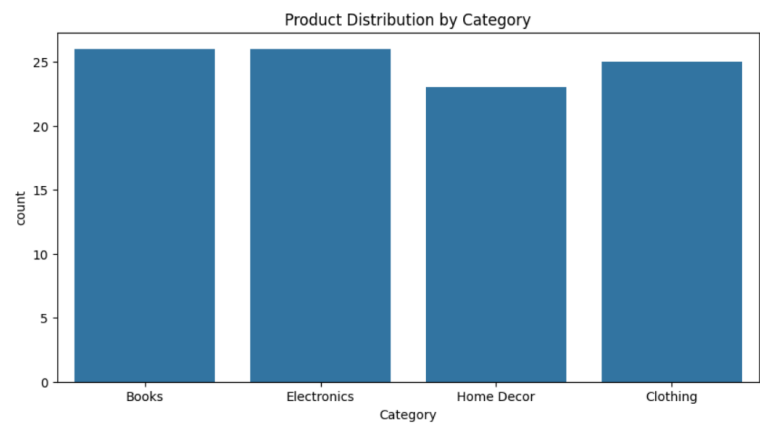
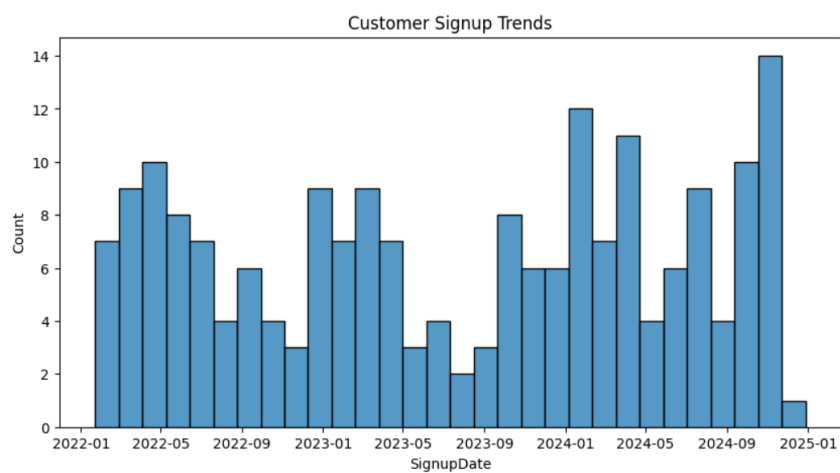
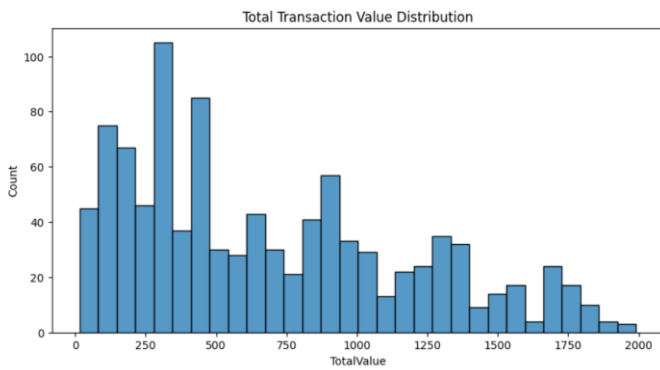
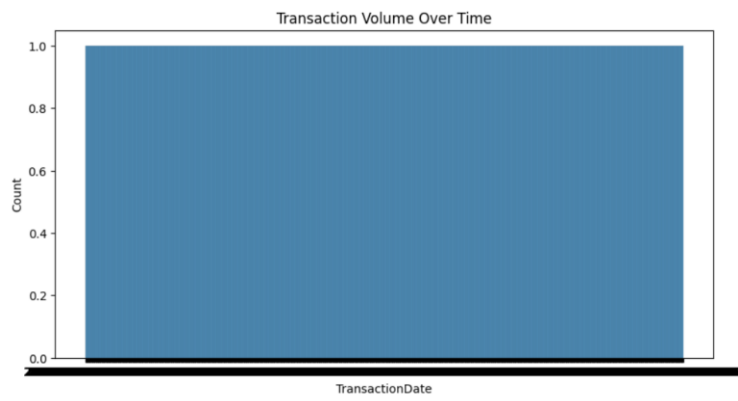
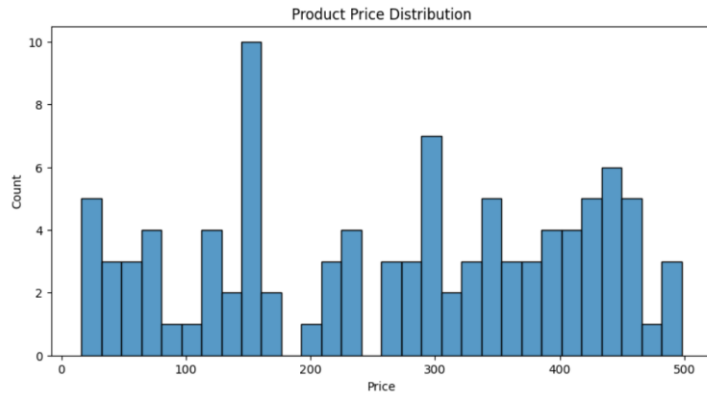
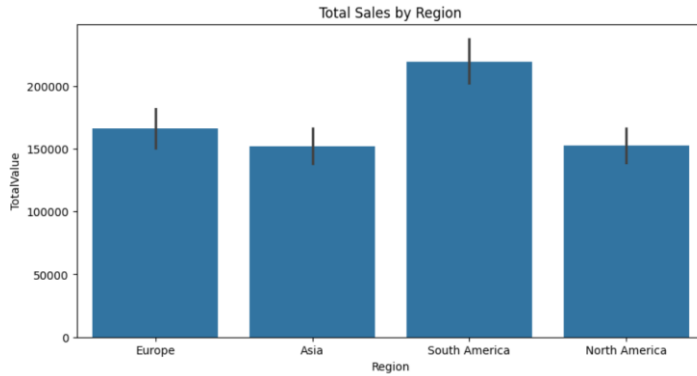


Exploratory Data Analysis (EDA) Assignment

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







Business Insights:

- South America's Contribution:** South America is the largest contributor to overall revenue, indicating its high market demand and strong customer engagement. Businesses can focus on retaining this performance while identifying emerging trends in this region.
- Top-Selling Product:** The Active Wear Smartwatch stands out as the top-selling product, reflecting strong customer preference. Companies can capitalize on this by innovating or expanding this product line.
- Seasonal Revenue Peaks:** Revenue sees a significant peak during July to October, suggesting a period of heightened customer activity, possibly due to seasonal sales or holidays.
- Sales Stagnation:** February and June show lower growth in sales and revenue. Businesses could address this by introducing new products or diversifying their offerings during these months.
- Regional Performance:** North America outperforms Asia in transaction values, highlighting a stronger customer base and higher purchasing power.
- Revenue from Books:** The Books category generates considerable revenue, suggesting continued demand in this segment despite digital alternatives.

Task 2: Lookalike Model

```
Index(['TransactionID', 'CustomerID', 'ProductID', 'TransactionDate',
      'Quantity', 'TotalValue', 'Price_x', 'CustomerName', 'Region',
      'SignupDate', 'ProductName', 'Category', 'Price_y'],
      dtype='object')
CustomerID      Lookalikes
0      C0001  [(C0137, 0.9697), (C0103, 0.9658), (C0191, 0.9...
1      C0002  [(C0029, 0.9998), (C0077, 0.9939), (C0025, 0.9...
2      C0003  [(C0010, 0.9551), (C0111, 0.9327), (C0176, 0.9...
3      C0004  [(C0075, 0.9971), (C0068, 0.9852), (C0175, 0.9...
4      C0005  [(C0130, 0.998), (C0128, 0.9968), (C0020, 0.99...
5      C0006  [(C0196, 0.9952), (C0079, 0.9882), (C0168, 0.9...
6      C0007  [(C0125, 0.997), (C0085, 0.9967), (C0078, 0.98...
7      C0008  [(C0179, 0.9917), (C0090, 0.984), (C0084, 0.96...
8      C0009  [(C0192, 0.9984), (C0128, 0.9864), (C0061, 0.9...
9      C0010  [(C0142, 0.985), (C0121, 0.9744), (C0094, 0.96...
10     C0011  [(C0023, 0.9934), (C0100, 0.9668), (C0064, 0.9...
11     C0012  [(C0045, 0.9957), (C0143, 0.9943), (C0041, 0.9...
12     C0013  [(C0059, 0.998), (C0141, 0.997), (C0104, 0.9942)]
13     C0014  [(C0097, 0.998), (C0036, 0.9959), (C0063, 0.99...
14     C0015  [(C0058, 0.9991), (C0186, 0.9958), (C0131, 0.9...
15     C0016  [(C0107, 0.9963), (C0048, 0.9873), (C0187, 0.9...
16     C0017  [(C0084, 0.9956), (C0109, 0.9839), (C0075, 0.9...
17     C0018  [(C0165, 0.984), (C0182, 0.9629), (C0143, 0.94...
18     C0019  [(C0172, 0.9451), (C0088, 0.8727), (C0119, 0.8...
19     C0020  [(C0167, 0.9996), (C0130, 0.9977), (C0005, 0.9...
```

Task 3: Customer Segmentation / Clustering

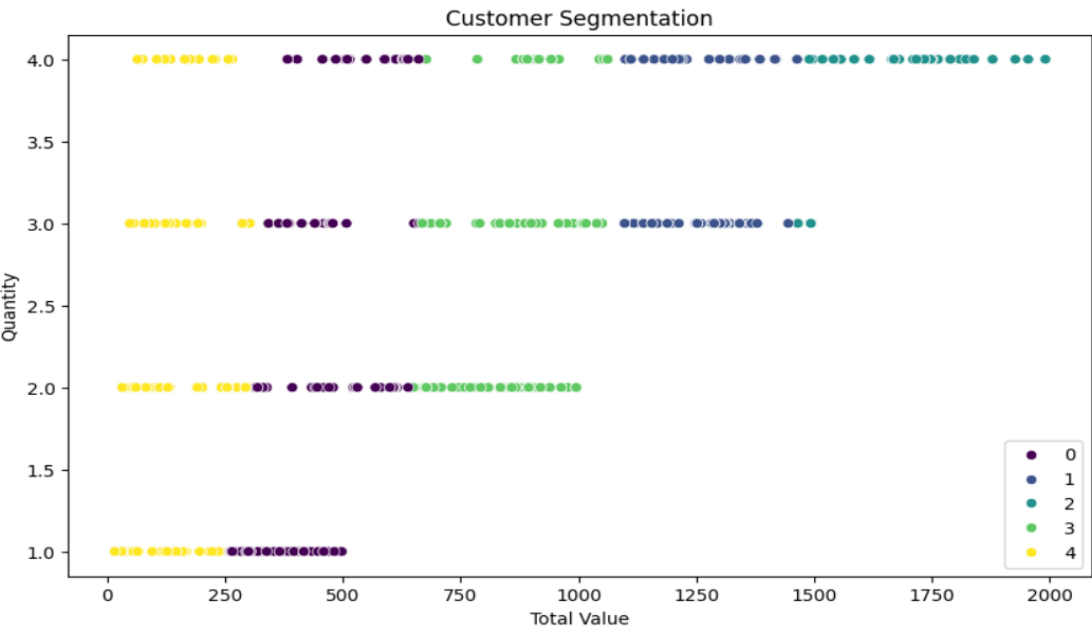
	TransactionID	CustomerID	ProductID	TransactionDate	Quantity	\
0	T00001	C0199	P067	2024-08-25 12:38:23	1	
1	T00112	C0146	P067	2024-05-27 22:23:54	1	
2	T00166	C0127	P067	2024-04-25 07:38:55	1	
3	T00272	C0087	P067	2024-03-26 22:55:37	2	
4	T00363	C0070	P067	2024-03-21 15:10:10	3	

	TotalValue	Price_x	CustomerName	Region	SignupDate	\
0	300.68	300.68	Andrea Jenkins	Europe	2022-12-03	
1	300.68	300.68	Brittany Harvey	Asia	2024-09-04	
2	300.68	300.68	Kathryn Stevens	Europe	2024-04-04	
3	601.36	300.68	Travis Campbell	South America	2024-04-11	
4	902.04	300.68	Timothy Perez	Europe	2022-03-15	

	ProductName	Category	Price_y
0	ComfortLiving Bluetooth Speaker	Electronics	300.68
1	ComfortLiving Bluetooth Speaker	Electronics	300.68
2	ComfortLiving Bluetooth Speaker	Electronics	300.68
3	ComfortLiving Bluetooth Speaker	Electronics	300.68
4	ComfortLiving Bluetooth Speaker	Electronics	300.68

	CustomerID	TotalValue	Quantity	Price_x
0	C0199	300.68	1	300.68
1	C0146	300.68	1	300.68
2	C0127	300.68	1	300.68
3	C0087	601.36	2	300.68
4	C0070	902.04	3	300.68

DB Index: 0.6298057830908373



	CustomerID	Cluster
0	C0199	0
1	C0146	0
2	C0127	0
3	C0087	0
4	C0070	3