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Car Analysis Report

The goal of this analysis was to identify the key factors that influenced the price of used cars in the current market. To accomplish this task, a dataset containing relevant information such as the price, manufacturer, odometer mileage, and the year was included. Based on this information, we built several predictive models to find the most optimal set of factors that would help maximize client profit margins. Our feature selection models were accurate when it came to the selection of the optimal features in the most desirable cars. Through extensive testing, we found that the manufacturer Ford was highly sought after by many potential buyers.

Through our initial modeling of the data, we also realized that there were several key trends in the relationship between what we believed to be the key features that determined the viability of a particular vehicle model. The most noticeable trend in the data was the relationship between the car's age and popularity. We noticed that there was a much higher likelihood of a car being purchased if it was newer and had lower usage miles, as dictated by the odometer reading. We also noticed that the sale price of the vehicles was significantly higher across the dataset if these two factors were met, which suggests an extremely high degree of importance for these features among potential customers.

In addition to these insights, however, we realized that the vehicles in the dataset depreciated up until a certain point if the vehicles lacked novel features but then appreciated again when highly antiquated and, therefore, rare by modern standards, features became more prevalent, showing that there is a market for antique vehicles past a certain age if their condition is maintained.

The information presented in this report contains the outcome of a strenuous data analysis program driven by predictive modeling, which we believe has provided a very strong set of features that are prioritized most heavily by potential customers. The process and result of our work are detailed in the Jupyter notebook linked in the GitHub below.

<https://github.com/Mapurin-ucsc/Car-Price-DataAnalysis/blob/main/practical_application_II_starter/prompt_II.ipynb>