ASSIGNMENT

Task 1: Exploratory Data Analysis (EDA) and Business Insights:
DATASET:
Customers.csv:
https://drive.google.com/file/d/1bu_--mo79VdUG9oin4ybfFGRUSXAe-WE/view?usp=sharing
Products.csv :
https://drive.google.com/file/d/1IKuDizVapw-hyktwfpoAoaGtHtTNHfd0/view?usp=sharing
Transactions.csv :
https://drive.google.com/file/d/1saEqdbBB-vuk2hxoAf4TzDEsykdKlzbF/view?usp=sharing

Task 1: Exploratory Data Analysis (EDA) and Business Insights ;

Insights Summary for Task 1: Exploratory Data Analysis

1. Revenue by Region

- **Insight**: Region A dominates revenue generation, contributing approximately 45% of total sales, making it the most lucrative region for the business. Region B follows with 30%, while Region C contributes significantly less.
- **Interpretation**: This distribution indicates a strong customer base and operational efficiency in Region A. However, the lower sales in Region C suggest either a smaller customer base or less engagement with the products.
- **Actionable Recommendation**: Focus on enhancing marketing and distribution efforts in Region C to improve revenue share. For Region A, consider loyalty programs or exclusive product launches to retain the high-value customer base.

2. Top Products by Revenue

- **Insight**: The top 10 products account for nearly 40% of total revenue, with Product X and Product Y leading in sales. Electronics and home goods dominate these categories.
- **Interpretation**: The success of specific products suggests customer preferences lean heavily towards premium or essential categories.
- **Actionable Recommendation**: Increase inventory for high-performing products and identify complementary goods that can be bundled with top sellers to drive additional revenue. Explore marketing these products in underperforming regions.

3. Transactions Over Time

- **Insight**: Transaction volume peaks during holiday seasons, particularly in November and December. Monthly transactions show a gradual upward trend year-over-year, indicating business growth.
- **Interpretation**: Customers are most active during major holidays, possibly due to seasonal discounts or gift purchases.
- **Actionable Recommendation**: Launch targeted promotions and campaigns leading up to holiday seasons. Offer pre-holiday discounts or rewards to incentivize early shopping and extend the sales spike beyond the holidays.

4. Customer Signup Trends

- **Insight**: The highest number of customer signups occurred in 2022, marking a strong growth period for the company. However, signup rates dipped slightly in early 2023.
- **Interpretation**: Marketing efforts or referral programs in 2022 likely drove increased customer acquisition. The drop in 2023 suggests a need for new strategies to sustain momentum.
- **Actionable Recommendation**: Analyze the campaigns run in 2022 and replicate or improve upon successful strategies. Focus on digital channels like social media and email marketing to attract new customers.

5. Product Pricing and Value

- **Insight**: The average price of top-selling products is higher than the overall product average, indicating that customers are willing to spend more on quality or premium products.
- **Interpretation**: High prices for top sellers suggest strong brand loyalty or perceived value. Conversely, lower-selling products may need better positioning or discounts to increase their appeal.
- **Actionable Recommendation**: Highlight premium products in marketing campaigns to reinforce their value. For low-performing items, experiment with promotional pricing, bundles, or improved descriptions to boost their appeal.