In [1]:
```
import pandas as pd
import matplotlib.pyplot as plt
import seaborn as sns
```

In [2]:
```
customers = pd.read_csv("./Customers.csv")
products = pd.read_csv("./Products.csv")
transactions = pd.read_csv("./Transactions.csv")
```

In [10]:
```
#customers
customers['SignupDate'] = pd.to_datetime(customers['SignupDate'])
transactions['TransactionDate'] = pd.to_datetime(transactions['TransactionDate'])
print(customers.head(10))
transactions.head(10)
```

```
  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
5      C0006     Brittany Palmer  South America 2024-01-07
6      C0007         Paul Graves           Asia 2022-06-18
7      C0008            David Li  North America 2024-01-13
8      C0009           Joy Clark         Europe 2023-08-14
9      C0010           Aaron Cox         Europe 2022-12-15
```

Out[10]:

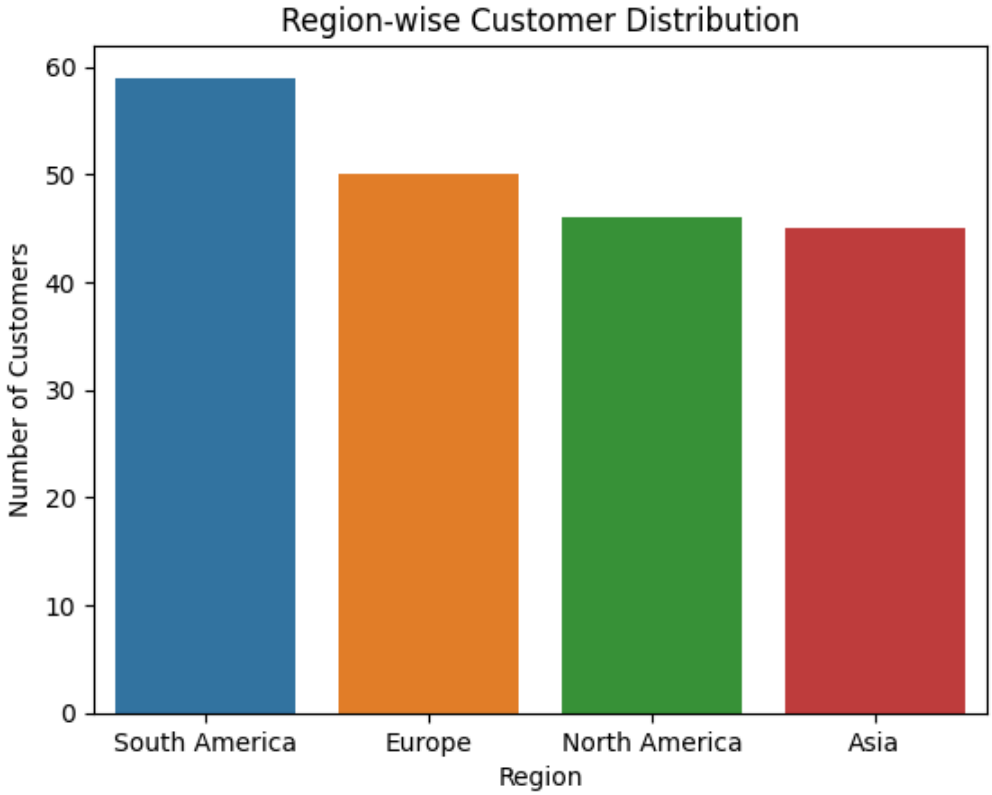
	TransactionID	CustomerID	ProductID	TransactionDate	Quantity	TotalValue	Price
0	T00001	C0199	P067	2024-08-25 12:38:23	1	300.68	300.68
1	T00112	C0146	P067	2024-05-27 22:23:54	1	300.68	300.68
2	T00166	C0127	P067	2024-04-25 07:38:55	1	300.68	300.68
3	T00272	C0087	P067	2024-03-26 22:55:37	2	601.36	300.68
4	T00363	C0070	P067	2024-03-21 15:10:10	3	902.04	300.68
5	T00442	C0188	P067	2024-12-26 14:40:03	1	300.68	300.68
6	T00490	C0195	P067	2024-11-24 11:49:48	3	902.04	300.68
7	T00536	C0008	P067	2024-09-22 06:13:59	1	300.68	300.68
8	T00564	C0157	P067	2024-12-07 17:57:40	3	902.04	300.68
9	T00631	C0130	P067	2024-05-14 23:14:59	2	601.36	300.68

In [7]:
```
merged_data = transactions.merge(customers, on="CustomerID").merge(products, on="ProductID"
```

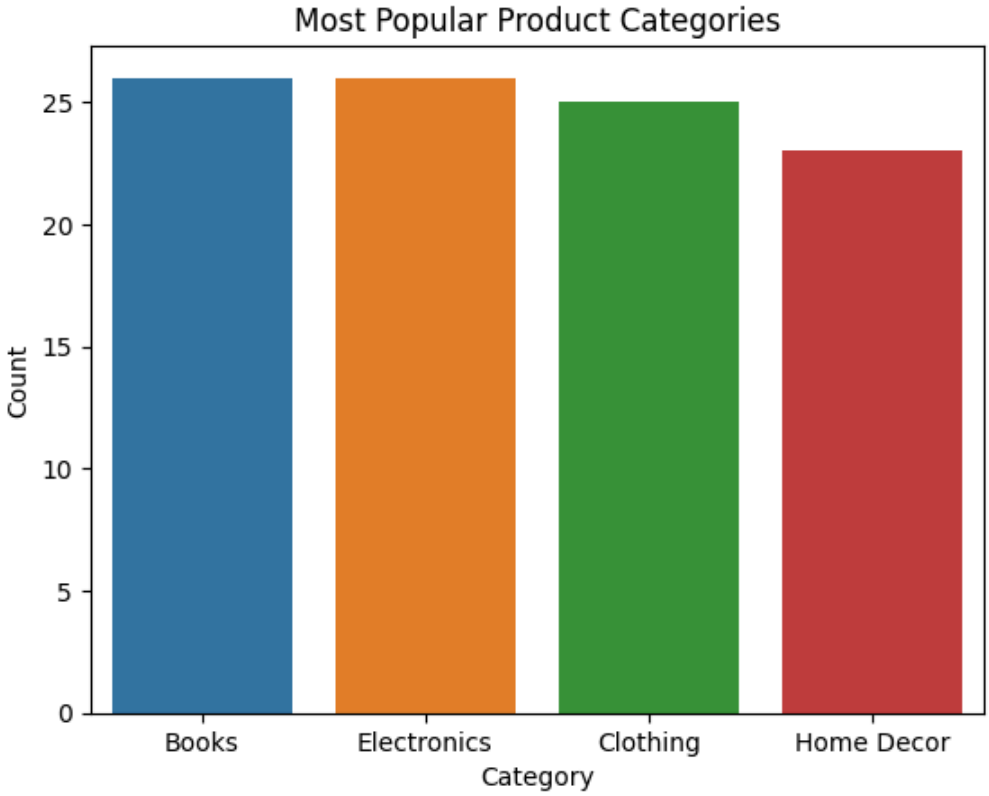
In [14]:
```
print("Customers stats:\n", customers.describe())
print("Products  :\n", products.describe())
print("Transactions  :\n", transactions.describe())
```

```
Customers stats:
                SignupDate
count                  200
mean   2023-07-19 08:31:12
min    2022-01-22 00:00:00
25%    2022-09-26 12:00:00
50%    2023-08-31 12:00:00
75%    2024-04-12 12:00:00
max    2024-12-28 00:00:00
Products  :
            Price
count  100.000000
mean   267.551700
std    143.219383
min     16.080000
25%    147.767500
50%    292.875000
75%    397.090000
max    497.760000
Transactions  :
                     TransactionDate     Quantity   TotalValue       Price
count                           1000  1000.000000  1000.000000  1000.00000
mean   2024-06-23 15:33:02.768999936     2.537000   689.995560   272.55407
min              2023-12-30 15:29:12     1.000000    16.080000    16.08000
25%       2024-03-25 22:05:34.500000     2.000000   295.295000   147.95000
50%       2024-06-26 17:21:52.500000     3.000000   588.880000   299.93000
75%              2024-09-19 14:19:57     4.000000  1011.660000   404.40000
max              2024-12-28 11:00:00     4.000000  1991.040000   497.76000
std                              NaN     1.117981   493.144478   140.73639
```

In [15]:
```
region_count = customers['Region'].value_counts()
sns.barplot(x=region_count.index, y=region_count.values)
plt.title("Region-wise Customer Distribution")
plt.xlabel("Region")
plt.ylabel("Number of Customers")
plt.show()
```



In [16]:
```
category_count = products['Category'].value_counts()
sns.barplot(x=category_count.index, y=category_count.values)
plt.title("Most Popular Product Categories")
plt.xlabel("Category")
plt.ylabel("Count")
plt.show()
```



In [ ]:
```
```