on the price range spectrum measure to have a lower sound decibel reading in comparison to vehicles who have diesel engines.