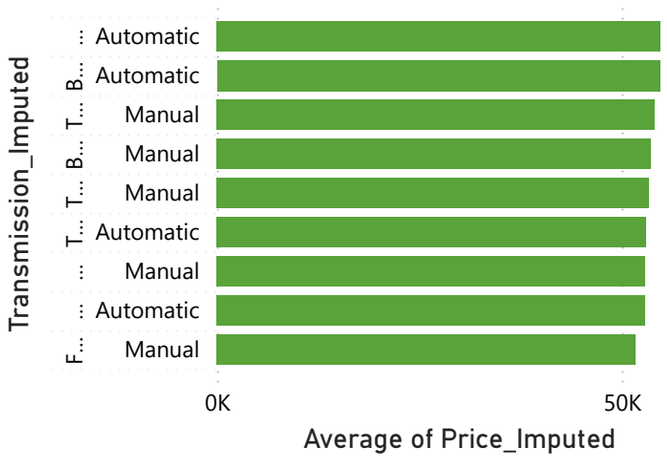
Car Price Prediction - Analysis Dashboard

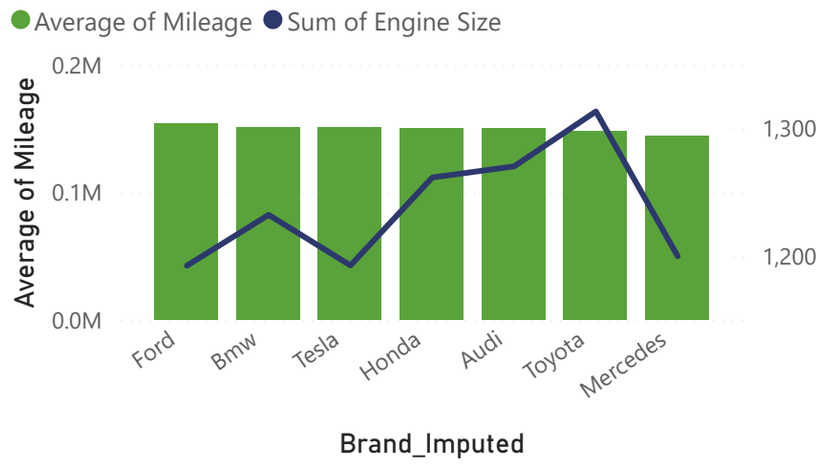
Total Car Count	Total Car's Price	Car's Average Mileage	Car's Max of Engine Size
2500	132M	149.75K	6.00

Year: 2000 – 2023

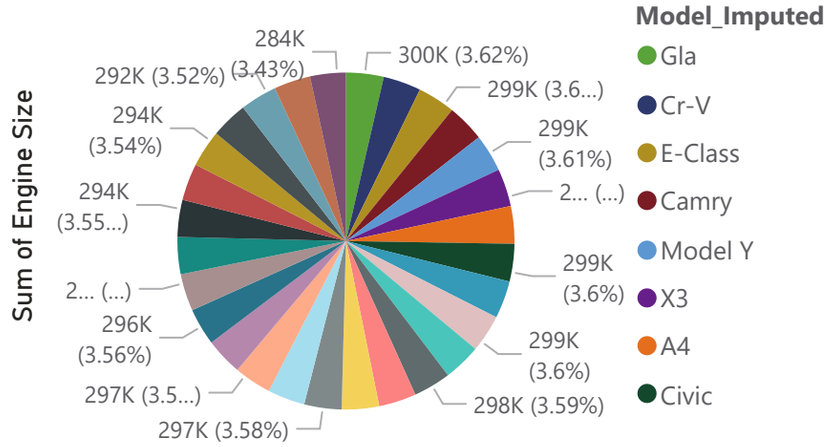
Average of Price_Imputed by Brand_Imputed and Transmission_Imputed



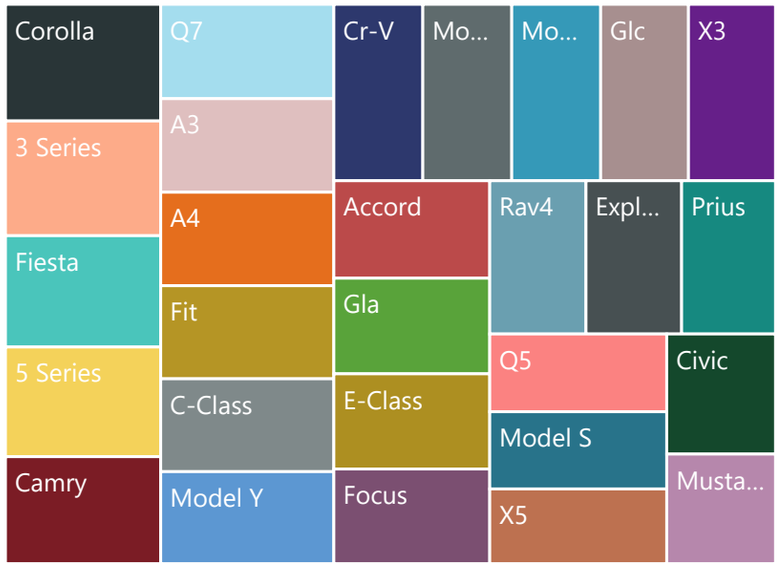
Average of Mileage and Sum of Engine Size by Brand_Imputed



Max of Mileage by Model_Imputed



Sum of Price_Imputed by Model_Imputed



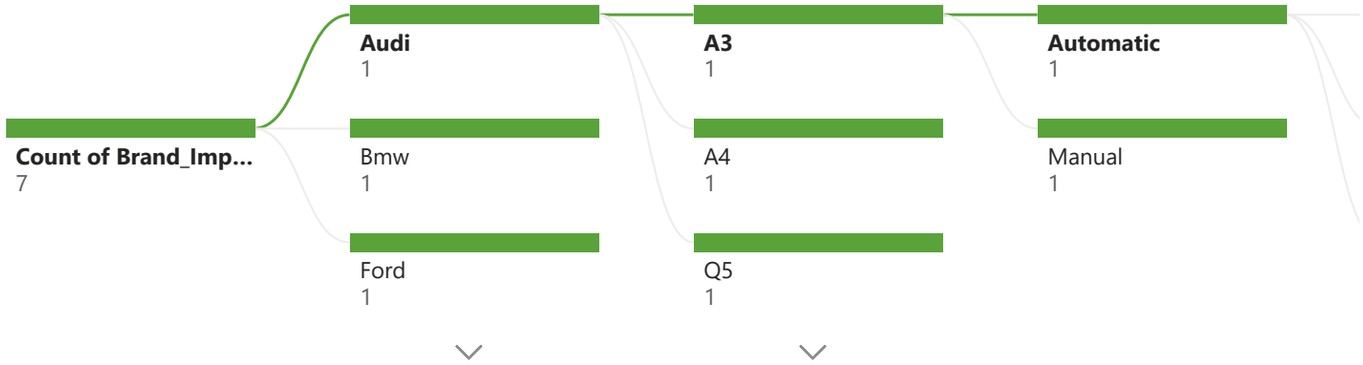
Brand_Imp...
- [ ] Audi
- [ ] Bmw
- [ ] Ford
- [ ] Honda
- [ ] Mercedes
- [ ] Tesla
- [ ] Toyota

Fuel_Type...
- [ ] Diesel
- [ ] Electric
- [ ] Hybrid
- [ ] Petrol

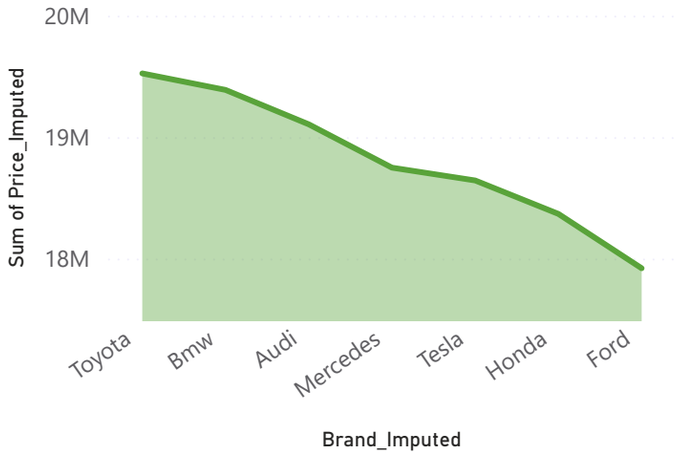
Condition_I...
- [ ] Like New
- [ ] New
- [ ] Unknown

Transmis...
- [ ] Automatic
- [ ] Manual

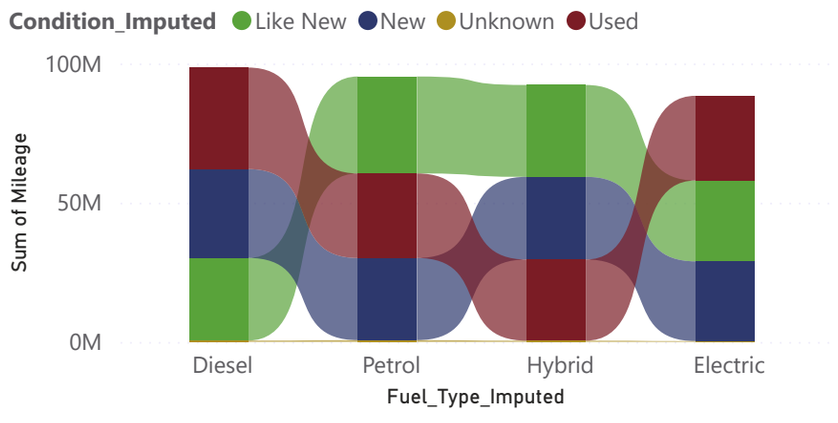
Brand_Imputed × Audi
Model_Imputed × A3
Transmission_Im... × Automatic



Sum of Price_Imputed by Brand_Imputed



Sum of Mileage by Fuel_Type_Imputed and Condition_Imputed



Year and Brand Wise Car's Sum of Price

Year	Audi	Bmw	Ford	Honda	M
2000	1244979	531226	662068	639140	
2001	1020680	666148	534618	691526	
2002	986405	1001382	659465	596181	
2003	874374	725054	560908	1008413	
2004	975775	666182	899427	775868	
2005	718380	950286	928896	849147	
2006	734800	815180	577371	807939	
2007	504649	1038982	1058947	665088	
2008	793628	944721	588430	659791	
Total	**19105132**	**19388251**	**17920221**	**18367573**	**1**

Insights for Car Price Prediction - Dashboard

📊 **Overall Dataset Insights:**
- The dataset contains **2,500 cars** with a **total market value of ~132 million**.
- The **average car mileage** is approximately **149,750 km**, indicating a dataset dominated by used vehicles.
- The **maximum engine size** observed is **6.0L**, suggesting inclusion of high-performance or luxury cars.

💰 **Price Insights:**
- **BMW and Toyota** contribute the **highest total car prices**, closely followed by **Audi and Mercedes**, highlighting the dominance of premium and reliable brands.
- **Tesla**, despite fewer models, shows a **high price contribution**, reflecting strong pricing of electric vehicles.
- **Manual vs Automatic**:
    - Cars with **Automatic transmission** generally show a **higher average imputed price** than Manual cars.
    - This suggests customer preference and higher resale value for automatic vehicles.

🚙 **Brand-Level Insights:**
- **BMW, Audi, Mercedes, and Tesla** consistently show:
    - Higher **average prices**
    - Moderate to lower **average mileage**, reinforcing their premium positioning.
- **Ford and Honda** show:
    - Higher mileage on average
    - Relatively lower price contribution, indicating value-oriented and high-usage vehicles.
- **Toyota** balances both **high mileage and high total price**, reflecting strong durability and resale value.

🛠 **Engine Size & Mileage Relationship:**
Brands like **BMW, Mercedes, and Audi** have a **higher total engine size**, correlating with higher prices.
- **Tesla**, despite no traditional engine size dependency, still maintains strong price positioning.
- **Higher mileage generally correlates with lower price**, but premium brands are less impacted by mileage depreciation.

🚘 Model-Level Insights
- Models such as **Model Y, Model S, BMW 3 Series, X5, Mercedes C-Class, and Audi A4** contribute significantly to total price.
- **Maximum mileage (~299K km)** is observed in models like:
    - **Gla**
    - **CR-V**
    - **E-Class**
    - **Camry**
- These high-mileage models indicate long vehicle lifespan and brand reliability.

⛽ **Fuel Type & Condition Insights:**
- **Petrol and Diesel cars** account for the **largest total mileage**, as they dominate the dataset.
- **Electric vehicles**, while fewer, show lower mileage but higher price impact.
- **Used and Unknown condition cars** contribute the most mileage, which is expected given real-world resale markets.
- **New and Like New cars** have lower mileage but command higher prices.

🗓️ **Year & Trend Insights:**
- Over the years (2000–2008 shown):
    - **BMW and Audi** show a steady rise in total price contribution.
    - **Ford and Honda** fluctuate more, indicating price sensitivity and market competition.
- Premium brands maintain **price stability over time**, even as vehicle age increases.

🔍 **Key Business Takeaways:**
- **Brand, transmission type, fuel type, and condition** are strong predictors of car price.
- **Automatic transmission, premium brands, and electric fuel types** positively influence car prices.
- **Mileage impacts price**, but the effect is mitigated for premium and luxury brands.
- **Toyota and BMW** emerge as the most balanced brands in terms of price, durability, and volume.