```python
In [2]:  # Import necessary libraries
         import pandas as pd
         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")

         # Inspect data
         print(customers.head())
         print(products.head())
         print(transactions.head())

         # Check for missing values
         print(customers.isnull().sum())
         print(products.isnull().sum())
         print(transactions.isnull().sum())

         # Example: Plot distribution of product prices
         sns.histplot(products['Price'], kde=True)
         plt.title('Distribution of Product Prices')
         plt.show()

         # Generate insights
         # Example: Top regions by number of customers
         region_counts = customers['Region'].value_counts()
         print(region_counts)

         # Example: Total sales per product category
         sales_by_category = transactions.merge(products, on='ProductID').groupby('Category')['TotalValue'].sum()
         print(sales_by_category)
```
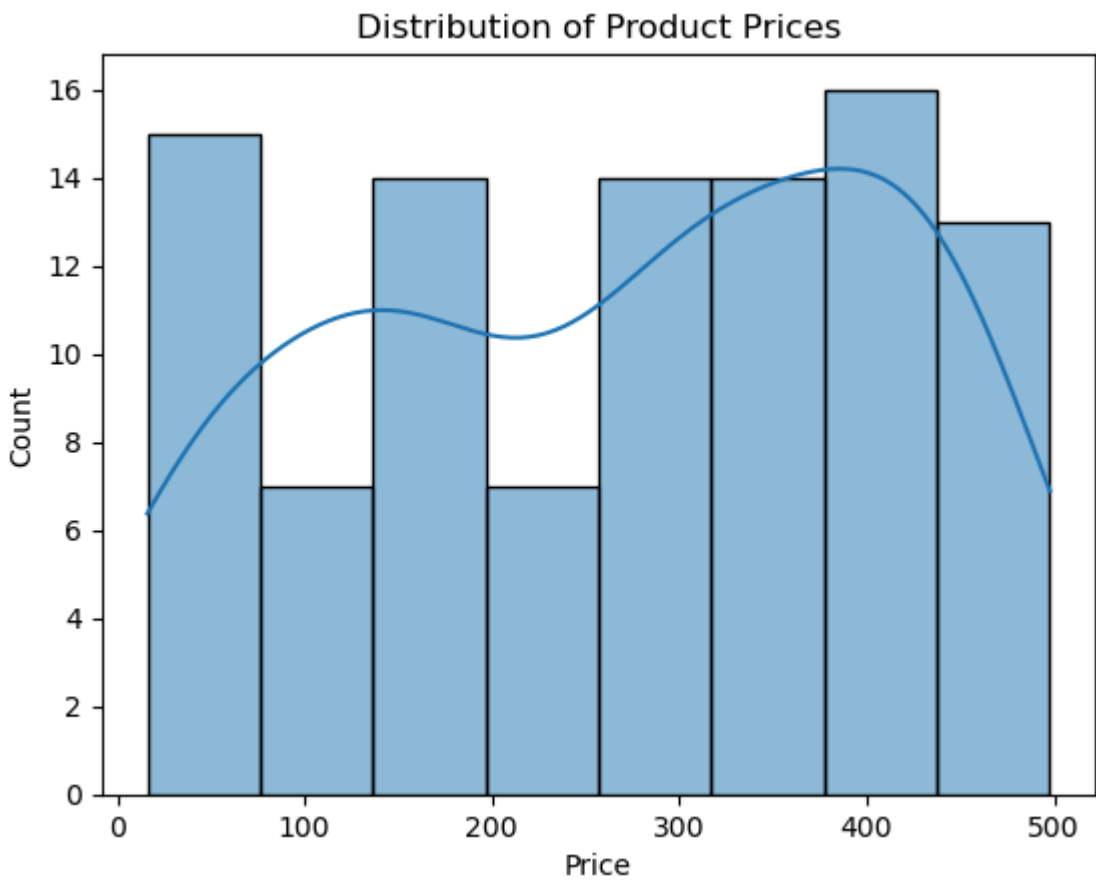
```
  CustomerID        CustomerName         Region  SignupDate
0      C0001    Lawrence Carroll  South America  2022-07-10
1      C0002       Elizabeth Lutz           Asia  2022-02-13
2      C0003      Michael Rivera  South America  2024-03-07
3      C0004  Kathleen Rodriguez  South America  2022-10-09
4      C0005         Laura Weber           Asia  2022-08-15
  ProductID             ProductName     Category   Price
0      P001      ActiveWear Biography        Books  169.30
1      P002     ActiveWear Smartwatch  Electronics  346.30
2      P003   ComfortLiving Biography        Books   44.12
3      P004           BookWorld Rug    Home Decor   95.69
4      P005          TechPro T-Shirt     Clothing  429.31
  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
0      300.68  300.68
1      300.68  300.68
2      300.68  300.68
3      601.36  300.68
4      902.04  300.68
CustomerID      0
CustomerName    0
Region          0
SignupDate      0
dtype: int64
ProductID      0
ProductName    0
Category       0
Price          0
dtype: int64
TransactionID      0
CustomerID         0
ProductID          0
TransactionDate    0
Quantity           0
TotalValue         0
Price              0
dtype: int64
```



```
Region
South America    59
Europe           50
North America    46
Asia             45
Name: count, dtype: int64
Category
Books         192147.47
Clothing      166170.66
Electronics   180783.50
```

```
    Home Decor     150893.93
    Name: TotalValue, dtype: float64
```

In [ ]: