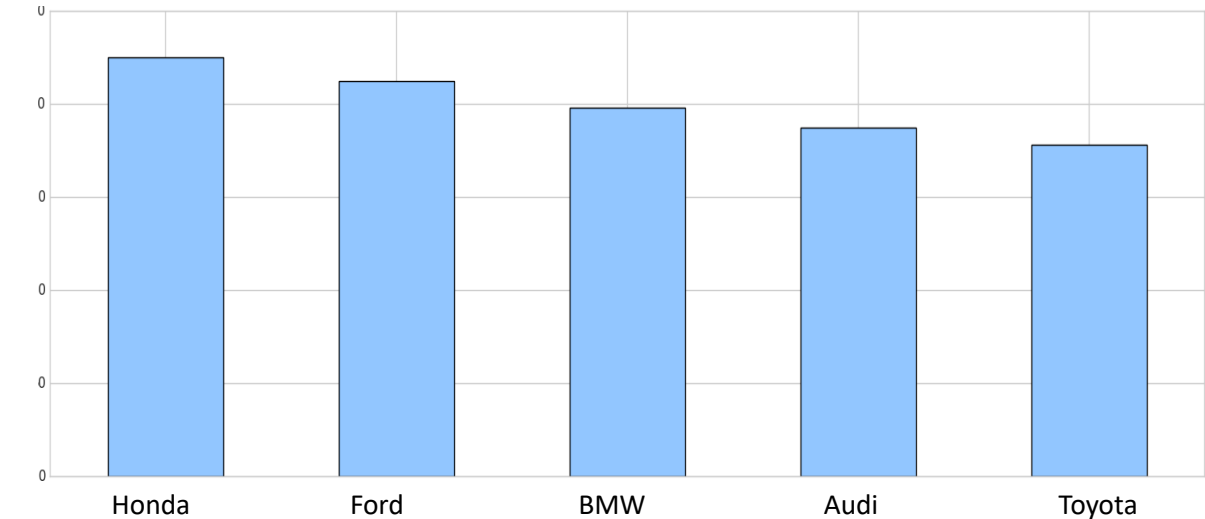


Car Dataset Analysis Report

This report analyzes a dataset of 1000 cars, examining factors such as brand, model, year, engine size, mileage, fuel type, and transmission to uncover pricing trends. Below, we address nine key questions to provide a comprehensive understanding of the data.

Interesting Fact: Contrary to expectations, fuel type has minimal impact on price (Diesel: \$25.1k, Electric: \$25.2k, Petrol: \$25.1k), suggesting market maturity or consistent pricing across fuel types.

1. Most Common Brands

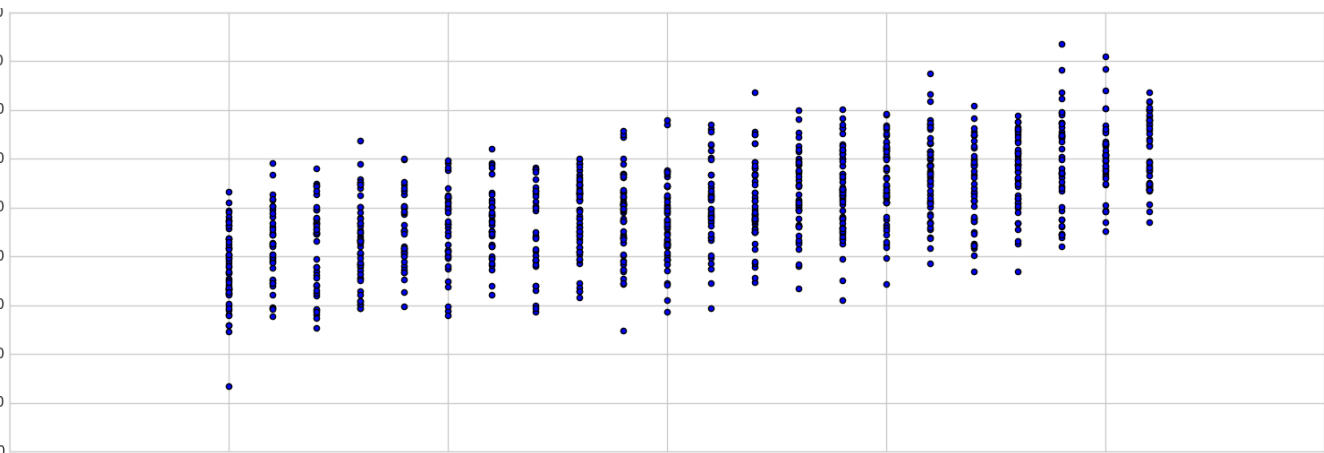


Ford (225) and Audi (212) are the most common brands, followed by Honda (198), Toyota (187), and BMW (178), indicating a diverse market with Ford leading in prevalence.

2. Price Distribution: Most cars fall in the mid-range (\$15k-\$35k), with a mean price of \$25.1k and fewer luxury cars (>\$35k), indicating a market skewed towards affordable vehicles.

Category	Price Range (USD)	Percentage
Cheap	<21,587.88	26%
Mid-range	21,587.88–28,806.37	50%
Luxury	>28,806.37	24%

3. Car Age vs. Price



Newer cars (lower age) command higher prices, with a strong negative correlation (-0.61). Prices decrease steadily as car age increases, from \$30.5k in 2021 to \$18.9k in 2000.

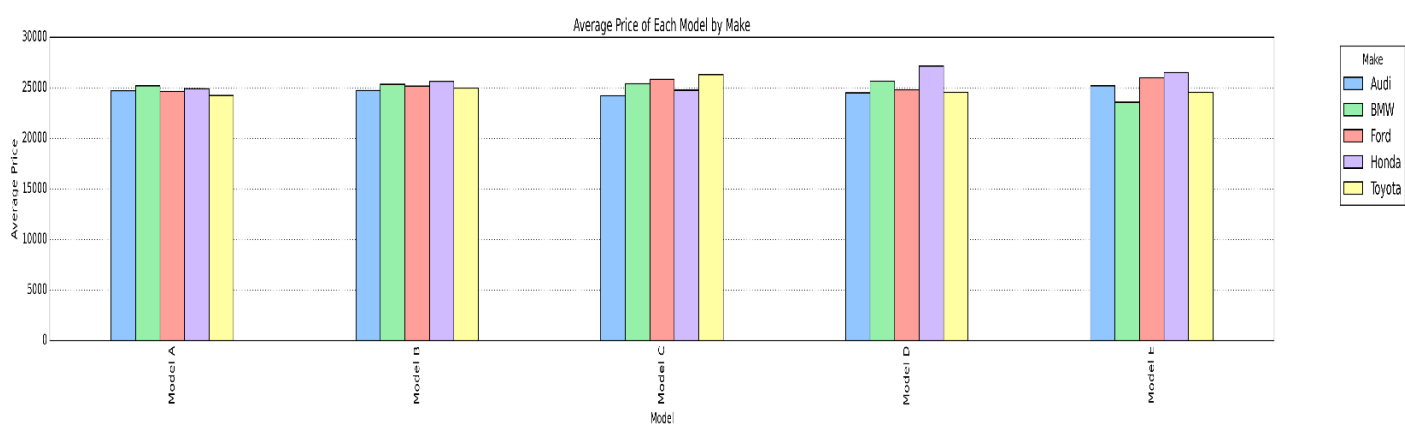
- 4. Engine Size vs. Price:** Larger engines correlate with higher prices (correlation: 0.38), with 4.5L engines averaging higher prices than smaller ones like 1.0L.
- 5. Mileage vs. Price:** Higher mileage corresponds to lower prices (correlation: -0.56), with cars under 33.7k miles averaging \$28.9k, dropping to \$21.1k for 161.9k-199.9k miles.
- 6. Transmission vs. Price:** Automatic cars (\$25.3k) are slightly more expensive than manuals (\$25.0k), suggesting a small premium for automatic transmission.
- 7. Fuel Type vs. Price:** Prices are similar across fuel types (Diesel: \$25.1k, Electric: \$25.2k, Petrol: \$25.1k), with electric cars slightly higher but not significantly.

9. Strongest Price Factor

Factor	Correlation with Price
Car Age	-0.61
Mileage	-0.56
Engine Size	0.38

Car age has the strongest impact on price (correlation: -0.61), followed by mileage (-0.56) and engine size (0.38). Brand impact varies but is less quantifiable here.

10. Model Price Consistency Across Brands: Model D (Honda: \$27.1k) and Model E (Honda: \$26.5k) are consistently pricier, while Model A and B show more variation across brands.



Conclusion

The analysis reveals that car age is the strongest predictor of price (correlation: -0.61), followed by mileage (-0.56) and engine size (0.38). Newer, low-mileage cars with larger engines command higher prices. Automatic cars and certain models (D and E) tend to be pricier, while fuel type has minimal impact, challenging assumptions about electric vehicle premiums. These insights provide valuable guidance for understanding car market dynamics.