

Project Report: Web Scraping Analysis of Cars24 - Ford Used Cars in Mumbai and Delhi

Introduction

This report presents the findings of a web scraping project aimed at analyzing used Ford cars listed on Cars24 in Mumbai and Delhi. The objective was to gather data, covering key details such as kilometers driven, year of manufacture, fuel type, transmission and price. This report provides an overview of the data collected and highlights significant trends and patterns observed in the used Ford car market.

Methodology

We developed a web scraping script to extract data from the Cars24 website, using Python programming language along with BeautifulSoup and Requests libraries.

The web scraping script extracted essential data points including kilometers driven, year of manufacture, fuel type, transmission and price of Ford used cars in Mumbai and Delhi. The data collection process involved handling dynamic content loading and parsing inconsistent HTML structures across different listings.

Data Collection & Analysis

The data collection process involved parsing HTML content and identifying relevant tags and attributes that contained the required information. Exploratory data analysis (EDA) was conducted to derive actionable insights.

Key Details

• Kilometers Driven

- The kilometers driven by the used Ford cars varied significantly, reflecting a wide range of vehicle conditions and usage histories.
- On average, most of the cars had driven between 20,000 to 80,000 kilometers. However, some outliers with over 90,000 kilometers were also noted, typically priced lower due to higher usage.

• Year of Manufacture

- The dataset included cars manufactured between 2015 and 2020.
- A significant concentration of cars from the years 2016 to 2019 was observed, indicating these models are more frequently resold.

• Fuel Type

- The data indicated that demand for petrol car variant is more than diesel car variants.

- The dataset did not include electric or hybrid Ford cars, suggesting a limited presence of these variants in the second-hand market.

- **Transmission**

- Manual transmission cars dominated the listings, making up about more than 77% of the dataset.
- Automatic transmission cars constituted the remaining 23%. This distribution could reflect market trends where manual cars are generally more affordable and prevalent.
- The preference for manual transmissions might also be influenced by regional driving conditions and consumer preferences.

- **Price**

- The price range for the used Ford cars spanned from ₹4,00,000 to ₹8,00,000.
- The pricing generally correlated with the year of manufacture and kilometers driven, with newer models and those with lower mileage commanding higher prices.
- Diesel variants were often priced slightly higher than their petrol counterparts, possibly due to better fuel economy and longer engine lifespan.
- Manual transmissions were often priced slightly lower than automatic transmission cars.

Observations and Insights

1. **Geographical Insights:** New Delhi showed a preference for newer models and had a higher concentration of premium listings. Mumbai, while also favoring popular models, exhibited a broader range of pricing across different vehicle conditions and mileage ranges.
2. **Market Demand:** The higher concentration of models from 2016 to 2019 suggests these cars strike a balance between affordability and modern features, making them popular choices in the used car market.
3. **Fuel Type Preferences:** The used car market on Cars24 for Ford cars showed a strong preference for traditional fuel types, with no significant presence of electric or hybrid models.
4. **Transmission Choices:** The dominance of manual transmission vehicles indicates that despite the convenience of automatic transmissions, cost and regional driving preferences continue to make manuals a more popular choice.

Conclusion

This project successfully utilized web scraping techniques to extract and analyze valuable data from Cars24 related to Ford used cars in Mumbai and Delhi. The insights collected provide actionable information for automotive dealerships and stakeholders to optimize inventory management, pricing strategies, and marketing initiatives tailored to regional market dynamics.

