

CUSTOMER SALES PERFORMANCE ANALYSIS

End-to-End Data Analytics Project

NIBEDITA SAHU

Data Science & Analytics

Project Overview

The goal of the project is to perform complete Data Analysis and Visualization using SQL, Python, and Power BI, helping build a strong foundation in real-world sales data handling, visualization, and storytelling for business insights.

Data Source:

- ▶ **Dataset Origin:** Dataset taken from Kaggle.
- ▶ **Dataset Details:** Contains information about orders, products, customers, regions and more.

Tools & Techniques Used

Tools:

- ▶ Pandas for data manipulation and cleaning to ensure data quality and consistency.
- ▶ Matplotlib for creating static visualizations to highlight trends and patterns in the data.
- ▶ Seaborn for advanced data visualization to provide deeper insights into sales performance metrics.
- ▶ SQL for querying and exploring the dataset to extract relevant information.
- ▶ Power BI to build an interactive dashboard for presenting findings and insights in a user-friendly format.

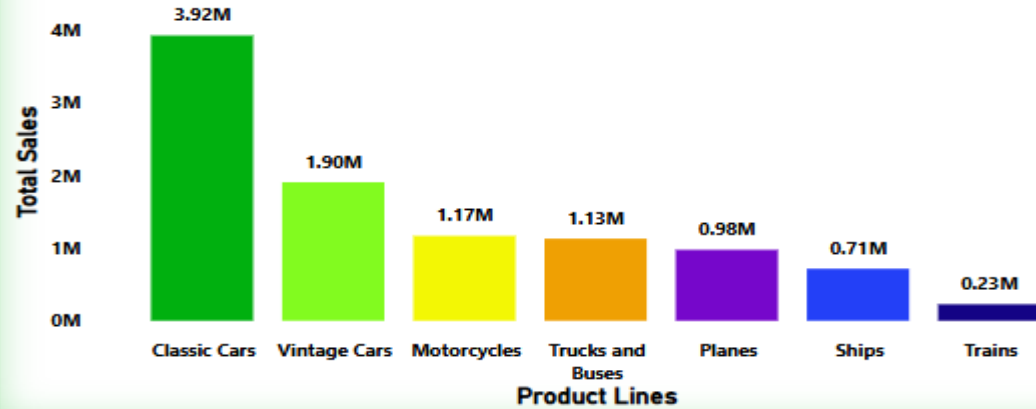
Tools & Techniques Used

Techniques:

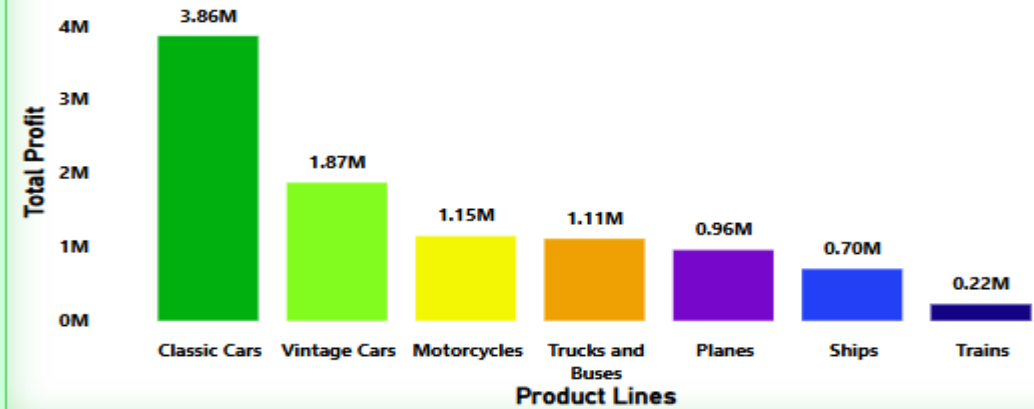
- ▶ Data Integration
- ▶ Data Cleaning
- ▶ Exploratory Data Analysis (EDA)
- ▶ Data Validation
- ▶ Statistical Analysis
- ▶ Feature Engineering
- ▶ Data Storytelling
- ▶ Dashboard Design

Customer Sales Performance Dashboard

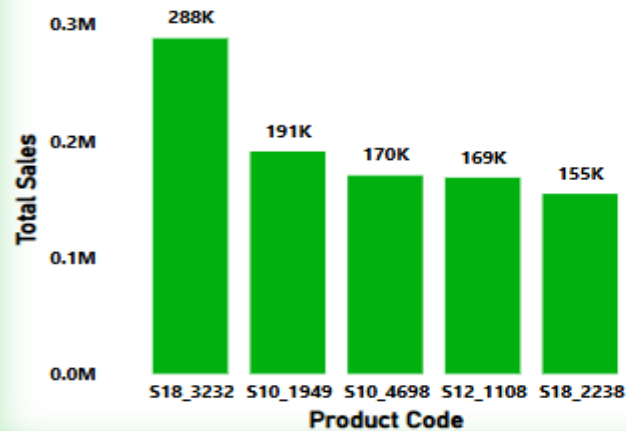
Total Sales by Product Lines



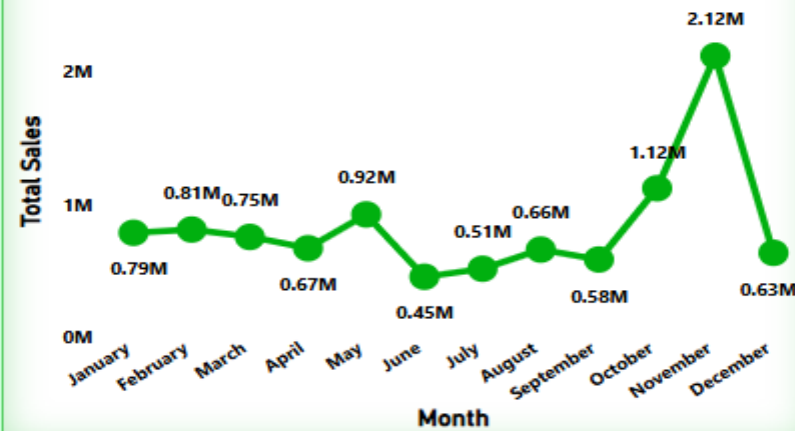
Total Profit by Product Lines



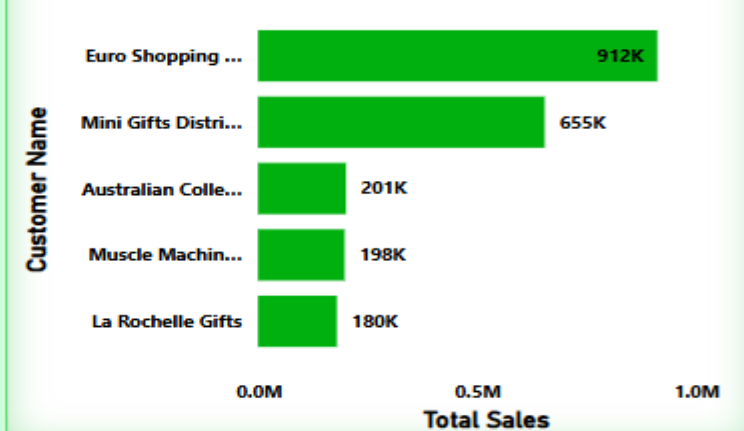
Top-5 Best Selling Products



Total Sales by Month

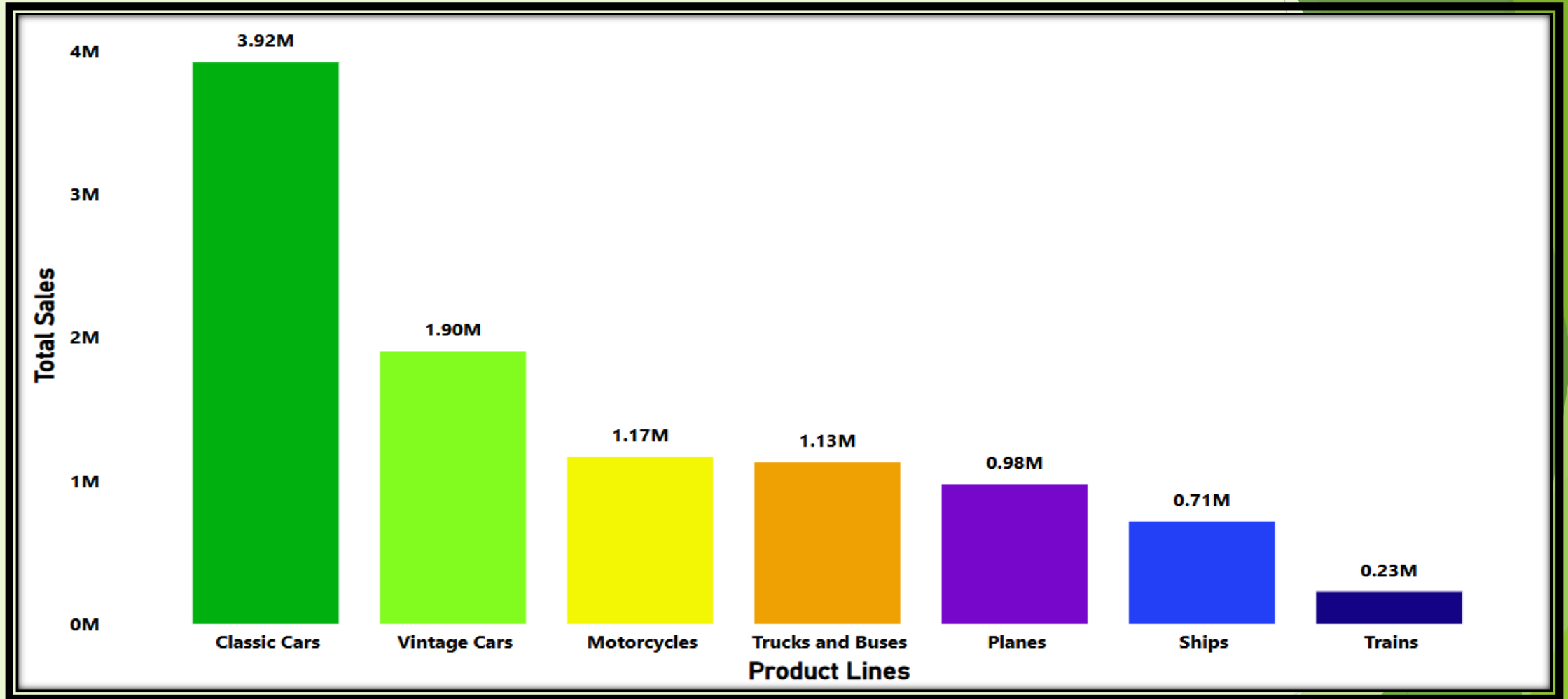


Top Customers by Revenue



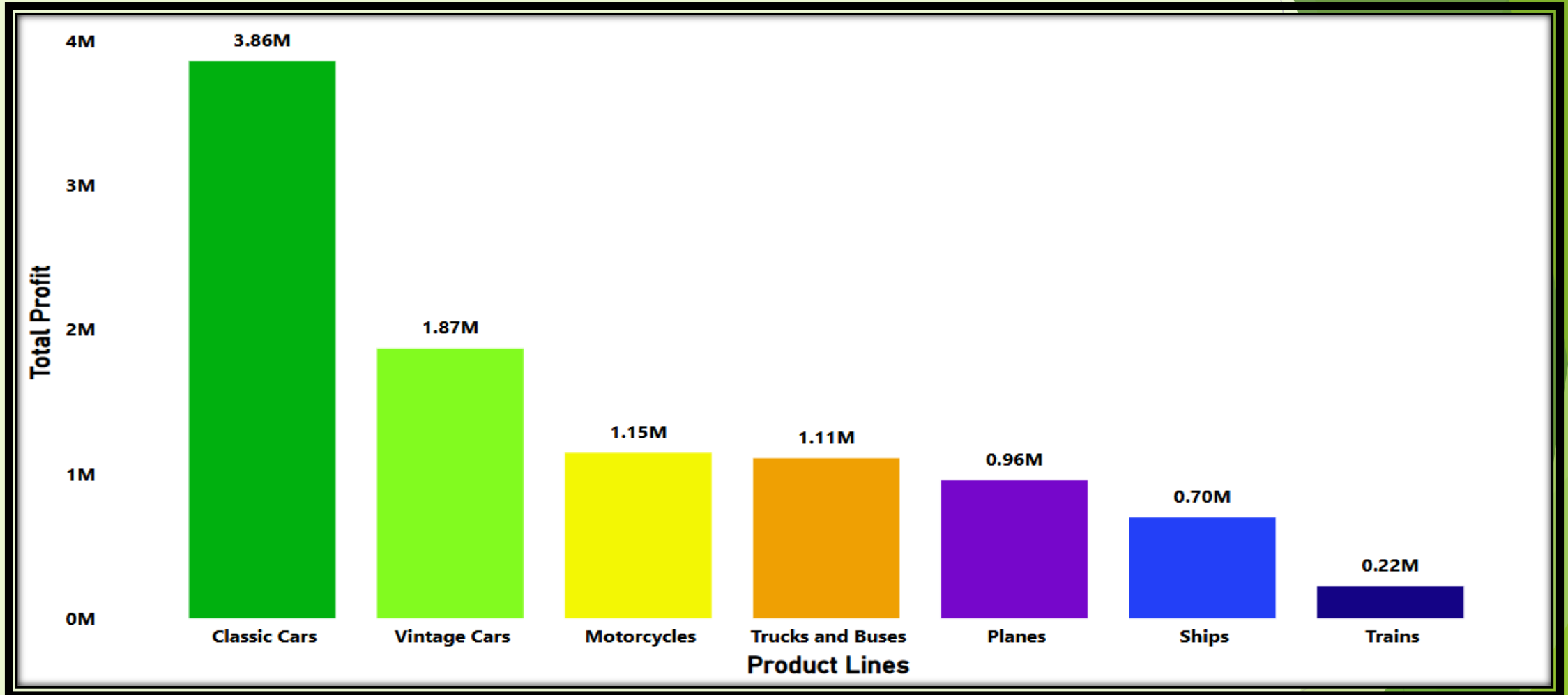
The final dashboard highlights key metrics and visual insights about sales performance across products, customers, and time.

Total Sales by Product Lines



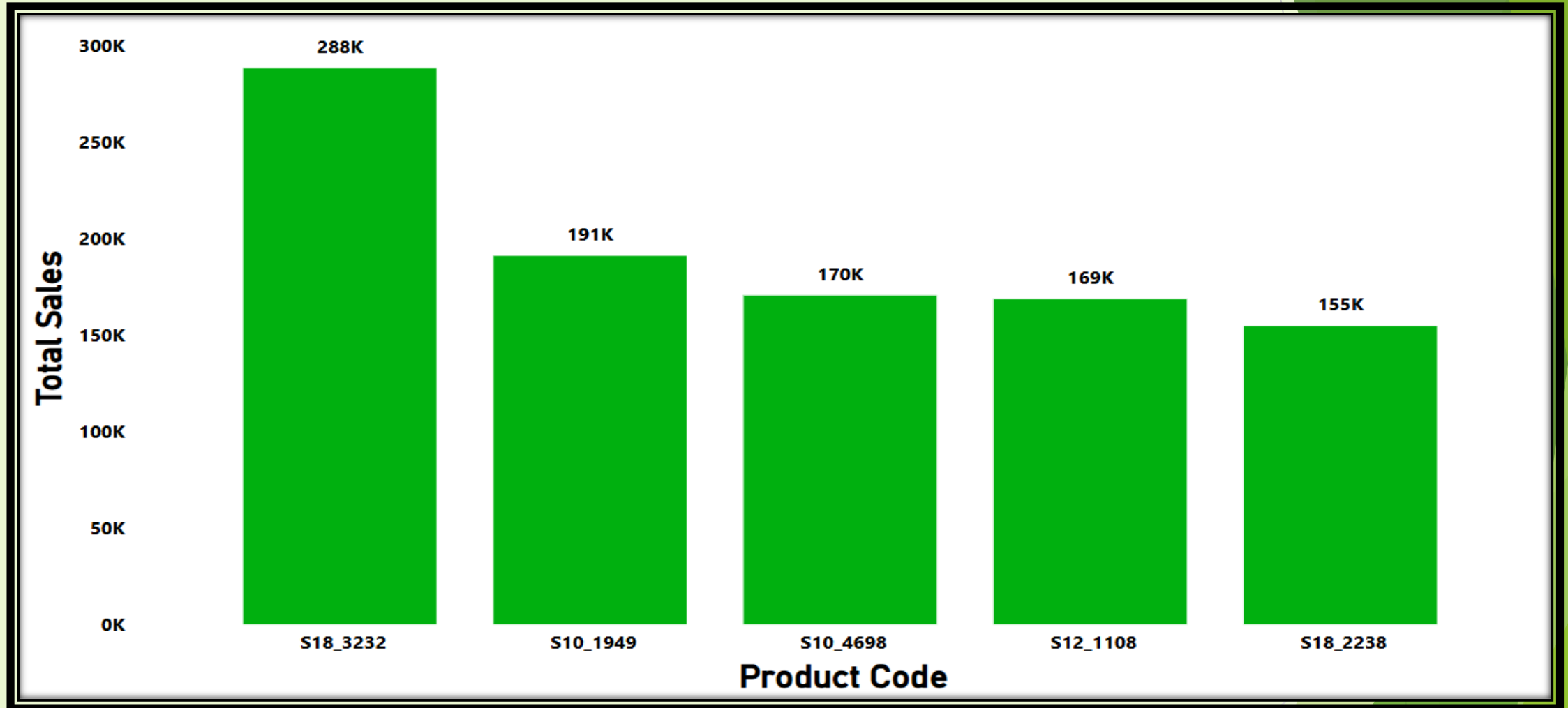
Classic Cars generated the highest revenue, followed by **Vintage Cars**. These categories could be prioritized in marketing strategies or stock planning to maximize sales.

Total Profit by Product Lines



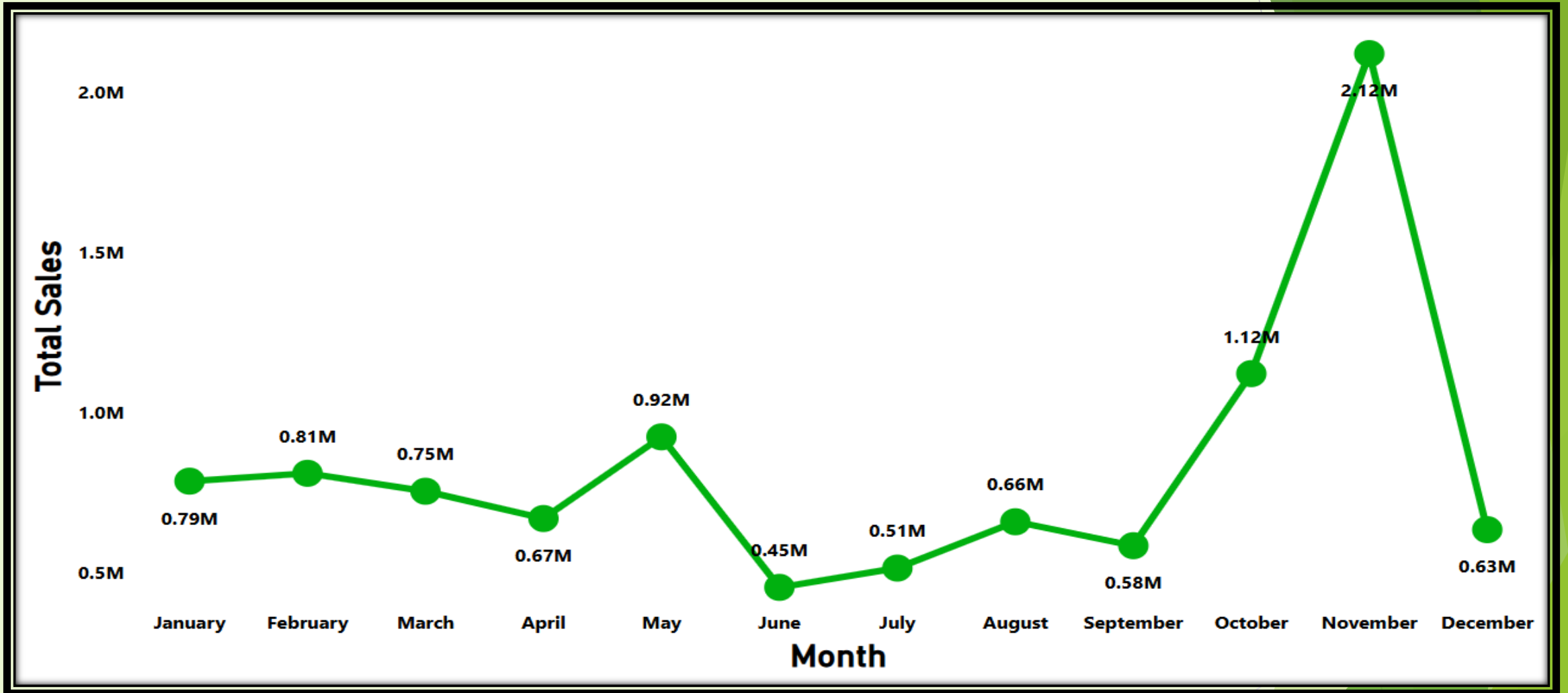
Classic Cars not only led in sales but also in overall profit, making it the most profitable category. We should focus on high-profit categories while analyzing cost-to-profit ratio for lower-performing product lines.

Top-5 Best-Selling Products



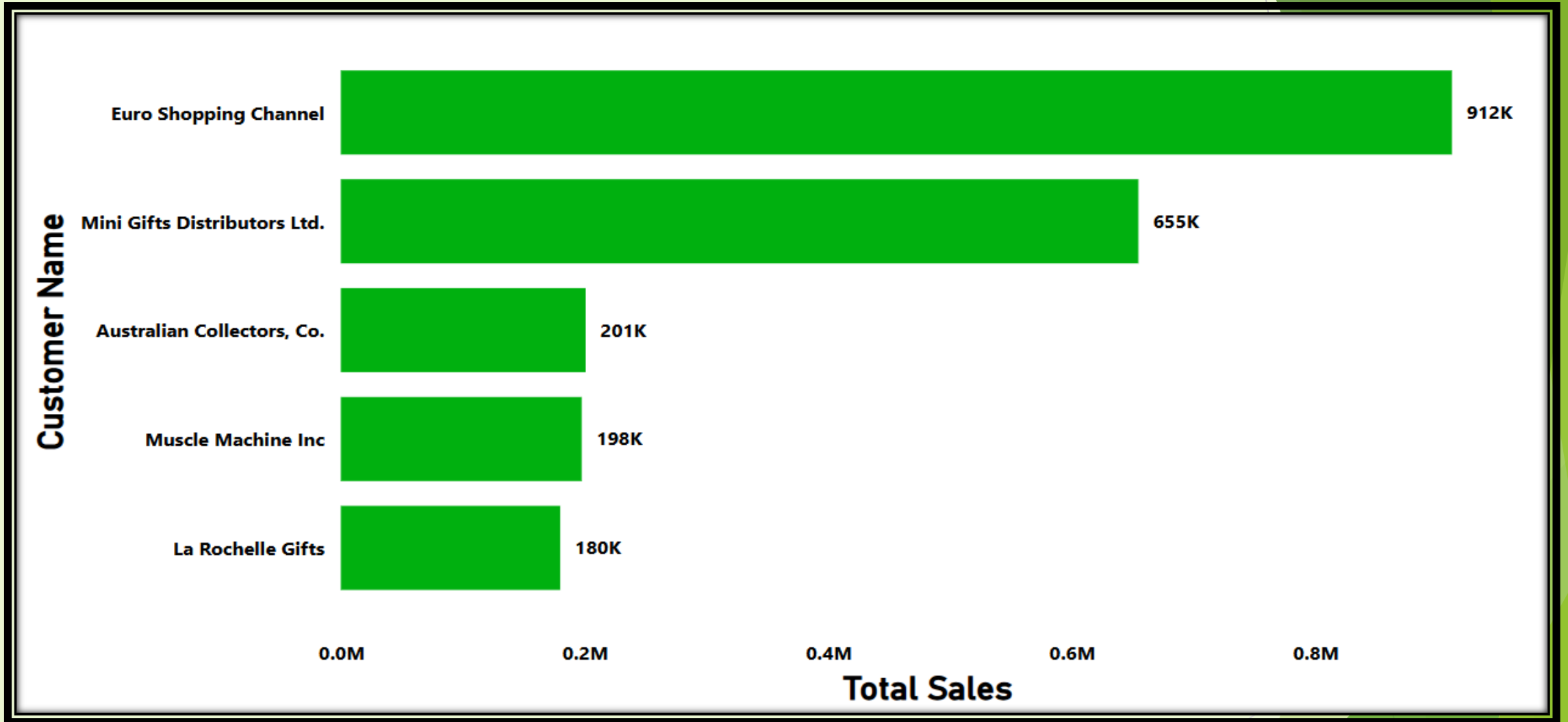
S18_3232 had the highest sales volumes, contributing significantly to total revenue. Top-selling products can be bundled or promoted further to drive revenue growth.

Total Sales by Month



Sales peaked in **November** at \$2.12M, then dropped about 70% to \$634K in **December**. This indicates possible seasonal trends. We should identify seasonal demand to optimize stock and campaign timing.

Top Customers by Revenue



Euro Shopping Channel and **Mini Gifts Distributor Ltd.** are our top customers, with purchases totaling over \$912K and \$655K, respectively. To retain their loyalty, we can offer loyalty programs and premium services.

Product Line Summary Table

Product Lines	Total Quantity Ordered	Total MSRP	Total Unit Price	Total Cost	Total Sales	Total Profit
Classic Cars	33992	115929	84,453.70	59,117.59	39,19,615.66	38,60,498.07
Vintage Cars	21069	52482	47,435.96	33,205.17	19,03,150.84	18,69,945.67
Motorcycles	11663	32130	27,472.19	19,230.53	11,66,388.34	11,47,157.81
Trucks and Buses	10777	30842	26,345.91	18,442.14	11,27,789.84	11,09,347.70
Planes	10727	27163	25,012.72	17,508.90	9,75,003.57	9,57,494.67
Ships	8127	20154	19,622.18	13,735.53	7,14,437.13	7,00,701.60
Trains	2712	5620	5,825.41	4,077.79	2,26,243.47	2,22,165.68
Total	99067	284320	2,36,168.07	1,65,317.65	1,00,32,628.85	98,67,311.20

From the table, we observe that while **Classic Cars** generated the highest revenue and profit, **Vintage Cars** also performed strongly across all metrics. In contrast, **Trains** and **Ships** had significantly lower sales volume and profit, possibly indicating either lower demand or niche market positioning.

Insights

- ▶ Classic Cars dominate both in sales and profit, making them the most valuable product line for the business.
- ▶ Vintage Cars follow closely in performance, with strong profit margins and high sales figures, indicating consistent customer demand.
- ▶ Top-5 best-selling products are heavily concentrated in the Classic and Vintage Car categories, revalidating their market popularity.
- ▶ Sales peak in November, suggesting the presence of seasonal demand or promotional campaigns during that time.
- ▶ Euro Shopping Channel and Mini Gifts Distributor Ltd. are the top revenue-generating customers, contributing significantly to overall sales.
- ▶ Trains category performs the weakest across all metrics: sales, profit, and quantity. These might need reevaluation in business strategy.
- ▶ The overall profit margin appears strong, as total profit is nearly equal to total sales, suggesting efficient cost management.

Conclusion & Recommendations

- ▶ The business is highly dependent on Classic and Vintage Cars. We should continue to focus marketing and inventory efforts on these top-performing product lines.
- ▶ There's a significant sales spike in November. We should work on this trend with targeted seasonal promotions and campaigns.
- ▶ Trains underperform across all metrics. Considering either improving product strategy or discontinuing the category after deeper evaluation would be effective.
- ▶ Top customers like Euro Shopping Channel and Mini Gifts Distributor Ltd. should be promoted through loyalty programs or special deals to maintain and grow relationships.
- ▶ High-profit margins across product lines indicate that existing cost control strategies are effective and should be sustained.
- ▶ There's an opportunity to expand top-performing product lines into new customer segments based on historic trends.

Thank you

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That's a Wrap — Now Let's Talk Data!