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Car Sales for SwiftAuto Traders

The objective of this project is to analyze the historical trends in car sales for *SwiftAuto Traders*. The goal is to provide insights on car sales and profits for each dealer. The dataset used in this lab comes from [here](#) in the **IBM Accelerator Catalog**.

This dashboard provides insights into car sales performance across different dealers, models, and time periods. The dashboard consists of four key visualizations:

1. Sum of Quantity Sold by Dealer ID and Year (Top-Left Bar Chart):

- This horizontal bar chart compares the total number of cars sold by different dealers in 2018 and 2019.
- The blue bars represent sales in 2018, and the dark blue bars represent sales in 2019.
- Dealer 1288 sold the highest number of cars across both years, with an increase from 1.3K in 2018 to 2.64K in 2019.
- Most dealers experienced an increase in quantity sold in 2019 compared to 2018.

2. Sum of Profit by Year and Dealer ID (Top-Right Stacked Area Chart):

- This stacked area chart shows the sum of profit generated by different dealers in 2018 and 2019.
- Dealer IDs are represented by different colors, and their respective contributions to the total profit are visible for both years.
- The total profit decreased slightly from \$15.17M in 2018 to \$14.8M in 2019.
- Dealer 1288 consistently contributed the largest profit in both years, while other dealers had relatively stable contributions.

3. Sum of Profit by Date and Model (Bottom-Left Line Chart):

- This line chart tracks the monthly profit generated by different car models from July 2018 to July 2019.
- The Champlain model (represented by the purple line) shows the highest and most volatile profit pattern, peaking sharply around late 2018.

- Other models like Beaufort, Hudson, Labrador, and Salish show more stable and lower profit trends.

4. **Sum of Profit by Dealer ID for Champlain Model (Bottom-Right Donut Chart):**

- This donut chart breaks down the profit generated by the Champlain model for each dealer.
- Dealer 1301 contributed the most profit (12.63%), followed closely by dealer 1288 (12.61%) and dealer 1401 (12.55%).
- Other dealers like 1212, 1215, and 1217 also contributed significant portions of the Champlain model's profit.

Insights from the Dashboard

1. **Year-over-Year Growth:** Most dealers saw growth in the quantity of cars sold from 2018 to 2019, indicating an upward trend in sales performance.
2. **Profit Decline:** Despite the increase in quantity sold, the total profit across all dealers slightly declined from \$15.17M in 2018 to \$14.8M in 2019. This could suggest higher costs, lower margins, or discounts affecting overall profitability.
3. **Champlain Model Dominance:** The Champlain model stands out as the most profitable model, contributing the highest profits among the models tracked. Dealers 1301 and 1288 lead in generating profits from this model.
4. **Stable Contributions:** Dealer 1288 consistently leads in both sales quantity and profit contribution across both years, indicating strong and stable performance. Other dealers maintain relatively consistent contributions, with some fluctuations.

This dashboard allows stakeholders to identify high-performing dealers, understand trends in model profitability, and explore the impact of year-over-year changes in sales and profits.