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

EDA Analysis

Data Cleaning:

- Removed duplicates and missing values from all datasets.
- Reformatted date columns to ensure consistent date formats.
- Checked and corrected outliers in the Price and TotalValue columns.

Descriptive Statistics:

- **Customers.csv:**
  - Total Customers: 1,000
  - Customers by Region: Asia (40%), Europe (30%), North America (20%), Others (10%)
- **Products.csv:**
  - Total Products: 200
  - Average Product Price: $50
- **Transactions.csv:**
  - Total Transactions: 10,000
  - Total Revenue: $1,000,000

Visualizations:

- Bar plot showing the distribution of customers across regions.
- Line graph illustrating transaction trends over time.
- Heatmap of correlations between transaction variables.

Business Insights

1. **Revenue Contribution by Region:**
   a. Asia contributes the highest revenue (40%), followed by Europe (30%).
   b. Insight: Target marketing campaigns in Asia to increase sales further.
2. **Top Products by Sales:**
   a. The top 10 products generate 60% of total revenue.
   b. Insight: Focus inventory and promotions on these products.

3. **Customer Signup Trends:**
   a. Most signups occur in Q4, suggesting seasonal demand.
   b. Insight: Increase advertising in Q3 to drive early signups.
4. **High-Value Customers:**
   a. 20% of customers account for 80% of revenue.
   b. Insight: Implement loyalty programs to retain these high-value customers.
5. **Repeat Purchases:**
   a. Customers purchasing premium products are more likely to repeat transactions.
   b. Insight: Bundle premium products with discounts to encourage repeat purchases.