Exploratory Data Analysis (EDA)

EDA Code:

```
# Import required libraries for EDA

import pandas as pd

import numpy as np

import matplotlib.pyplot as plt

import seaborn as sns


# Load datasets

customers = pd.read_csv('customers.csv')

products = pd.read_csv('products.csv')

transactions = pd.read_csv('transactions.csv')


# Merge datasets

merged_data = transactions.merge(customers, on='CustomerID').merge(products, on='ProductID')


# Visualization: Distribution of product prices

plt.figure(figsize=(10, 6))

sns.histplot(products['Price'], kde=True, bins=20, color='blue')

plt.title('Distribution of Product Prices')

plt.xlabel('Price')

plt.ylabel('Frequency')

plt.show()
```

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```
# Visualization: Customer region distribution

plt.figure(figsize=(10, 6))

sns.countplot(data=customers, x='Region', palette='viridis')

plt.title('Customer Region Distribution')

plt.xlabel('Region')

plt.ylabel('Count')

plt.show()
```

Business Insights:

1. The product prices follow a right-skewed distribution.

2. Most customers come from South America.

3. Top-selling products contribute significantly to revenue.

4. High-value transactions are dominated by electronics.

5. Frequent purchases are low-cost items.