

Task 1

Exploratory Data Analysis (EDA) and Business Insights

Business insights from the EDA:

1. **Number of Customers by Region:** Most customers come from specific regions, i.e South America, while others are underrepresented. Expanding your presence in untapped areas could bring in a lot of new business. And least from Asia.
2. **Product Category Distribution:** the number of products in each category. By looking at the bar lengths, we can quickly determine the most and least common product types. This distribution is valuable for understanding the overall product focus and potentially identifying areas for expansion or reduction within your inventory.
3. **Category-wise Revenue:** Highest by Electronics and Lowest by Home Decor.
4. **Monthly Sales Trend:** The sales data to reveal monthly performance trends. It calculates the total sales value for each month and visualizes it as a line graph. By examining the graph, we can identify specific months with high or low sales figures. Allows for quick comparison of sales across different months, highlighting periods of growth or decline. This is essential information for businesses to understand seasonal patterns, track sales performance, and plan inventory and marketing strategies accordingly.
5. **Top 10 Products by Revenue:** This reveals the top revenue-generating products. We can quickly identify the leading product and its significant revenue contribution. Furthermore, any noticeable gaps between the bars can highlight underperforming products, potentially revealing one lagging behind with a mere 5% revenue share. By understanding these revenue proportions and rankings, businesses can make data-driven decisions to optimize product strategies and focus on top performers.
6. **Last 10 Customers by Total Spending:** This highlights the 10 customers with the lowest overall spending. By examining the bar heights, we can quickly identify the customers who have spent the least. This information can be used to segment customers for targeted marketing campaigns or to identify potentially churn customers. Overall, the chart offers a quick glance at the bottom end of customer spending, providing insights for business decisions like retention and customer engagement.
7. **Transaction Value Distribution:** This histogram provides a snapshot of the sales transactions, revealing how often different transaction values occur. By observing

the distribution, you can identify the most common transaction amounts, pinpoint any unusually high or low values, and get an overall sense of the typical transaction value. This visual representation allows you to quickly grasp the range and frequency of sales, providing valuable context for sales performance analysis and potential pricing strategies.