In this project, I aimed to predict the selling price of a given used car using 15 different factors. Most trends that are obvious when dealing with used cars were borne out in my analysis, such as the fact that cars with more miles on them tend to sell for less, but there were some other surprising and important results, as summarized below.

First off, this analysis found that the exterior color of a used car is not an important factor in its price at all. In fact, in the best model that was run during the analysis, the exterior color of a color was found to be the second least important factor out of all 15 in the data. There is thus no discernible pattern of some cars selling for more than others based on color alone; if cars of some colors seem to sell for more than others, it is due to factors other than the color itself. Furthermore, every modeling technique that was applied saw this result, meaning it was not a special case, but an overarching trend.

Another surprising result of the analysis was the fact that stick shift cars are actually valued more than automatic cars, all other things being equal. The amount is not trivial either: an automatic car that is priced at $15,000 would be valued at $16,786 if it was manual transmission, according to the model. This means that used car dealerships should not shy away from buying manual cars to sell again, as they can often sell at a higher mark than automatic cars. Only about 11% of the cars in the dataset were stick shift, meaning that their rarity is likely what brings them a premium when sold.

Brand	Brand Effect
Porsche	110.67%
Hummer	80.16%
Lexus	36.38%
Toyota	30.25%
Mazda	29.65%
Jeep	28.53%
Honda	25.27%
Land Rover	25.17%
Mercedes	25.14%
Audi	20.79%
Hyundai	-25.45%
Buick	-37.80%
Chrysler	-41.35%

Lastly, there were several brands that had a positive effect on the selling price, as shown to the right. The brand effect represents what percent more or less expensive a car would be if it was a certain brand, when compared to a typically priced car. These numbers represent the effect of only the brand of a car, so

it truly represents the premium that customers pay in order to have a specific brand. Notably, Toyotas, Mazda, and Honda have a higher brand markup than Mercedes' or Audis, according to the data at hand. On the flip side, Hyundais, Buicks, and Chryslers are valued much less on the basis of their brand.