

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

```
In [2]: Amadf = pd.read_csv(r"C:\Users\Owner\Documents\FDA files\Amazon Sales data.csv")
```

```
In [3]: Amadf
```

```
Out[3]:
```

	Region	Country	Item Type	Sales Channel	Order Priority	Order Date	Order ID	Ship Date	Units Sold	Unit Price	Unit Cost	Total Revenue	Total Cost	Total Profit
0	Australia and Oceania	Tuvalu	Baby Food	Offline	H	5/28/2010	669165933	6/27/2010	9925	255.28	159.42	2533654.00	1582243.50	951410.50
1	Central America and the Caribbean	Grenada	Cereal	Online	C	8/22/2012	963881480	9/15/2012	2804	205.70	117.11	576782.80	328376.44	248406.36
2	Europe	Russia	Office Supplies	Offline	L	05-02-2014	341417157	05-08-2014	1779	651.21	524.96	1158502.59	933903.84	224598.75
3	Sub-Saharan Africa	Sao Tome and Principe	Fruits	Online	C	6/20/2014	514321792	07-05-2014	8102	9.33	6.92	75591.66	56065.84	19525.82
4	Sub-Saharan Africa	Rwanda	Office Supplies	Offline	L	02-01-2013	115456712	02-06-2013	5062	651.21	524.96	3296425.02	2657347.52	639077.50
...
95	Sub-Saharan Africa	Mali	Clothes	Online	M	7/26/2011	512878119	09-03-2011	888	109.28	35.84	97040.64	31825.92	65214.72
96	Asia	Malaysia	Fruits	Offline	L	11-11-2011	810711038	12/28/2011	6267	9.33	6.92	58471.11	43367.64	15103.47
97	Sub-Saharan Africa	Sierra Leone	Vegetables	Offline	C	06-01-2016	728815257	6/29/2016	1485	154.06	90.93	228779.10	135031.05	93748.05
98	North America	Mexico	Personal Care	Offline	M	7/30/2015	559427106	08-08-2015	5767	81.73	56.67	471336.91	326815.89	144521.02
99	Sub-Saharan Africa	Mozambique	Household	Offline	L	02-10-2012	665095412	2/15/2012	5367	668.27	502.54	3586605.09	2697132.18	889472.91

100 rows × 14 columns

```
In [4]: Amadf.info()
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 100 entries, 0 to 99
Data columns (total 14 columns):
 #   Column      Non-Null Count  Dtype  
 --- 
 0   Region      100 non-null    object 
 1   Country     100 non-null    object 
 2   Item Type   100 non-null    object 
 3   Sales Channel 100 non-null  object 
 4   Order Priority 100 non-null  object 
 5   Order Date   100 non-null    object 
 6   Order ID     100 non-null    int64  
 7   Ship Date    100 non-null    object 
 8   Units Sold   100 non-null    int64  
 9   Unit Price   100 non-null    float64
 10  Unit Cost    100 non-null    float64
 11  Total Revenue 100 non-null  float64
 12  Total Cost   100 non-null    float64
 13  Total Profit  100 non-null  float64
dtypes: float64(5), int64(2), object(7)
memory usage: 11.1+ KB
```

```
In [5]: Amadf.shape
```

```
Out[5]: (100, 14)
```

```
In [6]: Amadf.duplicated().sum()
```

```
Out[6]: 0
```

```
In [7]: Amadf.isna().sum()
```

```
Out[7]:
```

Region	0
Country	0
Item Type	0
Sales Channel	0
Order Priority	0
Order Date	0
Order ID	0
Ship Date	0
Units Sold	0
Unit Price	0
Unit Cost	0
Total Revenue	0
Total Cost	0
Total Profit	0

dtype: int64

```
In [8]: Amadf.skew()
```

```
C:\Users\Owner\AppData\Local\Temp\ipykernel_3104\884870791.py:1: FutureWarning: Dropping of nuisance columns in DataFrame reductions (with 'numeric_only=None') is deprecated; in a future version this will raise TypeError. Select only valid columns before calling the reduction.
Amadf.skew()
```

```
Out[8]:
```

Order ID	-0.098354
Units Sold	-0.099953
Unit Price	0.620751
Unit Cost	0.858072
Total Revenue	1.277698
Total Cost	1.460512
Total Profit	1.238555

dtype: float64

```
In [9]: Amadf.dtypes
```

```
Out[9]:
```

Region	object
Country	object
Item Type	object
Sales Channel	object
Order Priority	object
Order Date	object
Order ID	int64
Ship Date	object
Units Sold	int64
Unit Price	float64
Unit Cost	float64
Total Revenue	float64
Total Cost	float64
Total Profit	float64

dtype: object

```
In [10]: Amadf.columns
```

```
Out[10]: Index(['Region', 'Country', 'Item Type', 'Sales Channel', 'Order Priority',  
   'Order Date', 'Order ID', 'Ship Date', 'Units Sold', 'Unit Price',  
   'Unit Cost', 'Total Revenue', 'Total Cost', 'Total Profit'],  
   dtype='object')
```

```
In [11]: Amadf['ShipDate'] = pd.to_datetime(Amadf['Ship Date'])  
Amadf['OrderDate'] = pd.to_datetime(Amadf['Order Date'])
```

```
In [12]: Amadf.info()
```

```
<class 'pandas.core.frame.DataFrame'>  
RangeIndex: 100 entries, 0 to 99  
Data columns (total 16 columns):  
 #   Column      Non-Null Count  Dtype     
---  --          --          --          --  
 0   Region       100 non-null    object    
 1   Country      100 non-null    object    
 2   Item Type    100 non-null    object    
 3   Sales Channel 100 non-null    object    
 4   Order Priority 100 non-null    object    
 5   Order Date    100 non-null    object    
 6   Order ID     100 non-null    int64    
 7   Ship Date    100 non-null    object    
 8   Units Sold   100 non-null    int64    
 9   Unit Price   100 non-null    float64  
 10  Unit Cost    100 non-null    float64  
 11  Total Revenue 100 non-null    float64  
 12  Total Cost   100 non-null    float64  
 13  Total Profit 100 non-null    float64  
 14  ShipDate     100 non-null    datetime64[ns]  
 15  OrderDate    100 non-null    datetime64[ns]  
dtypes: datetime64[ns](2), float64(5), int64(2), object(7)  
memory usage: 12.6+ KB
```

```
In [13]: Amadf['orderCompTime'] = Amadf['ShipDate'] - Amadf['OrderDate']
```

```
In [14]: Amadf
```

```
Out[14]:
```

	Region	Country	Item Type	Sales Channel	Order Priority	Order Date	Order ID	Ship Date	Units Sold	Unit Price	Unit Cost	Total Revenue	Total Cost	Total Profit	ShipDate	OrderDate	orderCompTime
0	Australia and Oceania	Tuvalu	Baby Food	Offline	H	5/28/2010	669165933	6/27/2010	9925	255.28	159.42	2533654.00	1582243.50	951410.50	2010-06-27	2010-05-28	30 days
1	Central America and the Caribbean	Grenada	Cereal	Online	C	8/22/2012	963881480	9/15/2012	2804	205.70	117.11	576782.80	328376.44	248406.36	2012-09-15	2012-08-22	24 days
2	Europe	Russia	Office Supplies	Offline	L	05-02-2014	341417157	05-08-2014	1779	651.21	524.96	1158502.59	933903.84	224598.75	2014-05-08	2014-05-02	6 days
3	Sub-Saharan Africa	Sao Tome and Principe	Fruits	Online	C	6/20/2014	514321792	07-05-2014	8102	9.33	6.92	75591.66	56065.84	19525.82	2014-07-05	2014-06-20	15 days
4	Sub-Saharan Africa	Rwanda	Office Supplies	Offline	L	02-01-2013	115456712	02-06-2013	5062	651.21	524.96	3296425.02	2657347.52	639077.50	2013-02-06	2013-02-01	5 days
...	
95	Sub-Saharan Africa	Mali	Clothes	Online	M	7/26/2011	512878119	09-03-2011	888	109.28	35.84	97040.64	31825.92	65214.72	2011-09-03	2011-07-26	39 days
96	Asia	Malaysia	Fruits	Offline	L	11-11-2011	810711038	12/28/2011	6267	9.33	6.92	58471.11	43367.64	15103.47	2011-12-28	2011-11-11	47 days
97	Sub-Saharan Africa	Sierra Leone	Vegetables	Offline	C	06-01-2016	728815257	6/29/2016	1485	154.06	90.93	228779.10	135031.05	93748.05	2016-06-29	2016-06-01	28 days
98	North America	Mexico	Personal Care	Offline	M	7/30/2015	559427106	08-08-2015	5767	81.73	56.67	471336.91	326815.89	144521.02	2015-08-08	2015-07-30	9 days
99	Sub-Saharan Africa	Mozambique	Household	Offline	L	02-10-2012	665095412	2/15/2012	5367	668.27	502.54	3586605.09	2697132.18	889472.91	2012-02-15	2012-02-10	5 days

100 rows × 17 columns

```
In [15]: Amadf['Units Sold'].max()
```

```
Amadf.loc[Amadf['Units Sold'] == Amadf['Units Sold'].max()]
```

```
Out[15]:
```

	Region	Country	Item Type	Sales Channel	Order Priority	Order Date	Order ID	Ship Date	Units Sold	Unit Price	Unit Cost	Total Revenue	Total Cost	Total Profit	ShipDate	OrderDate	orderCompTime
0	Australia and Oceania	Tuvalu	Baby Food	Offline	H	5/28/2010	669165933	6/27/2010	9925	255.28	159.42	2533654.0	1582243.5	951410.5	2010-06-27	2010-05-28	30 days

```
In [16]: Amadf['Units Sold'].min()
```

```
Amadf.loc[Amadf['Units Sold'] == Amadf['Units Sold'].min()]
```

```
Out[16]:
```

	Region	Country	Item Type	Sales Channel	Order Priority	Order Date	Order ID	Ship Date	Units Sold	Unit Price	Unit Cost	Total Revenue	Total Cost	Total Profit	ShipDate	OrderDate	orderCompTime
10	Asia	Kyrgyzstan	Vegetables	Online	H	6/24/2011	814711606	07-12-2011	124	154.06	90.93	19103.44	11275.32	7828.12	2011-07-12	2011-06-24	18 days

```
In [17]: Amadf.loc[Amadf['Total Revenue'] == Amadf['Total Revenue'].max()]
```

```
Out[17]:
```

	Region	Country	Item Type	Sales Channel	Order Priority	Order Date	Order ID	Ship Date	Units Sold	Unit Price	Unit Cost	Total Revenue	Total Cost	Total Profit	ShipDate	OrderDate	orderCompTime
13	Central America and the Caribbean	Honduras	Household	Offline	H	02-08-2017	522840487	2/13/2017	8974	668.27	502.54	5997054.98	4509793.96	1487261.02	2017-02-13	2017-02-08	5 days

```
In [18]: Amadf.loc[Amadf['Total Revenue'] == Amadf['Total Revenue'].min()]
```

```
Out[18]:
```

	Region	Country	Item Type	Sales Channel	Order Priority	Order Date	Order ID	Ship Date	Units Sold	Unit Price	Unit Cost	Total Revenue	Total Cost	Total Profit	ShipDate	OrderDate	orderCompTime
88	Middle East and North Africa	Kuwait	Fruits	Online	M	4/30/2012	513417565	5/18/2012	522	9.33	6.92	4870.26	3612.24	1258.02	2012-05-18	2012-04-30	18 days

```
In [19]: Amadf.loc[Amadf['Total Profit'] == Amadf['Total Profit'].max()]
```

```
Out[19]:
```

	Region	Country	Item Type	Sales Channel	Order Priority	Order Date	Order ID	Ship Date	Units Sold	Unit Price	Unit Cost	Total Revenue	Total Cost	Total Profit	ShipDate	OrderDate	orderCompTime
74	Middle East and North Africa	Pakistan	Cosmetics	Offline	L	07-05-2013	231145322	8/16/2013	9892	437.2	263.33	4324782.4	2604860.36	1719922.04	2013-08-16	2013-07-05	42 days

```
In [20]: Amadf.loc[Amadf['Total Profit'] == Amadf['Total Profit'].min()]
```

Out[20]:	Region	Country	Item Type	Sales Channel	Order Priority	Order Date	Order ID	Ship Date	Units Sold	Unit Price	Unit Cost	Total Revenue	Total Cost	Total Profit	ShipDate	OrderDate	orderCompTime
88	Middle East and North Africa	Kuwait	Fruits	Online	M	4/30/2012	513417565	5/18/2012	522	9.33	6.92	4870.26	3612.24	1258.02	2012-05-18	2012-04-30	18 days

In [21]: Amadfd['Sales Channel'].value_counts()

Out[21]: Offline 50
Online 50
Name: Sales Channel, dtype: int64

In [22]: Amadfd['Item Type'].value_counts()

Out[22]: Clothes 13
Cosmetics 13
Office Supplies 12
Fruits 10
Personal Care 10
Household 9
Beverages 8
Baby Food 7
Cereal 7
Vegetables 6
Snacks 3
Meat 2
Name: Item Type, dtype: int64

In []:

In [23]: Amadfd['Region'].value_counts()

Out[23]: Sub-Saharan Africa 36
Europe 22
Australia and Oceania 11
Asia 11
Middle East and North Africa 10
Central America and the Caribbean 7
North America 3
Name: Region, dtype: int64

In [24]: Amadfd['Country'].value_counts()

Out[24]: The Gambia 4
Sierra Leone 3
Sao Tome and Principe 3
Mexico 3
Australia 3
...
Comoros 1
Iceland 1
Macedonia 1
Mauritania 1
Mozambique 1
Name: Country, Length: 76, dtype: int64

In [25]: AmaCopydf = Amadfd

In [26]: AmaCopydf

Out[26]:	Region	Country	Item Type	Sales Channel	Order Priority	Order Date	Order ID	Ship Date	Units Sold	Unit Price	Unit Cost	Total Revenue	Total Cost	Total Profit	ShipDate	OrderDate	orderCompTime
0	Australia and Oceania	Tuvalu	Baby Food	Offline	H	5/28/2010	669165933	6/27/2010	9925	255.28	159.42	2533654.00	1582243.50	951410.50	2010-06-27	2010-05-28	30 days
1	Central America and the Caribbean	Grenada	Cereal	Online	C	8/22/2012	963881480	9/15/2012	2804	205.70	117.11	576782.80	328376.44	248406.36	2012-09-15	2012-08-22	24 days
2	Europe	Russia	Office Supplies	Offline	L	05-02-2014	341417157	05-08-2014	1779	651.21	524.96	1158502.59	933903.84	224598.75	2014-05-08	2014-05-02	6 days
3	Sub-Saharan Africa	Sao Tome and Principe	Fruits	Online	C	6/20/2014	514321792	07-05-2014	8102	9.33	6.92	75591.66	56065.84	19525.82	2014-07-05	2014-06-20	15 days
4	Sub-Saharan Africa	Rwanda	Office Supplies	Offline	L	02-01-2013	115456712	02-06-2013	5062	651.21	524.96	3296425.02	2657347.52	639077.50	2013-02-06	2013-02-01	5 days
...	
95	Sub-Saharan Africa	Mali	Clothes	Online	M	7/26/2011	512878119	09-03-2011	888	109.28	35.84	97040.64	31825.92	65214.72	2011-09-03	2011-07-26	39 days
96	Asia	Malaysia	Fruits	Offline	L	11-11-2011	810711038	12/28/2011	6267	9.33	6.92	58471.11	43367.64	15103.47	2011-12-28	2011-11-11	47 days
97	Sub-Saharan Africa	Sierra Leone	Vegetables	Offline	C	06-01-2016	728815257	6/29/2016	1485	154.06	90.93	228779.10	135031.05	93748.05	2016-06-29	2016-06-01	28 days
98	North America	Mexico	Personal Care	Offline	M	7/30/2015	559427106	08-08-2015	5767	81.73	56.67	471336.91	326815.89	144521.02	2015-08-08	2015-07-30	9 days
99	Sub-Saharan Africa	Mozambique	Household	Offline	L	02-10-2012	665095412	2/15/2012	5367	668.27	502.54	3586605.09	2697132.18	889472.91	2012-02-15	2012-02-10	5 days

100 rows × 17 columns

In []:

In [27]: #converting Sales channel to interger
#Offline =0 and Online = 1

```
for x in AmaCopydf.index:
    if AmaCopydf.loc[x, "Sales Channel"] == "Offline" :
        AmaCopydf.loc[x, "Sales Channel"] = "1"

    elif AmaCopydf.loc[x, "Sales Channel"] == "Online" :
        AmaCopydf.loc[x, "Sales Channel"] = "2"
```

In []:

In []:

In [28]: #Converting order priority to integer

```
for x in AmaCopydf.index:
    if AmaCopydf.loc[x, "Order Priority"] == "L" :
        AmaCopydf.loc[x, "Order Priority"] = "1"

    elif AmaCopydf.loc[x, "Order Priority"] == "M" :
```

```

AmaCopydf.loc[x, "Order Priority"] = "2"
elif AmaCopydf.loc[x, "Order Priority"] == "C" :
    AmaCopydf.loc[x, "Order Priority"] = "3"

else:
    AmaCopydf.loc[x, "Order Priority"] = "4"

```

In [29]: AmaCopydf

	Region	Country	Item Type	Sales Channel	Order Priority	Order Date	Order ID	Ship Date	Units Sold	Unit Price	Unit Cost	Total Revenue	Total Cost	Total Profit	ShipDate	OrderDate	orderCompTime
0	Australia and Oceania	Tuvalu	Baby Food	1	4	5/28/2010	669165933	6/27/2010	9925	255.28	159.42	2533654.00	1582243.50	951410.50	2010-06-27	2010-05-28	30 days
1	Central America and the Caribbean	Grenada	Cereal	2	3	8/22/2012	963881480	9/15/2012	2804	205.70	117.11	576782.80	328376.44	248406.36	2012-09-15	2012-08-22	24 days
2	Europe	Russia	Office Supplies	1	1	05-02-2014	341417157	05-08-2014	1779	651.21	524.96	1158502.59	933903.84	224598.75	2014-05-08	2014-05-02	6 days
3	Sub-Saharan Africa	Sao Tome and Principe	Fruits	2	3	6/20/2014	514321792	07-05-2014	8102	9.33	6.92	75591.66	56065.84	19525.82	2014-07-05	2014-06-20	15 days
4	Sub-Saharan Africa	Rwanda	Office Supplies	1	1	02-01-2013	115456712	02-06-2013	5062	651.21	524.96	3296425.02	2657347.52	639077.50	2013-02-06	2013-02-01	5 days
...	
95	Sub-Saharan Africa	Mali	Clothes	2	2	7/26/2011	512878119	09-03-2011	888	109.28	35.84	97040.64	31825.92	65214.72	2011-09-03	2011-07-26	39 days
96	Asia	Malaysia	Fruits	1	1	11-11-2011	810711038	12/28/2011	6267	9.33	6.92	58471.11	43367.64	15103.47	2011-12-28	2011-11-11	47 days
97	Sub-Saharan Africa	Sierra Leone	Vegetables	1	3	06-01-2016	728815257	6/29/2016	1485	154.06	90.93	228779.10	135031.05	93748.05	2016-06-29	2016-06-01	28 days
98	North America	Mexico	Personal Care	1	2	7/30/2015	559427106	08-08-2015	5767	81.73	56.67	471336.91	326815.89	144521.02	2015-08-08	2015-07-30	9 days
99	Sub-Saharan Africa	Mozambique	Household	1	1	02-10-2012	665095412	2/15/2012	5367	668.27	502.54	3586605.09	2697132.18	889472.91	2012-02-15	2012-02-10	5 days

100 rows × 17 columns

In [30]: AmaCopydf['Sales Channel'] = AmaCopydf['Sales Channel'].astype(int)
AmaCopydf['Order Priority'] = AmaCopydf['Order Priority'].astype(int)

In [31]: AmaCopydf.dtypes

```

Out[31]: Region          object
Country         object
Item Type       object
Sales Channel   int32
Order Priority  int32
Order Date      object
Order ID        int64
Ship Date       object
Units Sold      int64
Unit Price      float64
Unit Cost       float64
Total Revenue   float64
Total Cost      float64
Total Profit    float64
ShipDate        datetime64[ns]
OrderDate       datetime64[ns]
orderCompTime   timedelta64[ns]
dtype: object

```

In [150...]: AmaCopydf['orderCompTime'].value_counts()

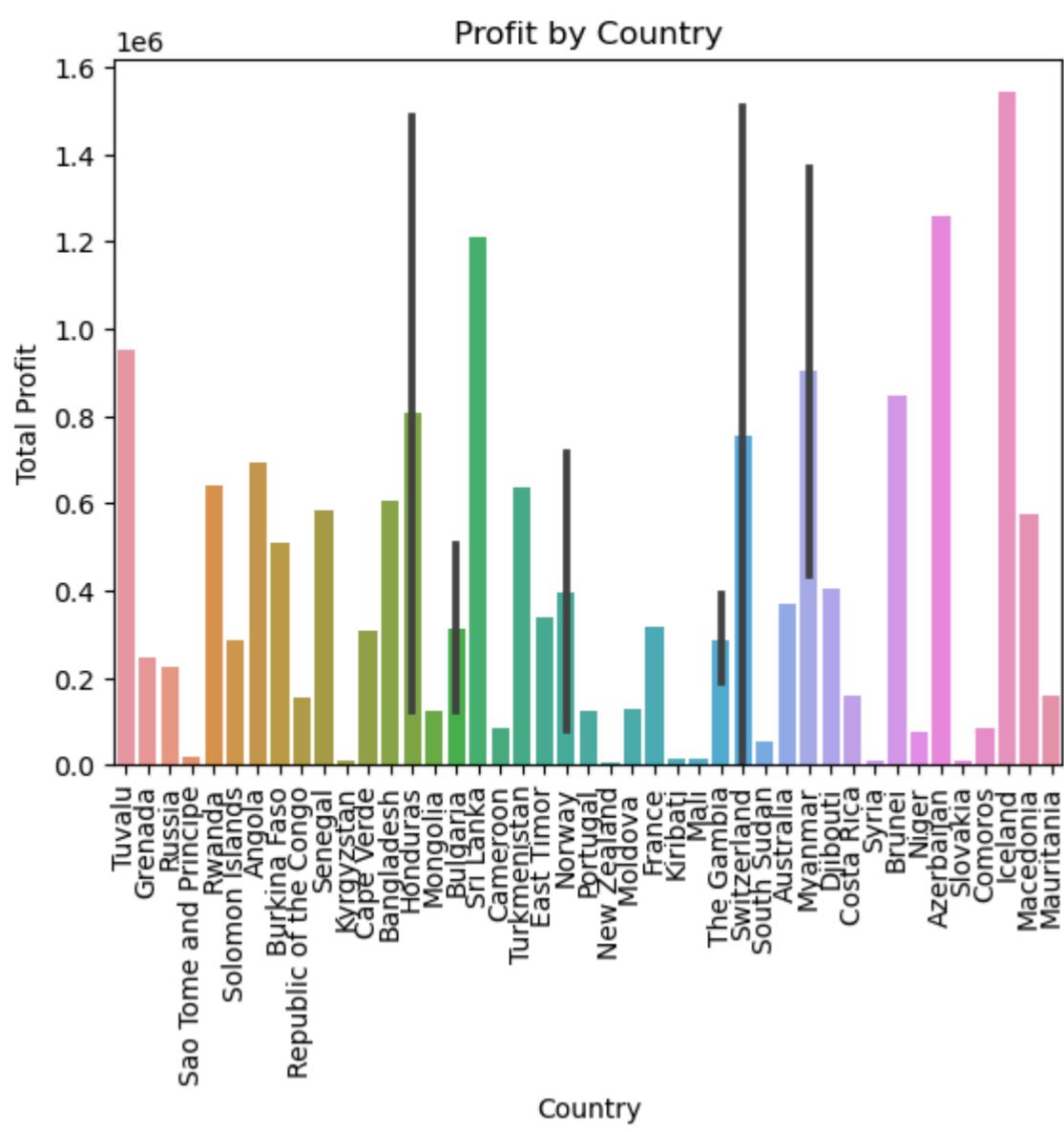
```

Out[150...]: 5 days    5
4 days    5
42 days   5
18 days   5
17 days   4
44 days   3
45 days   3
33 days   3
12 days   3
28 days   3
1 days    3
3 days    3
31 days   3
29 days   3
41 days   3
47 days   3
32 days   2
39 days   2
9 days    2
40 days   2
23 days   2
8 days    2
19 days   2
37 days   2
30 days   2
20 days   2
0 days    2
24 days   2
14 days   2
26 days   2
34 days   2
15 days   1
38 days   1
36 days   1
50 days   1
27 days   1
6 days    1
11 days   1
10 days   1
7 days    1
13 days   1
2 days    1
35 days   1
21 days   1
Name: orderCompTime, dtype: int64

```

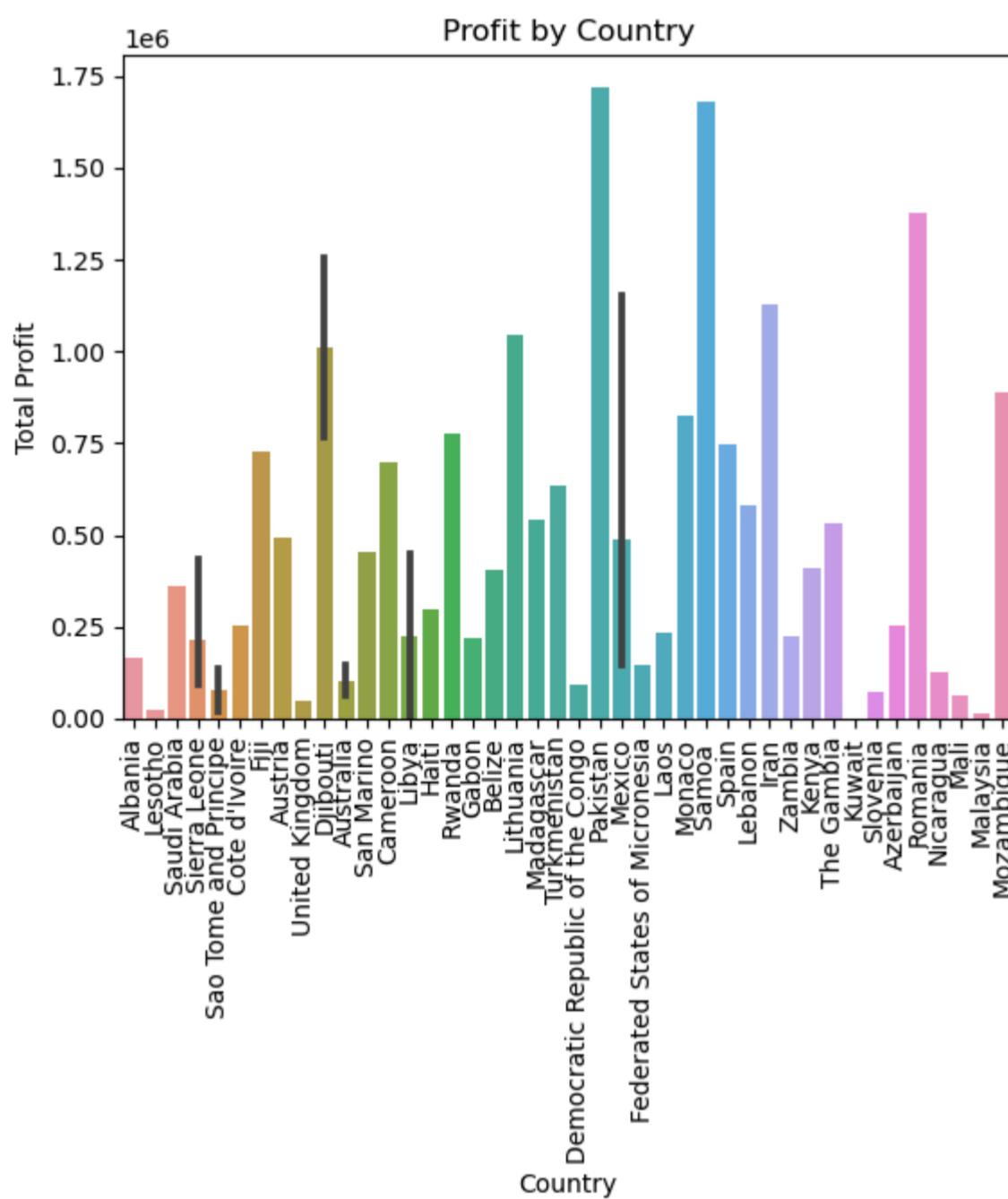
In [190...]: sb.barplot(x=AmaCopydf.iloc[:50, 1], y='Total Profit', data=AmaCopydf)
plt.xticks(rotation = 90)
plt.title('Profit by Country')

Out[190...]: Text(0.5, 1.0, 'Profit by Country')



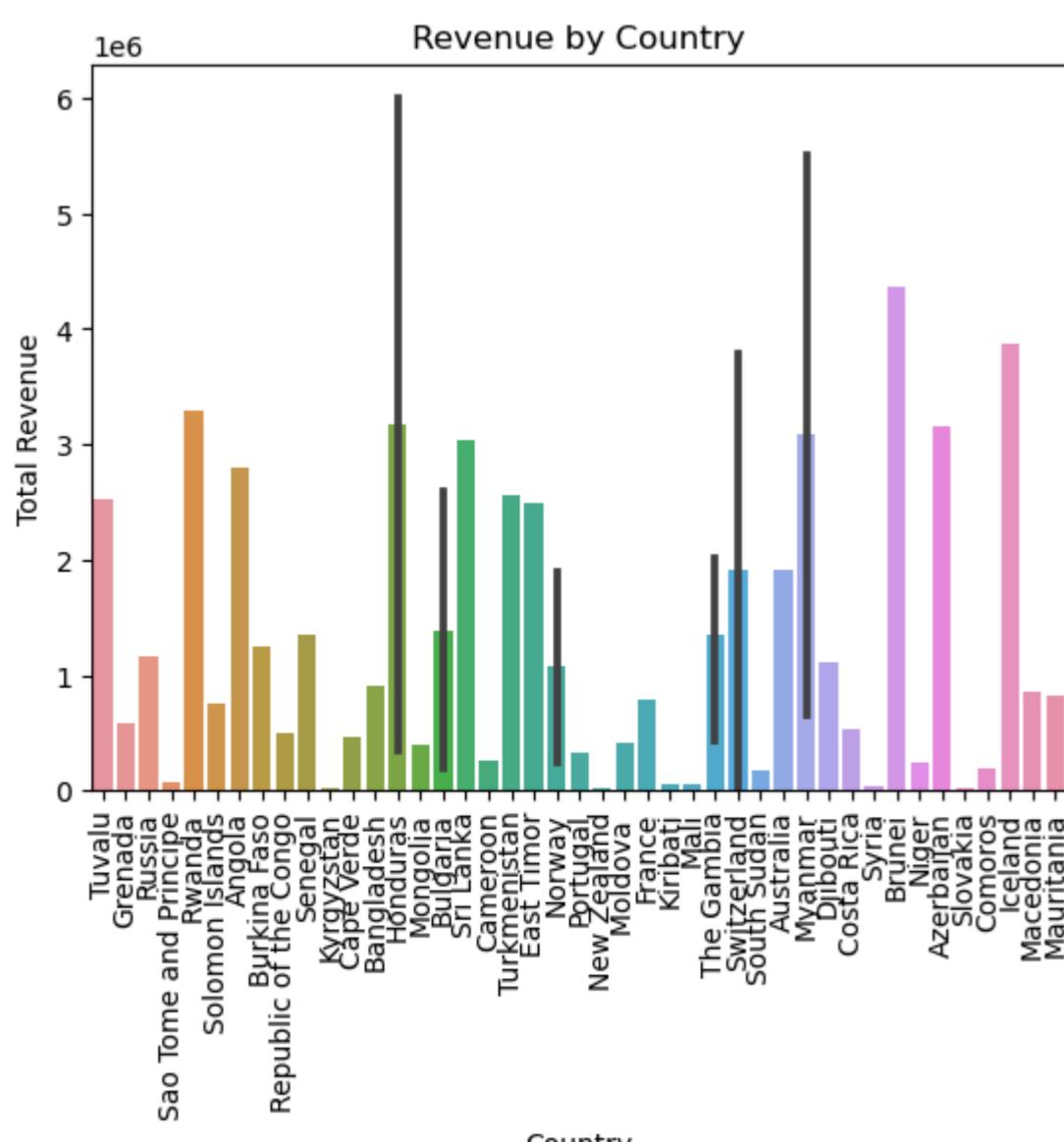
```
In [191... sb.barplot(x= AmaCopydf.iloc[50:101, 1], y= 'Total Profit', data= AmaCopydf)
plt.xticks(rotation = 90)
plt.title('Profit by Country')
```

```
Out[191... Text(0.5, 1.0, 'Profit by Country')
```



```
In [192... sb.barplot(x= AmaCopydf.iloc[:50, 1], y= 'Total Revenue', data= AmaCopydf)
plt.xticks(rotation = 90)
plt.title('Revenue by Country')
```

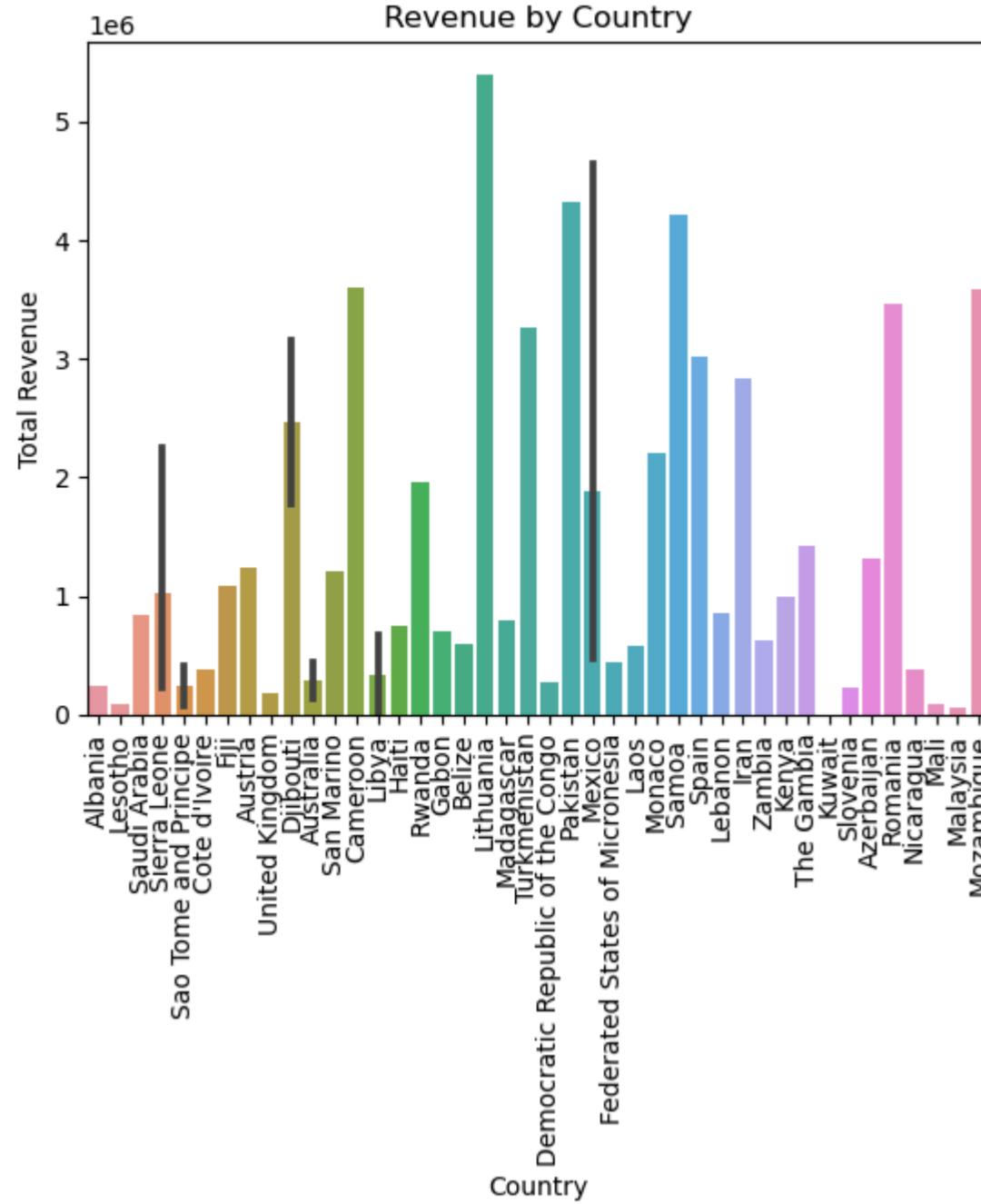
```
Out[192... Text(0.5, 1.0, 'Revenue by Country')
```



```
In [193... sb.barplot(x= AmaCopydf.iloc[50:101, 1], y= 'Total Revenue', data= AmaCopydf)
plt.xticks(rotation = 90)
```

```
plt.title('Revenue by Country')
```

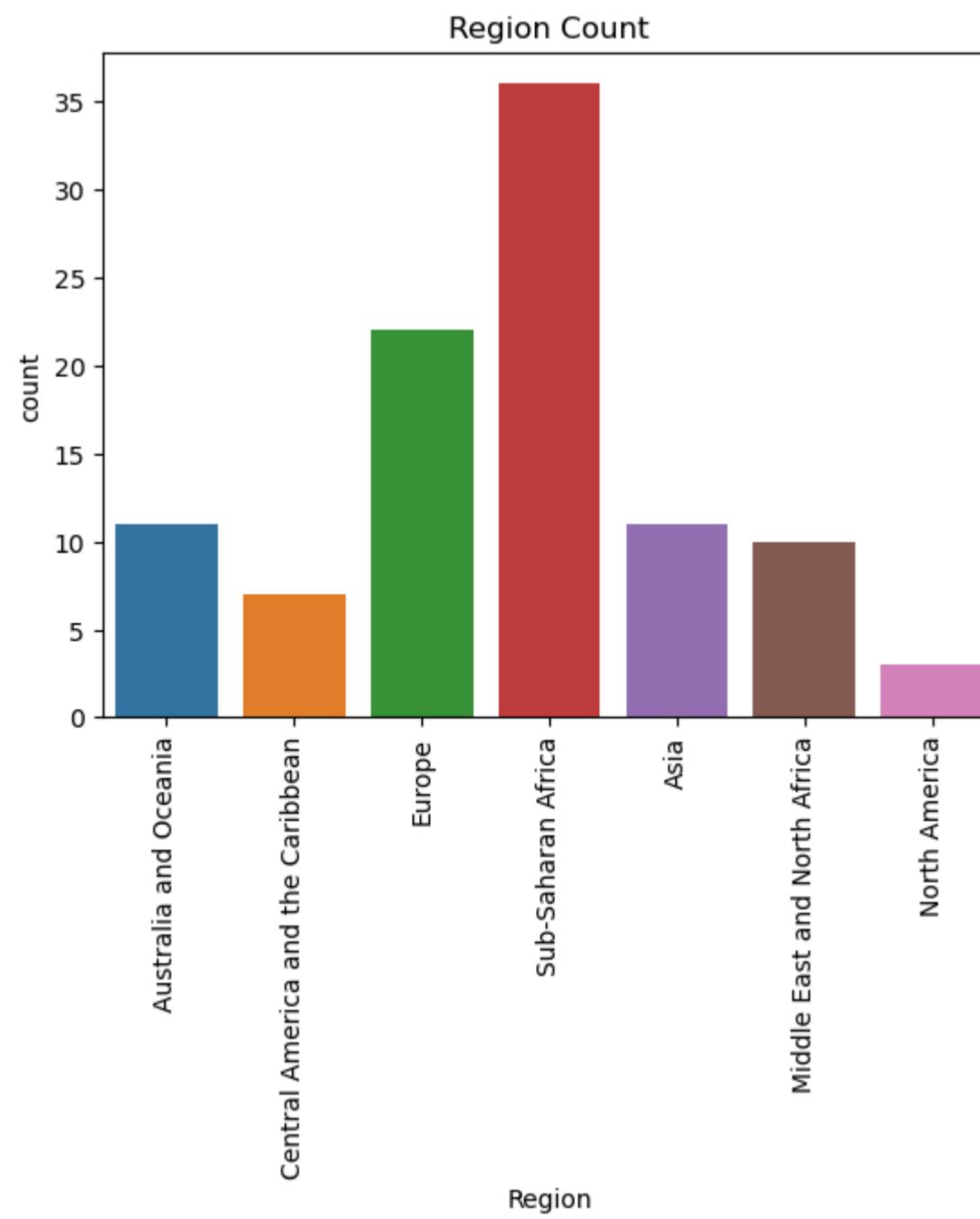
```
Out[193...]: Text(0.5, 1.0, 'Revenue by Country')
```



```
In [ ]:
```

```
sb.countplot(data=AmaCopydf, x="Region")
plt.figure(figsize=(20, 40))
plt.xticks(rotation = 90)
plt.title('Region Count')
```

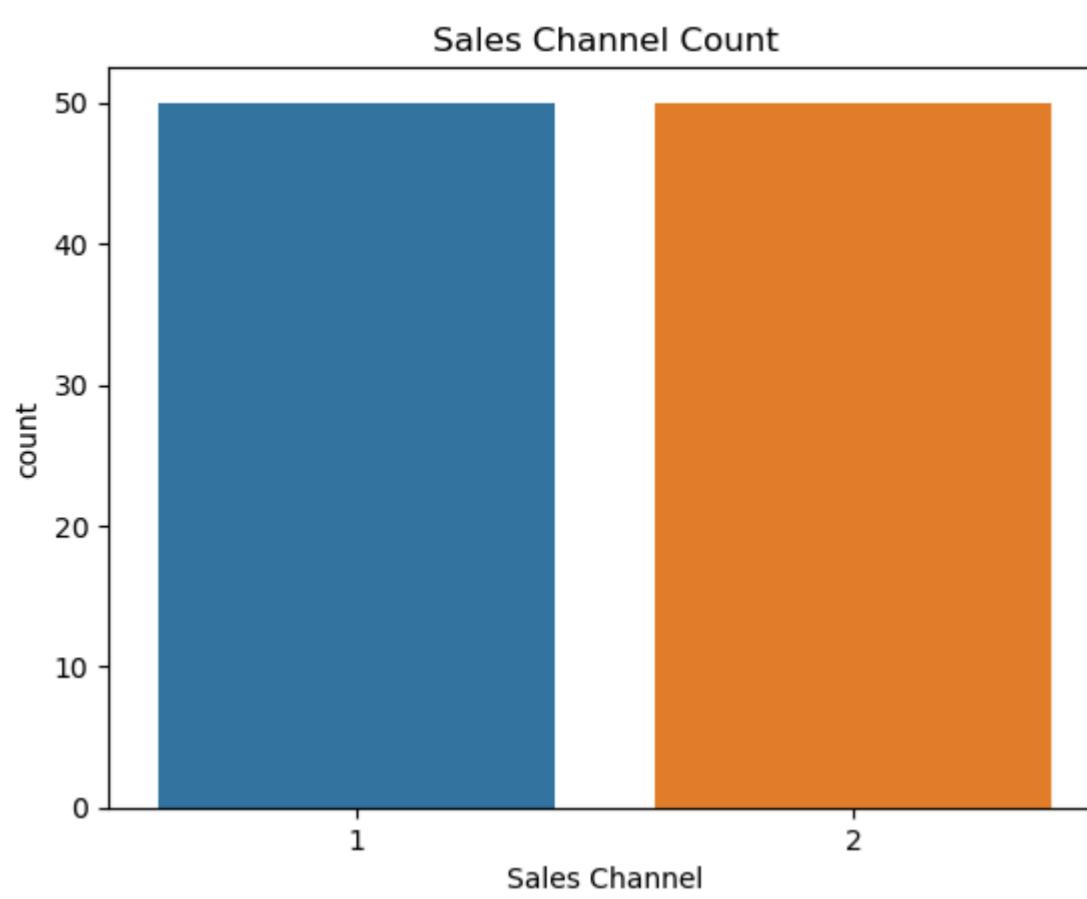
```
Out[179...]: Text(0.5, 1.0, 'Region Count')
```



```
In [33]:
```

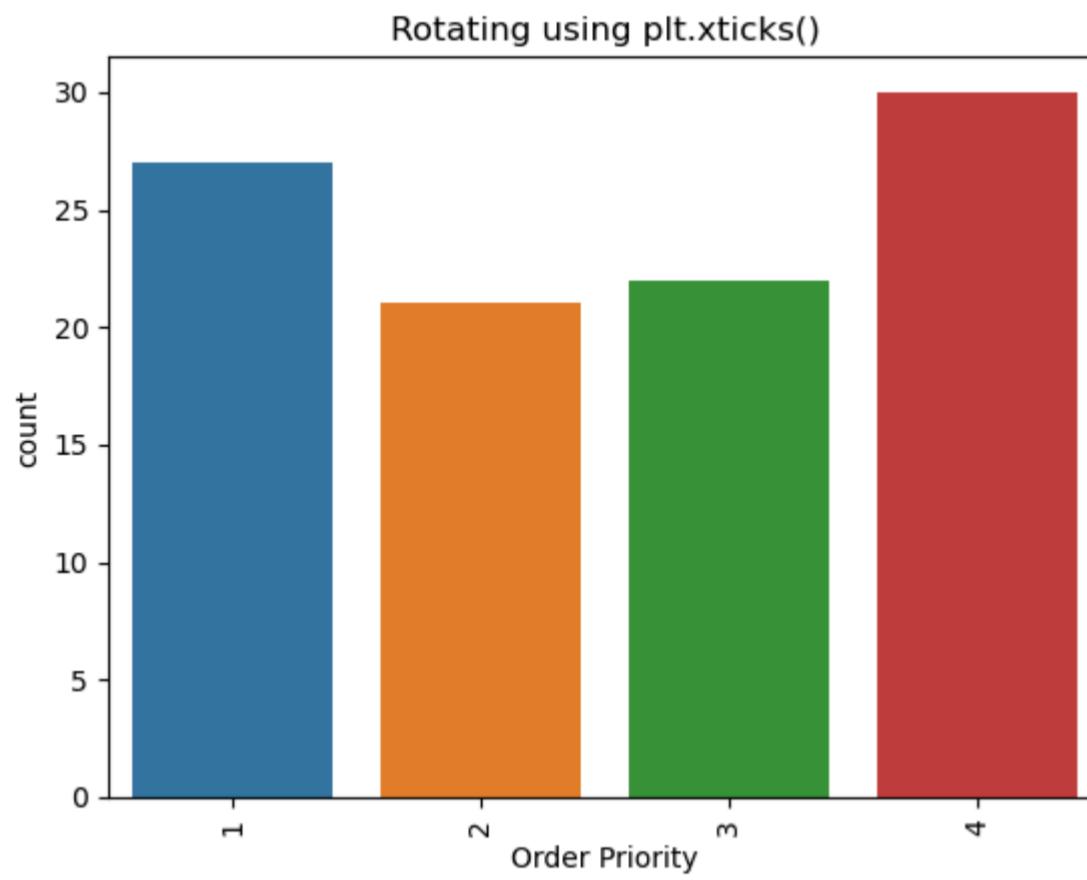
```
sb.countplot(data=AmaCopydf, x="Sales Channel")
plt.figure(figsize=(20, 40))
plt.title('Sales Channel Count')
```

```
Out[33]: Text(0.5, 1.0, 'Sales Channel Count')
```



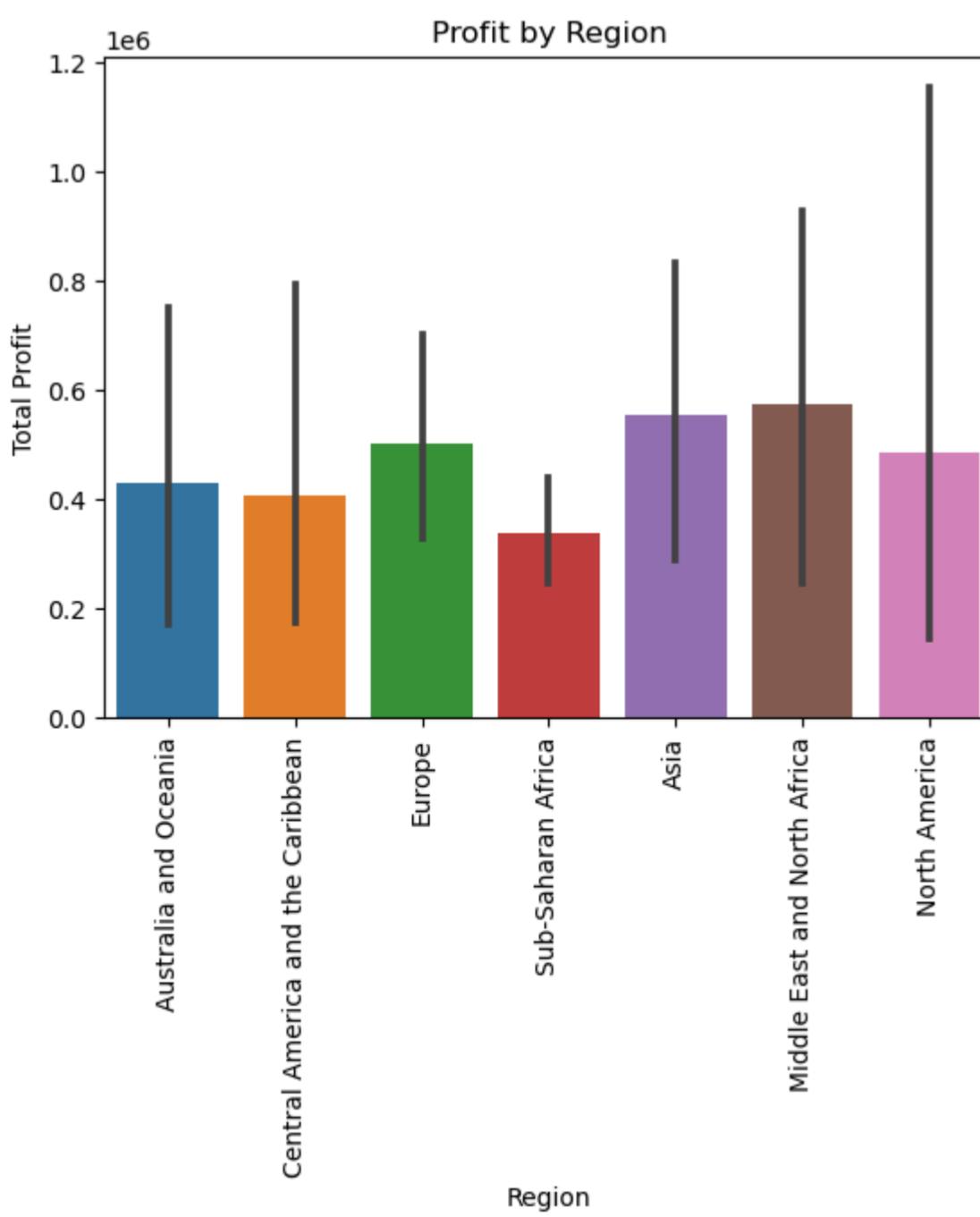
```
In [141]: sb.countplot(data=AmaCopydf, x="Order Priority")
plt.figure(figsize=(20, 40))
plt.xticks(rotation = 90)
plt.title('Rotating using plt.xticks()')
```

```
Out[141]: Text(0.5, 1.0, 'Rotating using plt.xticks()')
```



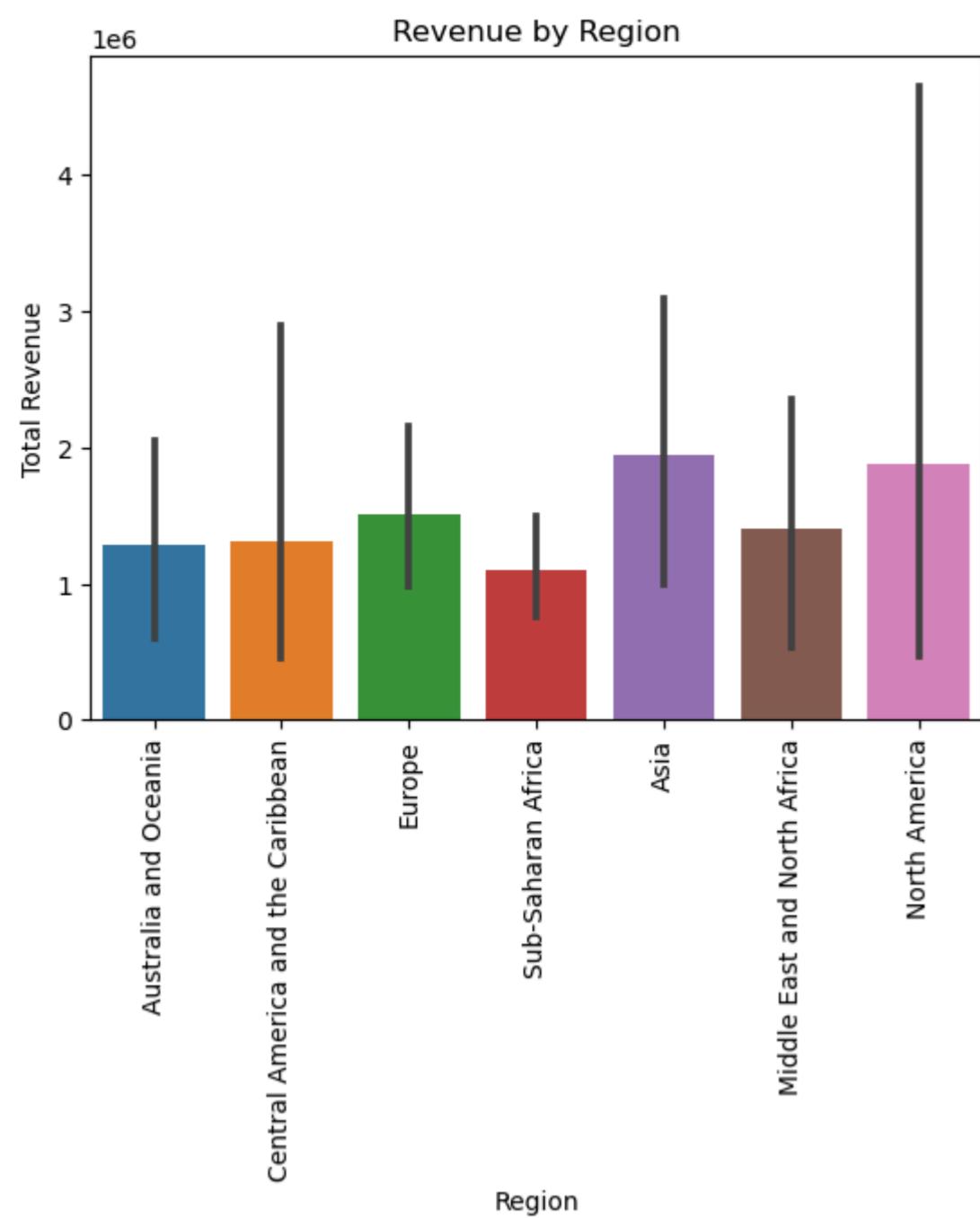
```
In [34]: sb.barplot(data=AmaCopydf, x="Region", y="Total Profit",
plt.figure(figsize=(20, 40))
plt.xticks(rotation = 90)
plt.title('Profit by Region'))
```

```
Out[34]: Text(0.5, 1.0, 'Profit by Region')
```



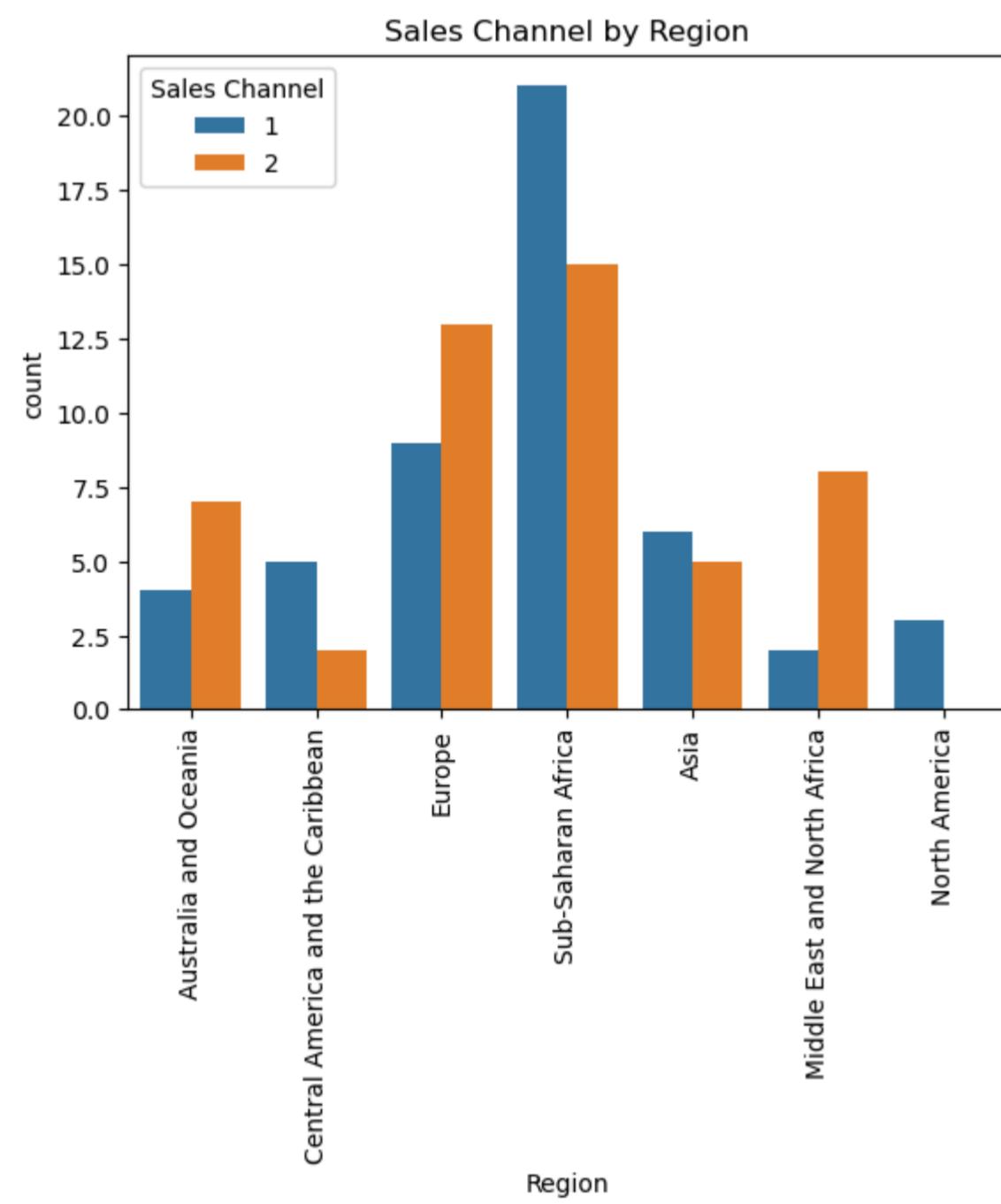
```
In [35]: sb.barplot(data=AmaCopydf, x="Region", y="Total Revenue",
plt.figure(figsize=(20, 40))
plt.xticks(rotation = 90)
plt.title('Revenue by Region'))
```

```
Out[35]: Text(0.5, 1.0, 'Revenue by Region')
```



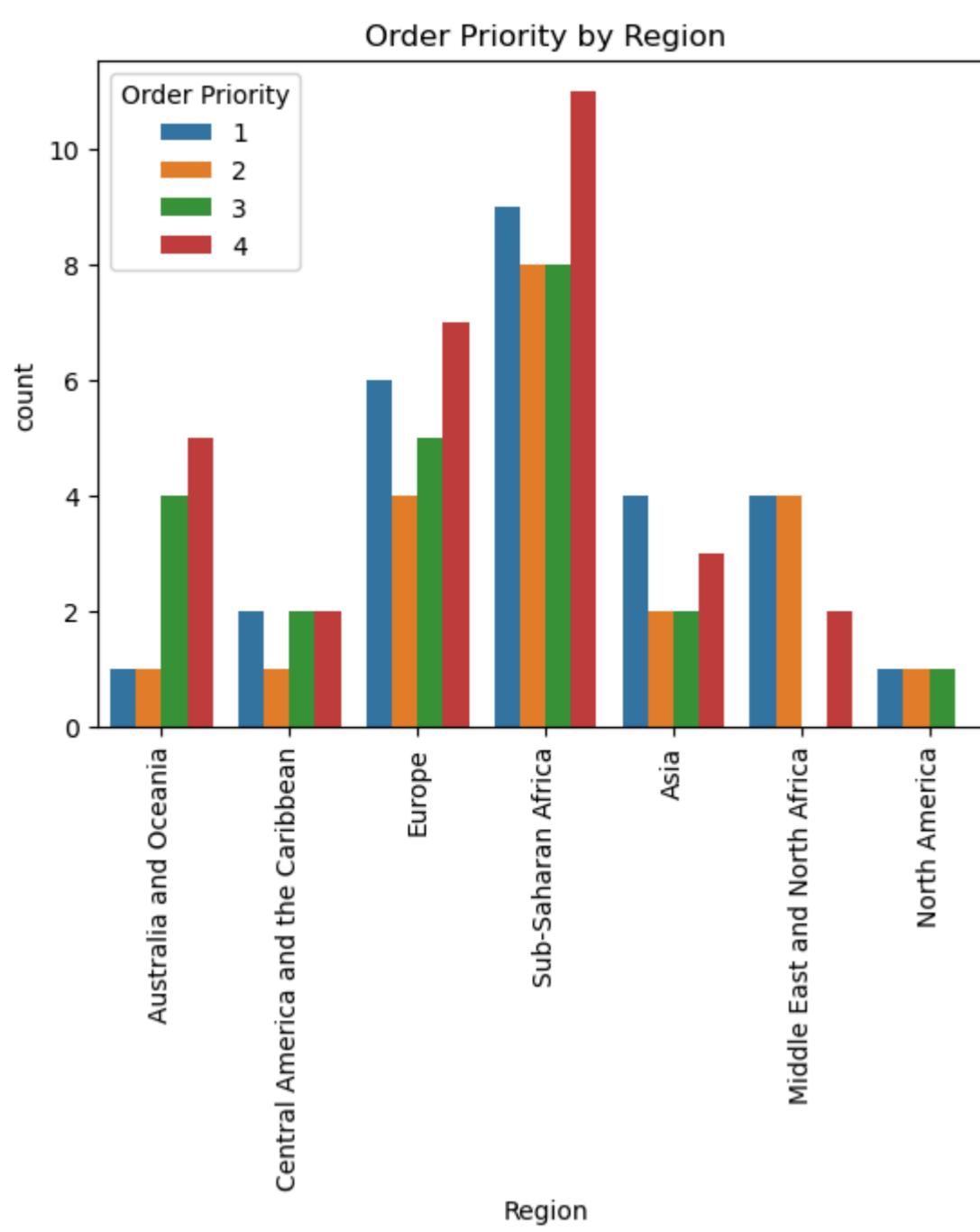
```
In [162... sb.countplot(data=AmaCopydf, x="Region", hue="Sales Channel",)
plt.figure(figsize=(20, 40))
plt.xticks(rotation = 90)
plt.title('Sales Channel by Region')
```

```
Out[162... Text(0.5, 1.0, 'Sales Channel by Region')
```



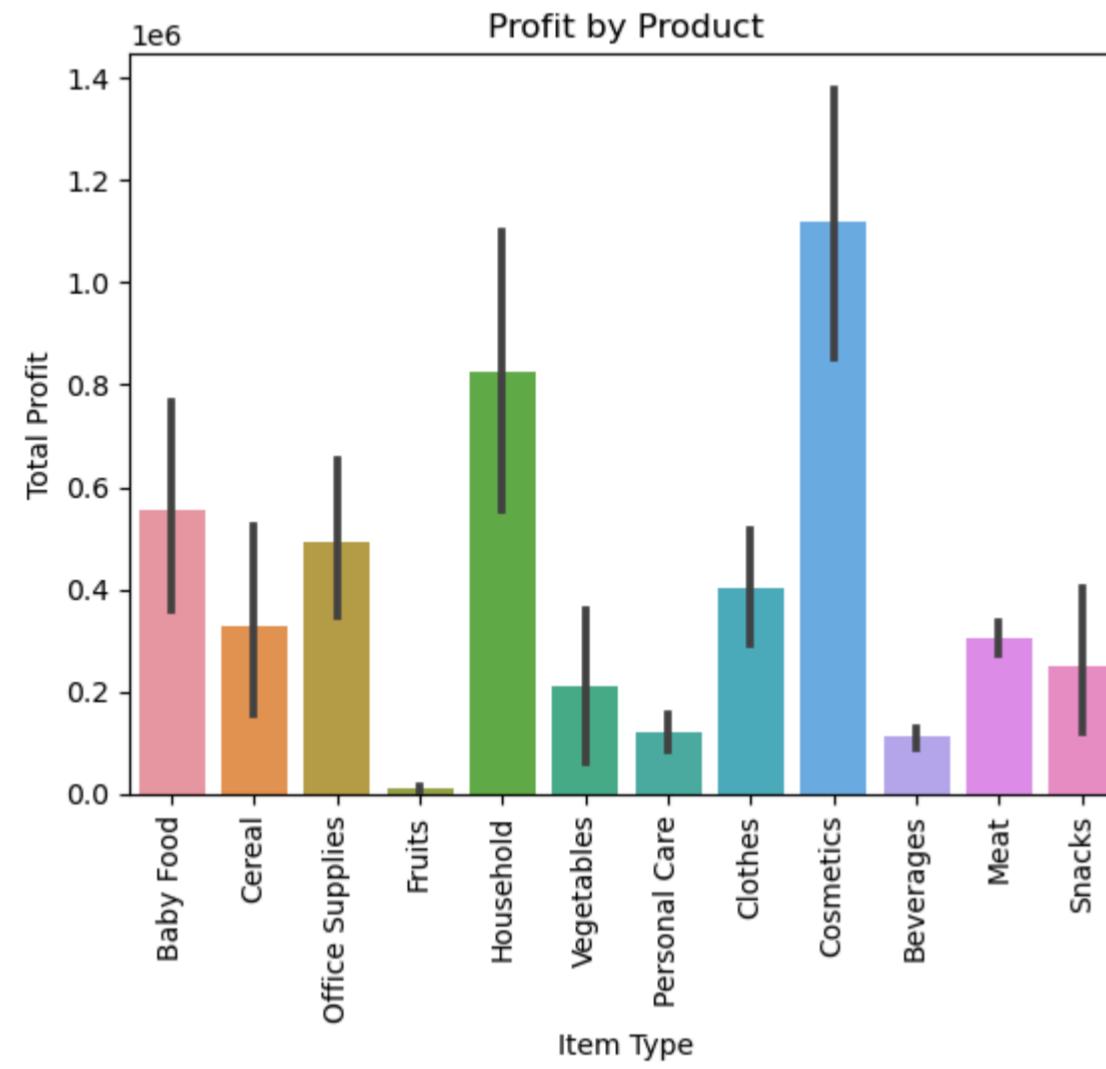
```
In [165... sb.countplot(data=AmaCopydf, x="Region", hue="Order Priority",)
plt.figure(figsize=(20, 40))
plt.xticks(rotation = 90)
plt.title('Order Priority by Region')
```

```
Out[165... Text(0.5, 1.0, 'Order Priority by Region')
```



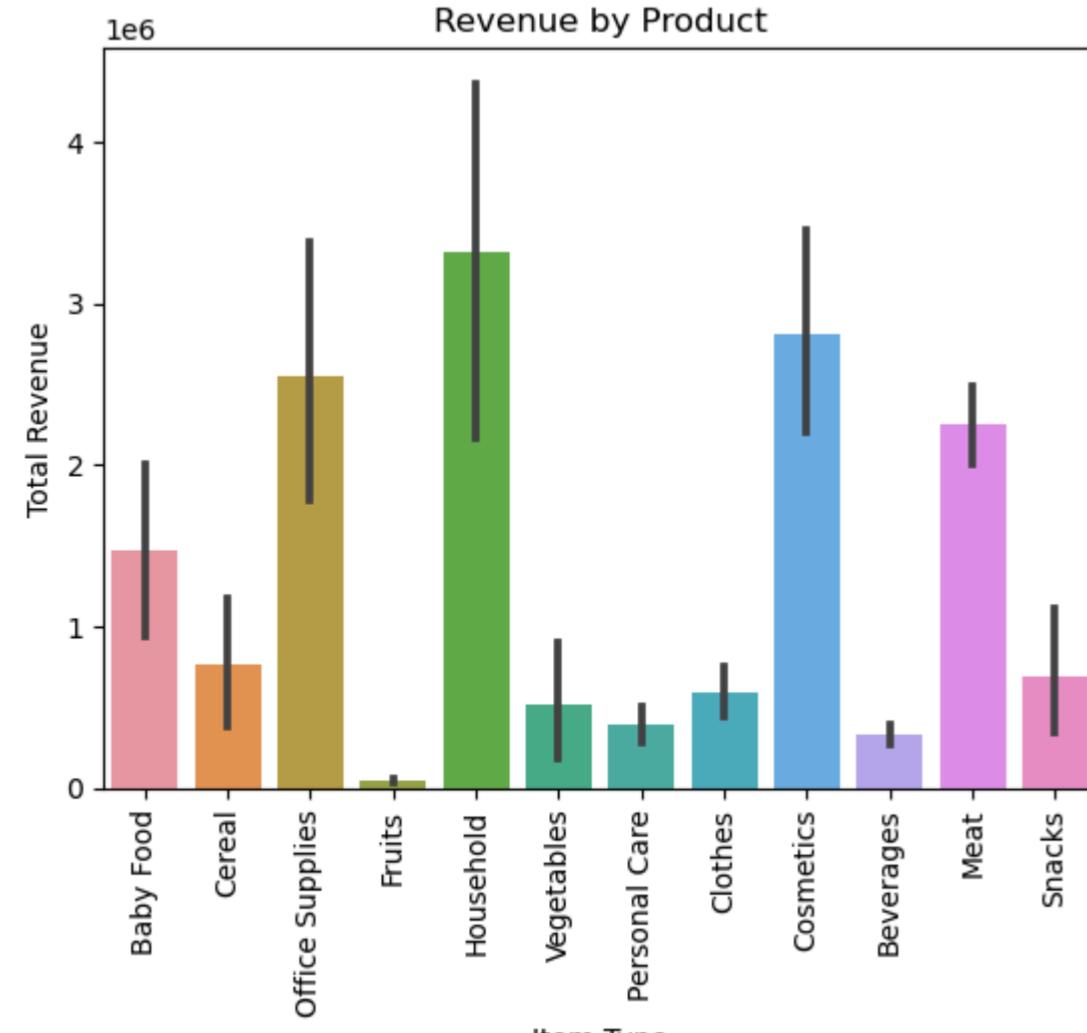
```
In [36]: sb.barplot(data=AmaCopydf, x="Item Type", y="Total Profit",)
plt.xticks(rotation = 90)
plt.title('Profit by Product')
```

Out[36]: Text(0.5, 1.0, 'Profit by Product')



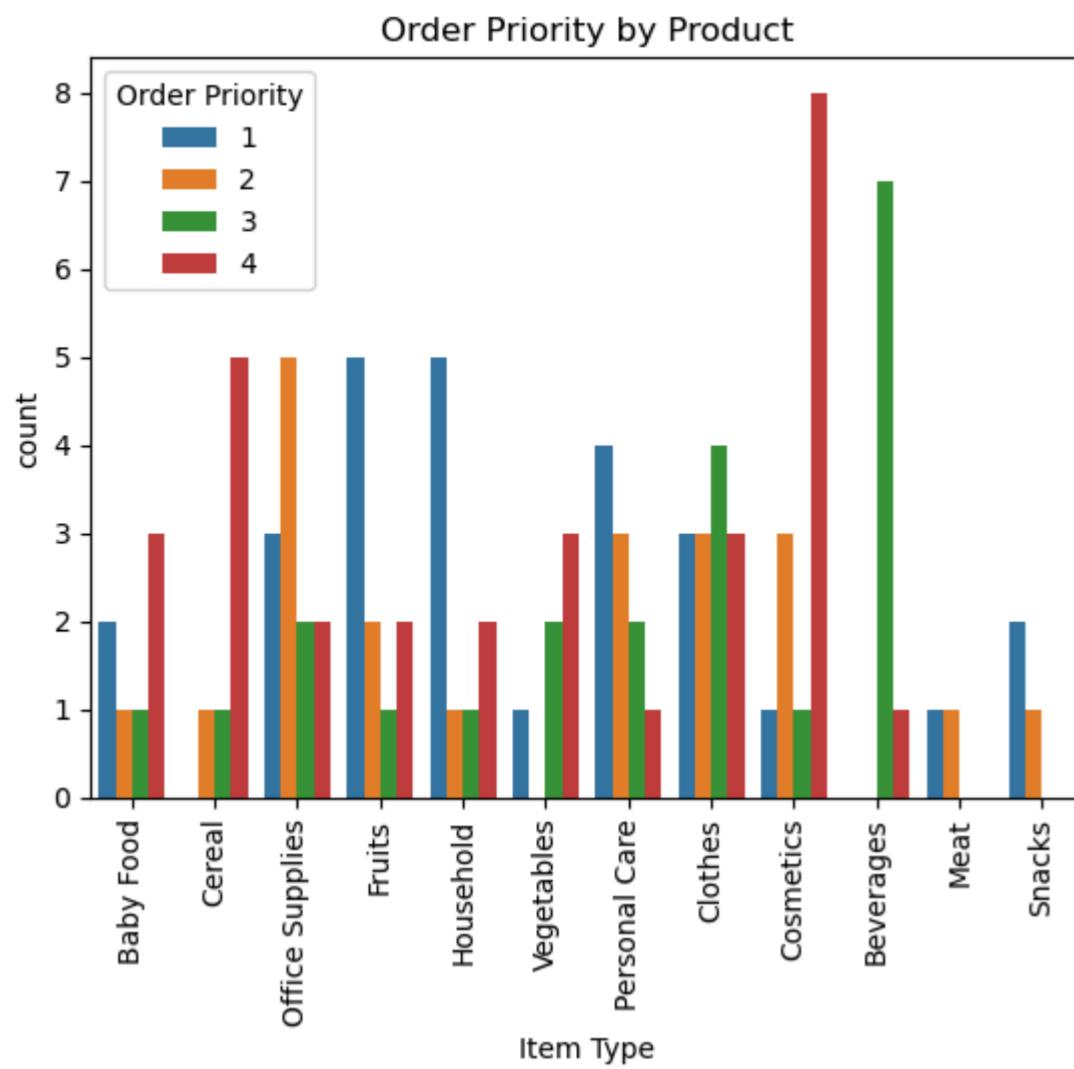
```
In [158... sb.barplot(data=AmaCopydf, x="Item Type", y="Total Revenue",)
plt.xticks(rotation = 90)
plt.title('Revenue by Product')
```

Out[158... Text(0.5, 1.0, 'Revenue by Product')



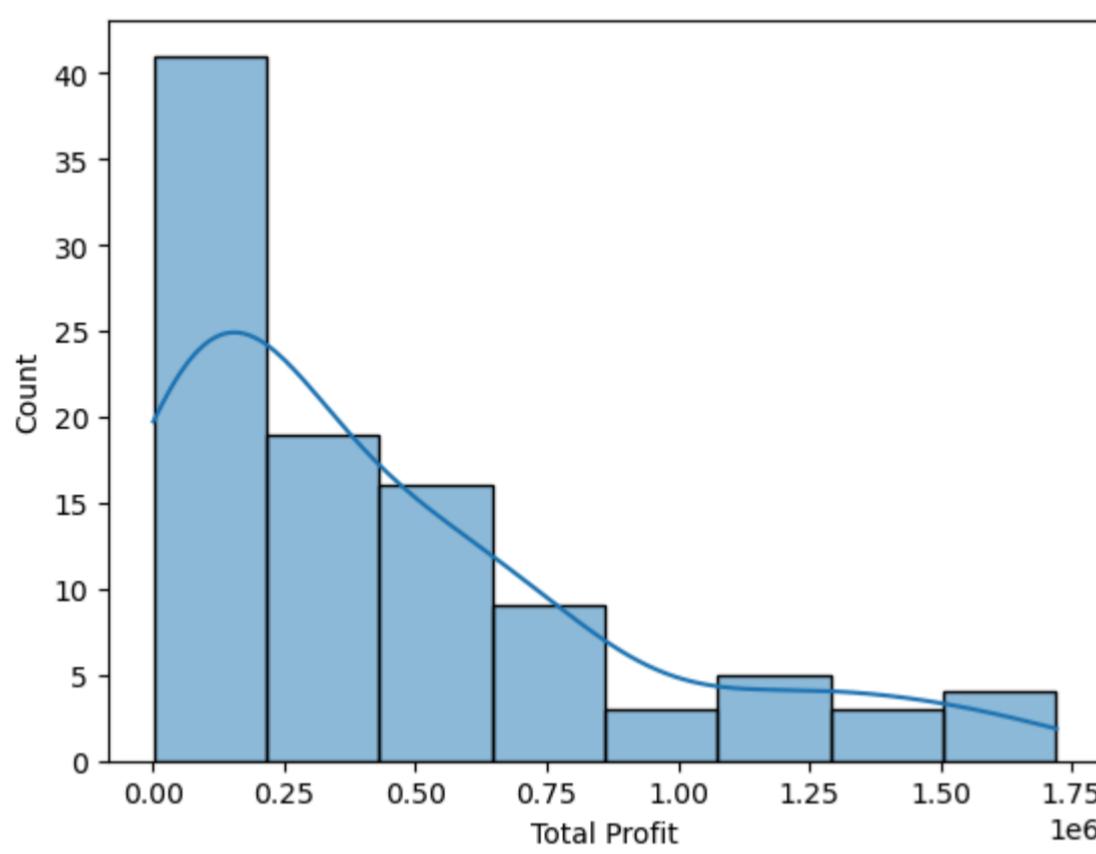
```
In [164... sb.countplot(data=AmaCopydf, x="Item Type", hue="Order Priority",)
plt.xticks(rotation = 90)
plt.title('Order Priority by Product')
```

```
Out[164]: Text(0.5, 1.0, 'Order Priority by Product')
```



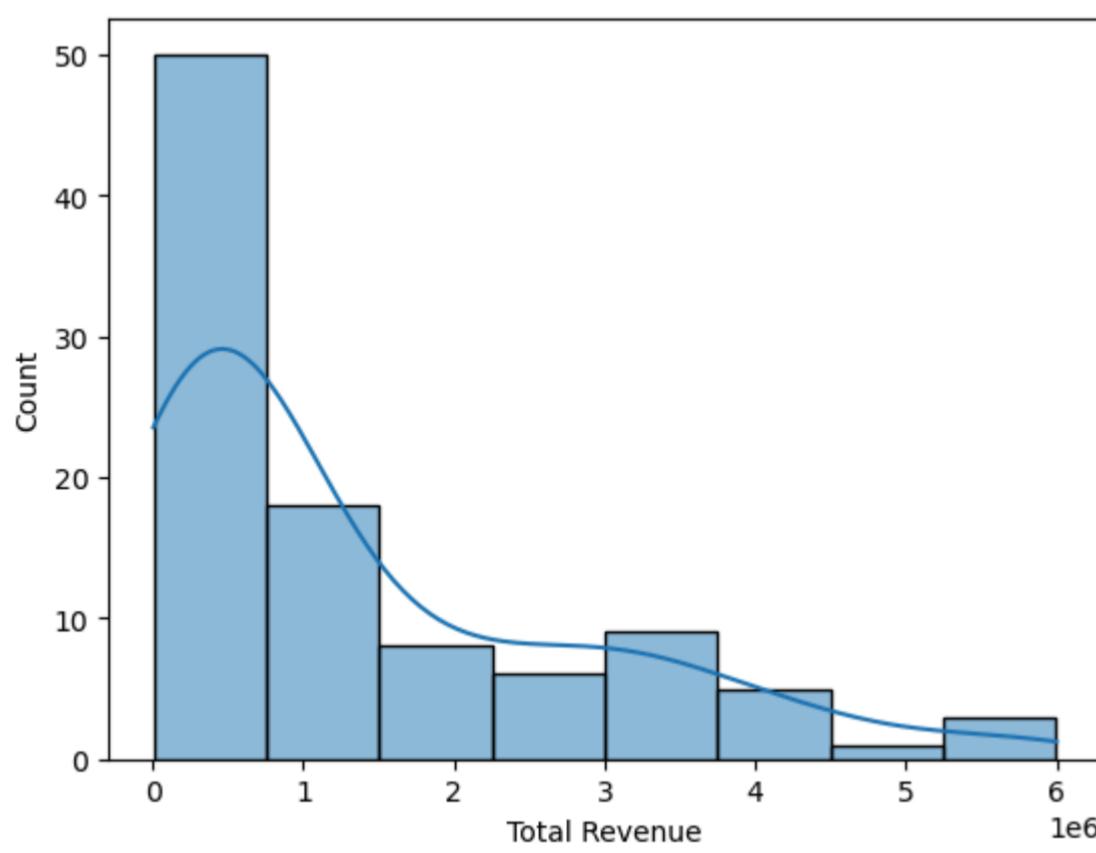
```
In [154]: sb.histplot(AmaCopydf['Total Profit'], kde=True)
```

```
Out[154]: <AxesSubplot:xlabel='Total Profit', ylabel='Count'>
```



```
In [155]: sb.histplot(AmaCopydf['Total Revenue'], kde=True)
```

```
Out[155]: <AxesSubplot:xlabel='Total Revenue', ylabel='Count'>
```



```
In [ ]:
```

```
In [37]: #Household Products
```

```
housedf = AmaCopydf.loc[AmaCopydf['Item Type'] == 'Household']
```

```
In [38]: housedf
```

	Region	Country	Item Type	Sales Channel	Order Priority	Order Date	Order ID	Ship Date	Units Sold	Unit Price	Unit Cost	Total Revenue	Total Cost	Total Profit	ShipDate	OrderDate	orderCompTime
6	Sub-Saharan Africa	Angola	Household	1	2	4/23/2011	135425221	4/27/2011	4187	668.27	502.54	2798046.49	2104134.98	693911.51	2011-04-27	2011-04-23	4 days
13	Central America and the Caribbean	Honduras	Household	1	4	02-08-2017	522840487	2/13/2017	8974	668.27	502.54	5997054.98	4509793.96	1487261.02	2017-02-13	2017-02-08	5 days
18	Asia	Turkmenistan	Household	1	1	12/30/2010	441619336	1/20/2011	3830	668.27	502.54	2559474.10	1924728.20	634745.90	2011-01-20	2010-12-30	21 days
29	Sub-Saharan Africa	The Gambia	Household	1	1	5/26/2012	886494815	06-09-2012	2370	668.27	502.54	1583799.90	1191019.80	392780.10	2012-06-09	2012-05-26	14 days
33	Asia	Myanmar	Household	1	4	1/16/2015	177713572	03-01-2015	8250	668.27	502.54	5513227.50	4145955.00	1367272.50	2015-03-01	2015-01-16	44 days
58	Europe	United Kingdom	Household	2	1	01-05-2012	955357205	2/14/2012	282	668.27	502.54	188452.14	141716.28	46735.86	2012-02-14	2012-01-05	40 days
75	North America	Mexico	Household	1	3	11-06-2014	986435210	12-12-2014	6954	668.27	502.54	4647149.58	3494663.16	1152486.42	2014-12-12	2014-11-06	36 days
80	Europe	Spain	Household	1	1	10/21/2012	213487374	11/30/2012	4513	668.27	502.54	3015902.51	2267963.02	747939.49	2012-11-30	2012-10-21	40 days
99	Sub-Saharan Africa	Mozambique	Household	1	1	02-10-2012	665095412	2/15/2012	5367	668.27	502.54	3586605.09	2697132.18	889472.91	2012-02-15	2012-02-10	5 days

In [39]: `housedf.Country.value_counts()`

```
Out[39]: Angola      1
Honduras      1
Turkmenistan  1
The Gambia    1
Myanmar       1
United Kingdom 1
Mexico        1
Spain         1
Mozambique   1
Name: Country, dtype: int64
```

In [40]: `housedf.Region.value_counts()`

```
Out[40]: Sub-Saharan Africa      3
Asia          2
Europe        2
Central America and the Caribbean 1
North America 1
Name: Region, dtype: int64
```

In [41]: `housedf.loc[housedf['orderCompTime'] == housedf['orderCompTime'].max()]`

	Region	Country	Item Type	Sales Channel	Order Priority	Order Date	Order ID	Ship Date	Units Sold	Unit Price	Unit Cost	Total Revenue	Total Cost	Total Profit	ShipDate	OrderDate	orderCompTime
33	Asia	Myanmar	Household	1	4	1/16/2015	177713572	03-01-2015	8250	668.27	502.54	5513227.5	4145955.0	1367272.5	2015-03-01	2015-01-16	44 days

In [42]: `housedf.loc[housedf['orderCompTime'] >= "20days"]`

	Region	Country	Item Type	Sales Channel	Order Priority	Order Date	Order ID	Ship Date	Units Sold	Unit Price	Unit Cost	Total Revenue	Total Cost	Total Profit	ShipDate	OrderDate	orderCompTime
18	Asia	Turkmenistan	Household	1	1	12/30/2010	441619336	1/20/2011	3830	668.27	502.54	2559474.10	1924728.20	634745.90	2011-01-20	2010-12-30	21 days
33	Asia	Myanmar	Household	1	4	1/16/2015	177713572	03-01-2015	8250	668.27	502.54	5513227.50	4145955.00	1367272.50	2015-03-01	2015-01-16	44 days
58	Europe	United Kingdom	Household	2	1	01-05-2012	955357205	2/14/2012	282	668.27	502.54	188452.14	141716.28	46735.86	2012-02-14	2012-01-05	40 days
75	North America	Mexico	Household	1	3	11-06-2014	986435210	12-12-2014	6954	668.27	502.54	4647149.58	3494663.16	1152486.42	2014-12-12	2014-11-06	36 days
80	Europe	Spain	Household	1	1	10/21/2012	213487374	11/30/2012	4513	668.27	502.54	3015902.51	2267963.02	747939.49	2012-11-30	2012-10-21	40 days

In [43]: `housedf.loc[housedf['orderCompTime'] == housedf['orderCompTime'].min()]`

	Region	Country	Item Type	Sales Channel	Order Priority	Order Date	Order ID	Ship Date	Units Sold	Unit Price	Unit Cost	Total Revenue	Total Cost	Total Profit	ShipDate	OrderDate	orderCompTime
6	Sub-Saharan Africa	Angola	Household	1	2	4/23/2011	135425221	4/27/2011	4187	668.27	502.54	2798046.49	2104134.98	693911.51	2011-04-27	2011-04-23	4 days

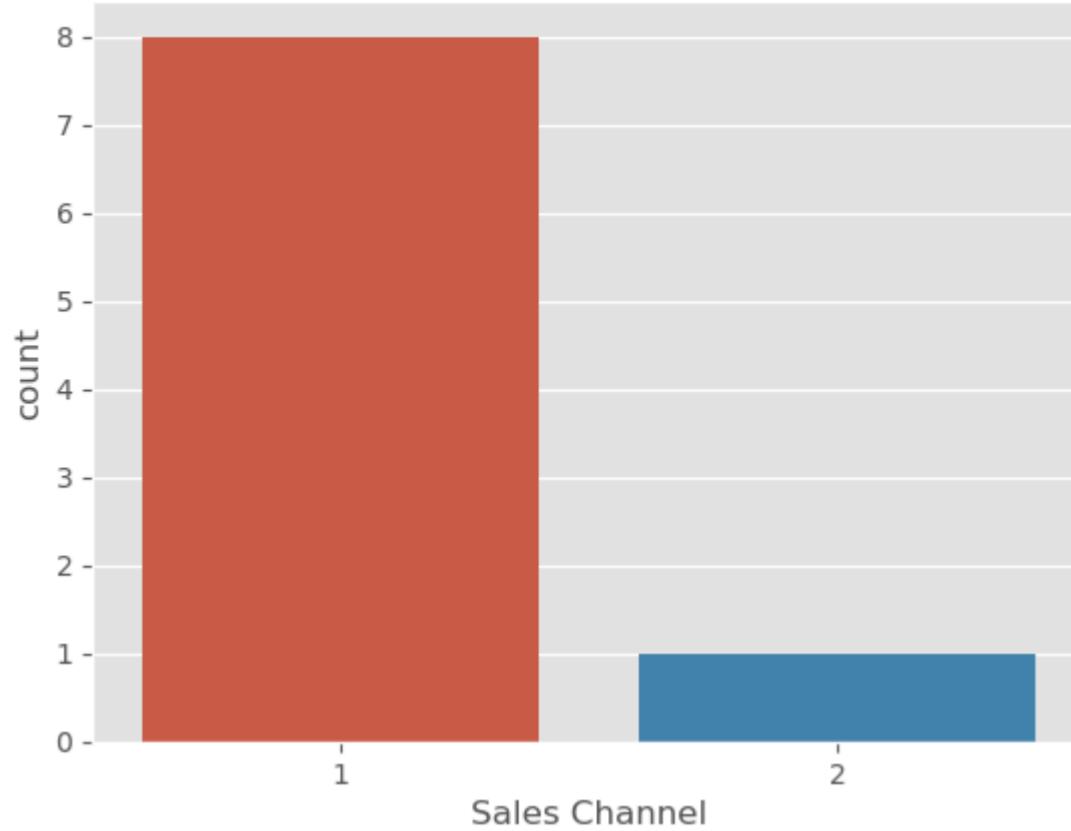
In [44]: `housedf.loc[housedf['orderCompTime'] <= "10days"]`

	Region	Country	Item Type	Sales Channel	Order Priority	Order Date	Order ID	Ship Date	Units Sold	Unit Price	Unit Cost	Total Revenue	Total Cost	Total Profit	ShipDate	OrderDate	orderCompTime
6	Sub-Saharan Africa	Angola	Household	1	2	4/23/2011	135425221	4/27/2011	4187	668.27	502.54	2798046.49	2104134.98	693911.51	2011-04-27	2011-04-23	4 days
13	Central America and the Caribbean	Honduras	Household	1	4	02-08-2017	522840487	2/13/2017	8974	668.27	502.54	5997054.98	4509793.96	1487261.02	2017-02-13	2017-02-08	5 days
99	Sub-Saharan Africa	Mozambique	Household	1	1	02-10-2012	665095412	2/15/2012	5367	668.27	502.54	3586605.09	2697132.18	889472.91	2012-02-15	2012-02-10	5 days

```
In [245...]: sb.countplot(data=housedf, x="Sales Channel")
plt.figure(figsize=(20, 40))
plt.title('Sales Channel Distribution')
```

Out[245...]: `Text(0.5, 1.0, 'Sales Channel Distribution')`

Sales Channel Distribution



In [246]:

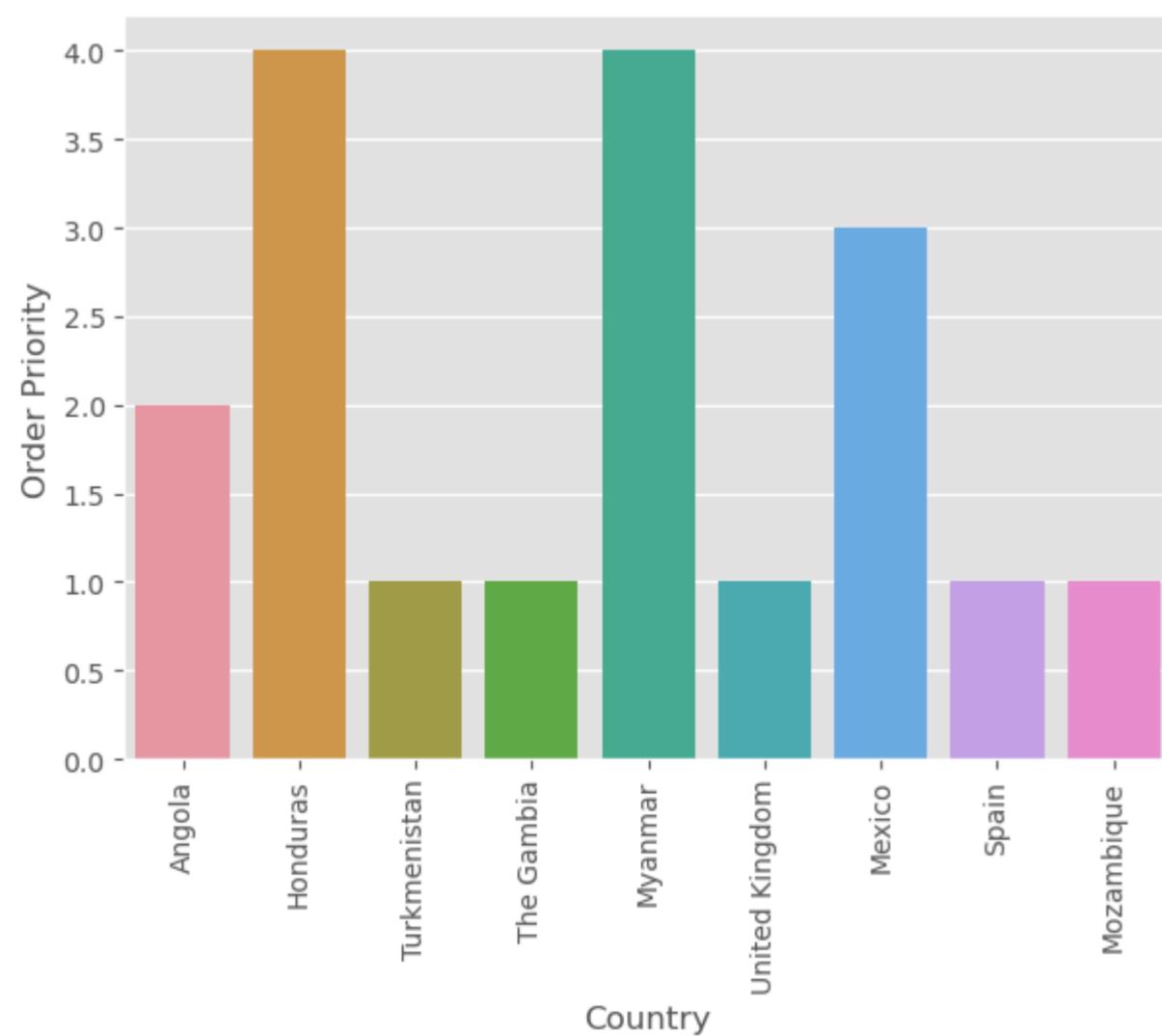
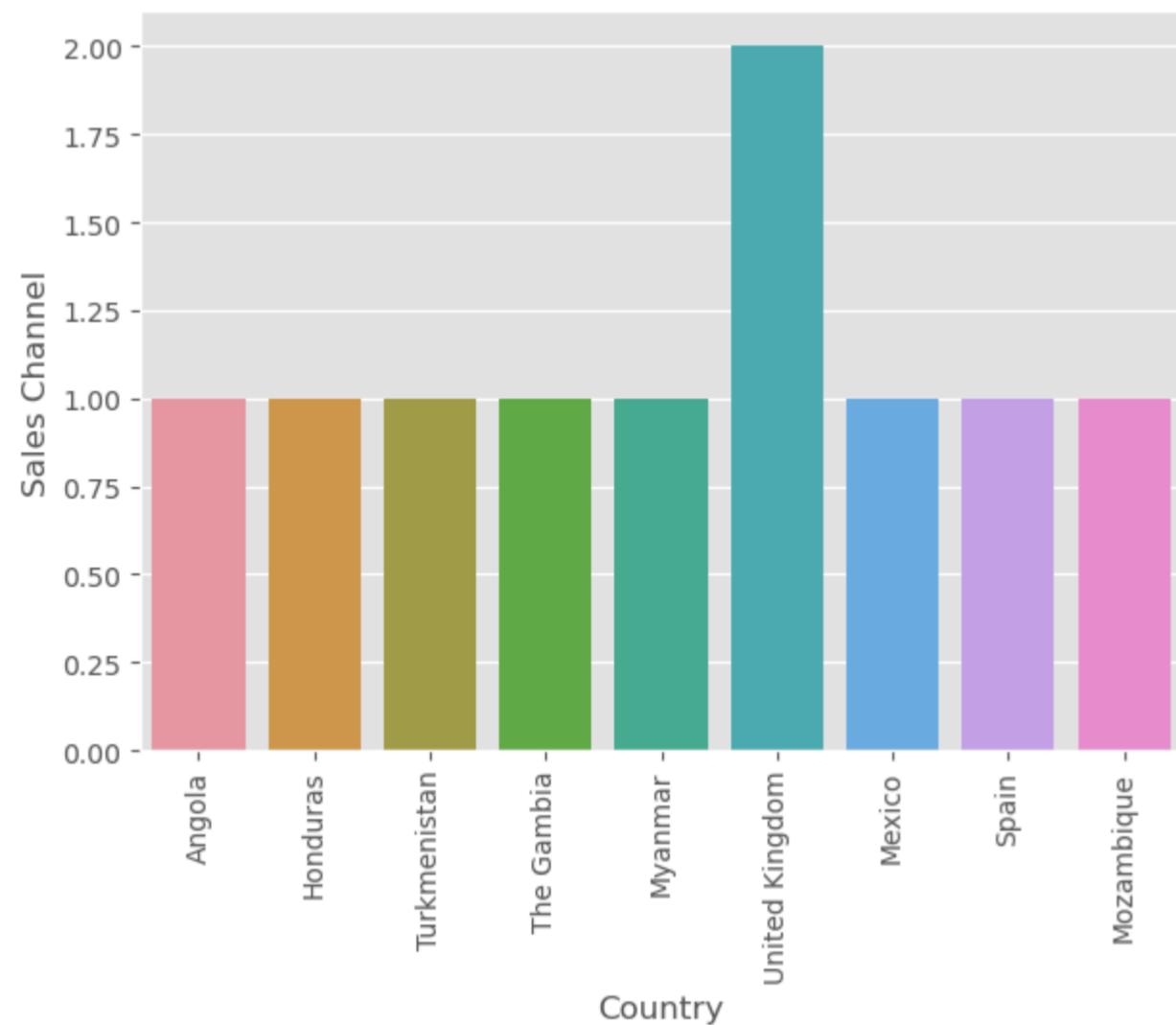
```
%matplotlib inline

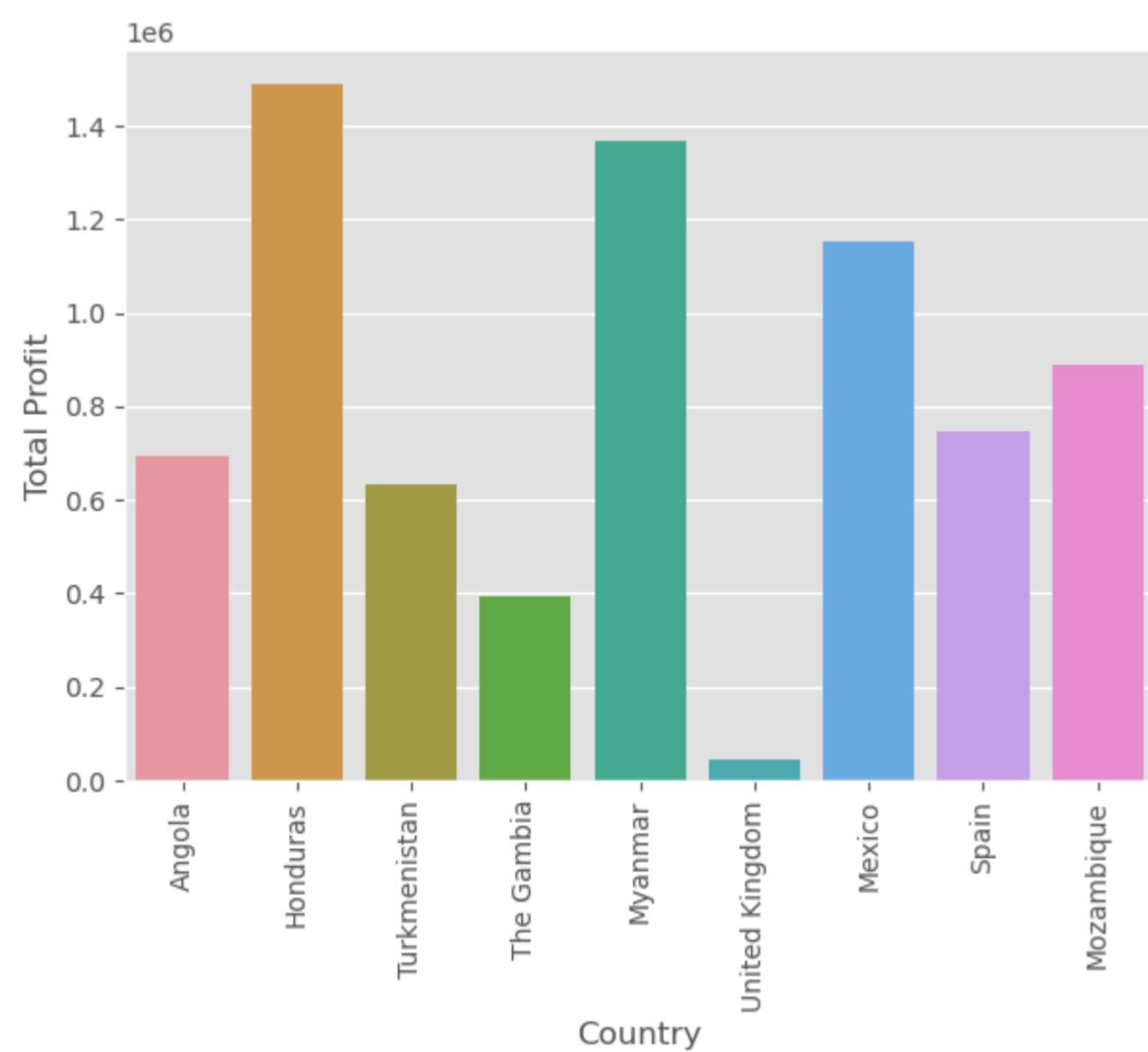
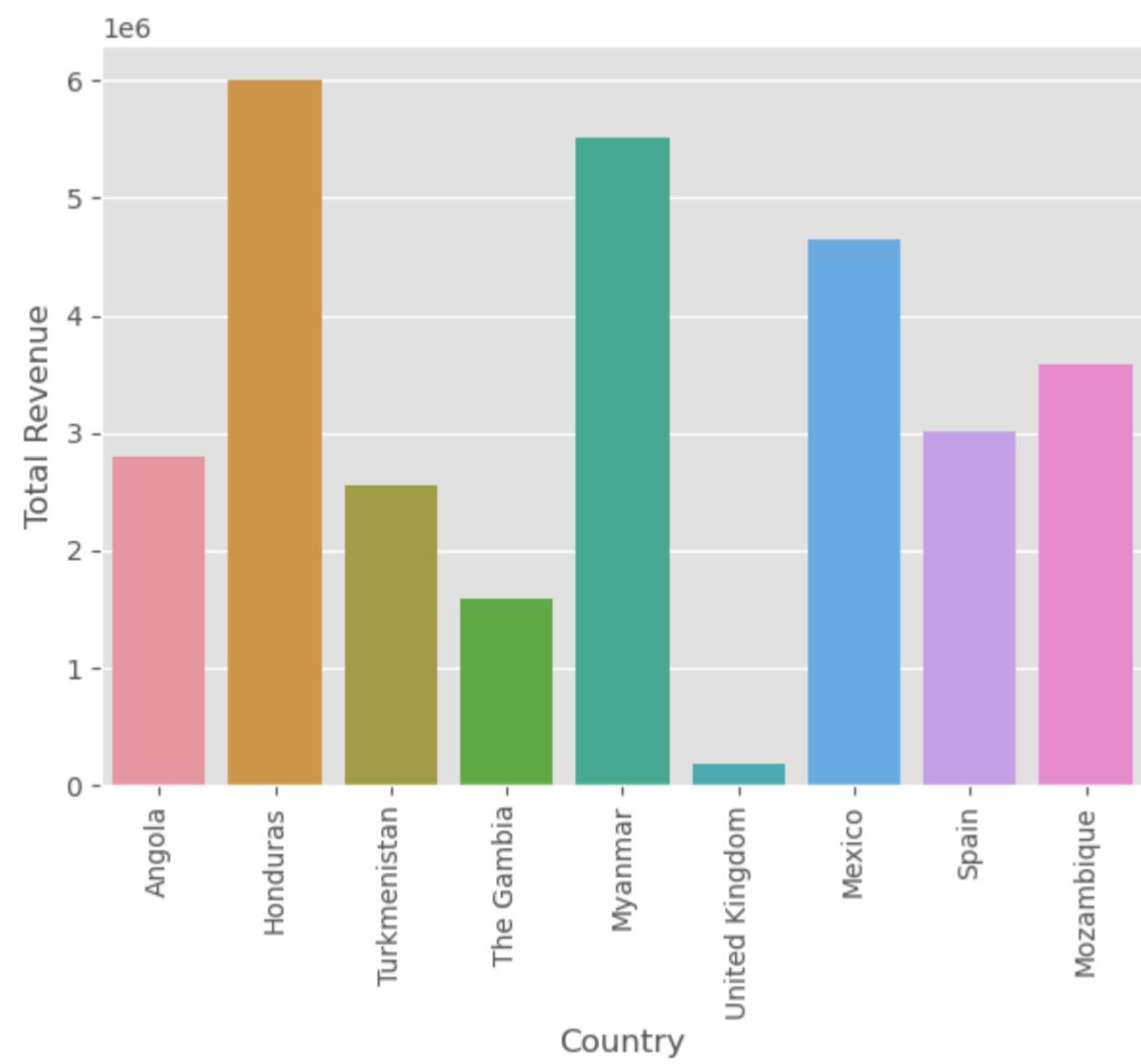
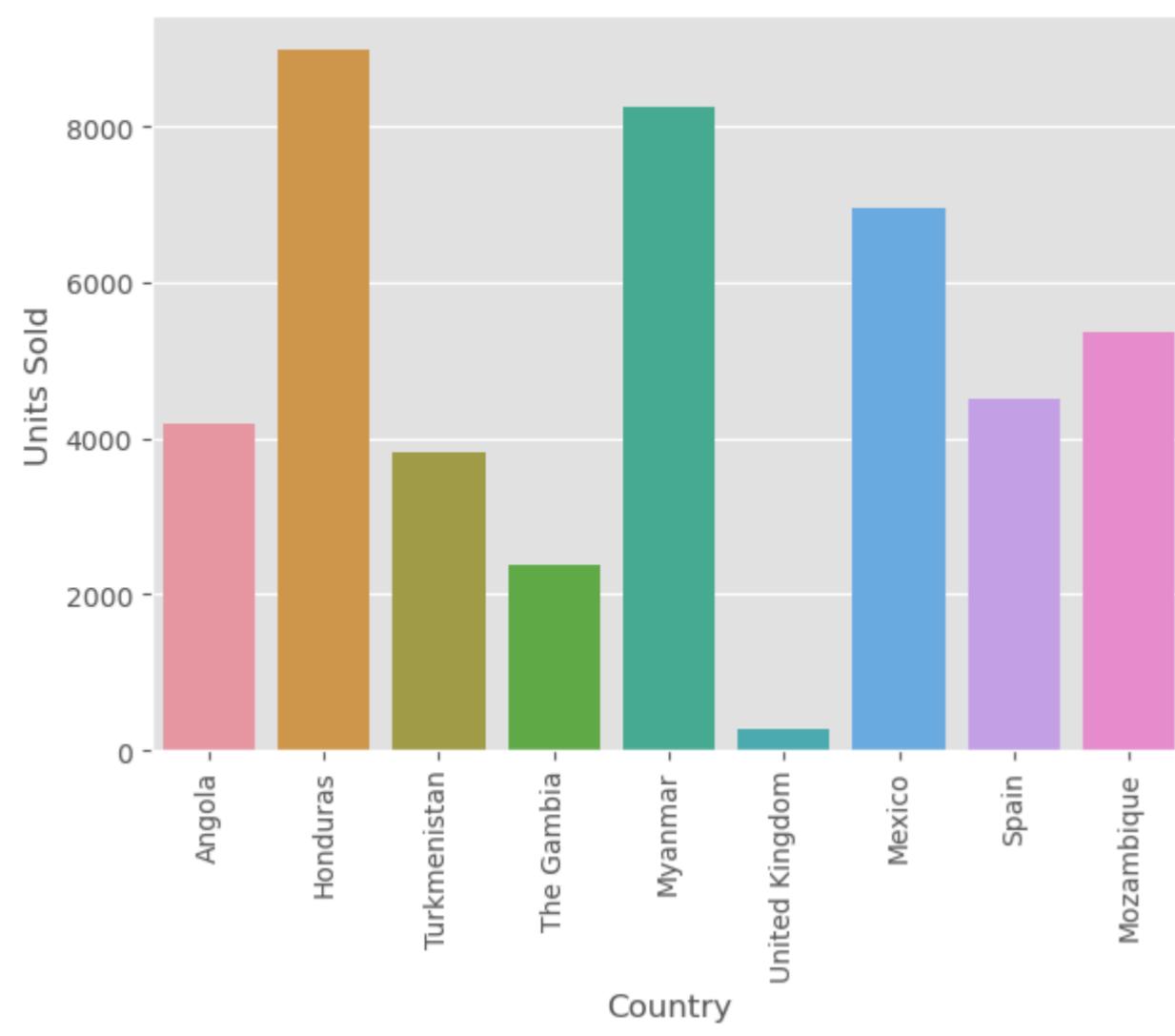
def plotter( X, Y, df):
    plt.figure(figsize=(7,5))

    sb.barplot(x=X, y=Y, data = housedf)
    plt.xticks(rotation = 90)
    plt.show()

ColumnList = ['Sales Channel', 'Order Priority', 'Units Sold',
              'Total Revenue', 'Total Profit']

for column in ColumnList:
    plotter('Country', column, housedf)
```





In [247...]

```

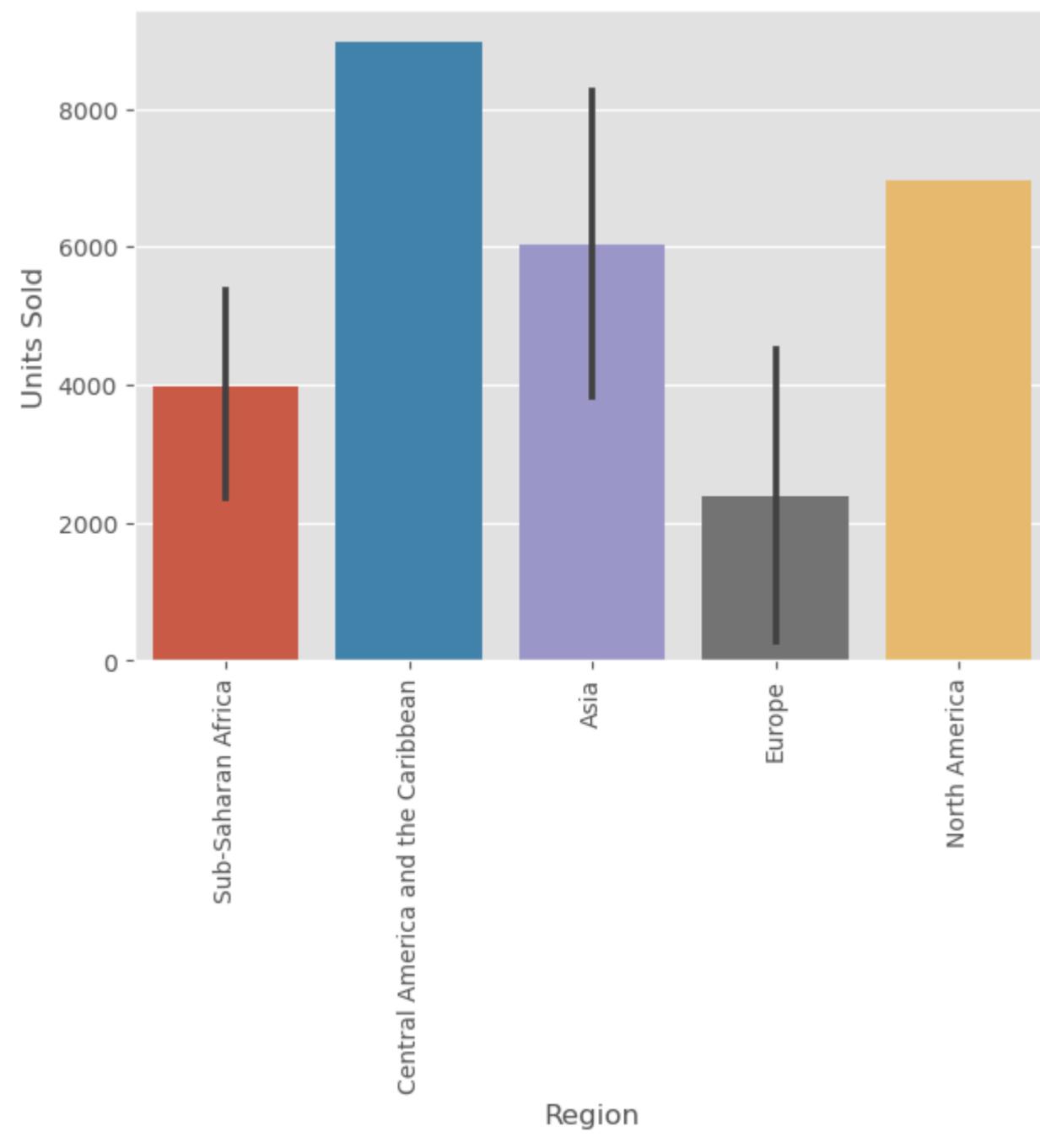
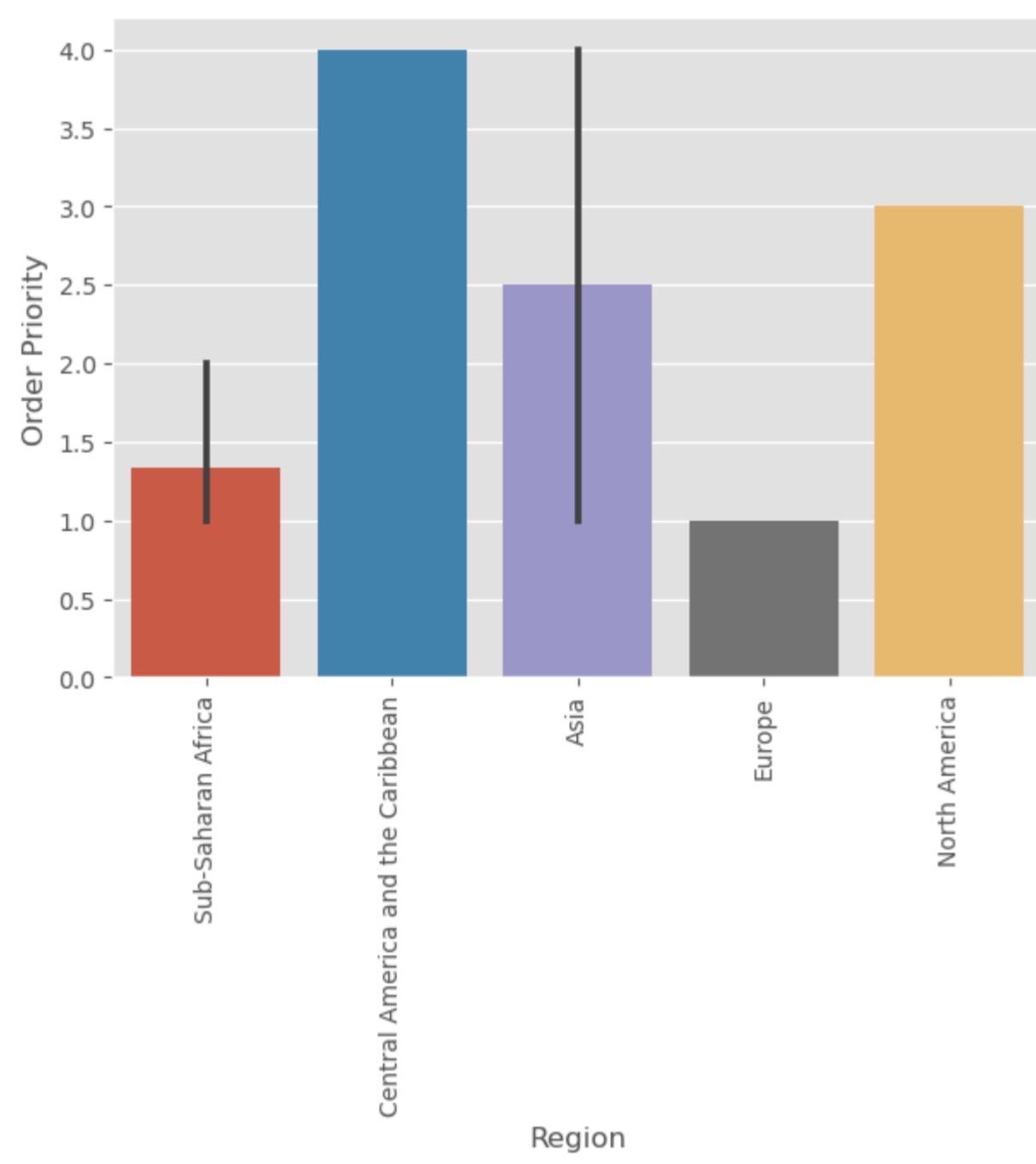
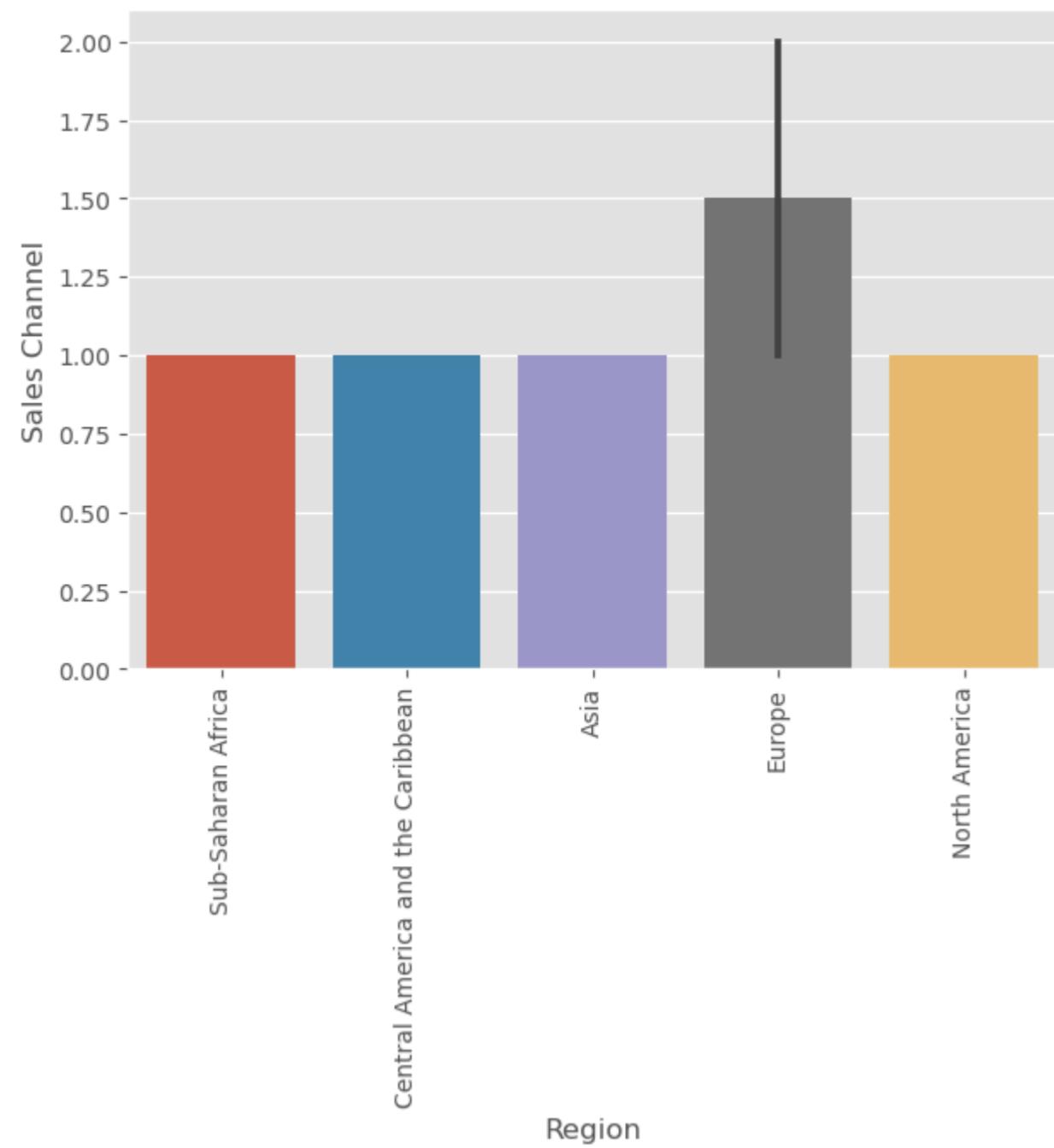
def plotter( X, Y, df):
    plt.figure(figsize=(7,5))

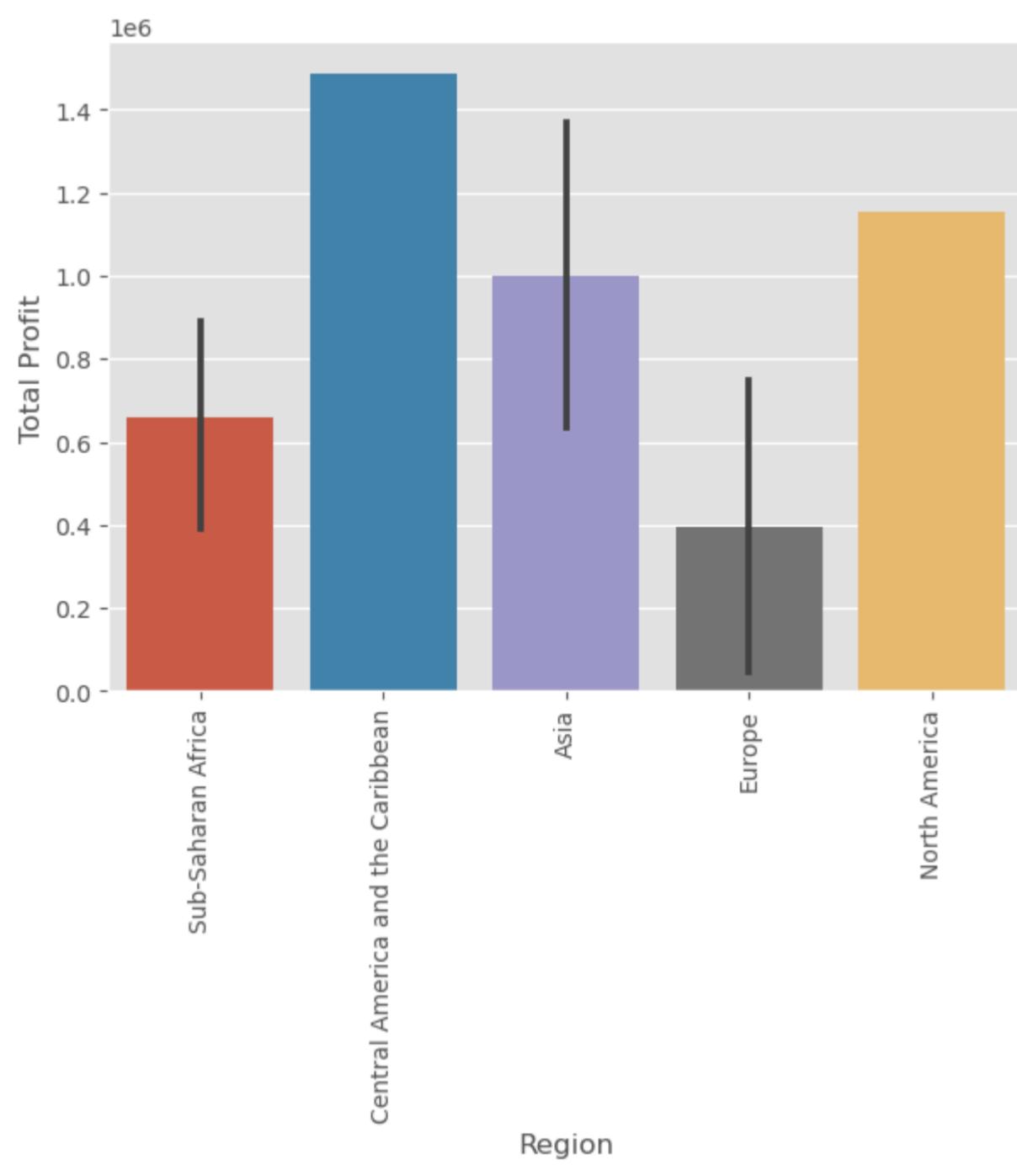
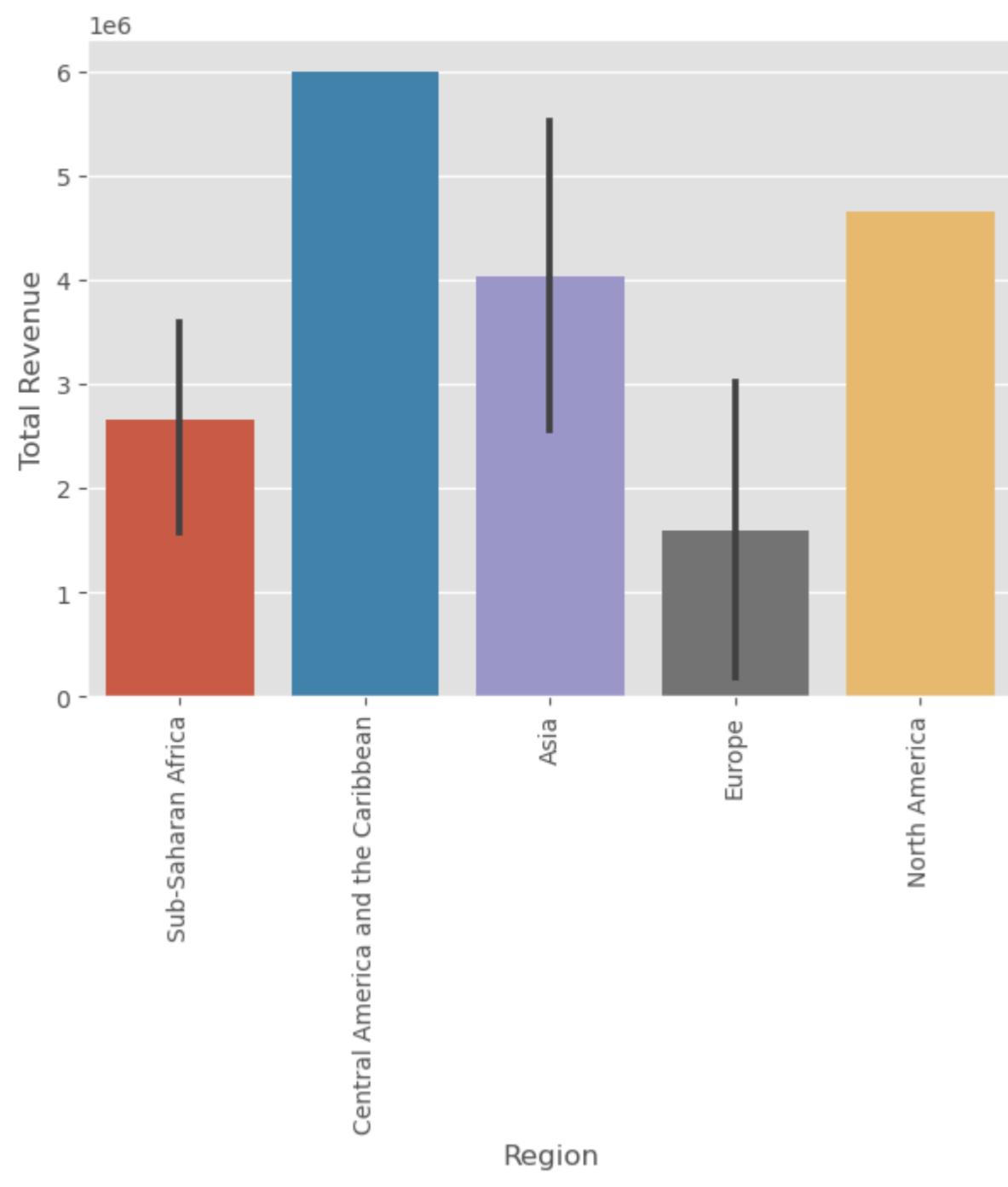
    sb.barplot(x=X, y=Y, data = housedf)
    plt.xticks(rotation = 90)
    plt.show()

ColumnList = ['Sales Channel', 'Order Priority', 'Units Sold',
              'Total Revenue', 'Total Profit']

for column in ColumnList:
    plotter('Region', column, housedf)

```





```
In [ ]: 
In [ ]: 
In [48]: Clothdf = AmaCopydf.loc[AmaCopydf['Item Type'] == 'Clothes']
In [49]: Clothdf
```

Out[49]:	Region	Country	Item Type	Sales Channel	Order Priority	Order Date	Order ID	Ship Date	Units Sold	Unit Price	Unit Cost	Total Revenue	Total Cost	Total Profit	ShipDate	OrderDate	orderCompTime
11	Sub-Saharan Africa	Cape Verde	Clothes	1	4	08-02-2014	939825713	8/19/2014	4168	109.28	35.84	455479.04	149381.12	306097.92	2014-08-19	2014-08-02	17 days
12	Asia	Bangladesh	Clothes	2	1	1/13/2017	187310731	03-01-2017	8263	109.28	35.84	902980.64	296145.92	606834.72	2017-03-01	2017-01-13	47 days
15	Europe	Bulgaria	Clothes	2	2	4/23/2012	972292029	06-03-2012	1673	109.28	35.84	182825.44	59960.32	122865.12	2012-06-03	2012-04-23	41 days
44	Asia	Myanmar	Clothes	2	4	11/14/2015	223359620	11/18/2015	5930	109.28	35.84	648030.40	212531.20	435499.20	2015-11-18	2015-11-14	4 days
48	Europe	Macedonia	Clothes	1	3	10/14/2014	787399423	11/14/2014	7842	109.28	35.84	856973.76	281057.28	575916.48	2014-11-14	2014-10-14	31 days
50	Europe	Albania	Clothes	2	3	02-02-2010	385383069	3/18/2010	2269	109.28	35.84	247956.32	81320.96	166635.36	2010-03-18	2010-02-02	44 days
55	Sub-Saharan Africa	Cote d'Ivoire	Clothes	2	3	06-08-2012	114606559	6/27/2012	3482	109.28	35.84	380512.96	124794.88	255718.08	2012-06-27	2012-06-08	19 days
56	Australia and Oceania	Fiji	Clothes	1	3	6/30/2010	647876489	08-01-2010	9905	109.28	35.84	1082418.40	354995.20	727423.20	2010-08-01	2010-06-30	32 days
63	Middle East and North Africa	Libya	Clothes	1	4	10/30/2010	705784308	11/17/2010	6116	109.28	35.84	668356.48	219197.44	449159.04	2010-11-17	2010-10-30	18 days
67	Central America and the Caribbean	Belize	Clothes	1	2	7/25/2016	807025039	09-07-2016	5498	109.28	35.84	600821.44	197048.32	403773.12	2016-09-07	2016-07-25	44 days
69	Sub-Saharan Africa	Madagascar	Clothes	1	1	4/25/2015	610425555	5/28/2015	7342	109.28	35.84	802333.76	263137.28	539196.48	2015-05-28	2015-04-25	33 days
81	Middle East and North Africa	Lebanon	Clothes	2	1	9/18/2012	663110148	10-08-2012	7884	109.28	35.84	861563.52	282562.56	579000.96	2012-10-08	2012-09-18	20 days
95	Sub-Saharan Africa	Mali	Clothes	2	2	7/26/2011	512878119	09-03-2011	888	109.28	35.84	97040.64	31825.92	65214.72	2011-09-03	2011-07-26	39 days

In [50]: Clothdf.Country.value_counts()

Out[50]:

Cape Verde	1
Bangladesh	1
Bulgaria	1
Myanmar	1
Macedonia	1
Albania	1
Cote d'Ivoire	1
Fiji	1
Libya	1
Belize	1
Madagascar	1
Lebanon	1
Mali	1

Name: Country, dtype: int64

In [51]: Clothdf.Region.value_counts()

Out[51]:

Sub-Saharan Africa	4
Europe	3
Asia	2
Middle East and North Africa	2
Australia and Oceania	1
Central America and the Caribbean	1

Name: Region, dtype: int64

In [52]: Clothdf.loc[Clothdf['orderCompTime'] == Clothdf['orderCompTime'].max()]

Out[52]:	Region	Country	Item Type	Sales Channel	Order Priority	Order Date	Order ID	Ship Date	Units Sold	Unit Price	Unit Cost	Total Revenue	Total Cost	Total Profit	ShipDate	OrderDate	orderCompTime
12	Asia	Bangladesh	Clothes	2	1	1/13/2017	187310731	03-01-2017	8263	109.28	35.84	902980.64	296145.92	606834.72	2017-03-01	2017-01-13	47 days

In [53]: Clothdf.loc[Clothdf['orderCompTime'] >= "20days"]

Out[53]:	Region	Country	Item Type	Sales Channel	Order Priority	Order Date	Order ID	Ship Date	Units Sold	Unit Price	Unit Cost	Total Revenue	Total Cost	Total Profit	ShipDate	OrderDate	orderCompTime
12	Asia	Bangladesh	Clothes	2	1	1/13/2017	187310731	03-01-2017	8263	109.28	35.84	902980.64	296145.92	606834.72	2017-03-01	2017-01-13	47 days
15	Europe	Bulgaria	Clothes	2	2	4/23/2012	972292029	06-03-2012	1673	109.28	35.84	182825.44	59960.32	122865.12	2012-06-03	2012-04-23	41 days
48	Europe	Macedonia	Clothes	1	3	10/14/2014	787399423	11/14/2014	7842	109.28	35.84	856973.76	281057.28	575916.48	2014-11-14	2014-10-14	31 days
50	Europe	Albania	Clothes	2	3	02-02-2010	385383069	3/18/2010	2269	109.28	35.84	247956.32	81320.96	166635.36	2010-03-18	2010-02-02	44 days
56	Australia and Oceania	Fiji	Clothes	1	3	6/30/2010	647876489	08-01-2010	9905	109.28	35.84	1082418.40	354995.20	727423.20	2010-08-01	2010-06-30	32 days
67	Central America and the Caribbean	Belize	Clothes	1	2	7/25/2016	807025039	09-07-2016	5498	109.28	35.84	600821.44	197048.32	403773.12	2016-09-07	2016-07-25	44 days
69	Sub-Saharan Africa	Madagascar	Clothes	1	1	4/25/2015	610425555	5/28/2015	7342	109.28	35.84	802333.76	263137.28	539196.48	2015-05-28	2015-04-25	33 days
81	Middle East and North Africa	Lebanon	Clothes	2	1	9/18/2012	663110148	10-08-2012	7884	109.28	35.84	861563.52	282562.56	579000.96	2012-10-08	2012-09-18	20 days
95	Sub-Saharan Africa	Mali	Clothes	2	2	7/26/2011	512878119	09-03-2011	888	109.28	35.84	97040.64	31825.92	65214.72	2011-09-03	2011-07-26	39 days

In [54]: Clothdf.loc[Clothdf['orderCompTime'] == Clothdf['orderCompTime'].min()]

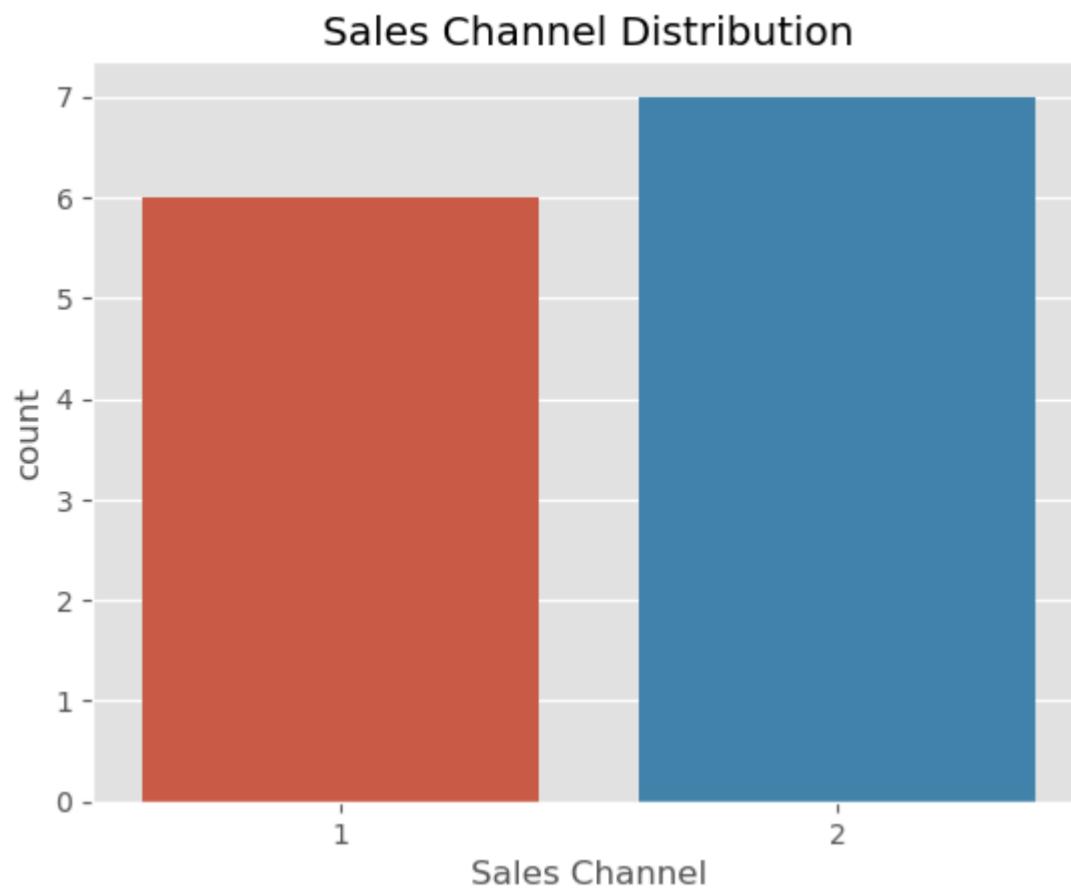
Out[54]:	Region	Country	Item Type	Sales Channel	Order Priority	Order Date	Order ID	Ship Date	Units Sold	Unit Price	Unit Cost	Total Revenue	Total Cost	Total Profit	ShipDate	OrderDate	orderCompTime
44	Asia	Myanmar	Clothes	2	4	11/14/2015	223359620	11/18/2015	5930	109.28	35.84	648030.4	212531.2	435499.2	2015-11-18	2015-11-14	4 days

In [55]: Clothdf.loc[Clothdf['orderCompTime'] <= "10days"]

Out[55]:	Region	Country	Item Type	Sales Channel	Order Priority	Order Date	Order ID	Ship Date	Units Sold	Unit Price	Unit Cost	Total Revenue	Total Cost	Total Profit	ShipDate	OrderDate	orderCompTime
44	Asia	Myanmar	Clothes	2	4	11/14/2015	223359620	11/18/2015	5930	109.28	3						

```
In [242... sb.countplot(data=Clothdf, x="Sales Channel")
plt.figure(figsize=(20, 40)
plt.title('Sales Channel Distribution')
```

```
Out[242... Text(0.5, 1.0, 'Sales Channel Distribution')
```



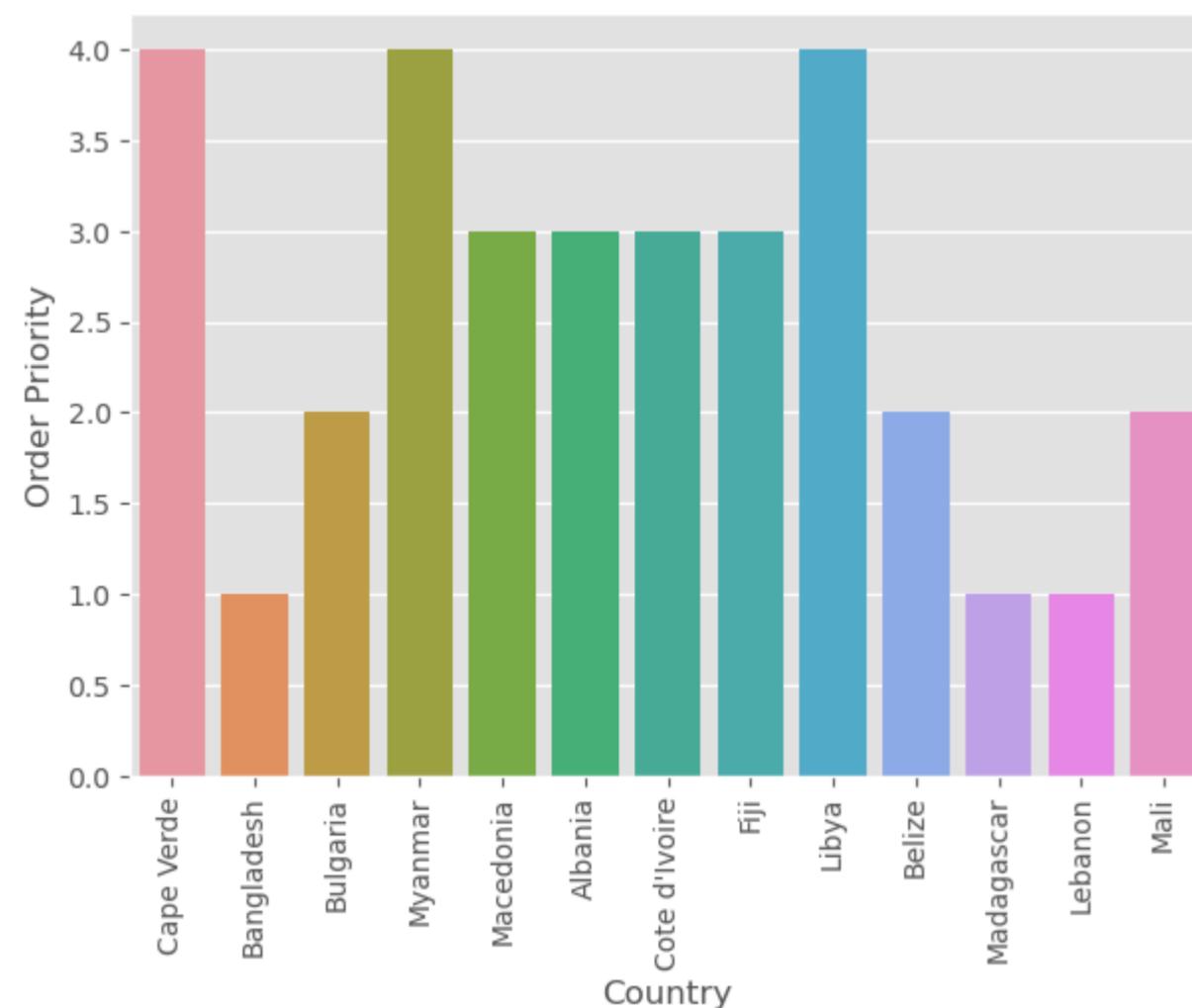
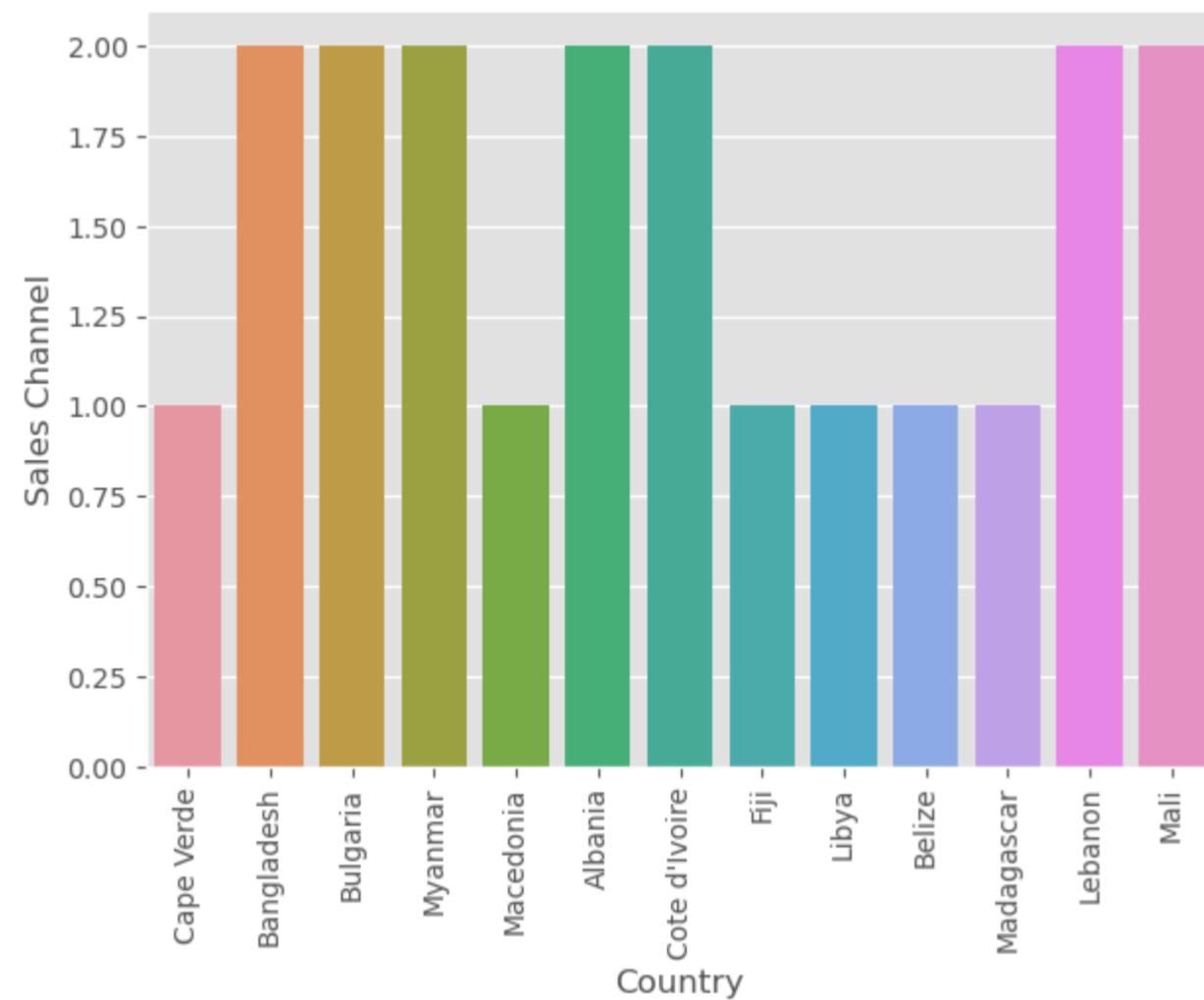
```
In [243... %matplotlib inline
```

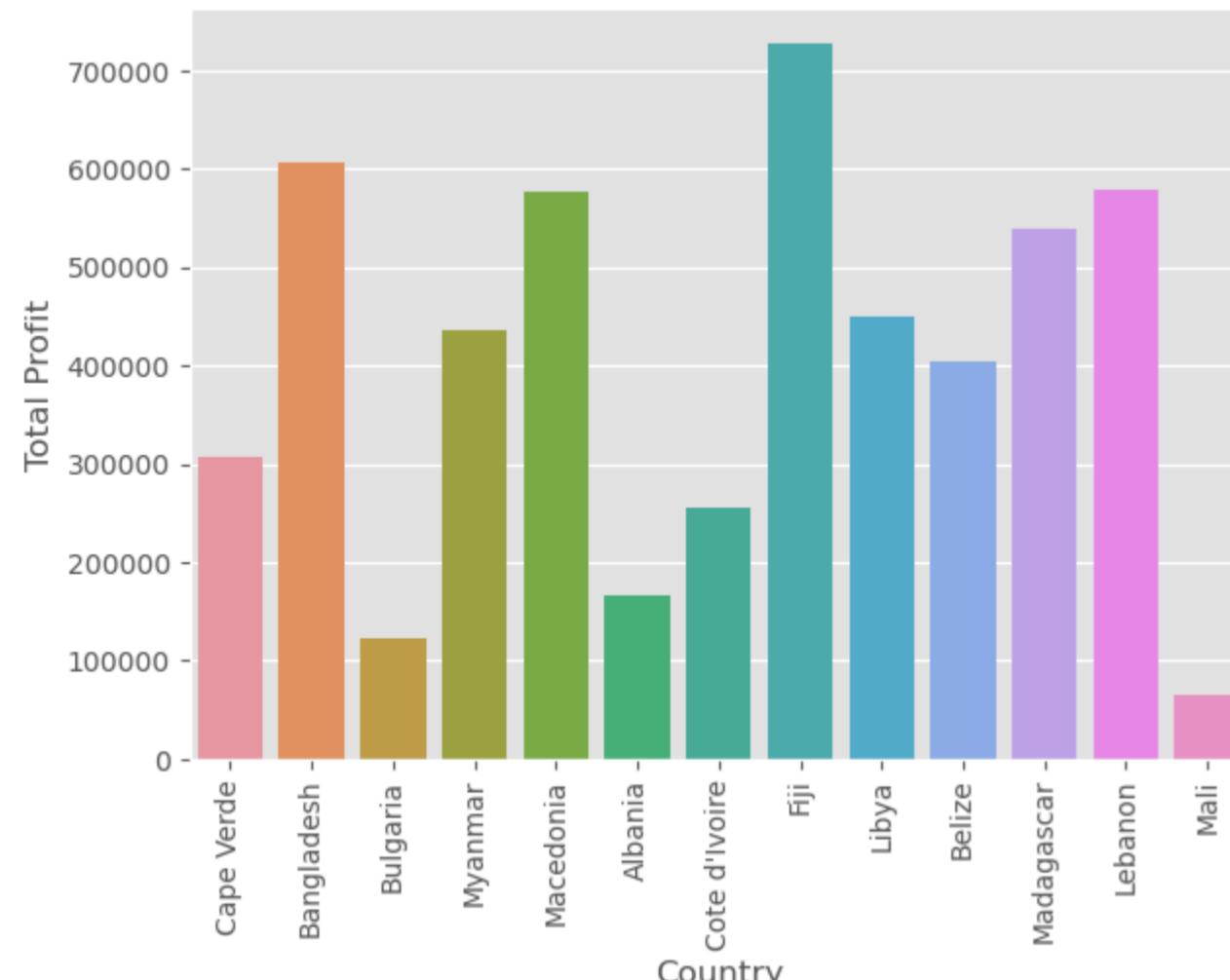
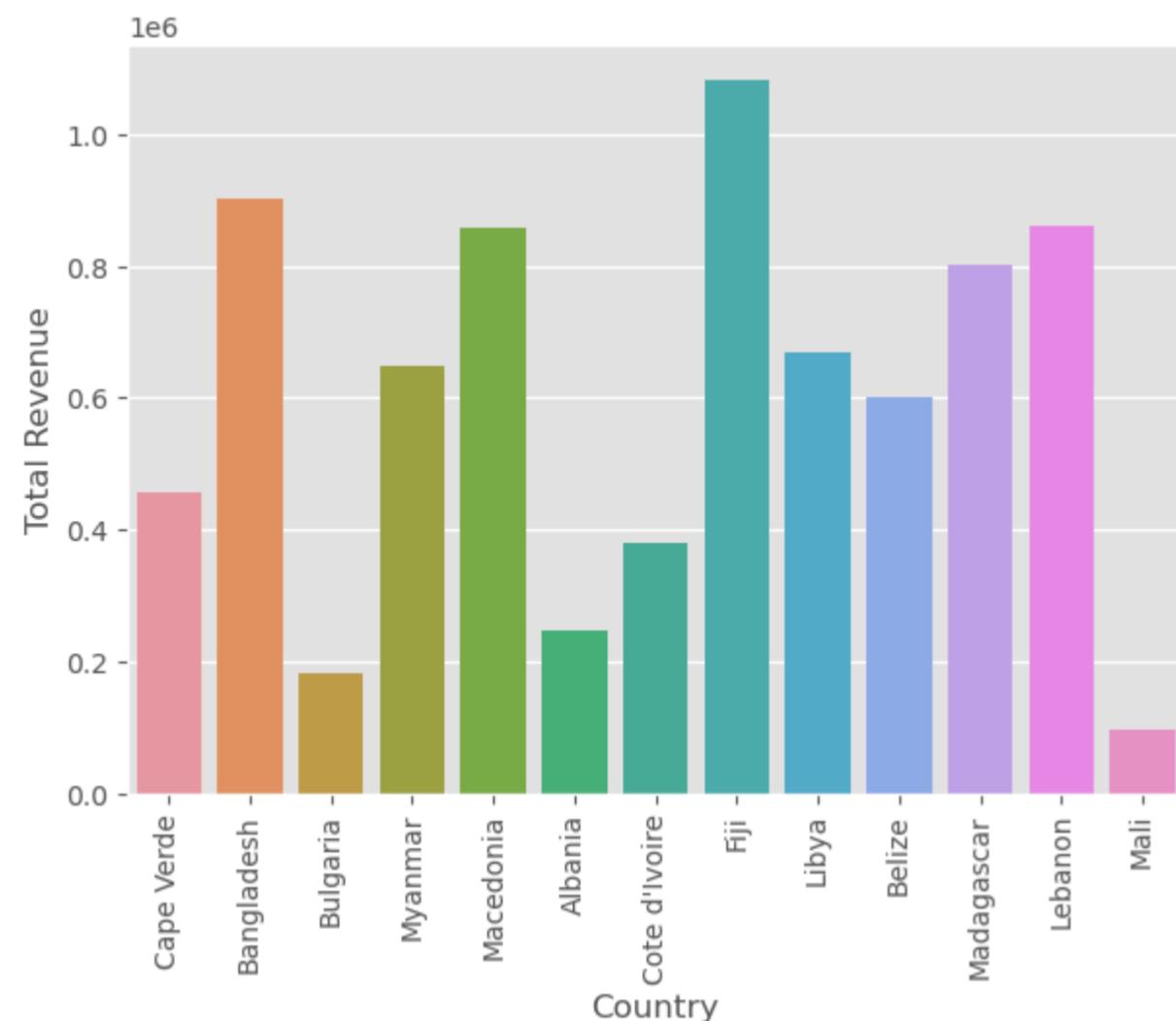
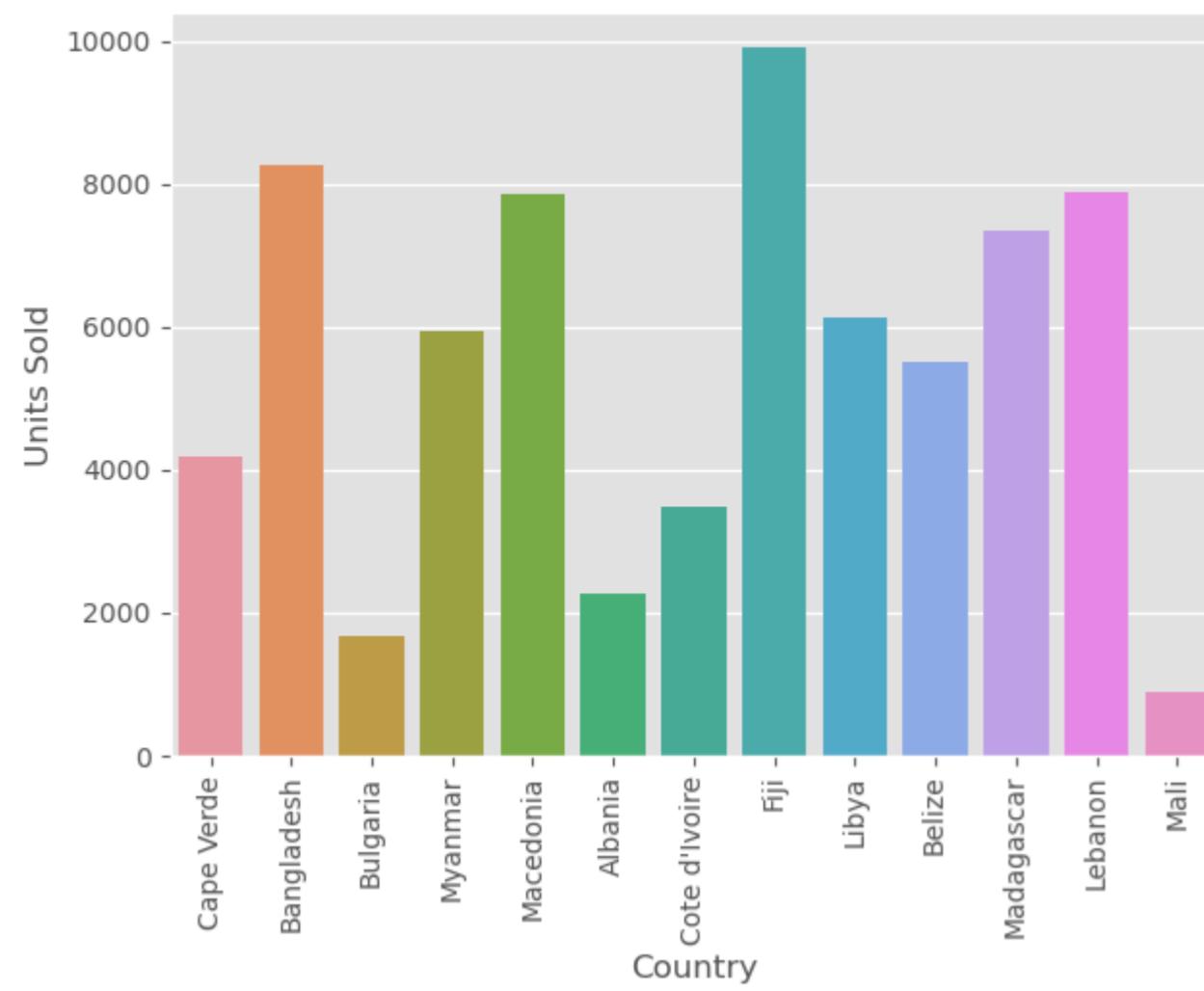
```
def plotter(X, Y, df):
    plt.figure(figsize=(7,5))

    sb.barplot(x=X, y=Y, data = Clothdf)
    plt.xticks(rotation = 90)
    plt.show()
```

```
ColumnList = ['Sales Channel', 'Order Priority', 'Units Sold',
              'Total Revenue', 'Total Profit']
```

```
for column in ColumnList:
    plotter('Country', column, Clothdf)
```





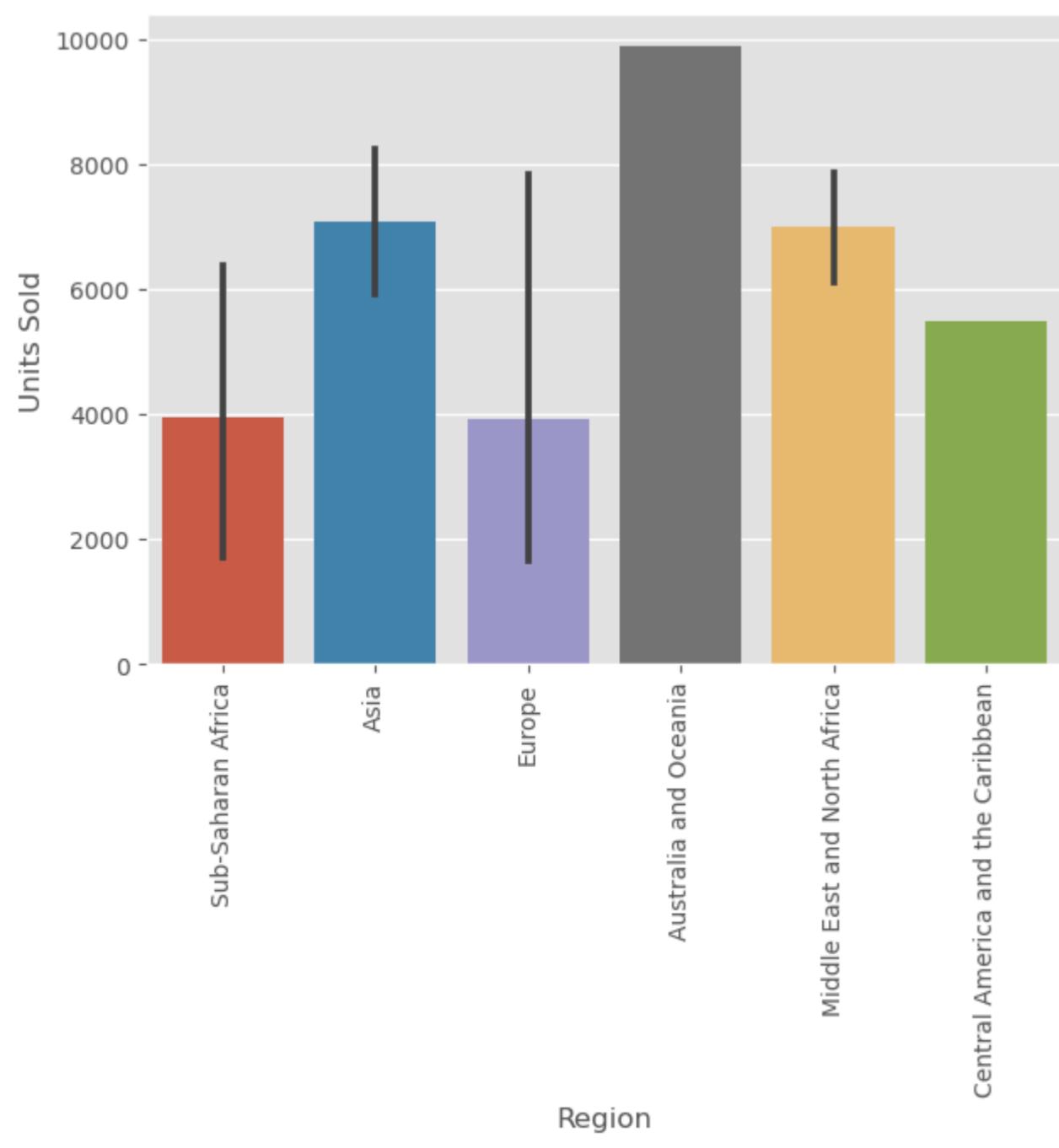
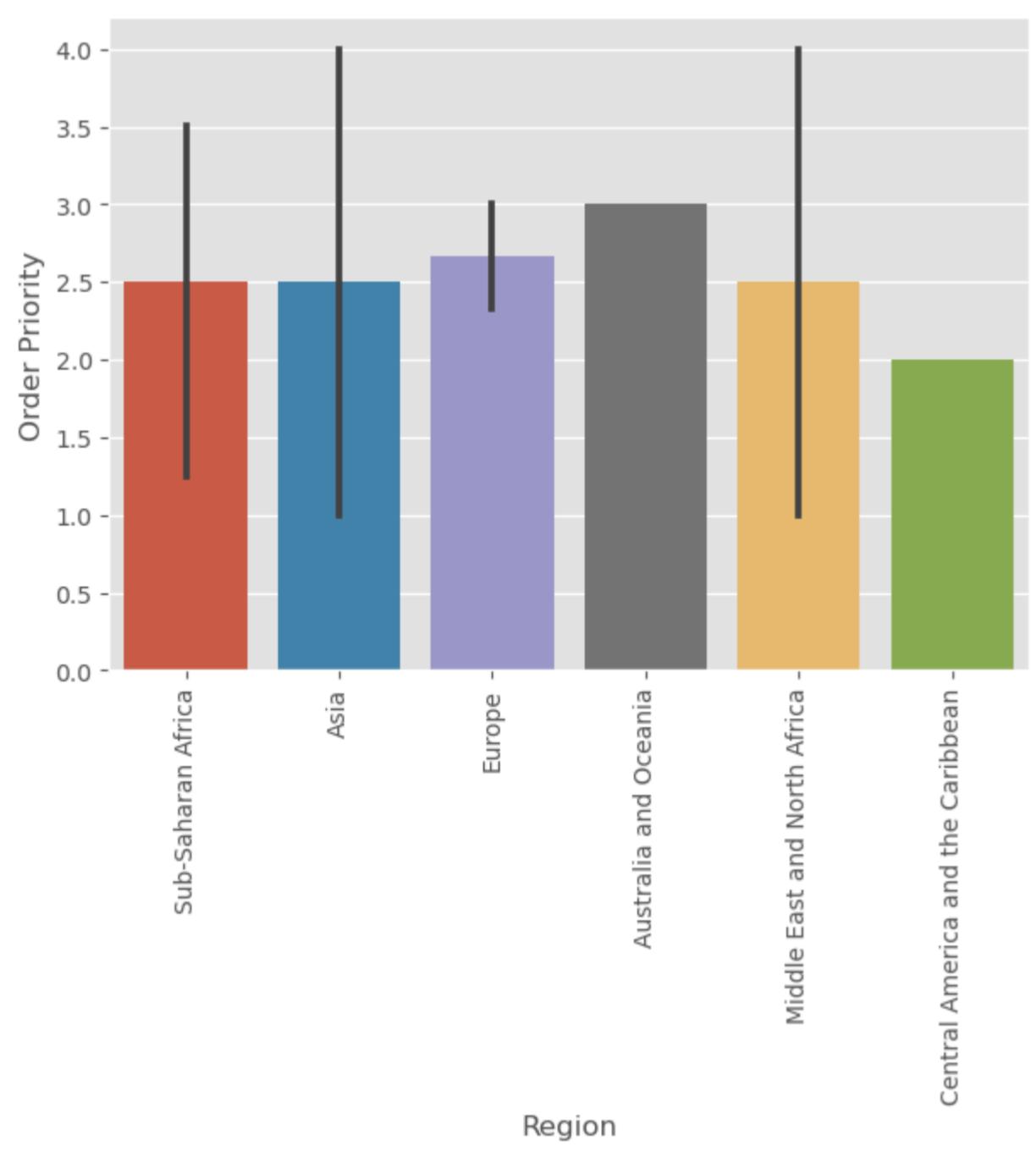
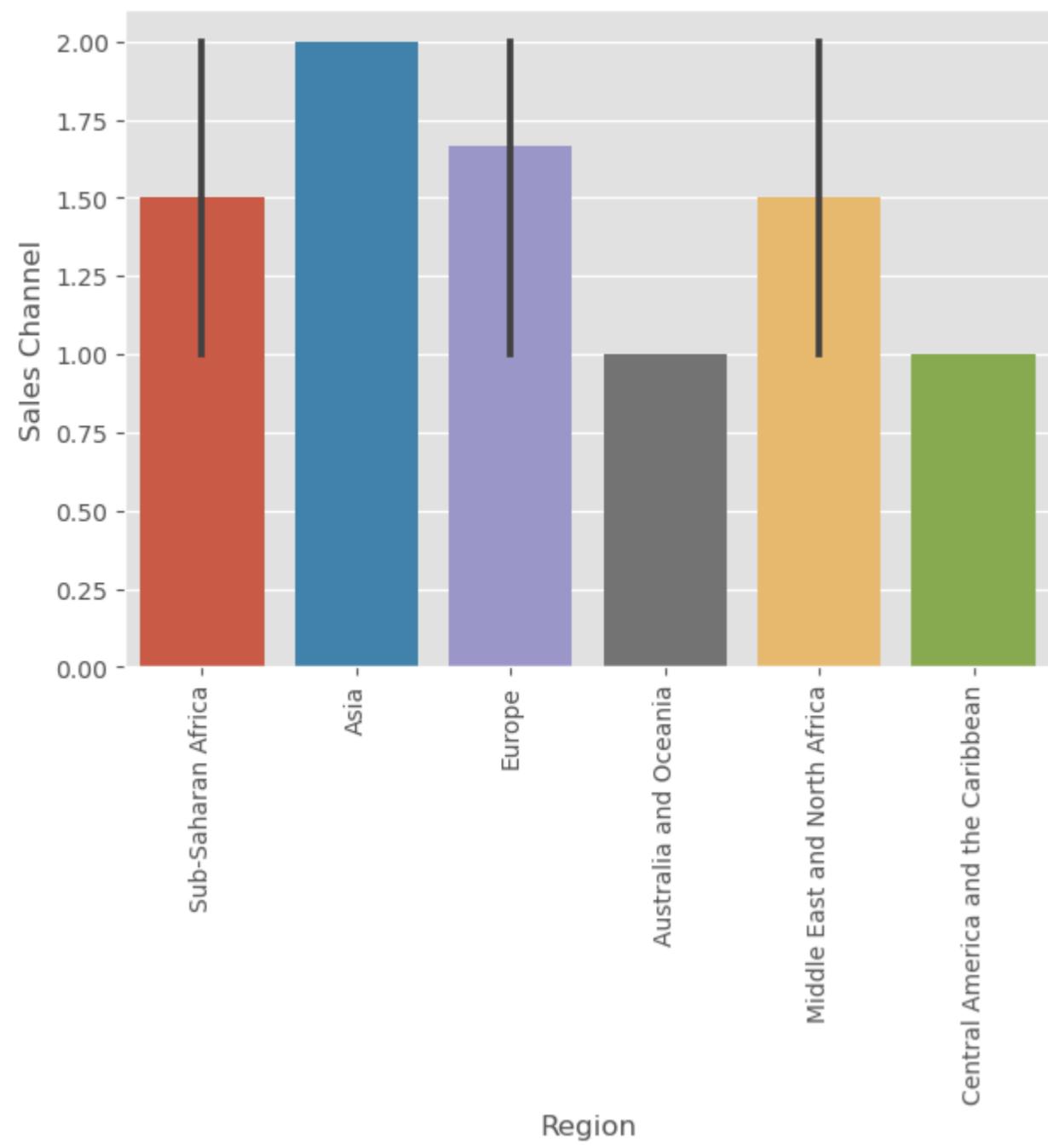
In [244]: %matplotlib inline

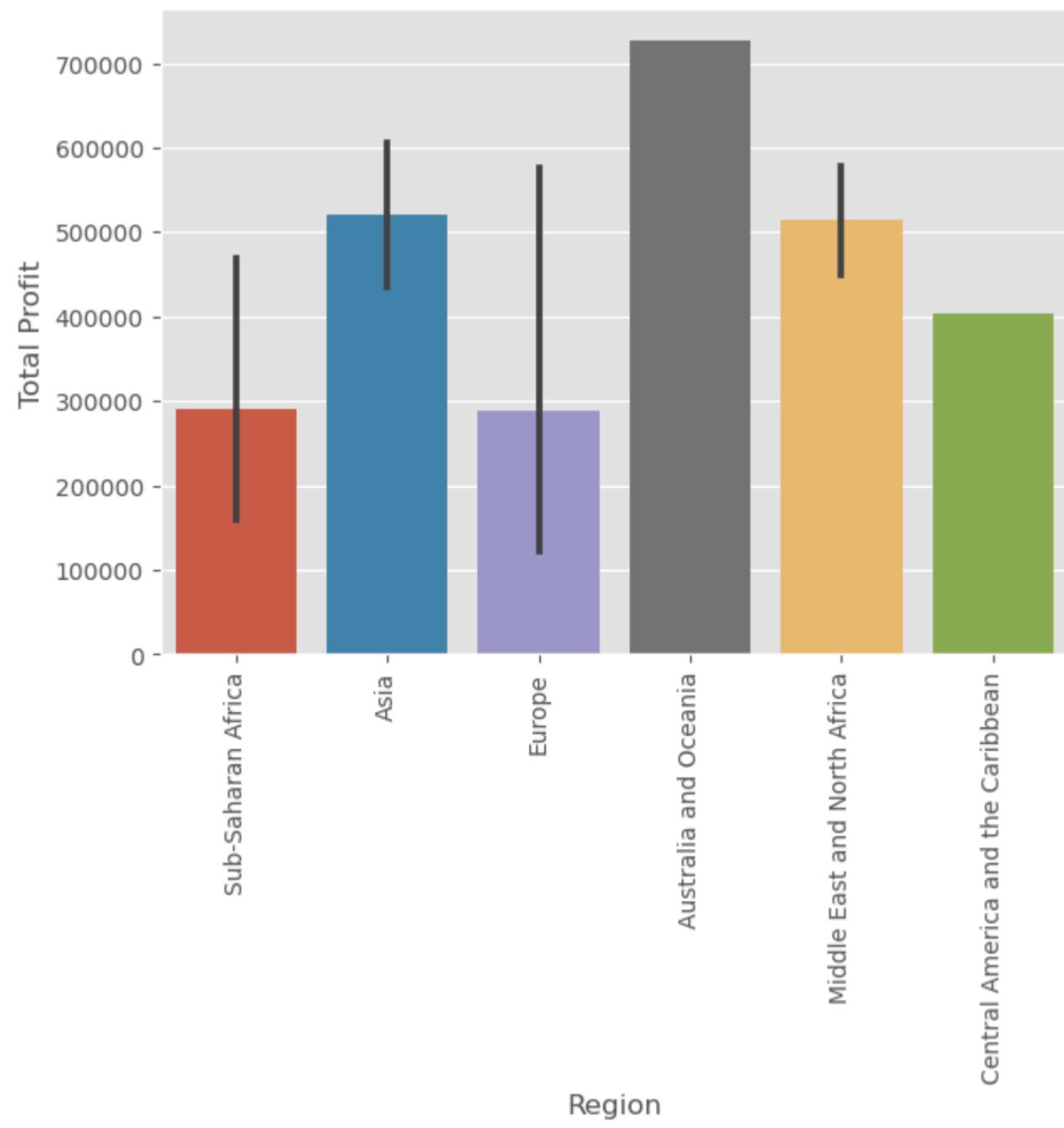
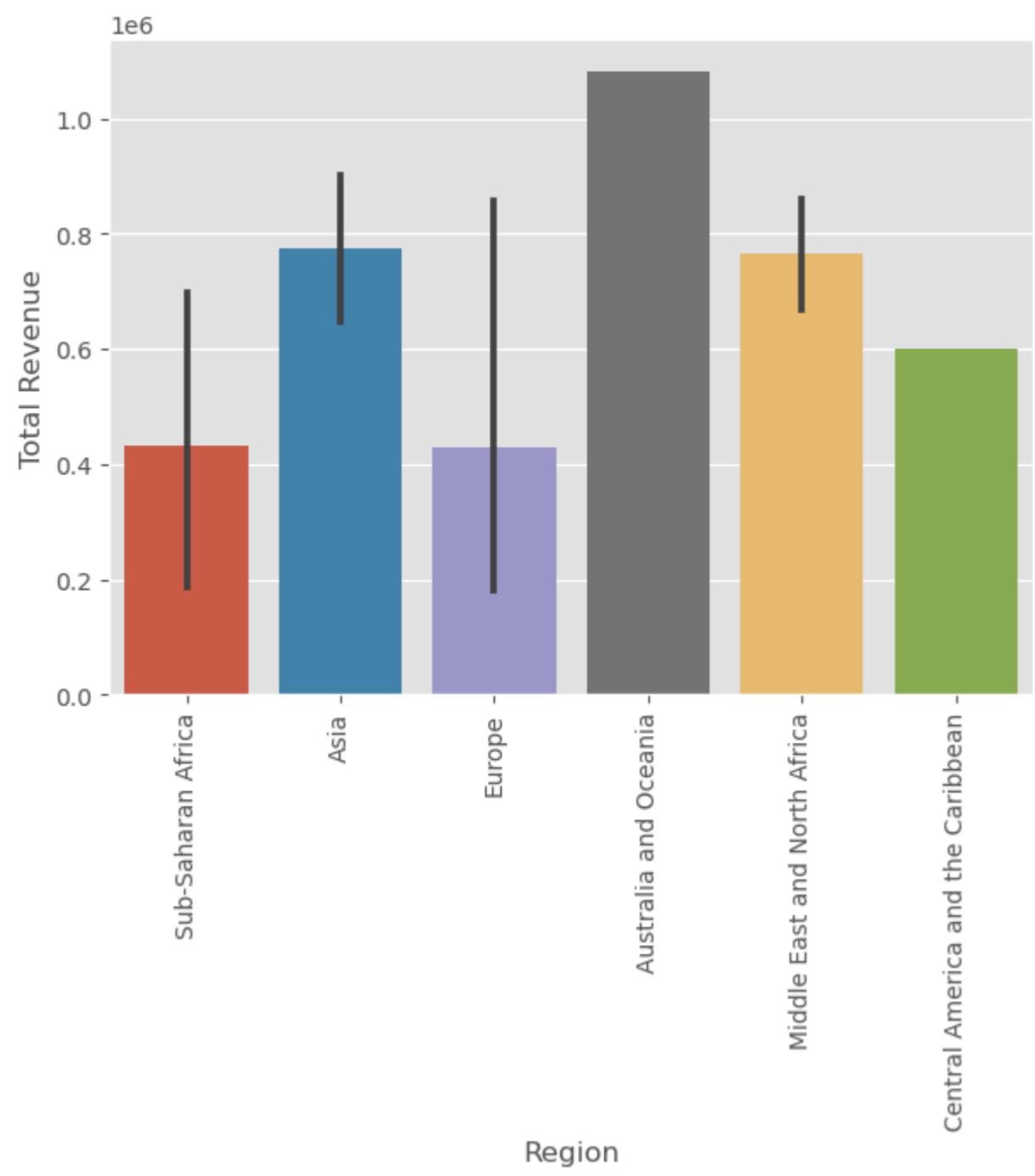
```
def plotter( X, Y, df):
    plt.figure(figsize=(7,5))

    sb.barplot(x=X, y=Y, data = Clothdf)
    plt.xticks(rotation = 90)
    plt.show()

ColumnList = ['Sales Channel', 'Order Priority', 'Units Sold',
              'Total Revenue', 'Total Profit']

for column in ColumnList:
    plotter('Region', column, Clothdf)
```





```
In [ ]: 
In [ ]: 
In [59]: #cosmetic Products
Cosmetdf = AmaCopydf.loc[AmaCopydf['Item Type'] == 'Cosmetics']
In [60]: Cosmetdf
```

Out[60]:		Region	Country	Item Type	Sales Channel	Order Priority	Order Date	Order ID	Ship Date	Units Sold	Unit Price	Unit Cost	Total Revenue	Total Cost	Total Profit	ShipDate	OrderDate	orderCompTime
	16	Asia	Sri Lanka	Cosmetics	1	2	11/19/2016	419123971	12/18/2016	6952	437.2	263.33	3039414.4	1830670.16	1208744.24	2016-12-18	2016-11-19	29 days
	25	Europe	France	Cosmetics	2	4	5/22/2017	898523128	06-05-2017	1815	437.2	263.33	793518.0	477943.95	315574.05	2017-06-05	2017-05-22	14 days
	30	Europe	Switzerland	Cosmetics	1	2	9/17/2012	249693334	10/20/2012	8661	437.2	263.33	3786589.2	2280701.13	1505888.07	2012-10-20	2012-09-17	33 days
	41	Middle East and North Africa	Azerbaijan	Cosmetics	2	2	02-06-2010	382392299	2/25/2010	7234	437.2	263.33	3162704.8	1904929.22	1257775.58	2010-02-25	2010-02-06	19 days
	46	Europe	Iceland	Cosmetics	2	3	12/31/2016	331438481	12/31/2016	8867	437.2	263.33	3876652.4	2334947.11	1541705.29	2016-12-31	2016-12-31	0 days
	57	Europe	Austria	Cosmetics	1	4	2/23/2015	868214595	03-02-2015	2847	437.2	263.33	1244708.4	749700.51	495007.89	2015-03-02	2015-02-23	7 days
	59	Sub-Saharan Africa	Djibouti	Cosmetics	1	4	04-07-2014	259353148	4/19/2014	7215	437.2	263.33	3154398.0	1899925.95	1254472.05	2014-04-19	2014-04-07	12 days
	64	Central America and the Caribbean	Haiti	Cosmetics	1	4	10/13/2013	505716836	11/16/2013	1705	437.2	263.33	745426.0	448977.65	296448.35	2013-11-16	2013-10-13	34 days
	65	Sub-Saharan Africa	Rwanda	Cosmetics	1	4	10-11-2013	699358165	11/25/2013	4477	437.2	263.33	1957344.4	1178928.41	778415.99	2013-11-25	2013-10-11	45 days
	74	Middle East and North Africa	Pakistan	Cosmetics	1	1	07-05-2013	231145322	8/16/2013	9892	437.2	263.33	4324782.4	2604860.36	1719922.04	2013-08-16	2013-07-05	42 days
	79	Australia and Oceania	Samoa	Cosmetics	2	4	7/20/2013	670854651	08-07-2013	9654	437.2	263.33	4220728.8	2542187.82	1678540.98	2013-08-07	2013-07-20	18 days
	82	Middle East and North Africa	Iran	Cosmetics	2	4	11/15/2016	286959302	12-08-2016	6489	437.2	263.33	2836990.8	1708748.37	1128242.43	2016-12-08	2016-11-15	23 days
	93	Europe	Romania	Cosmetics	2	4	11/26/2010	660643374	12/25/2010	7910	437.2	263.33	3458252.0	2082940.30	1375311.70	2010-12-25	2010-11-26	29 days

In [61]: Cosmetdf.Country.value_counts()

```
Out[61]: Sri Lanka    1
France      1
Switzerland 1
Azerbaijan 1
Iceland     1
Austria     1
Djibouti    1
Haiti       1
Rwanda      1
Pakistan    1
Samoa       1
Iran        1
Romania    1
Name: Country, dtype: int64
```

In [62]: Cosmetdf.Region.value_counts()

```
Out[62]: Europe          5
Middle East and North Africa 3
Sub-Saharan Africa 2
Asia            1
Central America and the Caribbean 1
Australia and Oceania 1
Name: Region, dtype: int64
```

In [63]: Cosmetdf.loc[Cosmetdf['orderCompTime'] == Cosmetdf['orderCompTime'].max()]

Out[63]:		Region	Country	Item Type	Sales Channel	Order Priority	Order Date	Order ID	Ship Date	Units Sold	Unit Price	Unit Cost	Total Revenue	Total Cost	Total Profit	ShipDate	OrderDate	orderCompTime
	65	Sub-Saharan Africa	Rwanda	Cosmetics	1	4	10-11-2013	699358165	11/25/2013	4477	437.2	263.33	1957344.4	1178928.41	778415.99	2013-11-25	2013-10-11	45 days

In [64]: Cosmetdf.loc[Cosmetdf['orderCompTime'] >= "20days"]

Out[64]:		Region	Country	Item Type	Sales Channel	Order Priority	Order Date	Order ID	Ship Date	Units Sold	Unit Price	Unit Cost	Total Revenue	Total Cost	Total Profit	ShipDate	OrderDate	orderCompTime
	16	Asia	Sri Lanka	Cosmetics	1	2	11/19/2016	419123971	12/18/2016	6952	437.2	263.33	3039414.4	1830670.16	1208744.24	2016-12-18	2016-11-19	29 days
	30	Europe	Switzerland	Cosmetics	1	2	9/17/2012	249693334	10/20/2012	8661	437.2	263.33	3786589.2	2280701.13	1505888.07	2012-10-20	2012-09-17	33 days
	64	Central America and the Caribbean	Haiti	Cosmetics	1	4	10/13/2013	505716836	11/16/2013	1705	437.2	263.33	745426.0	448977.65	296448.35	2013-11-16	2013-10-13	34 days
	65	Sub-Saharan Africa	Rwanda	Cosmetics	1	4	10-11-2013	699358165	11/25/2013	4477	437.2	263.33	1957344.4	1178928.41	778415.99	2013-11-25	2013-10-11	45 days
	74	Middle East and North Africa	Pakistan	Cosmetics	1	1	07-05-2013	231145322	8/16/2013	9892	437.2	263.33	4324782.4	2604860.36	1719922.04	2013-08-16	2013-07-05	42 days
	82	Middle East and North Africa	Iran	Cosmetics	2	4	11/15/2016	286959302	12-08-2016	6489	437.2	263.33	2836990.8	1708748.37	1128242.43	2016-12-08	2016-11-15	23 days
	93	Europe	Romania	Cosmetics	2	4	11/26/2010	660643374	12/25/2010	7910	437.2	263.33	3458252.0	2082940.30	1375311.70	2010-12-25	2010-11-26	29 days

In [65]: Cosmetdf.loc[Cosmetdf['orderCompTime'] == Cosmetdf['orderCompTime'].min()]

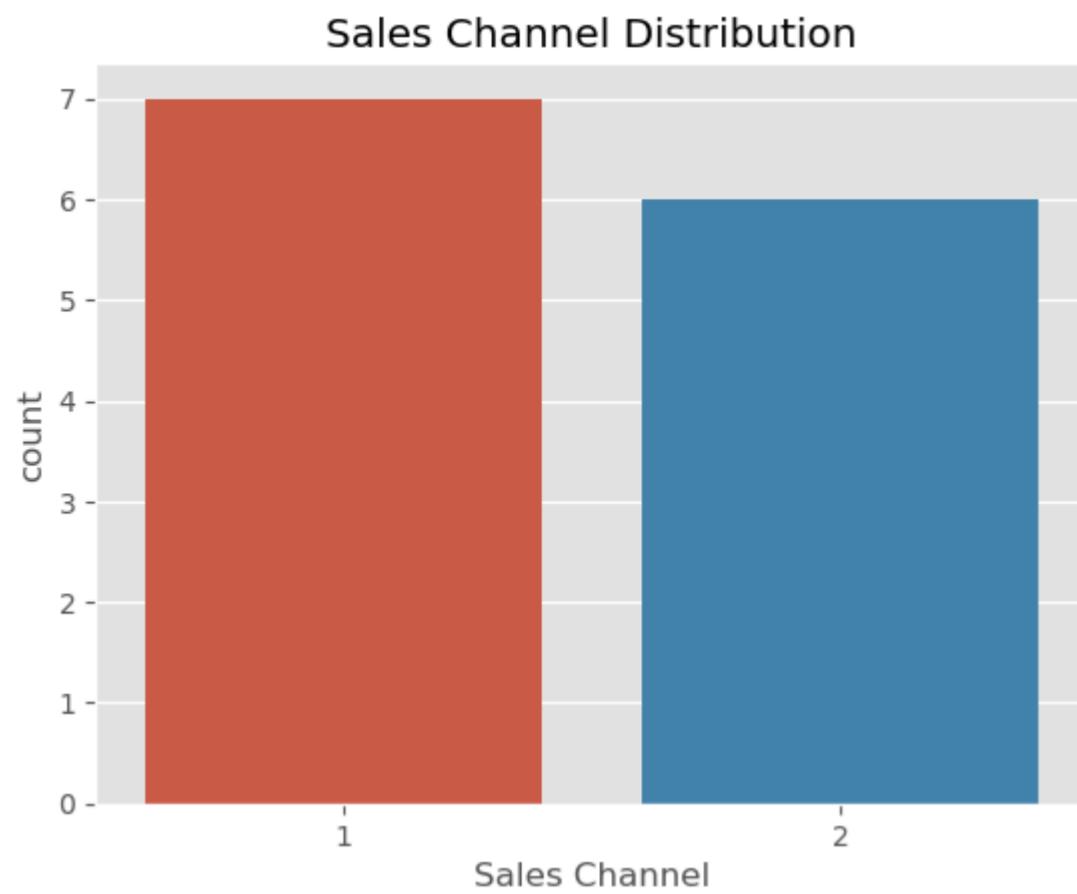
Out[65]:		Region	Country	Item Type	Sales Channel	Order Priority	Order Date	Order ID	Ship Date	Units Sold	Unit Price	Unit Cost	Total Revenue	Total Cost	Total Profit	ShipDate	OrderDate	orderCompTime
	46	Europe	Iceland	Cosmetics	2	3	12/31/2016	331438481	12/31/2016	8867	437.2	263.33	3876652.4	2334947.11	1541705.29	2016-12-31	2016-12-31	0 days

In [66]: Cosmetdf.loc[Cosmetdf['orderCompTime'] <= "10days"]

Out[66]:		Region	Country	Item Type	Sales Channel	Order Priority	Order Date	Order ID	Ship Date	Units Sold	Unit Price	Unit Cost	Total Revenue	Total Cost	Total Profit	ShipDate	OrderDate	orderCompTime
	46	Europe	Iceland	Cosmetics	2	3	12/31/2016	331438481	12/31/2016	8867	437.2	263.33	3876652.4	2334947.11	1541705.29	2016-12-31	2016-12-31	0 days
	57	Europe	Austria	Cosmetics	1	4	2/23/2015	868214595	03-02-2015	2847	437.2	263.33	1244708.4	749700.51	495007.89	2015-03-02	2015-02-23	7 days

```
In [241...]: sb.countplot(data=Cosmetdf, x="Sales Channel")
plt.figure(figsize=(20, 40))
plt.title('Sales Channel Distribution')
```

```
Out[241]: Text(0.5, 1.0, 'Sales Channel Distribution')
```



```
In [68]: %matplotlib inline
```

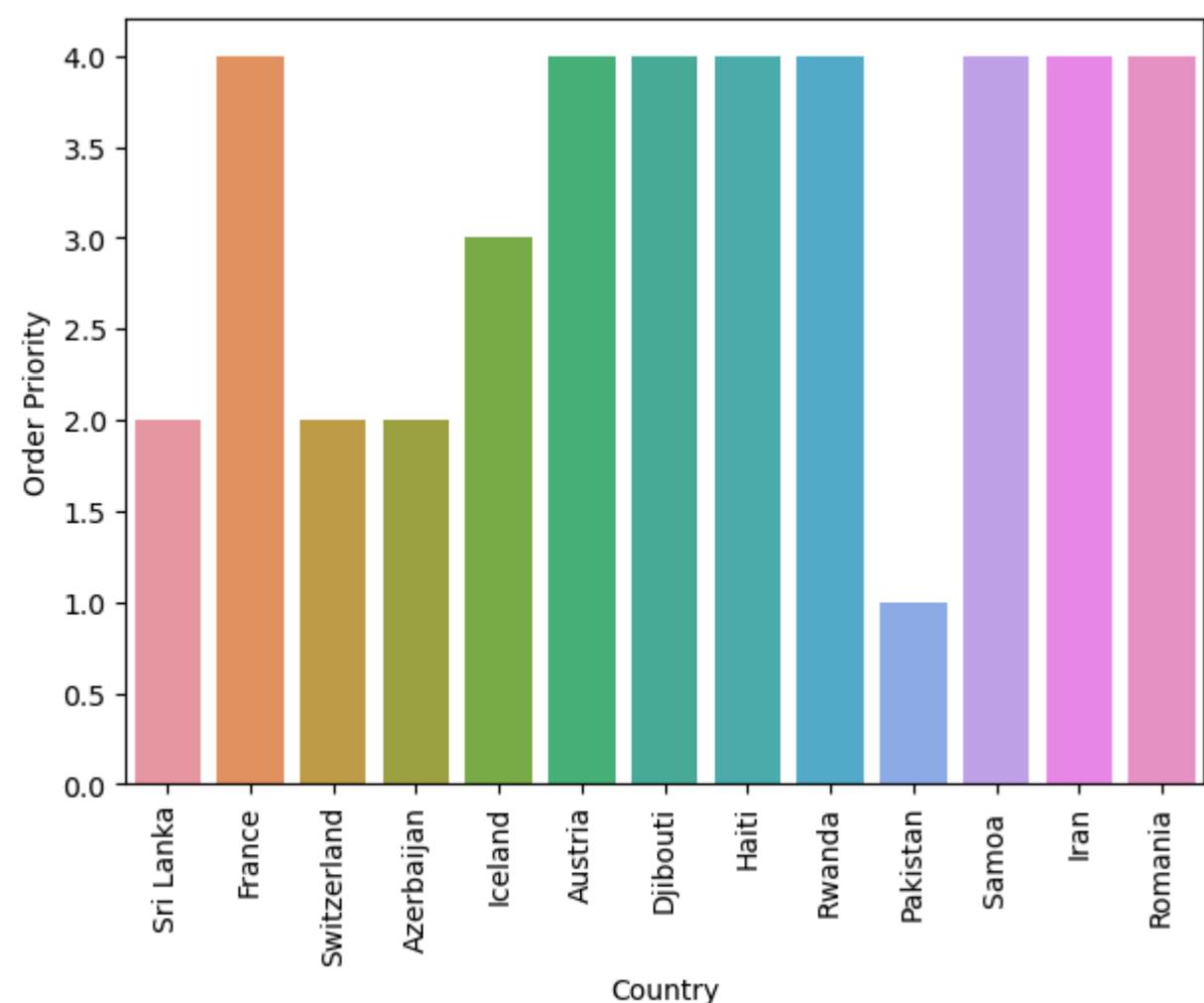
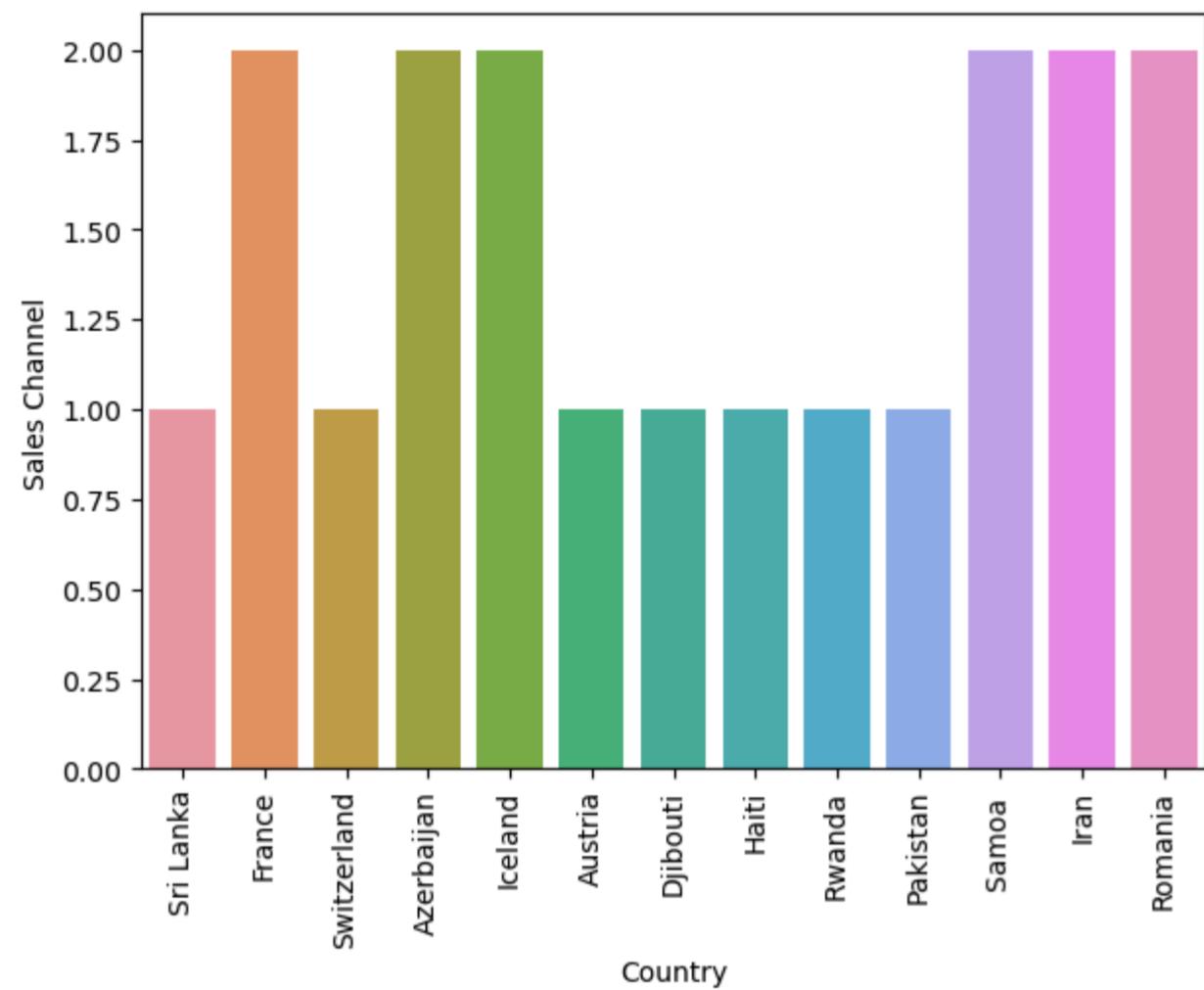
```
def plotter(X, Y, df):
    plt.figure(figsize=(7,5))

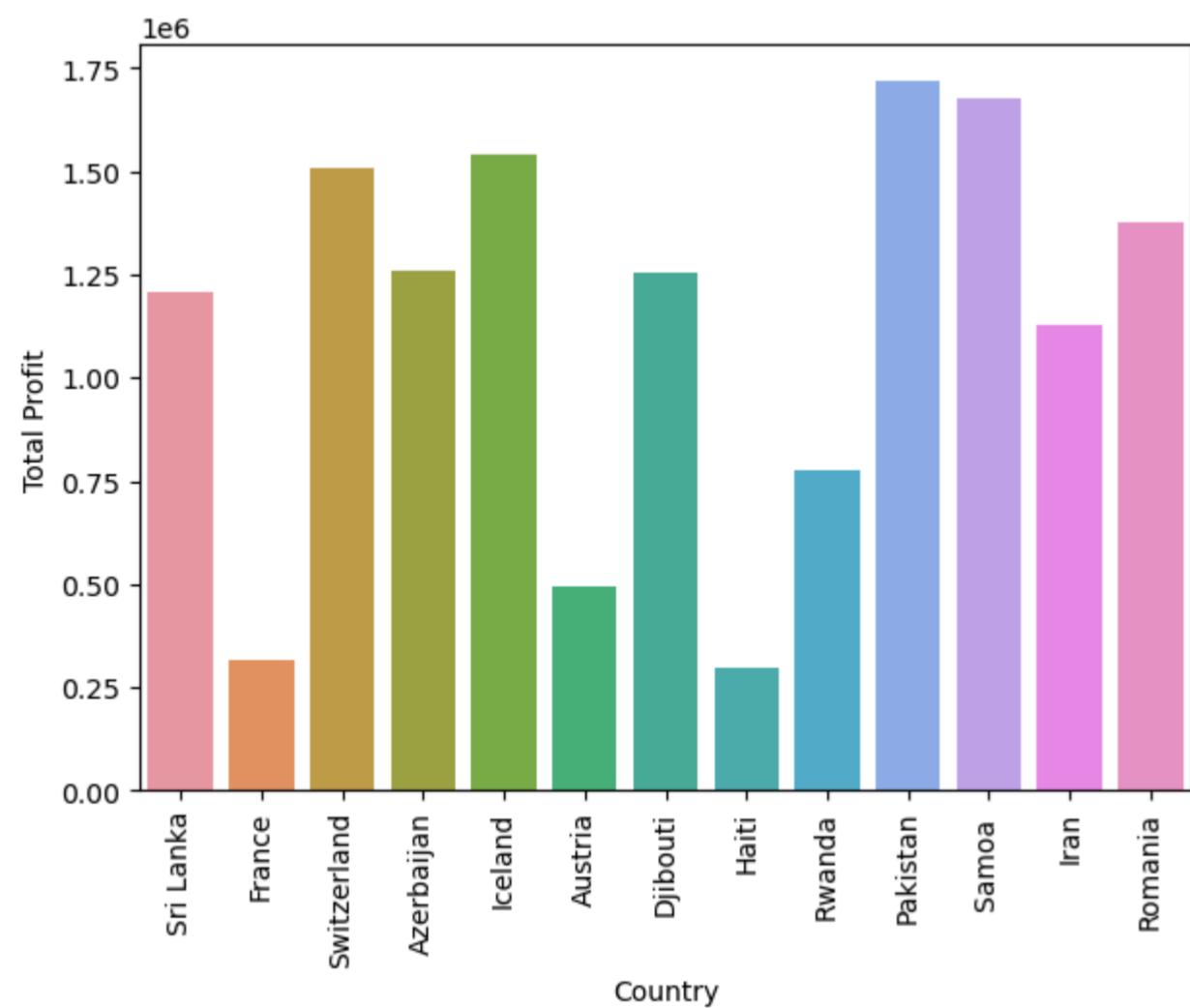
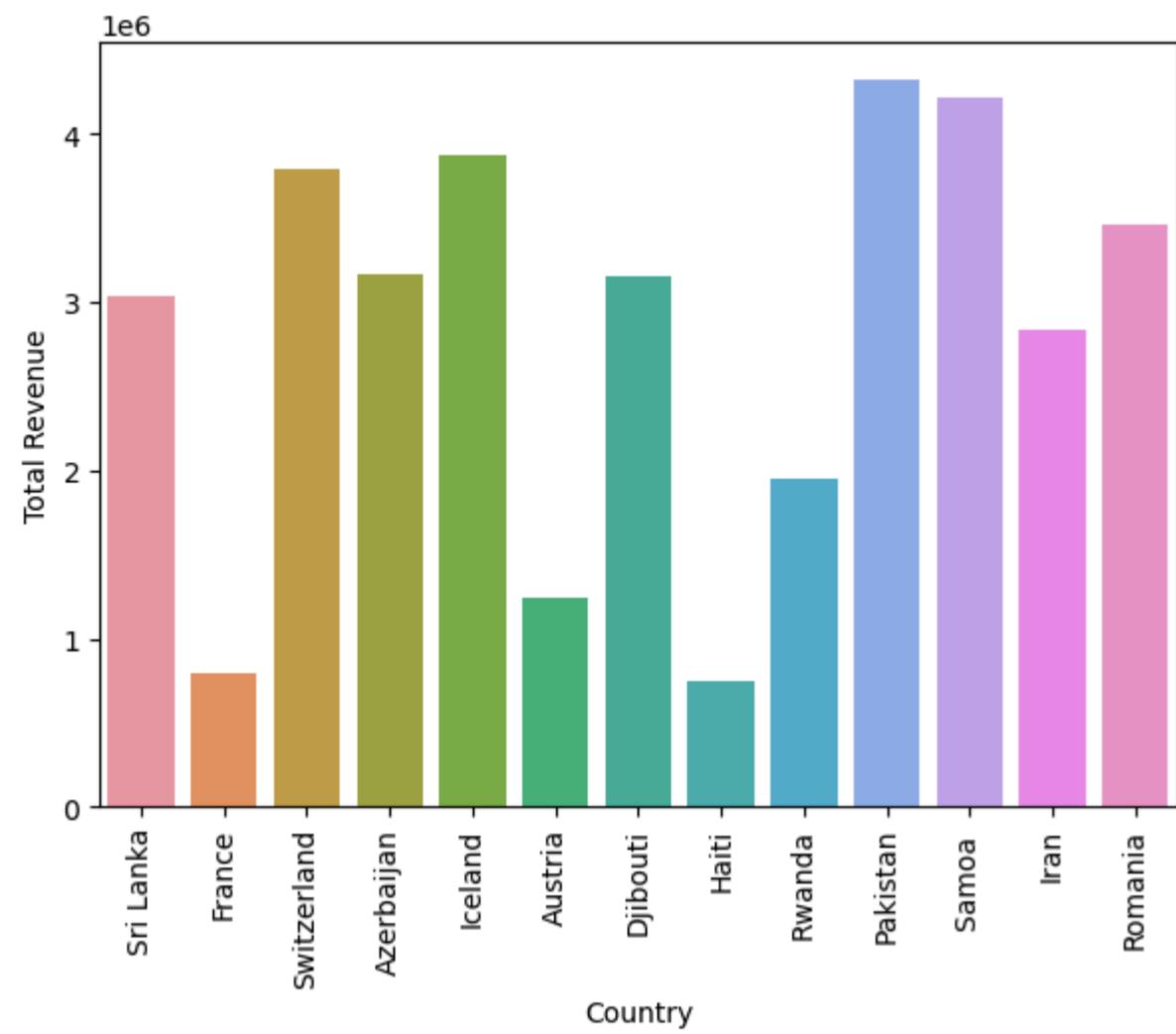
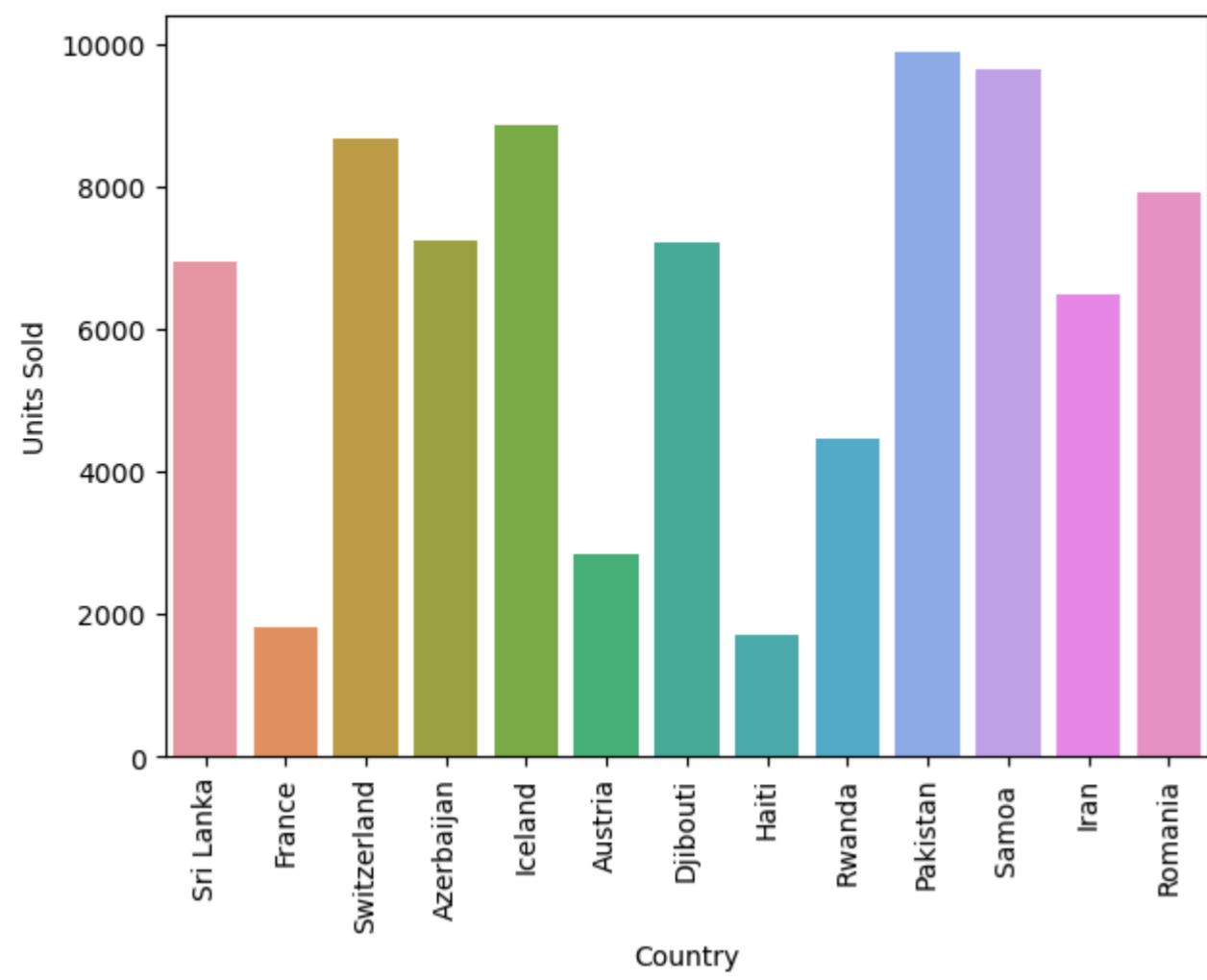
    sb.barplot(x=X, y=Y, data = Cosmetdf)
    plt.xticks(rotation = 90)

    plt.show()

ColumnList = ['Sales Channel', 'Order Priority', 'Units Sold',
              'Total Revenue', 'Total Profit']

for column in ColumnList:
    plotter('Country', column, Cosmetdf)
```





```
In [69]: %matplotlib inline

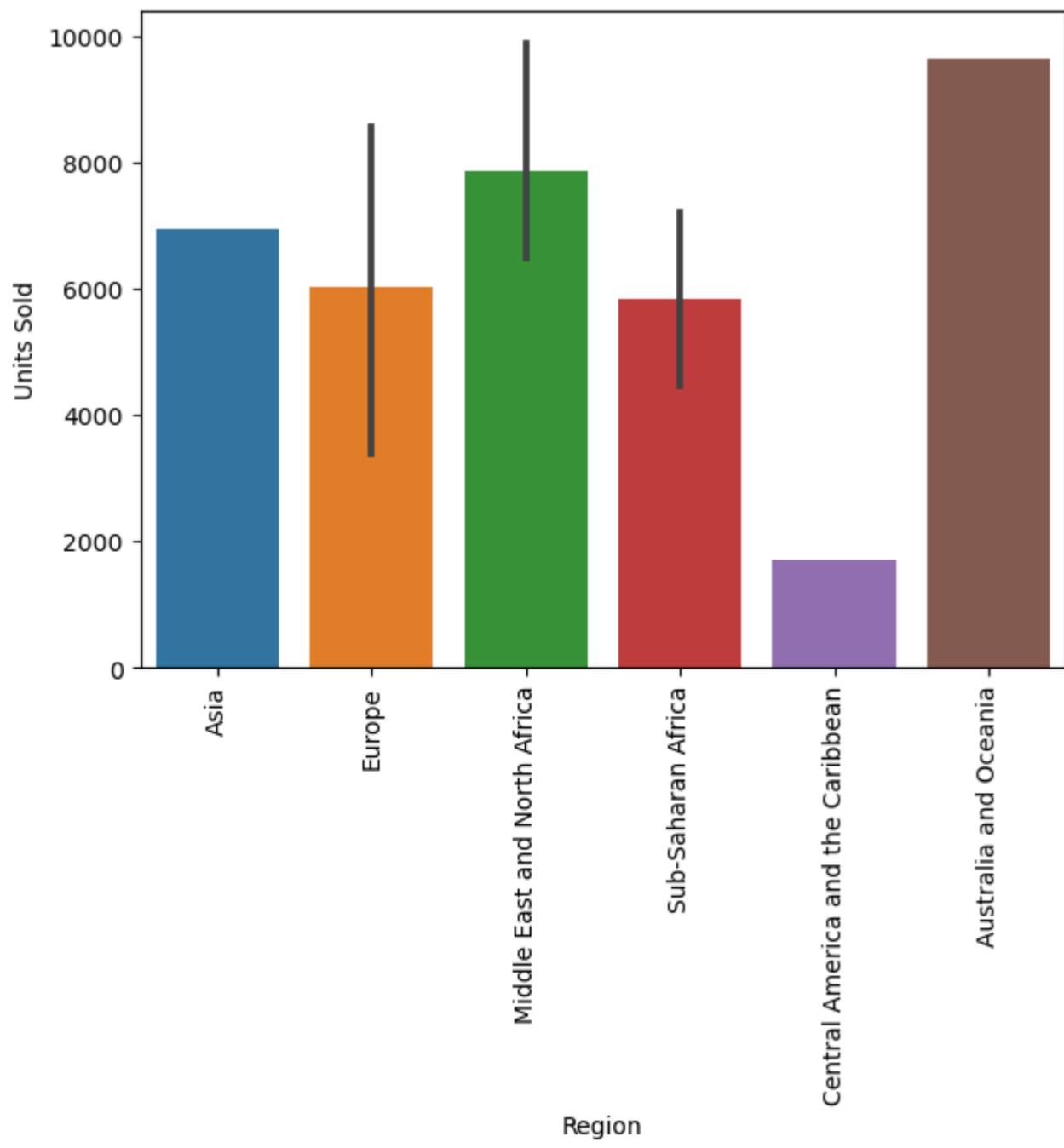
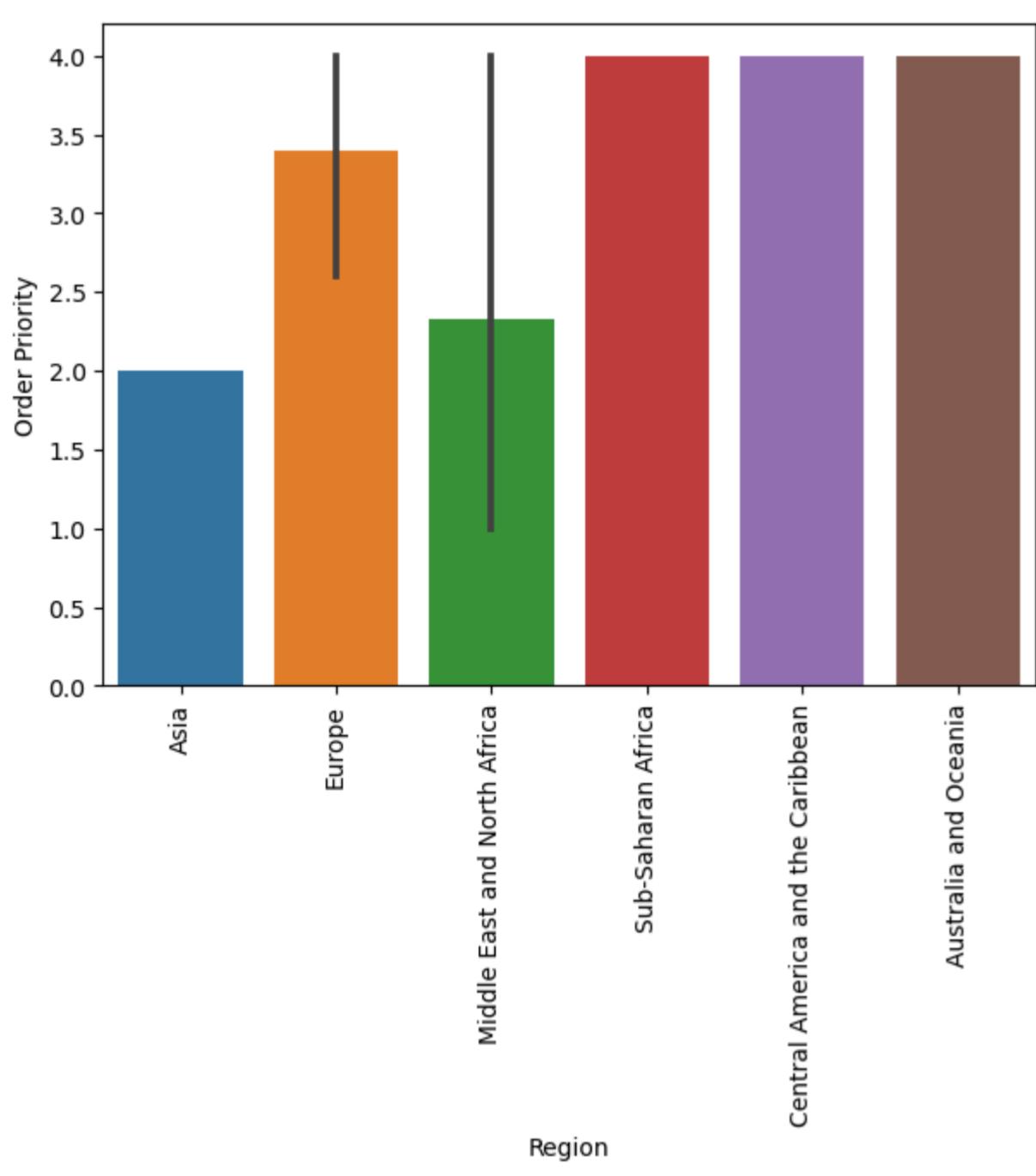
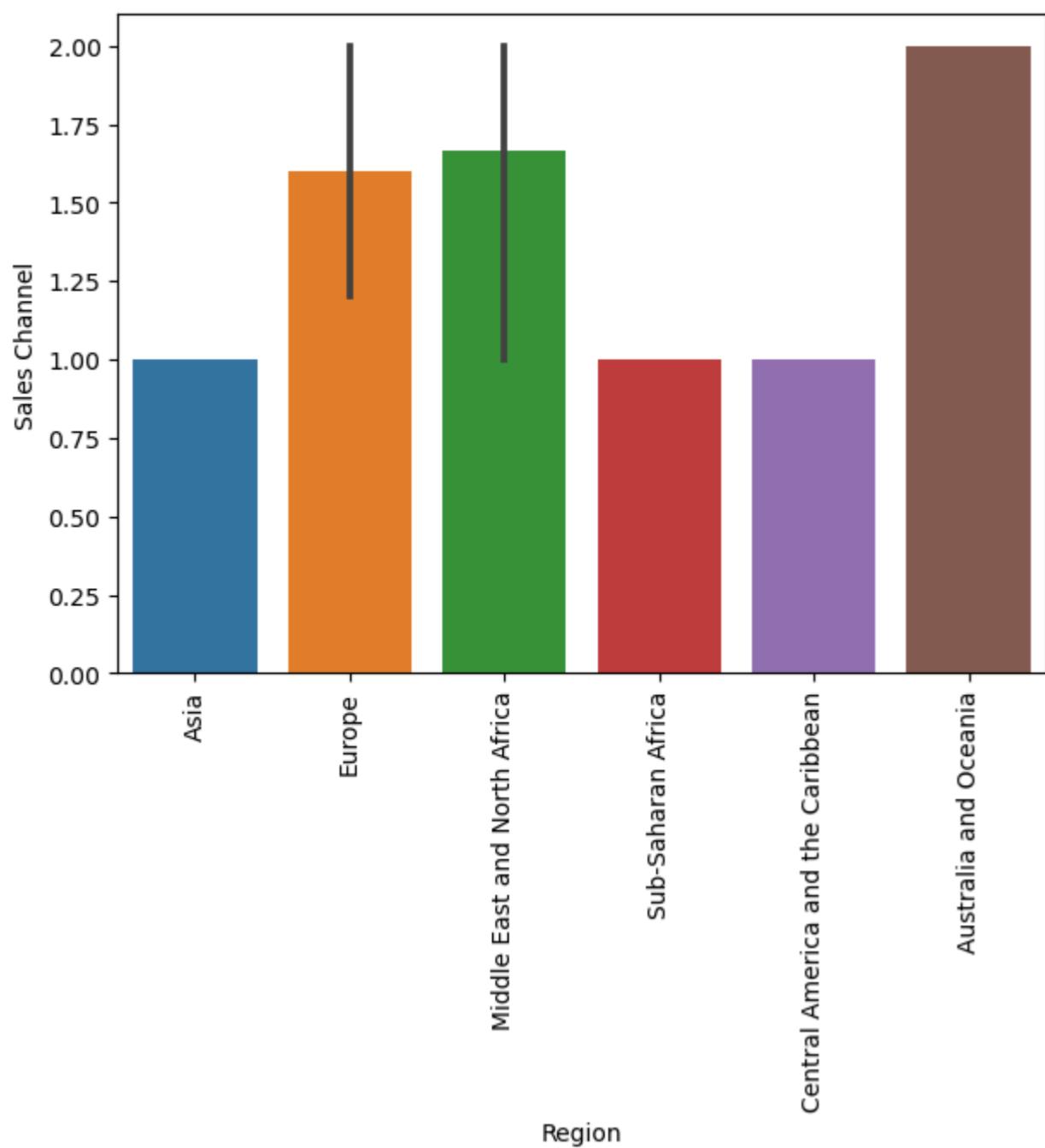
def plotter( X, Y, df):
    plt.figure(figsize=(7,5))

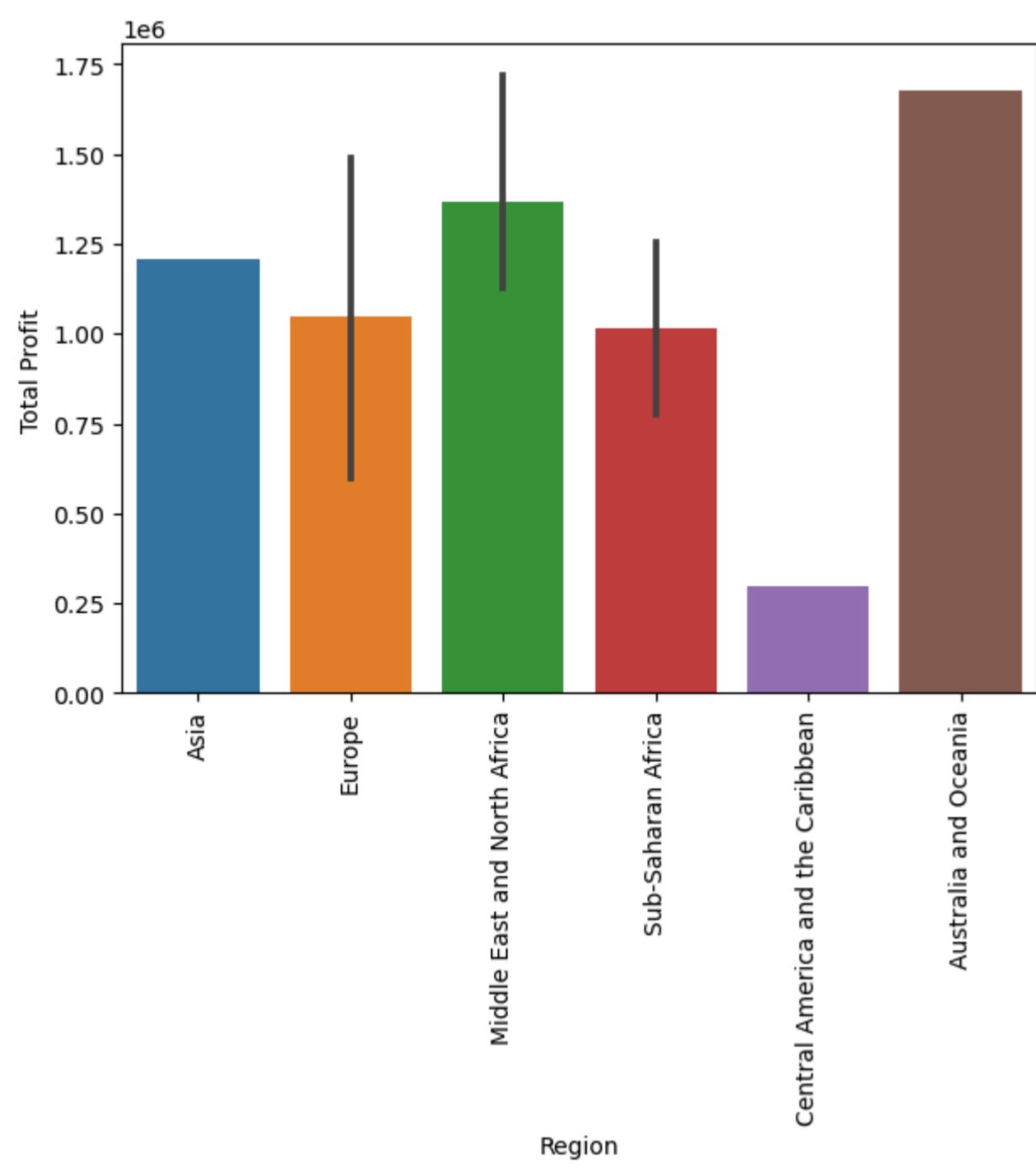
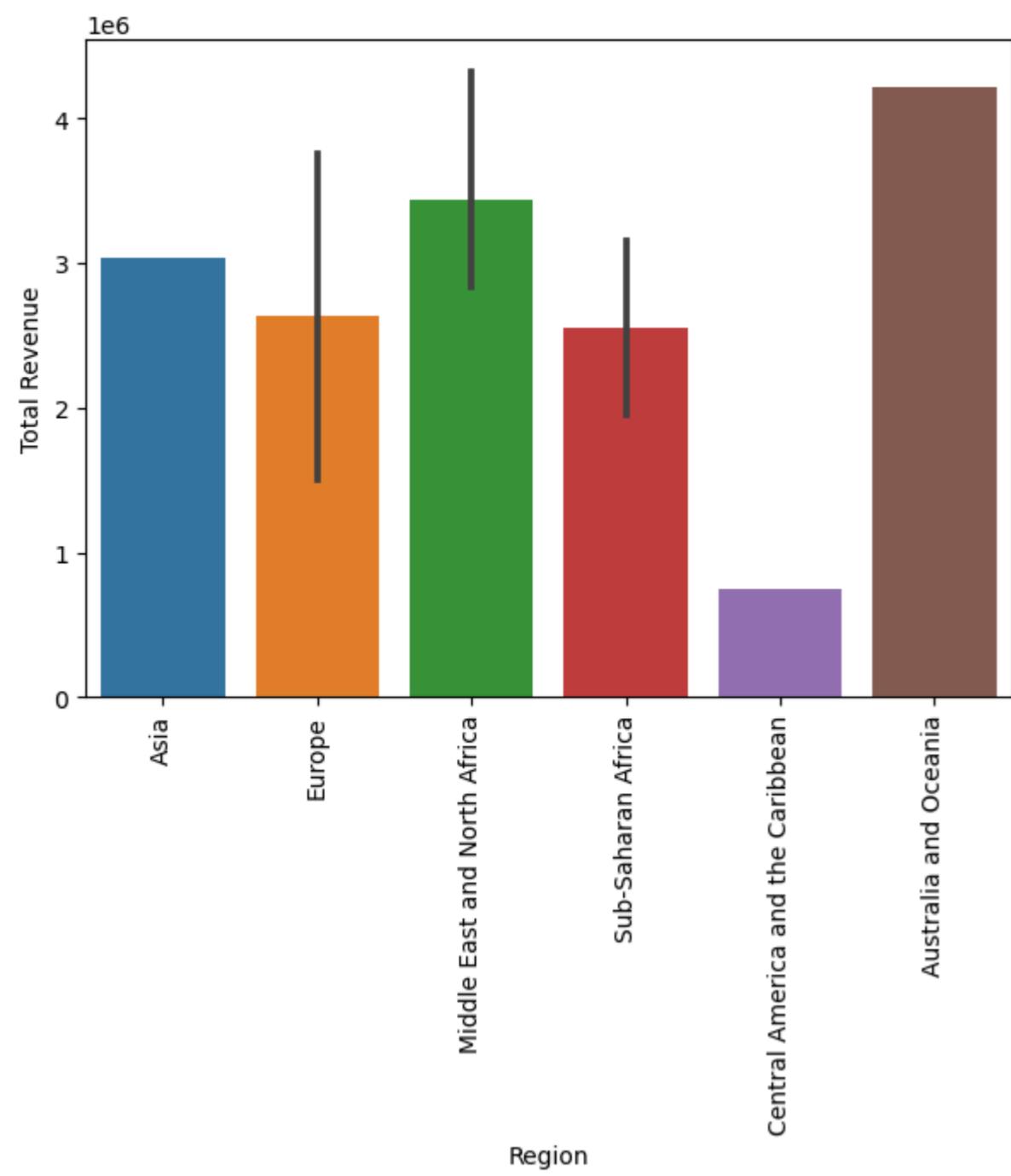
    sb.barplot(x=X, y=Y, data = Cosmetdf)
    plt.xticks(rotation = 90)

    plt.show()

ColumnList = ['Sales Channel', 'Order Priority', 'Units Sold',
              'Total Revenue', 'Total Profit']

for column in ColumnList:
    plotter('Region', column, Cosmetdf)
```





```
In [ ]: 
In [ ]: 
In [ ]: 
In [ ]: 
In [70]: Officedf = AmaCopydf.loc[AmaCopydf['Item Type'] == 'Office Supplies']
In [71]: Officedf
```

Out[71]:	Region	Country	Item Type	Sales Channel	Order Priority	Order Date	Order ID	Ship Date	Units Sold	Unit Price	Unit Cost	Total Revenue	Total Cost	Total Profit	ShipDate	OrderDate	orderCompTime
2	Europe	Russia	Office Supplies	1	1	05-02-2014	341417157	05-08-2014	1779	651.21	524.96	1158502.59	933903.84	224598.75	2014-05-08	2014-05-02	6 days
4	Sub-Saharan Africa	Rwanda	Office Supplies	1	1	02-01-2013	115456712	02-06-2013	5062	651.21	524.96	3296425.02	2657347.52	639077.50	2013-02-06	2013-02-01	5 days
32	Australia and Oceania	Australia	Office Supplies	2	3	10/27/2015	158535134	11/25/2015	2924	651.21	524.96	1904138.04	1534983.04	369155.00	2015-11-25	2015-10-27	29 days
38	Asia	Brunei	Office Supplies	2	1	04-01-2012	320009267	05-08-2012	6708	651.21	524.96	4368316.68	3521431.68	846885.00	2012-05-08	2012-04-01	37 days
39	Europe	Bulgaria	Office Supplies	2	2	2/16/2012	189965903	2/28/2012	3987	651.21	524.96	2596374.27	2093015.52	503358.75	2012-02-28	2012-02-16	12 days
49	Sub-Saharan Africa	Mauritania	Office Supplies	1	3	01-11-2012	837559306	1/13/2012	1266	651.21	524.96	824431.86	664599.36	159832.50	2012-01-13	2012-01-11	2 days
53	Sub-Saharan Africa	Sierra Leone	Office Supplies	1	2	11/26/2011	441888415	01-07-2012	3457	651.21	524.96	2251232.97	1814786.72	436446.25	2012-01-07	2011-11-26	42 days
62	Sub-Saharan Africa	Cameroon	Office Supplies	2	2	11-07-2011	177636754	11/15/2011	5518	651.21	524.96	3593376.78	2896729.28	696647.50	2011-11-15	2011-11-07	8 days
68	Europe	Lithuania	Office Supplies	1	4	10/24/2010	166460740	11/17/2010	8287	651.21	524.96	5396577.27	4350343.52	1046233.75	2010-11-17	2010-10-24	24 days
70	Asia	Turkmenistan	Office Supplies	2	2	4/23/2013	462405812	5/20/2013	5010	651.21	524.96	3262562.10	2630049.60	632512.50	2013-05-20	2013-04-23	27 days
90	Sub-Saharan Africa	Sierra Leone	Office Supplies	1	4	12-06-2016	621386563	12/14/2016	948	651.21	524.96	617347.08	497662.08	119685.00	2016-12-14	2016-12-06	8 days
92	Middle East and North Africa	Azerbaijan	Office Supplies	2	2	6/13/2012	423331391	7/24/2012	2021	651.21	524.96	1316095.41	1060944.16	255151.25	2012-07-24	2012-06-13	41 days

In [72]: `Officedf.Country.value_counts()`

```
Out[72]: Sierra Leone    2
Russia          1
Rwanda          1
Australia       1
Brunei          1
Bulgaria        1
Mauritania      1
Cameroon        1
Lithuania       1
Turkmenistan    1
Azerbaijan     1
Name: Country, dtype: int64
```

In [73]: `Officedf.Region.value_counts()`

```
Out[73]: Sub-Saharan Africa    5
Europe          3
Asia            2
Australia and Oceania  1
Middle East and North Africa 1
Name: Region, dtype: int64
```

In [74]: `Officedf.loc[Officedf['orderCompTime'] == Officedf['orderCompTime'].max()]`

Out[74]:	Region	Country	Item Type	Sales Channel	Order Priority	Order Date	Order ID	Ship Date	Units Sold	Unit Price	Unit Cost	Total Revenue	Total Cost	Total Profit	ShipDate	OrderDate	orderCompTime
53	Sub-Saharan Africa	Sierra Leone	Office Supplies	1	2	11/26/2011	441888415	01-07-2012	3457	651.21	524.96	2251232.97	1814786.72	436446.25	2012-01-07	2011-11-26	42 days

In [75]: `Officedf.loc[Officedf['orderCompTime'] >= "20days"]`

Out[75]:	Region	Country	Item Type	Sales Channel	Order Priority	Order Date	Order ID	Ship Date	Units Sold	Unit Price	Unit Cost	Total Revenue	Total Cost	Total Profit	ShipDate	OrderDate	orderCompTime
32	Australia and Oceania	Australia	Office Supplies	2	3	10/27/2015	158535134	11/25/2015	2924	651.21	524.96	1904138.04	1534983.04	369155.00	2015-11-25	2015-10-27	29 days
38	Asia	Brunei	Office Supplies	2	1	04-01-2012	320009267	05-08-2012	6708	651.21	524.96	4368316.68	3521431.68	846885.00	2012-05-08	2012-04-01	37 days
53	Sub-Saharan Africa	Sierra Leone	Office Supplies	1	2	11/26/2011	441888415	01-07-2012	3457	651.21	524.96	2251232.97	1814786.72	436446.25	2012-01-07	2011-11-26	42 days
68	Europe	Lithuania	Office Supplies	1	4	10/24/2010	166460740	11/17/2010	8287	651.21	524.96	5396577.27	4350343.52	1046233.75	2010-11-17	2010-10-24	24 days
70	Asia	Turkmenistan	Office Supplies	2	2	4/23/2013	462405812	5/20/2013	5010	651.21	524.96	3262562.10	2630049.60	632512.50	2013-05-20	2013-04-23	27 days
92	Middle East and North Africa	Azerbaijan	Office Supplies	2	2	6/13/2012	423331391	7/24/2012	2021	651.21	524.96	1316095.41	1060944.16	255151.25	2012-07-24	2012-06-13	41 days

In [76]: `Officedf.loc[Officedf['orderCompTime'] == Officedf['orderCompTime'].min()]`

Out[76]:	Region	Country	Item Type	Sales Channel	Order Priority	Order Date	Order ID	Ship Date	Units Sold	Unit Price	Unit Cost	Total Revenue	Total Cost	Total Profit	ShipDate	OrderDate	orderCompTime
49	Sub-Saharan Africa	Mauritania	Office Supplies	1	3	01-11-2012	837559306	1/13/2012	1266	651.21	524.96	824431.86	664599.36	159832.5	2012-01-13	2012-01-11	2 days

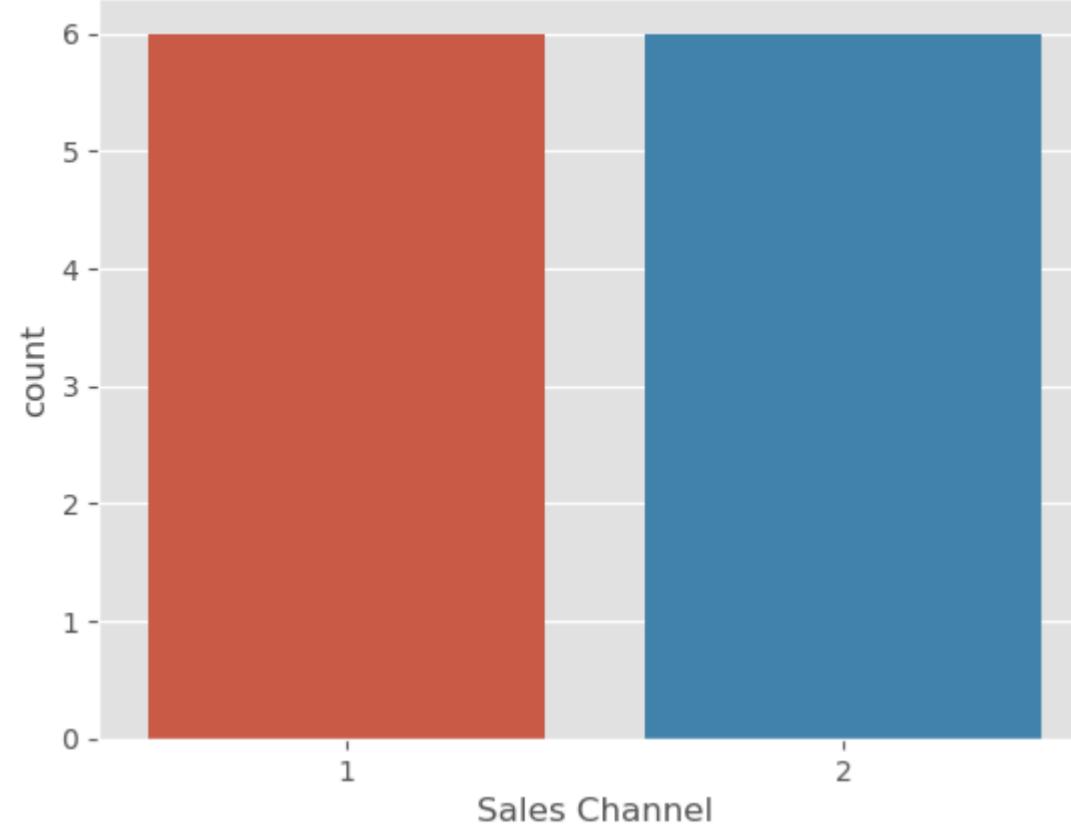
In [77]: `Officedf.loc[Officedf['orderCompTime'] <= "10days"]`

Out[77]:	Region	Country	Item Type	Sales Channel	Order Priority	Order Date	Order ID	Ship Date	Units Sold	Unit Price	Unit Cost	Total Revenue	Total Cost	Total Profit	ShipDate	OrderDate	orderCompTime
2	Europe	Russia	Office Supplies	1	1	05-02-2014	341417157	05-08-2014	1779	651.21	524.96	1158502.59	933903.84	224598.75	2014-05-08	2014-05-02	6 days
4	Sub-Saharan Africa	Rwanda	Office Supplies	1	1	02-01-2013	115456712	02-06-2013	5062	651.21	524.96	3296425.02	2657347.52	639077.50	2013-02-06	2013-02-01	5 days
49	Sub-Saharan Africa	Mauritania	Office Supplies	1	3	01-11-2012	837559306	1/13/2012	1266	651.21	524.96	824431.86	664599.36	159832.50	2012-01-13	2012-01-11	2 days
62	Sub-Saharan Africa	Cameroon	Office Supplies	2	2	11-07-2011	177636754	11/15/2011	5518	651.21	524.96	3593376.78	2896729.28	696647.50	2011-11-15	2011-11-07	8 days
90	Sub-Saharan Africa	Sierra Leone	Office Supplies	1	4	12-06-2016	621386563	12/14/2016	948	651.21	524.96	617347.08	497662.08	119			

```
plt.title('Sales Channel Distribution')
```

```
Out[238]: Text(0.5, 1.0, 'Sales Channel Distribution')
```

Sales Channel Distribution



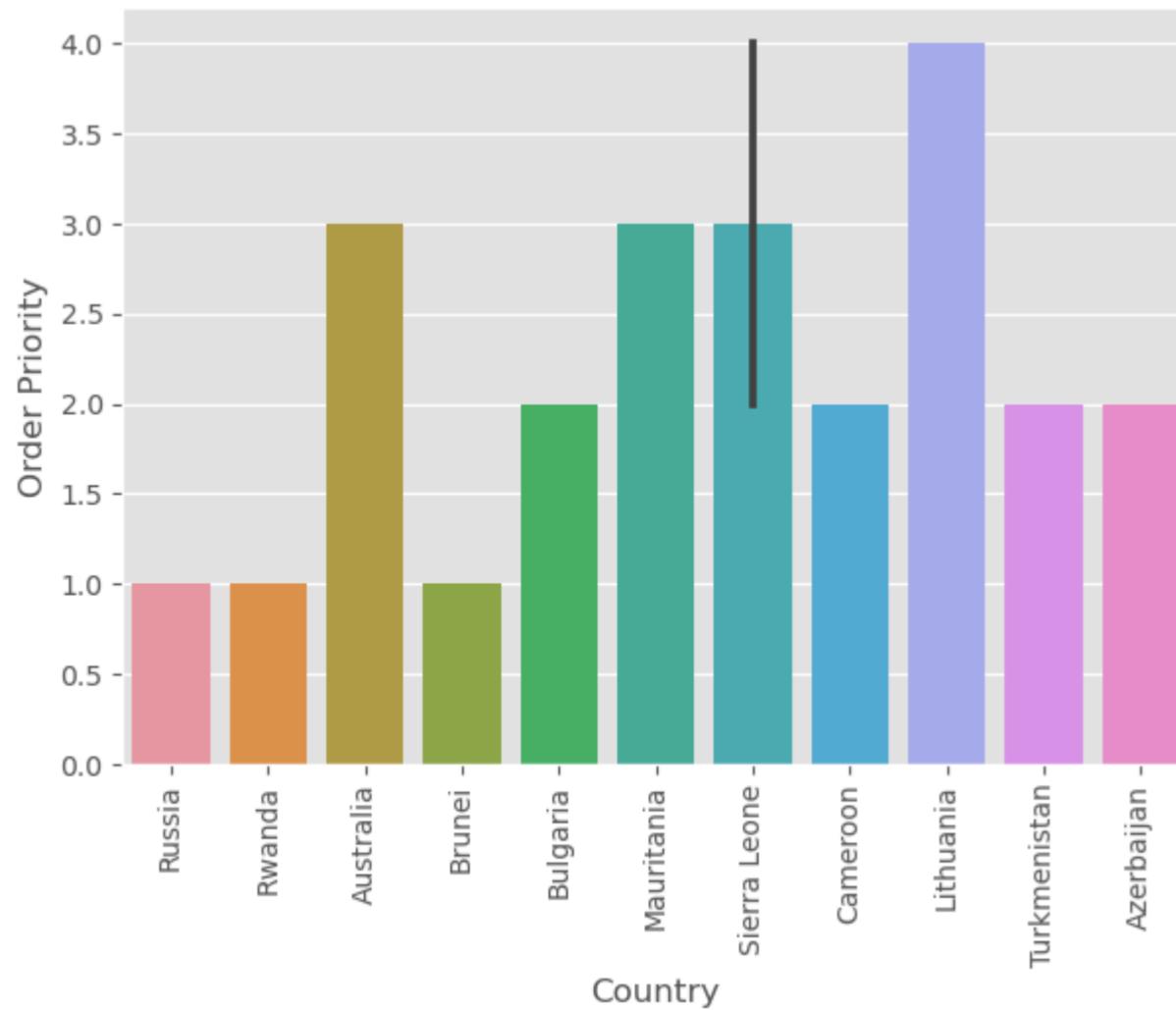
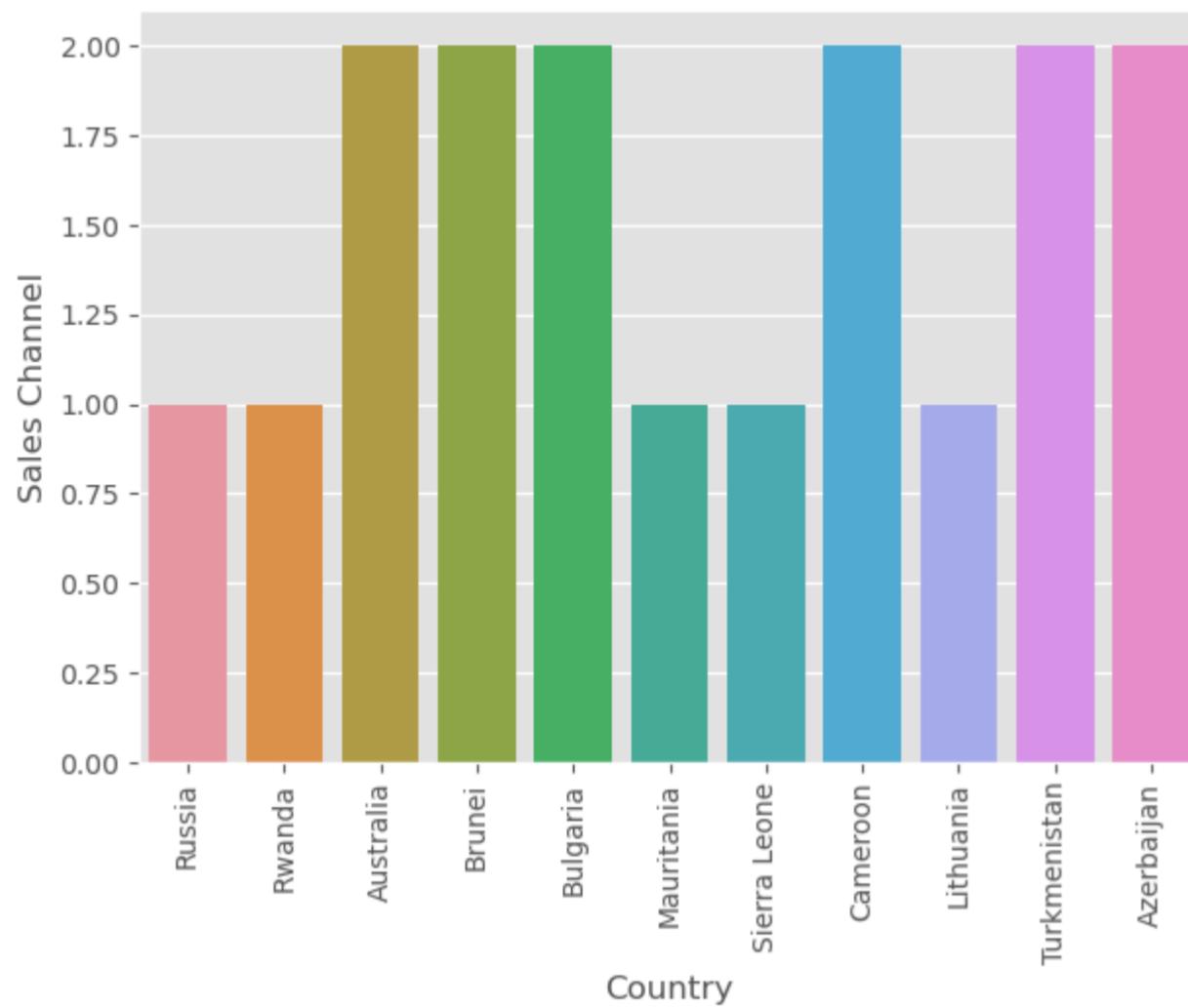
```
In [239]: %matplotlib inline
```

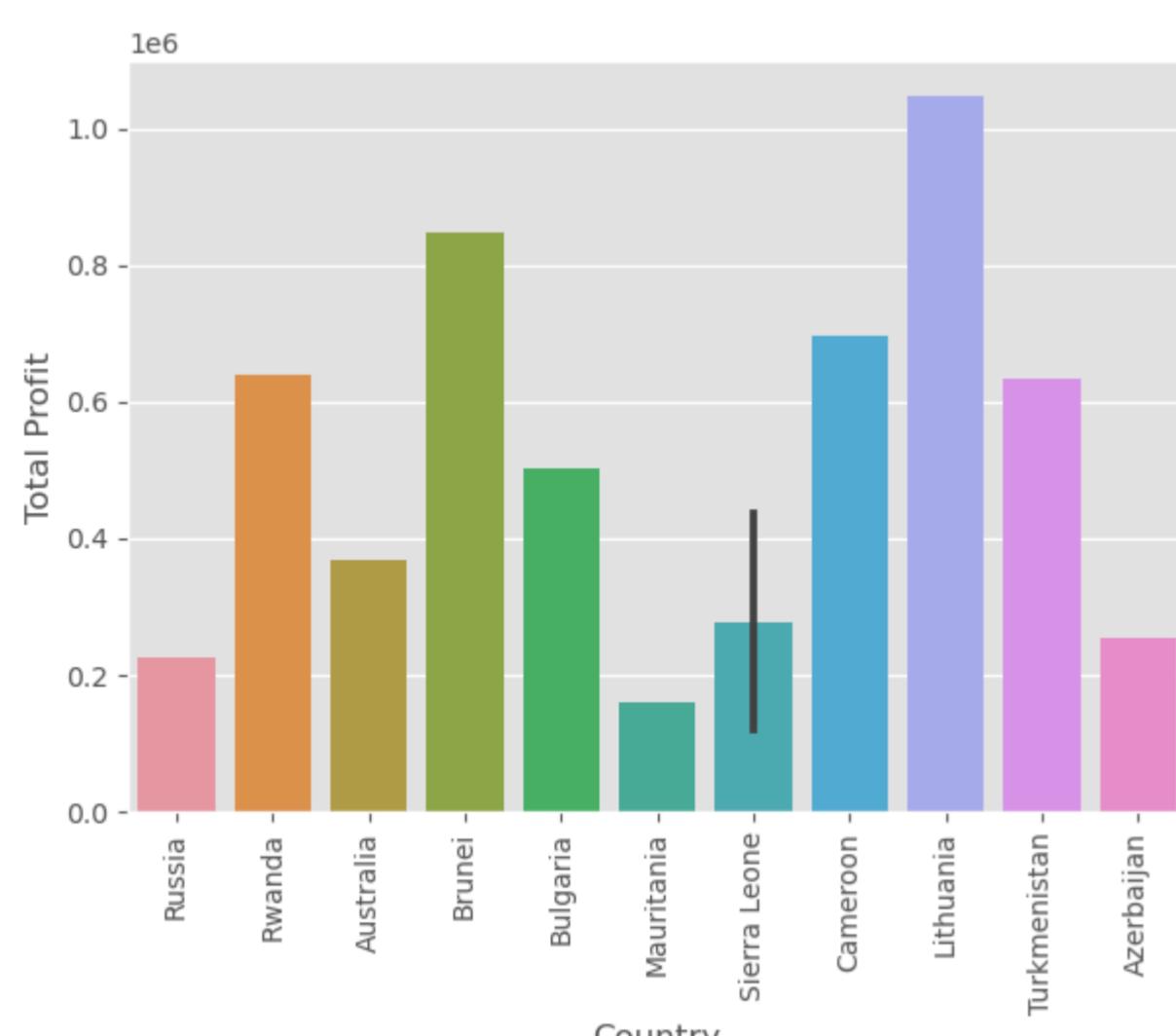
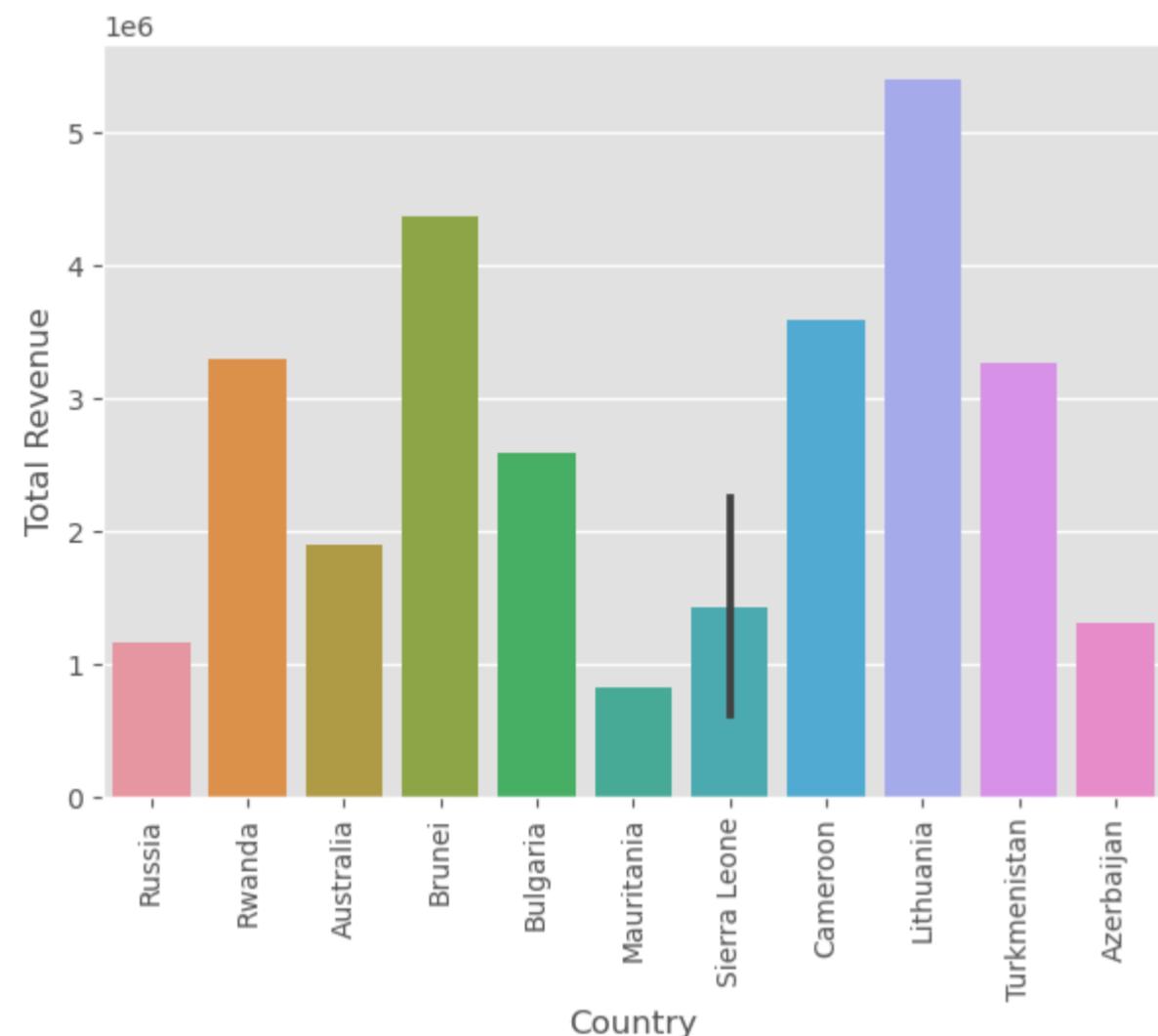
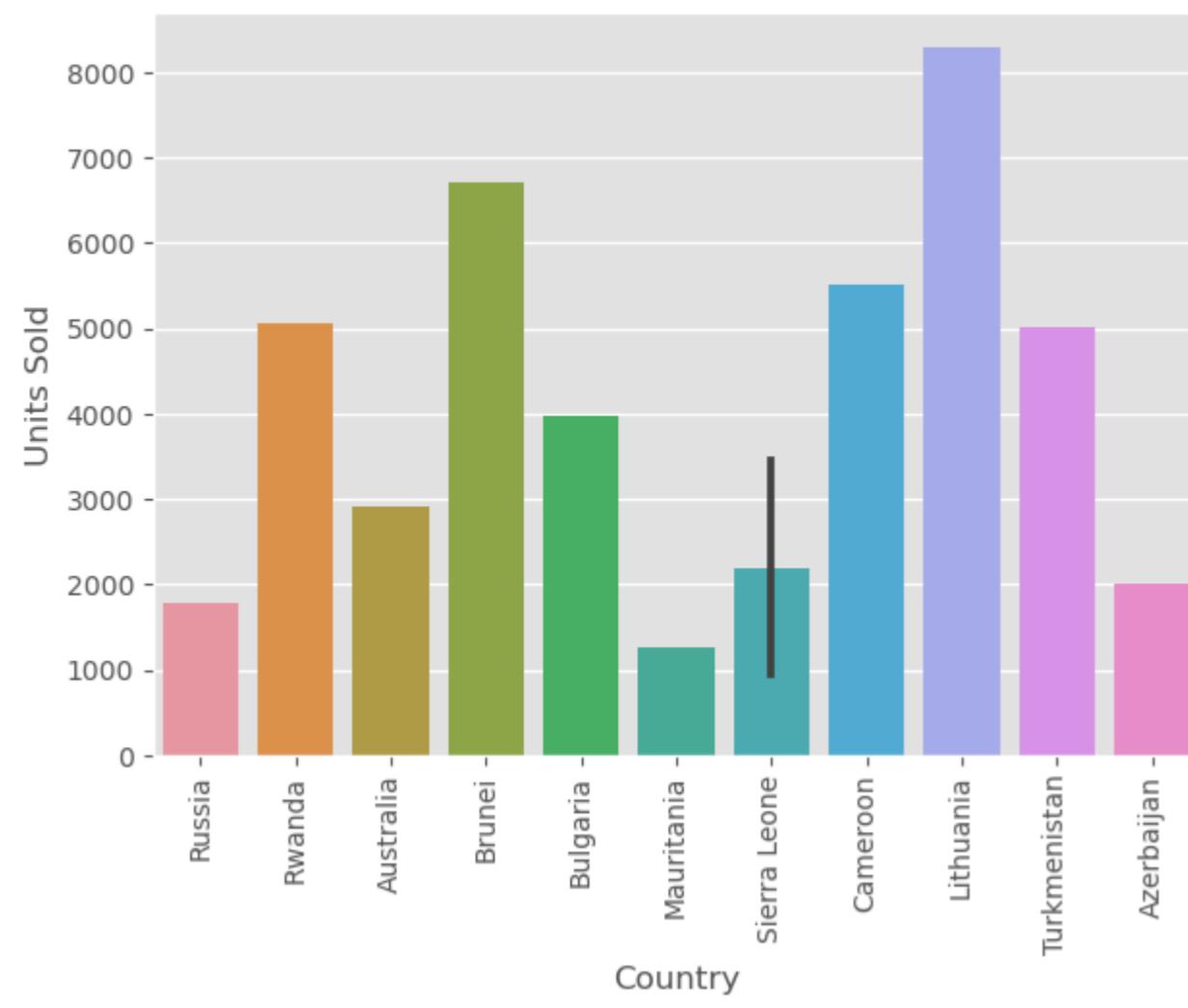
```
def plotter(X, Y, df):
    plt.figure(figsize=(7,5))

    sb.barplot(x=X, y=Y, data = Officedf)
    plt.xticks(rotation = 90)
    plt.show()

ColumnList = ['Sales Channel', 'Order Priority', 'Units Sold',
              'Total Revenue', 'Total Profit']

for column in ColumnList:
    plotter('Country', column, Officedf)
```





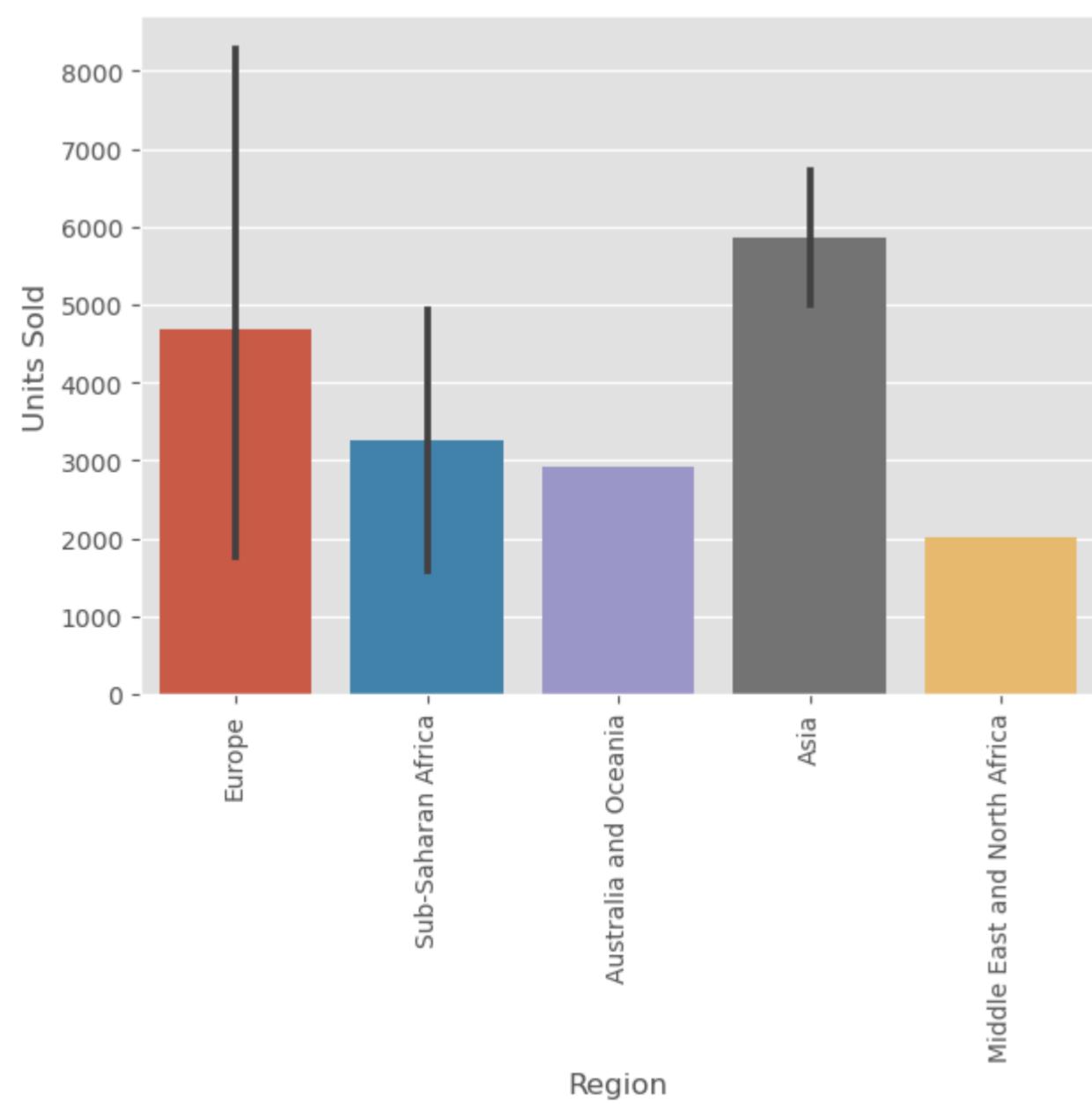
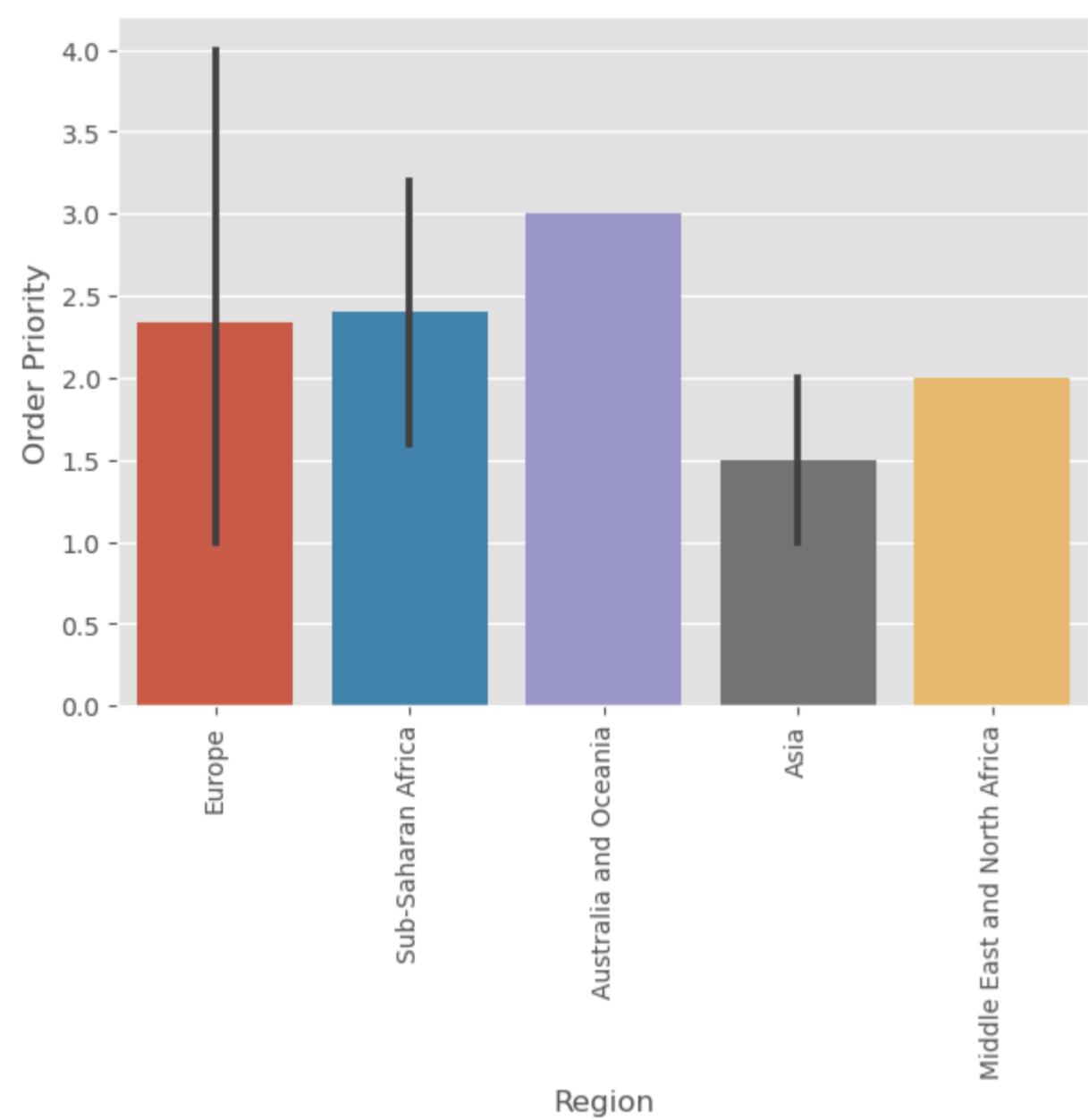
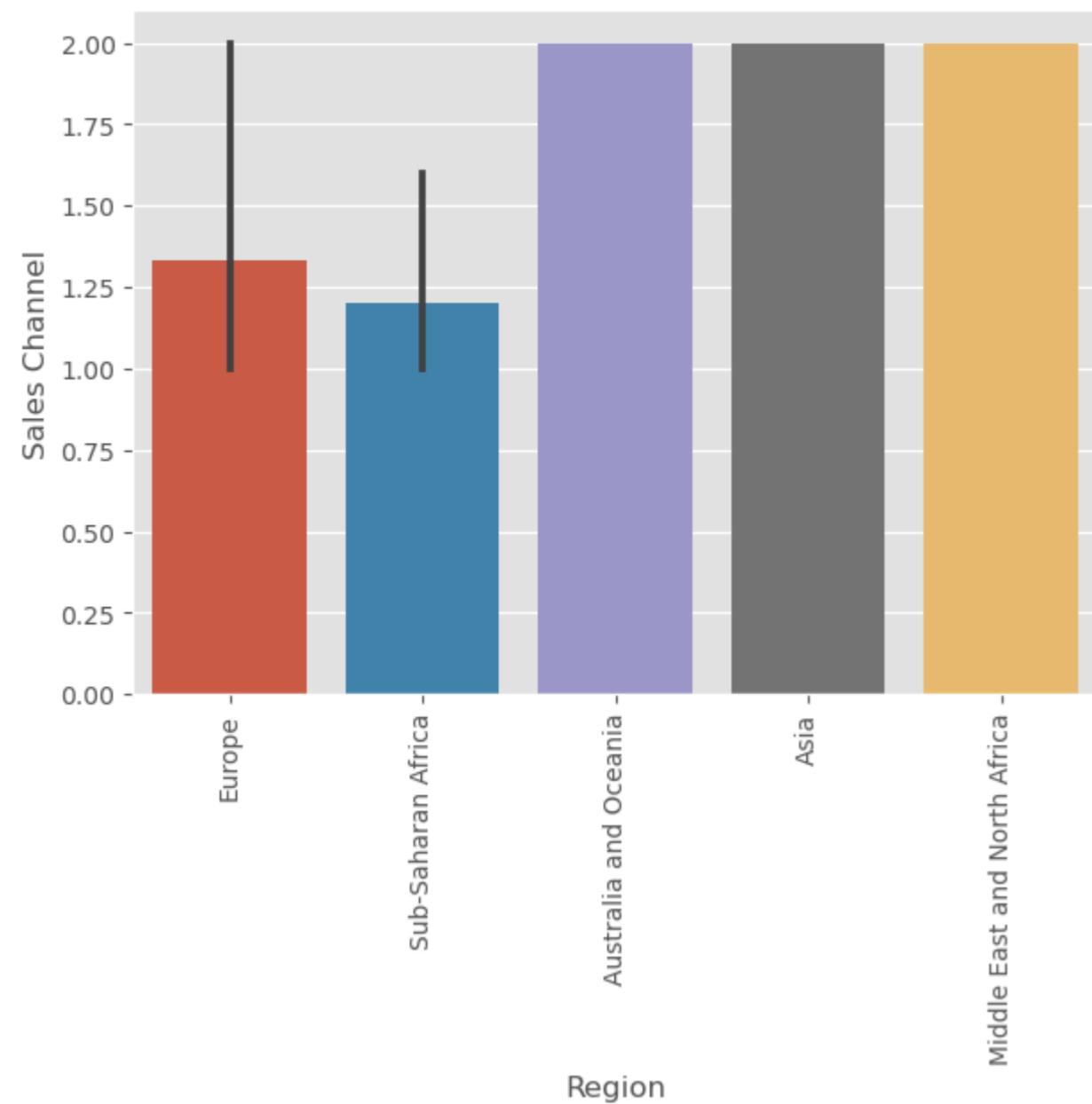
In [240]: %matplotlib inline

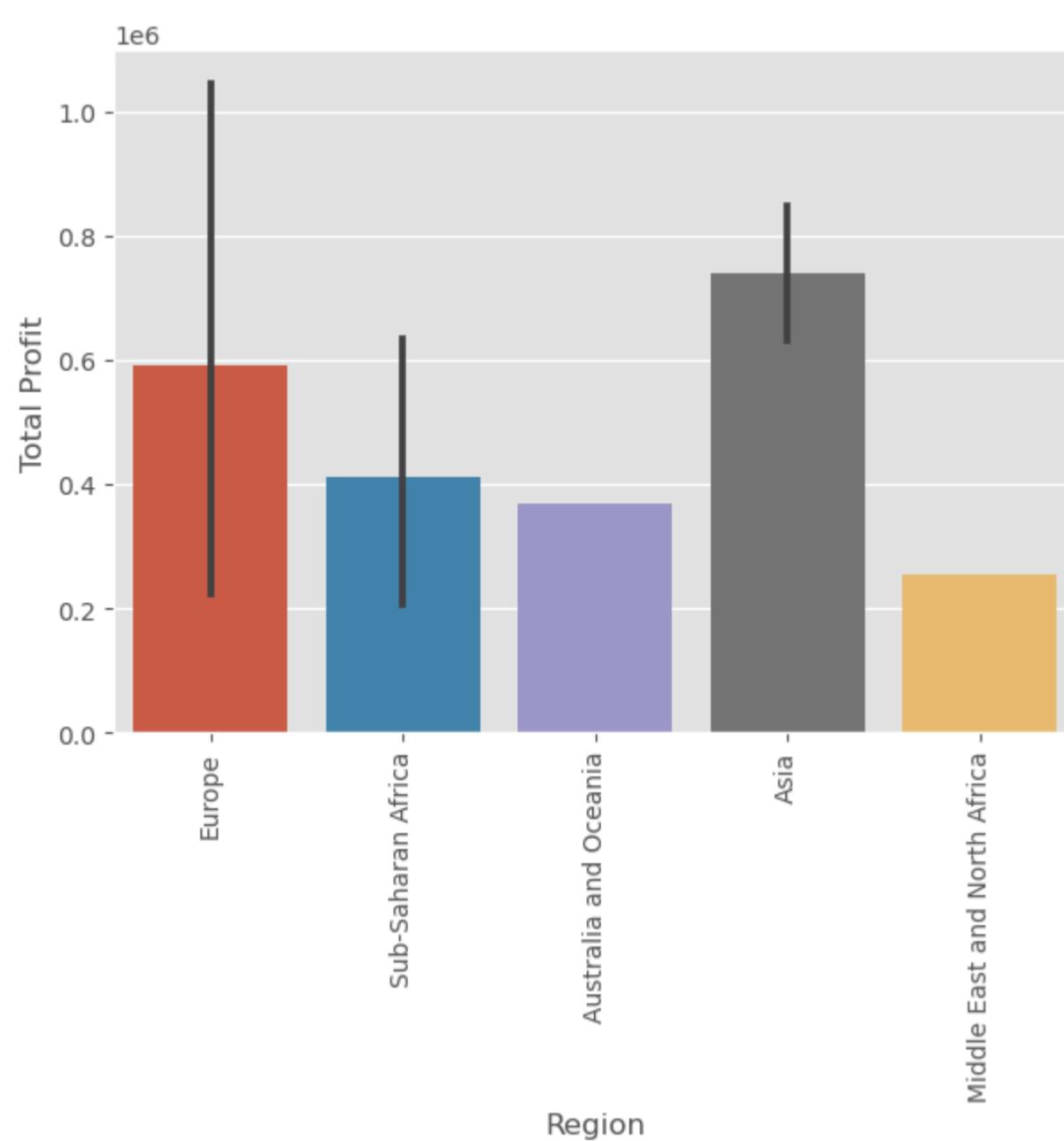
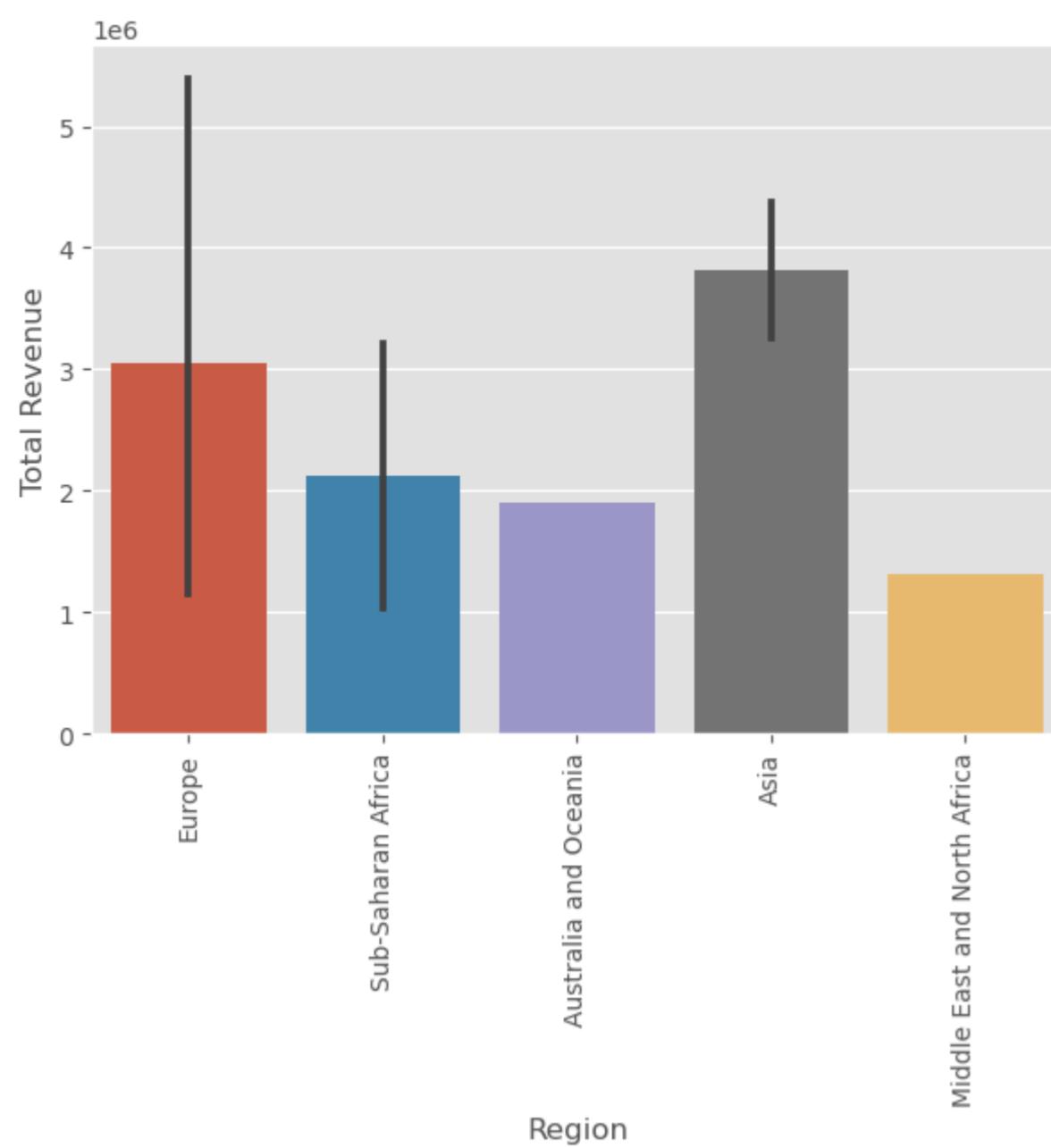
```
def plotter( X, Y, df):
    plt.figure(figsize=(7,5))

    sb.barplot(x=X, y=Y, data = Officedf)
    plt.xticks(rotation = 90)
    plt.show()

ColumnList = ['Sales Channel', 'Order Priority', 'Units Sold',
              'Total Revenue', 'Total Profit']

for column in ColumnList:
    plotter('Region', column, Officedf)
```





In []:																																																																																																																																																																																																							
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In [81]:	Fruitdf = AmaCopydf.loc[AmaCopydf['Item Type'] == 'Fruits']																																																																																																																																																																																																						
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Out[82]:	<table border="1"> <thead> <tr> <th></th> <th>Region</th> <th>Country</th> <th>Item Type</th> <th>Sales Channel</th> <th>Order Priority</th> <th>Order Date</th> <th>Order ID</th> <th>Ship Date</th> <th>Units Sold</th> <th>Unit Price</th> <th>Unit Cost</th> <th>Total Revenue</th> <th>Total Cost</th> <th>Total Profit</th> <th>ShipDate</th> <th>OrderDate</th> <th>orderCompTime</th> </tr> </thead> <tbody> <tr> <td>3</td><td>Sub-Saharan Africa</td><td>Sao Tome and Principe</td><td>Fruits</td><td>2</td><td>3</td><td>6/20/2014</td><td>514321792</td><td>07-05-2014</td><td>8102</td><td>9.33</td><td>6.92</td><td>75591.66</td><td>56065.84</td><td>19525.82</td><td>2014-07-05</td><td>2014-06-20</td><td>15 days</td></tr> <tr> <td>23</td><td>Australia and Oceania</td><td>New Zealand</td><td>Fruits</td><td>2</td><td>4</td><td>09-08-2014</td><td>142278373</td><td>10-04-2014</td><td>2187</td><td>9.33</td><td>6.92</td><td>20404.71</td><td>15134.04</td><td>5270.67</td><td>2014-10-04</td><td>2014-09-08</td><td>26 days</td></tr> <tr> <td>26</td><td>Australia and Oceania</td><td>Kiribati</td><td>Fruits</td><td>2</td><td>2</td><td>10/13/2014</td><td>347140347</td><td>11-10-2014</td><td>5398</td><td>9.33</td><td>6.92</td><td>50363.34</td><td>37354.16</td><td>13009.18</td><td>2014-11-10</td><td>2014-10-13</td><td>28 days</td></tr> <tr> <td>27</td><td>Sub-Saharan Africa</td><td>Mali</td><td>Fruits</td><td>2</td><td>1</td><td>05-07-2010</td><td>686048400</td><td>05-10-2010</td><td>5822</td><td>9.33</td><td>6.92</td><td>54319.26</td><td>40288.24</td><td>14031.02</td><td>2010-05-10</td><td>2010-05-07</td><td>3 days</td></tr> <tr> <td>36</td><td>Middle East and North Africa</td><td>Syria</td><td>Fruits</td><td>2</td><td>1</td><td>11/22/2011</td><td>162052476</td><td>12-03-2011</td><td>3784</td><td>9.33</td><td>6.92</td><td>35304.72</td><td>26185.28</td><td>9119.44</td><td>2011-12-03</td><td>2011-11-22</td><td>11 days</td></tr> <tr> <td>51</td><td>Sub-Saharan Africa</td><td>Lesotho</td><td>Fruits</td><td>2</td><td>1</td><td>8/18/2013</td><td>918419539</td><td>9/18/2013</td><td>9606</td><td>9.33</td><td>6.92</td><td>89623.98</td><td>66473.52</td><td>23150.46</td><td>2013-09-18</td><td>2013-08-18</td><td>31 days</td></tr> <tr> <td>54</td><td>Sub-Saharan Africa</td><td>Sao Tome and Principe</td><td>Fruits</td><td>1</td><td>4</td><td>9/17/2013</td><td>508980977</td><td>10/24/2013</td><td>7637</td><td>9.33</td><td>6.92</td><td>71253.21</td><td>52848.04</td><td>18405.17</td><td>2013-10-24</td><td>2013-09-17</td><td>37 days</td></tr> <tr> <td>71</td><td>Middle East and North Africa</td><td>Libya</td><td>Fruits</td><td>2</td><td>1</td><td>8/14/2015</td><td>816200339</td><td>9/30/2015</td><td>673</td><td>9.33</td><td>6.92</td><td>6279.09</td><td>4657.16</td><td>1621.93</td><td>2015-09-30</td><td>2015-08-14</td><td>47 days</td></tr> <tr> <td>88</td><td>Middle East and North Africa</td><td>Kuwait</td><td>Fruits</td><td>2</td><td>2</td><td>4/30/2012</td><td>513417565</td><td>5/18/2012</td><td>522</td><td>9.33</td><td>6.92</td><td>4870.26</td><td>3612.24</td><td>1258.02</td><td>2012-05-18</td><td>2012-04-30</td><td>18 days</td></tr> <tr> <td>96</td><td>Asia</td><td>Malaysia</td><td>Fruits</td><td>1</td><td>1</td><td>11-11-2011</td><td>810711038</td><td>12/28/2011</td><td>6267</td><td>9.33</td><td>6.92</td><td>58471.11</td><td>43367.64</td><td>15103.47</td><td>2011-12-28</td><td>2011-11-11</td><td>47 days</td></tr> </tbody> </table>		Region	Country	Item Type	Sales Channel	Order Priority	Order Date	Order ID	Ship Date	Units Sold	Unit Price	Unit Cost	Total Revenue	Total Cost	Total Profit	ShipDate	OrderDate	orderCompTime	3	Sub-Saharan Africa	Sao Tome and Principe	Fruits	2	3	6/20/2014	514321792	07-05-2014	8102	9.33	6.92	75591.66	56065.84	19525.82	2014-07-05	2014-06-20	15 days	23	Australia and Oceania	New Zealand	Fruits	2	4	09-08-2014	142278373	10-04-2014	2187	9.33	6.92	20404.71	15134.04	5270.67	2014-10-04	2014-09-08	26 days	26	Australia and Oceania	Kiribati	Fruits	2	2	10/13/2014	347140347	11-10-2014	5398	9.33	6.92	50363.34	37354.16	13009.18	2014-11-10	2014-10-13	28 days	27	Sub-Saharan Africa	Mali	Fruits	2	1	05-07-2010	686048400	05-10-2010	5822	9.33	6.92	54319.26	40288.24	14031.02	2010-05-10	2010-05-07	3 days	36	Middle East and North Africa	Syria	Fruits	2	1	11/22/2011	162052476	12-03-2011	3784	9.33	6.92	35304.72	26185.28	9119.44	2011-12-03	2011-11-22	11 days	51	Sub-Saharan Africa	Lesotho	Fruits	2	1	8/18/2013	918419539	9/18/2013	9606	9.33	6.92	89623.98	66473.52	23150.46	2013-09-18	2013-08-18	31 days	54	Sub-Saharan Africa	Sao Tome and Principe	Fruits	1	4	9/17/2013	508980977	10/24/2013	7637	9.33	6.92	71253.21	52848.04	18405.17	2013-10-24	2013-09-17	37 days	71	Middle East and North Africa	Libya	Fruits	2	1	8/14/2015	816200339	9/30/2015	673	9.33	6.92	6279.09	4657.16	1621.93	2015-09-30	2015-08-14	47 days	88	Middle East and North Africa	Kuwait	Fruits	2	2	4/30/2012	513417565	5/18/2012	522	9.33	6.92	4870.26	3612.24	1258.02	2012-05-18	2012-04-30	18 days	96	Asia	Malaysia	Fruits	1	1	11-11-2011	810711038	12/28/2011	6267	9.33	6.92	58471.11	43367.64	15103.47	2011-12-28	2011-11-11	47 days
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51	Sub-Saharan Africa	Lesotho	Fruits	2	1	8/18/2013	918419539	9/18/2013	9606	9.33	6.92	89623.98	66473.52	23150.46	2013-09-18	2013-08-18	31 days																																																																																																																																																																																						
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96	Asia	Malaysia	Fruits	1	1	11-11-2011	810711038	12/28/2011	6267	9.33	6.92	58471.11	43367.64	15103.47	2011-12-28	2011-11-11	47 days																																																																																																																																																																																						

In [83]: Fruitdf.Country.value_counts()

```
Out[83]: Sao Tome and Principe    2  
New Zealand                      1  
Kiribati                         1  
Mali                             1  
Syria                           1  
Lesotho                          1  
Libya                           1  
Kuwait                          1  
Malaysia                         1  
Name: Country, dtype: int64
```

```
In [84]: Fruitdf.Region.value_counts()
```

```
Out[84]: Sub-Saharan Africa      4  
Middle East and North Africa   3  
Australia and Oceania          2  
Asia                            1  
Name: Region, dtype: int64
```

```
In [85]: Fruitdf.loc[Fruitdf['orderCompTime'] == Fruitdf['orderCompTime'].max() ]
```

	Region	Country	Item Type	Sales Channel	Order Priority	Order Date	Order ID	Ship Date	Units Sold	Unit Price	Unit Cost	Total Revenue	Total Cost	Total Profit	ShipDate	OrderDate	orderCompTime
71	Middle East and North Africa	Libya	Fruits	2	1	8/14/2015	816200339	9/30/2015	673	9.33	6.92	6279.09	4657.16	1621.93	2015-09-30	2015-08-14	47 days
96	Asia	Malaysia	Fruits	1	1	11-11-2011	810711038	12/28/2011	6267	9.33	6.92	58471.11	43367.64	15103.47	2011-12-28	2011-11-11	47 days

```
In [86]: Fruitdf.loc[Fruitdf['orderCompTime'] >= '20days']
```

	Region	Country	Item Type	Sales Channel	Order Priority	Order Date	Order ID	Ship Date	Units Sold	Unit Price	Unit Cost	Total Revenue	Total Cost	Total Profit	ShipDate	OrderDate	orderCompTime
23	Australia and Oceania	New Zealand	Fruits	2	4	09-08-2014	142278373	10-04-2014	2187	9.33	6.92	20404.71	15134.04	5270.67	2014-10-04	2014-09-08	26 days
26	Australia and Oceania	Kiribati	Fruits	2	2	10/13/2014	347140347	11-10-2014	5398	9.33	6.92	50363.34	37354.16	13009.18	2014-11-10	2014-10-13	28 days
51	Sub-Saharan Africa	Lesotho	Fruits	2	1	8/18/2013	918419539	9/18/2013	9606	9.33	6.92	89623.98	66473.52	23150.46	2013-09-18	2013-08-18	31 days
54	Sub-Saharan Africa	Sao Tome and Principe	Fruits	1	4	9/17/2013	508980977	10/24/2013	7637	9.33	6.92	71253.21	52848.04	18405.17	2013-10-24	2013-09-17	37 days
71	Middle East and North Africa	Libya	Fruits	2	1	8/14/2015	816200339	9/30/2015	673	9.33	6.92	6279.09	4657.16	1621.93	2015-09-30	2015-08-14	47 days
96	Asia	Malaysia	Fruits	1	1	11-11-2011	810711038	12/28/2011	6267	9.33	6.92	58471.11	43367.64	15103.47	2011-12-28	2011-11-11	47 days

```
In [87]: Fruitdf.loc[Fruitdf['orderCompTime'] == Fruitdf['orderCompTime'].min() ]
```

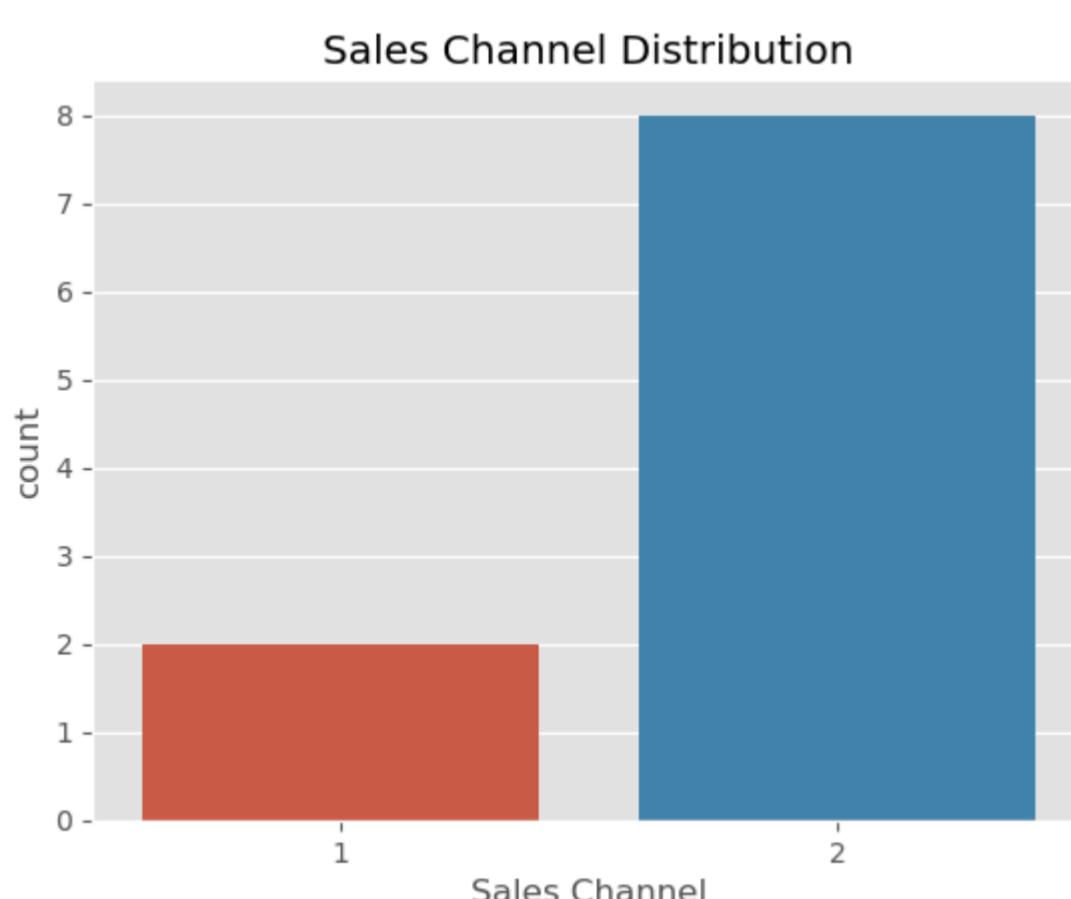
	Region	Country	Item Type	Sales Channel	Order Priority	Order Date	Order ID	Ship Date	Units Sold	Unit Price	Unit Cost	Total Revenue	Total Cost	Total Profit	ShipDate	OrderDate	orderCompTime
27	Sub-Saharan Africa	Mali	Fruits	2	1	05-07-2010	686048400	05-10-2010	5822	9.33	6.92	54319.26	40288.24	14031.02	2010-05-10	2010-05-07	3 days

```
In [88]: Fruitdf.loc[Fruitdf['orderCompTime'] <= '10days']
```

	Region	Country	Item Type	Sales Channel	Order Priority	Order Date	Order ID	Ship Date	Units Sold	Unit Price	Unit Cost	Total Revenue	Total Cost	Total Profit	ShipDate	OrderDate	orderCompTime
27	Sub-Saharan Africa	Mali	Fruits	2	1	05-07-2010	686048400	05-10-2010	5822	9.33	6.92	54319.26	40288.24	14031.02	2010-05-10	2010-05-07	3 days

```
In [237...]: sb.countplot(data=Fruitdf, x="Sales Channel")
plt.figure(figsize=(20, 40))
plt.title('Sales Channel Distribution')
```

```
Out[237...]: Text(0.5, 1.0, 'Sales Channel Distribution')
```

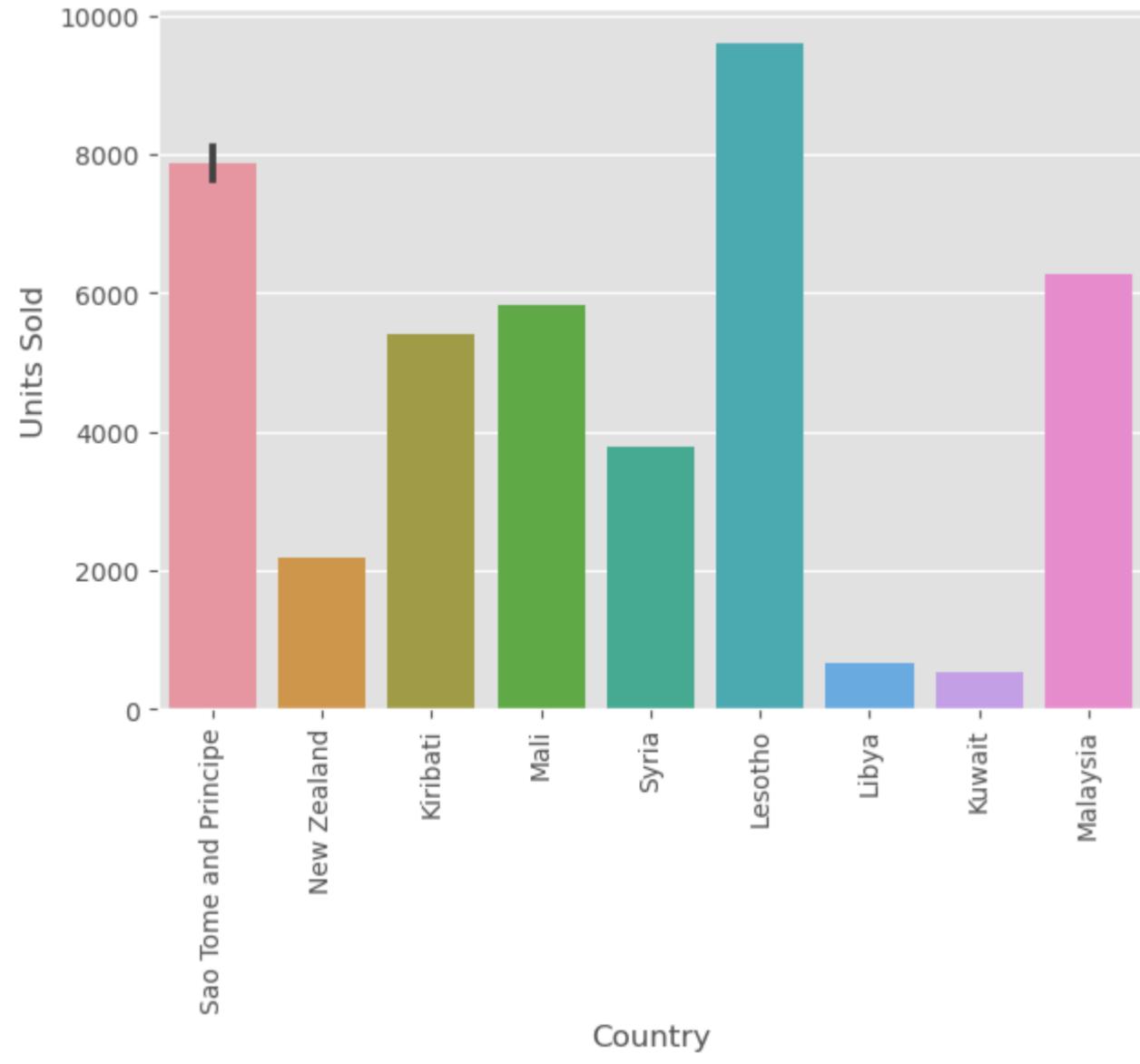
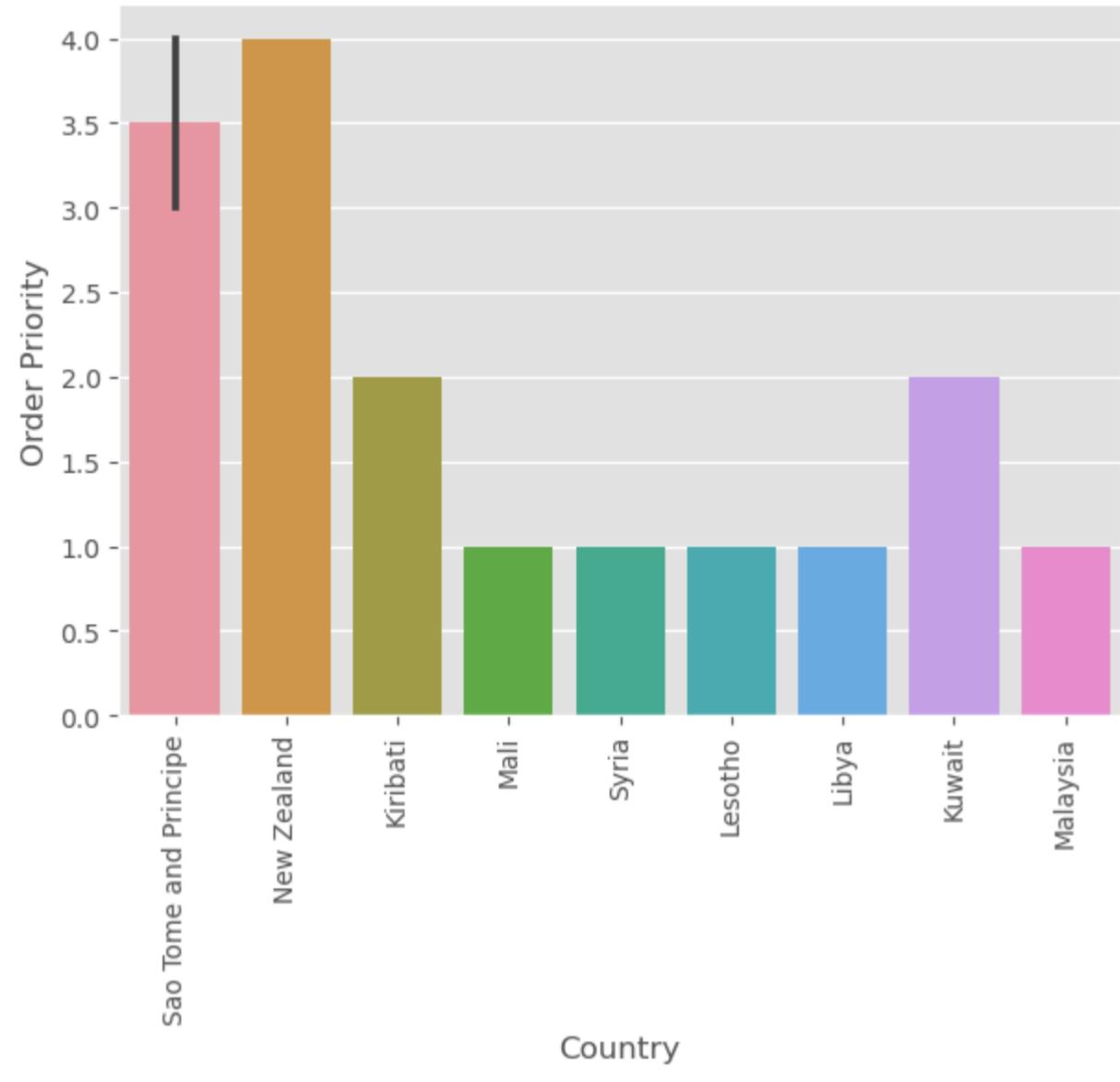
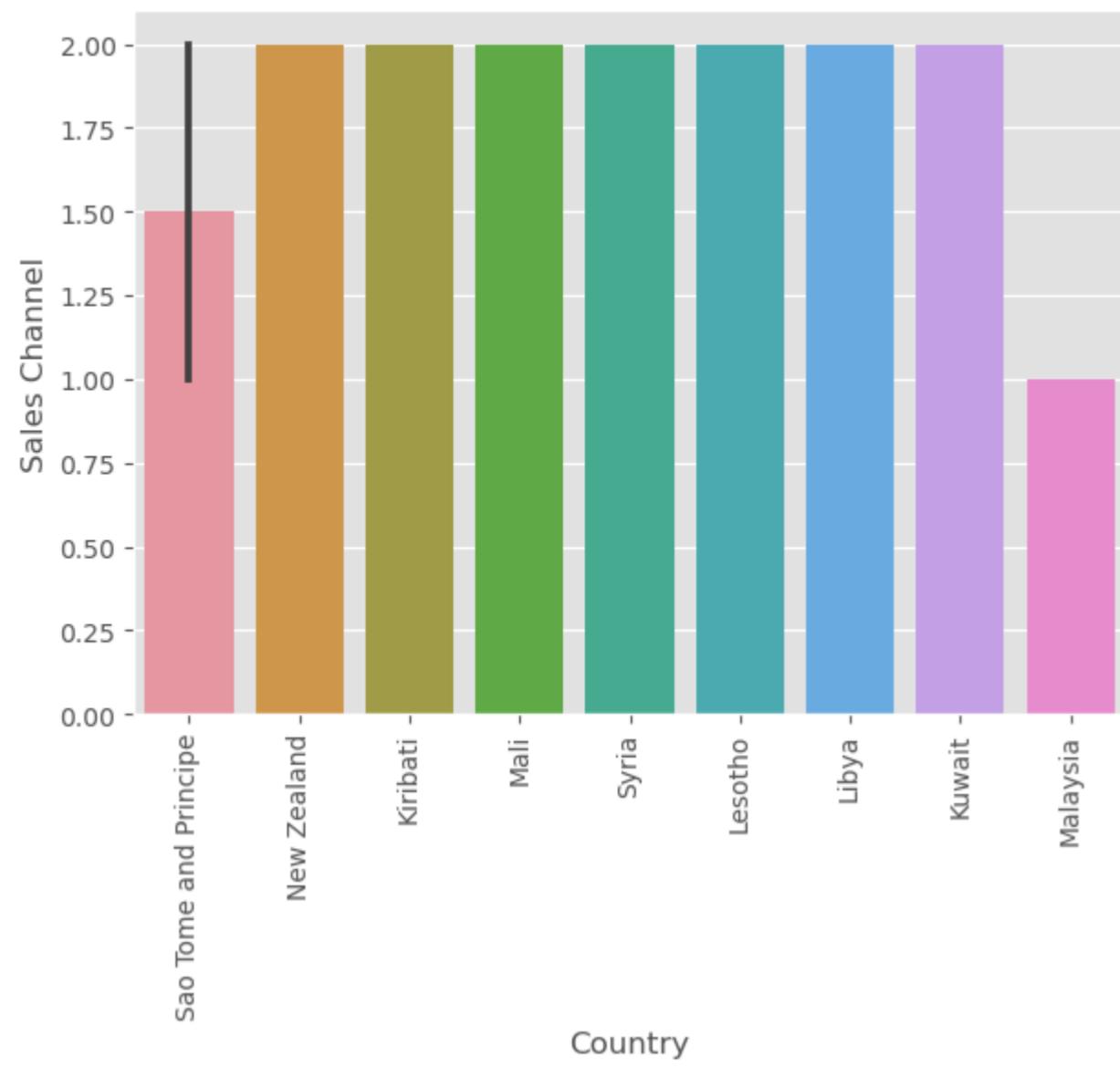


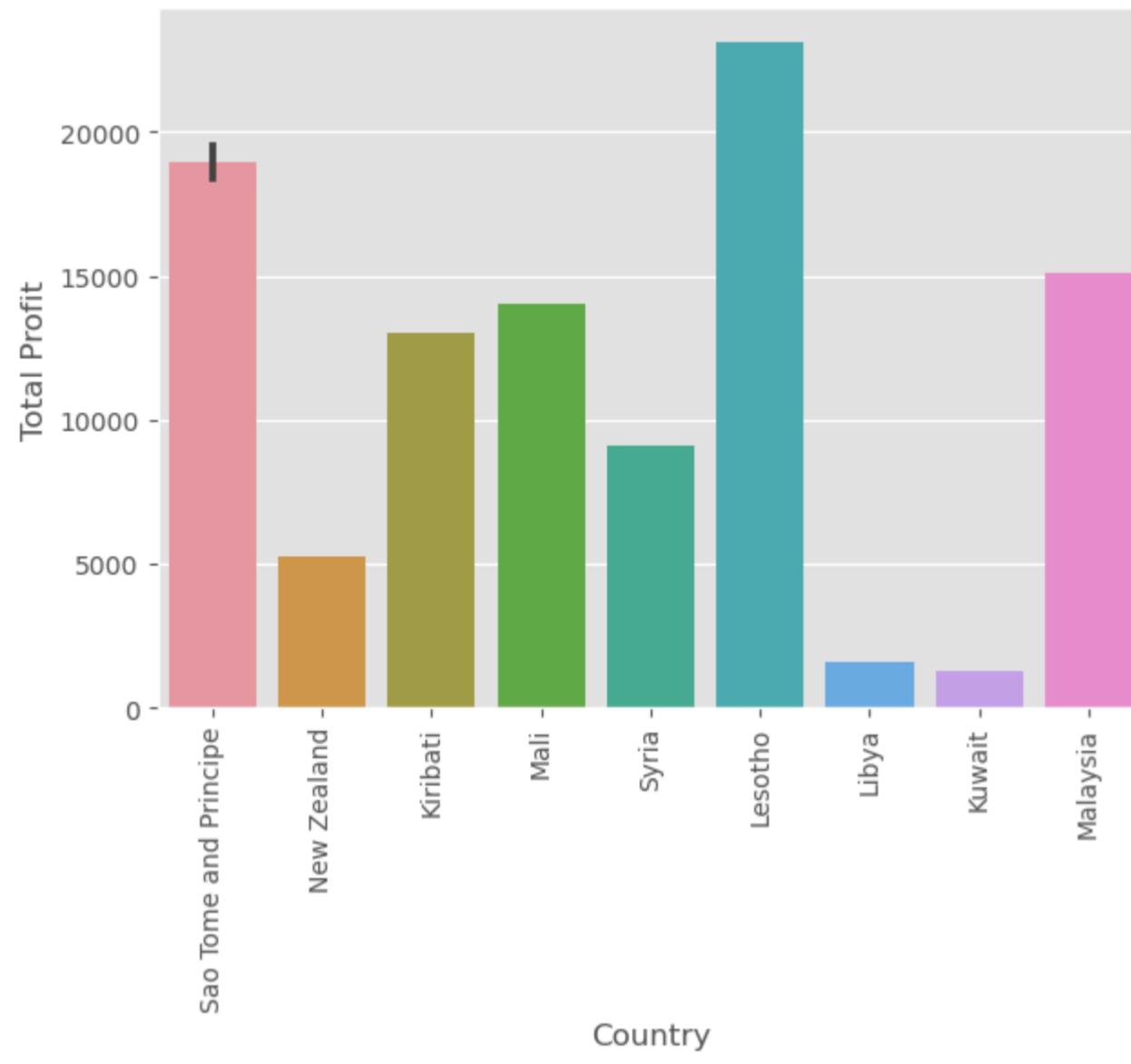
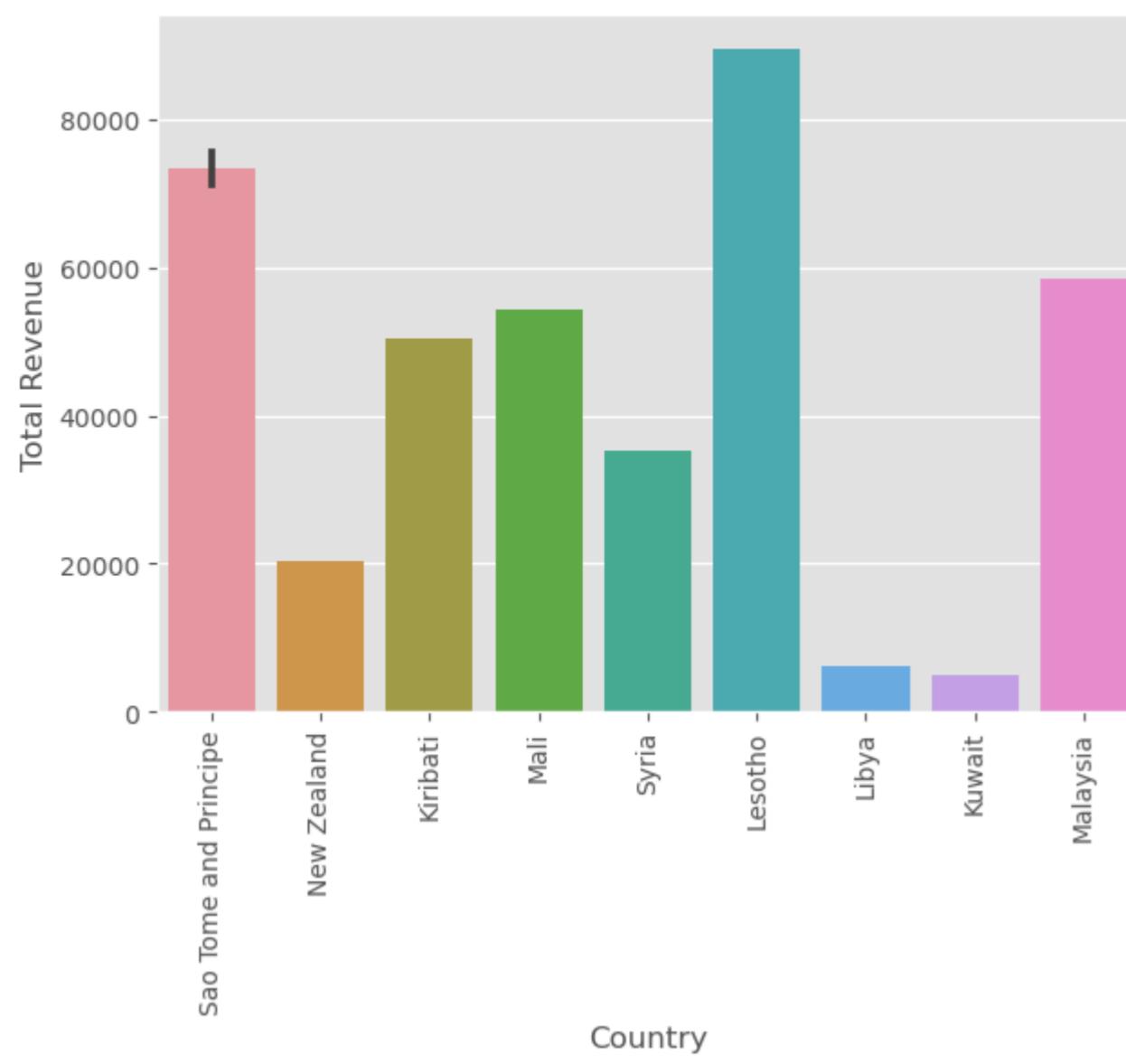
```
In [235...]: def plotter( X, Y, df):
    plt.figure(figsize=(7,5))
```

```
    sb.barplot(x=X, y=Y, data = Fruitdf)
    plt.xticks(rotation = 90)
    plt.show()
```

```
FruitList = ['Sales Channel', 'Order Priority', 'Units Sold',  
            'Total Revenue', 'Total Profit']
```

```
for column in ColumnList:  
    plotter('Country', column, Fruitdf)
```





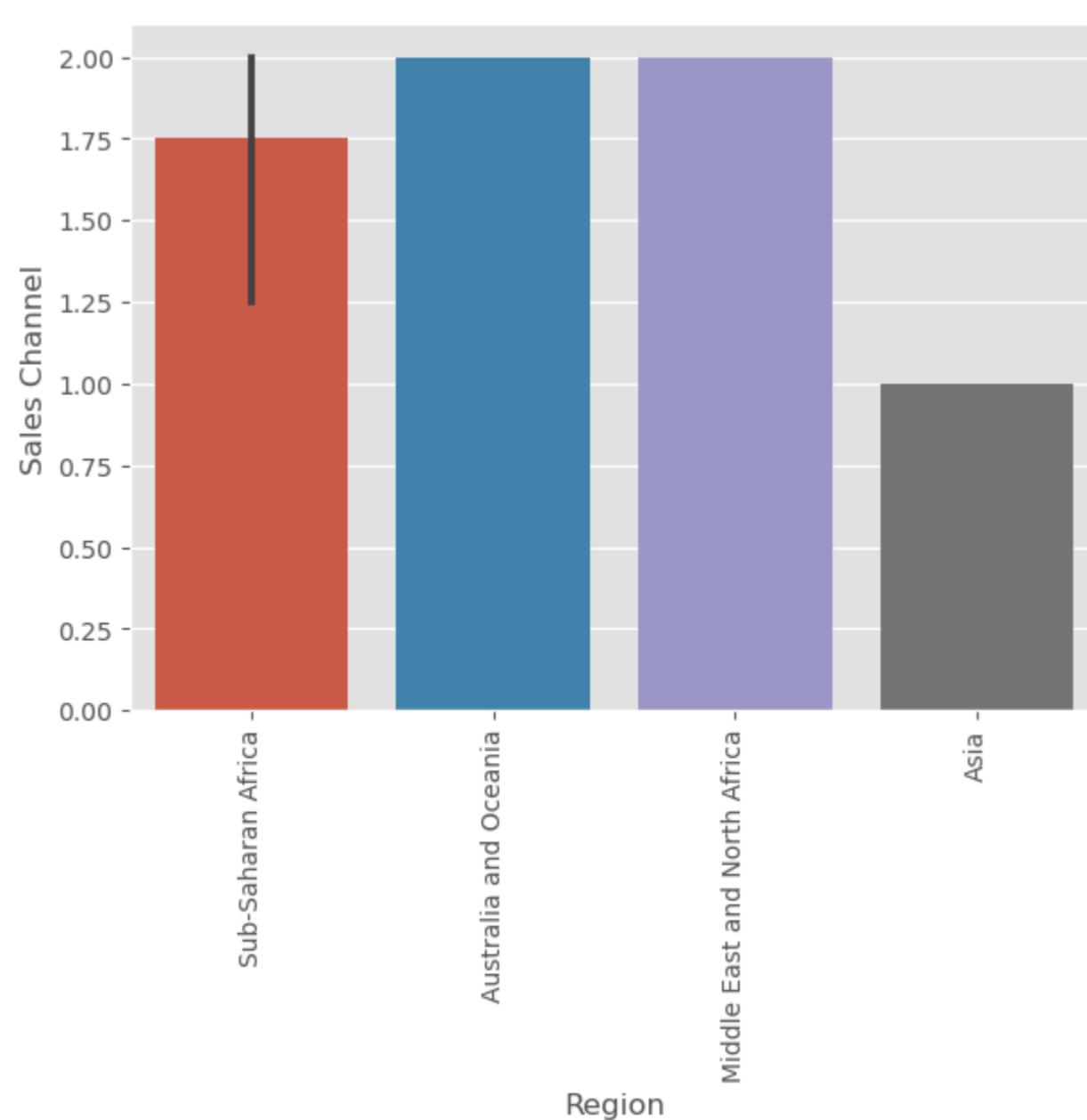
In [236]:

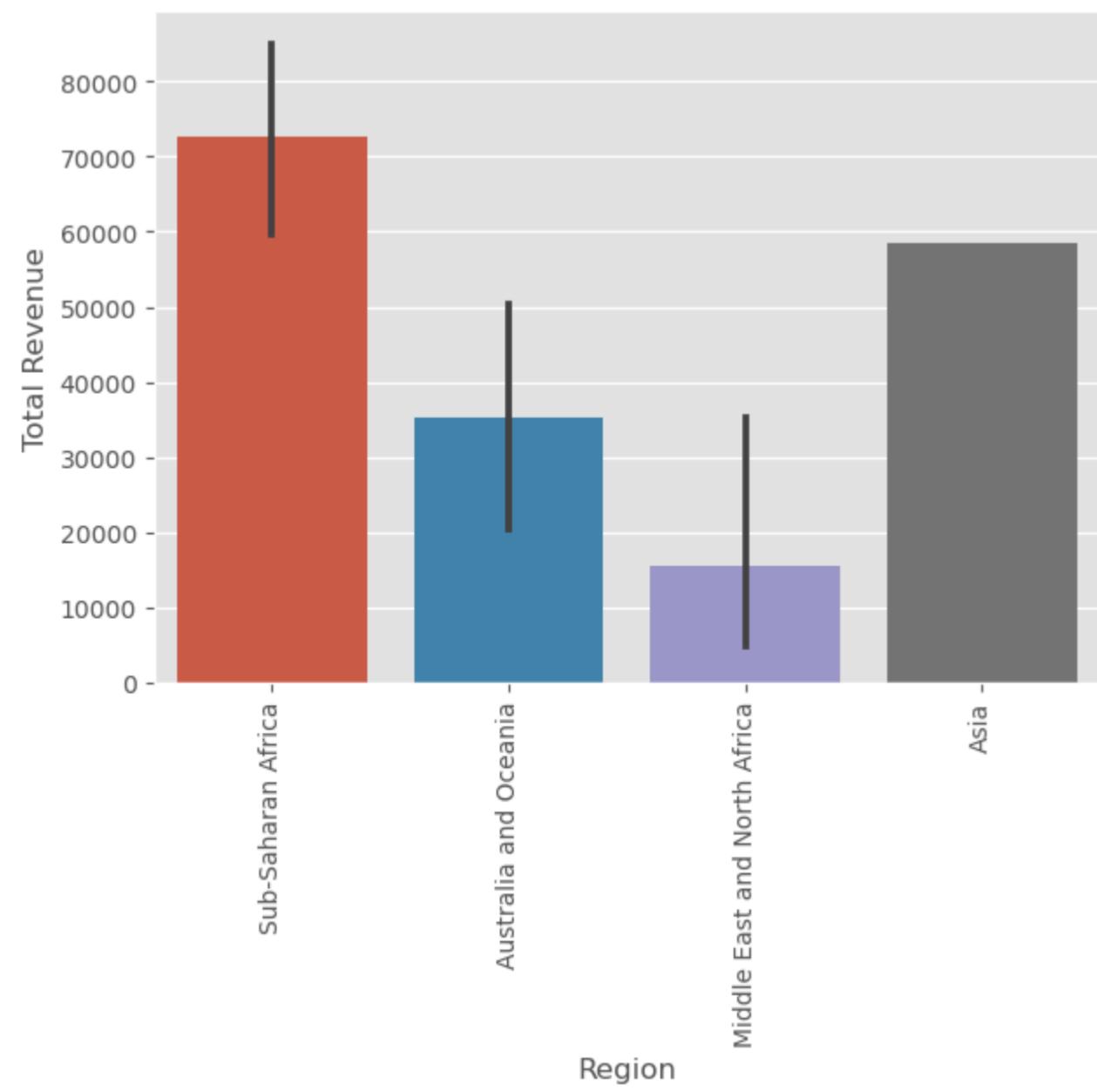
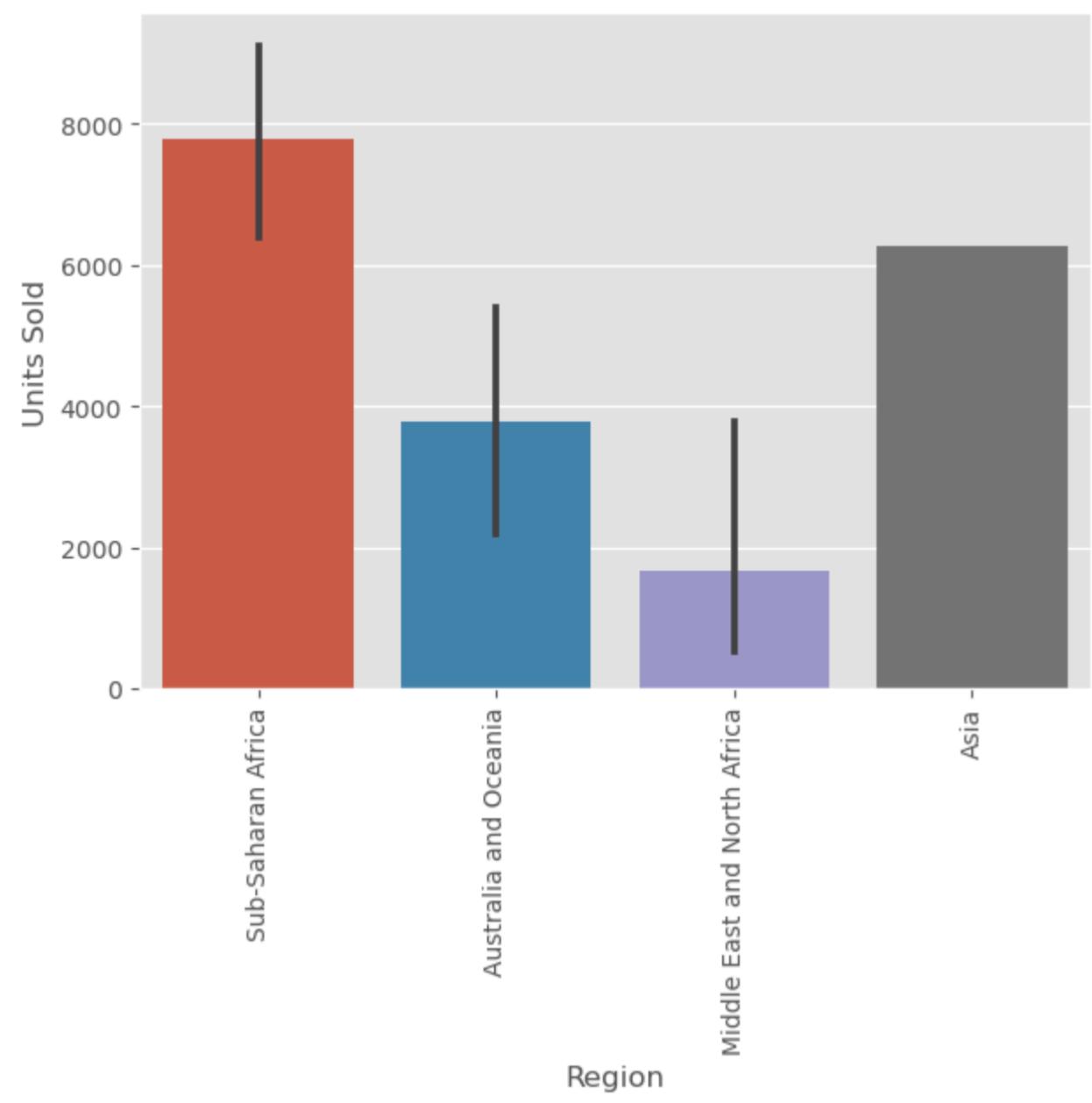
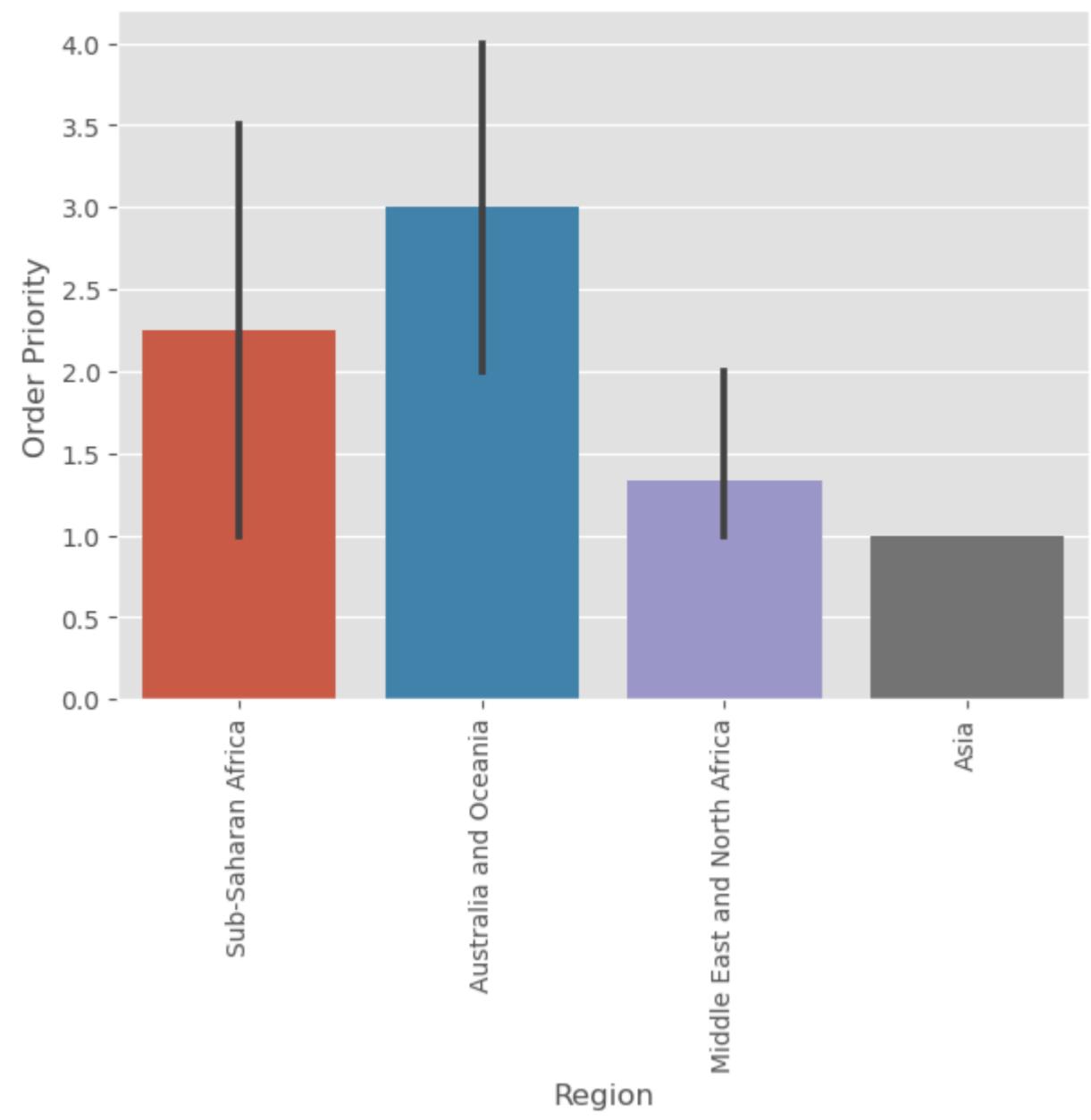
```
def plotter( X, Y, df):
    plt.figure(figsize=(7,5))

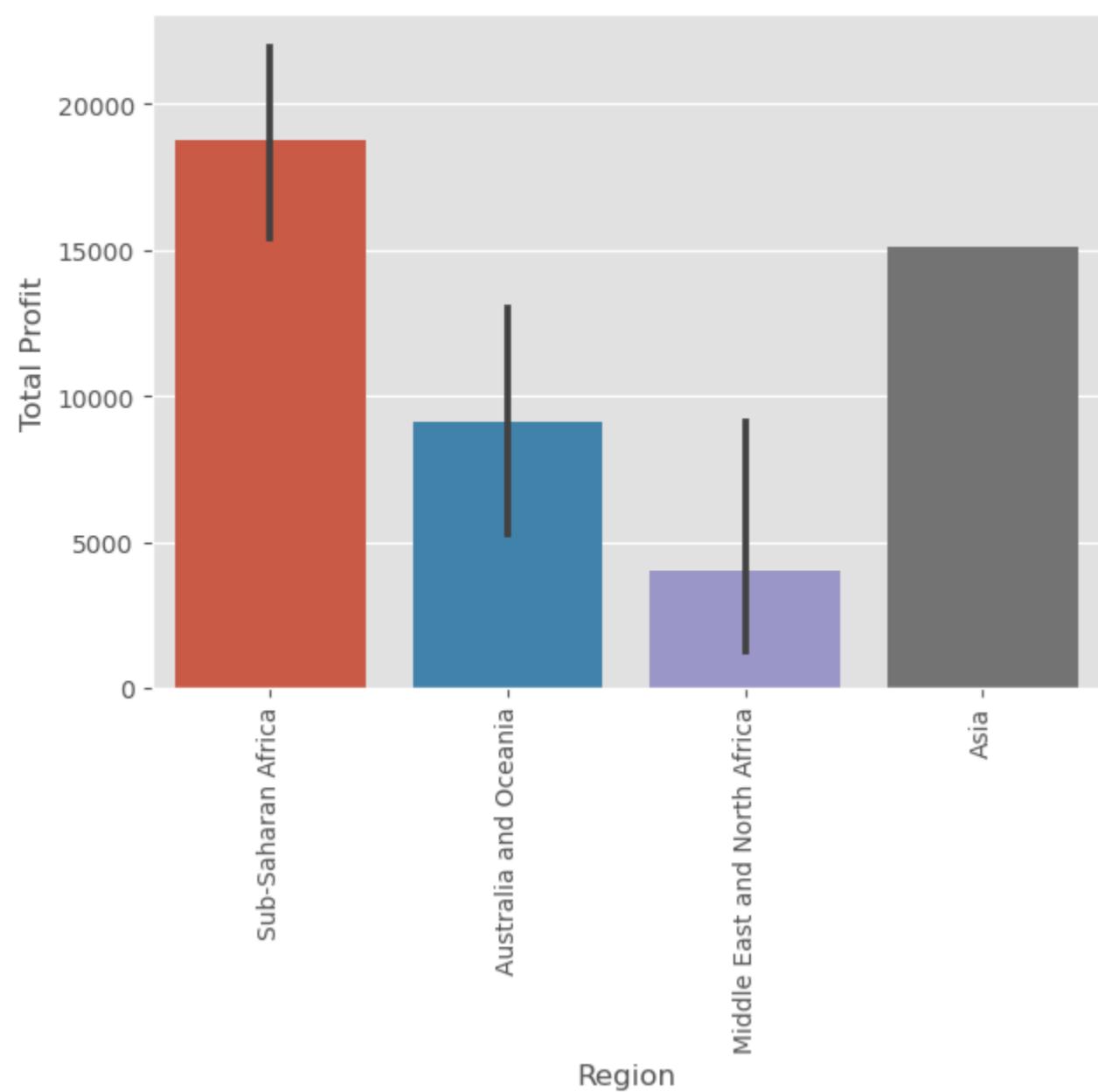
    sb.barplot(x=X, y=Y, data = Fruitdf)
    plt.xticks(rotation = 90)
    plt.show()

FruitList = ['Sales Channel', 'Order Priority', 'Units Sold',
            'Total Revenue', 'Total Profit']

for column in ColumnList:
    plotter('Region', column, Fruitdf)
```







```
In [ ]: 
In [ ]: 
In [92]: Caredf = AmaCopydf.loc[AmaCopydf['Item Type'] == 'Personal Care']
In [93]: Caredf
```

	Region	Country	Item Type	Sales Channel	Order Priority	Order Date	Order ID	Ship Date	Units Sold	Unit Price	Unit Cost	Total Revenue	Total Cost	Total Profit	ShipDate	OrderDate	orderCompTime
8	Sub-Saharan Africa	Republic of the Congo	Personal Care	1	2	7/14/2015	770463311	8/25/2015	6070	81.73	56.67	496101.10	343986.90	152114.20	2015-08-25	2015-07-14	42 days
14	Asia	Mongolia	Personal Care	1	3	2/19/2014	832401311	2/23/2014	4901	81.73	56.67	400558.73	277739.67	122819.06	2014-02-23	2014-02-19	4 days
24	Europe	Moldova	Personal Care	2	1	05-07-2016	740147912	05-10-2016	5070	81.73	56.67	414371.10	287316.90	127054.20	2016-05-10	2016-05-07	3 days
31	Sub-Saharan Africa	South Sudan	Personal Care	1	3	12/29/2013	406502997	1/28/2014	2125	81.73	56.67	173676.25	120423.75	53252.50	2014-01-28	2013-12-29	30 days
35	Central America and the Caribbean	Costa Rica	Personal Care	1	1	05-08-2017	456767165	5/21/2017	6409	81.73	56.67	523807.57	363198.03	160609.54	2017-05-21	2017-05-08	13 days
40	Sub-Saharan Africa	Niger	Personal Care	2	4	03-11-2017	699285638	3/28/2017	3015	81.73	56.67	246415.95	170860.05	75555.90	2017-03-28	2017-03-11	17 days
47	Europe	Switzerland	Personal Care	2	2	12/23/2010	617667090	1/31/2011	273	81.73	56.67	22312.29	15470.91	6841.38	2011-01-31	2010-12-23	39 days
66	Sub-Saharan Africa	Gabon	Personal Care	1	1	07-08-2012	228944623	07-09-2012	8656	81.73	56.67	707454.88	490535.52	216919.36	2012-07-09	2012-07-08	1 days
85	North America	Mexico	Personal Care	1	1	2/17/2012	430915820	3/20/2012	6422	81.73	56.67	524870.06	363934.74	160935.32	2012-03-20	2012-02-17	32 days
98	North America	Mexico	Personal Care	1	2	7/30/2015	559427106	08-08-2015	5767	81.73	56.67	471336.91	326815.89	144521.02	2015-08-08	2015-07-30	9 days

```
In [94]: Caredf.Country.value_counts()
Out[94]: Mexico      2
          Republic of the Congo  1
          Mongolia    1
          Moldova     1
          South Sudan  1
          Costa Rica   1
          Niger        1
          Switzerland  1
          Gabon        1
Name: Country, dtype: int64
```

```
In [95]: Caredf.Region.value_counts()
Out[95]: Sub-Saharan Africa      4
          Europe            2
          North America       2
          Asia               1
          Central America and the Caribbean 1
Name: Region, dtype: int64
```

```
In [96]: Caredf.loc[Caredf['orderCompTime'] == Caredf['orderCompTime'].max()]
Out[96]: 
   Region      Country Item Type Sales Channel Order Priority Order Date Order ID Ship Date Units Sold Unit Price Unit Cost Total Revenue Total Cost Total Profit ShipDate OrderDate orderCompTime
8 Sub-Saharan Africa Republic of the Congo Personal Care           1             2  7/14/2015  770463311  8/25/2015      6070     81.73      56.67  496101.1  343986.9  152114.2 2015-08-25 2015-07-14      42 days
```

```
In [97]: Caredf.loc[Caredf['orderCompTime'] >= '20days']
```

Out[97]:	Region	Country	Item Type	Sales Channel	Order Priority	Order Date	Order ID	Ship Date	Units Sold	Unit Price	Unit Cost	Total Revenue	Total Cost	Total Profit	ShipDate	OrderDate	orderCompTime
8	Sub-Saharan Africa	Republic of the Congo	Personal Care	1	2	7/14/2015	770463311	8/25/2015	6070	81.73	56.67	496101.10	343986.90	152114.20	2015-08-25	2015-07-14	42 days
31	Sub-Saharan Africa	South Sudan	Personal Care	1	3	12/29/2013	406502997	1/28/2014	2125	81.73	56.67	173676.25	120423.75	53252.50	2014-01-28	2013-12-29	30 days
47	Europe	Switzerland	Personal Care	2	2	12/23/2010	617667090	1/31/2011	273	81.73	56.67	22312.29	15470.91	6841.38	2011-01-31	2010-12-23	39 days
85	North America	Mexico	Personal Care	1	1	2/17/2012	430915820	3/20/2012	6422	81.73	56.67	524870.06	363934.74	160935.32	2012-03-20	2012-02-17	32 days

In [98]: Caredf.loc[Caredf['orderCompTime'] == Caredf['orderCompTime'].min()]

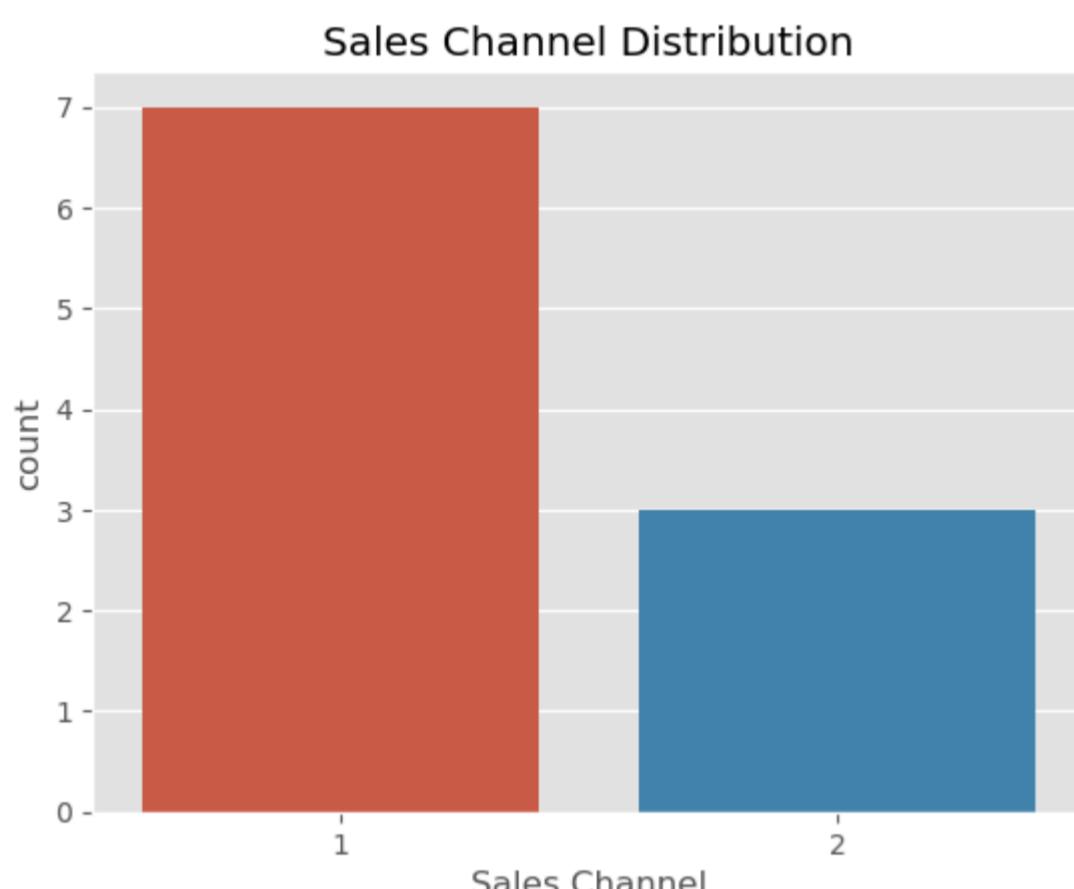
Out[98]:	Region	Country	Item Type	Sales Channel	Order Priority	Order Date	Order ID	Ship Date	Units Sold	Unit Price	Unit Cost	Total Revenue	Total Cost	Total Profit	ShipDate	OrderDate	orderCompTime
66	Sub-Saharan Africa	Gabon	Personal Care	1	1	07-08-2012	228944623	07-09-2012	8656	81.73	56.67	707454.88	490535.52	216919.36	2012-07-09	2012-07-08	1 days

In [99]: Caredf.loc[Caredf['orderCompTime'] <= '10days']

Out[99]:	Region	Country	Item Type	Sales Channel	Order Priority	Order Date	Order ID	Ship Date	Units Sold	Unit Price	Unit Cost	Total Revenue	Total Cost	Total Profit	ShipDate	OrderDate	orderCompTime
14	Asia	Mongolia	Personal Care	1	3	2/19/2014	832401311	2/23/2014	4901	81.73	56.67	400558.73	277739.67	122819.06	2014-02-23	2014-02-19	4 days
24	Europe	Moldova	Personal Care	2	1	05-07-2016	740147912	05-10-2016	5070	81.73	56.67	414371.10	287316.90	127054.20	2016-05-10	2016-05-07	3 days
66	Sub-Saharan Africa	Gabon	Personal Care	1	1	07-08-2012	228944623	07-09-2012	8656	81.73	56.67	707454.88	490535.52	216919.36	2012-07-09	2012-07-08	1 days
98	North America	Mexico	Personal Care	1	2	7/30/2015	559427106	08-08-2015	5767	81.73	56.67	471336.91	326815.89	144521.02	2015-08-08	2015-07-30	9 days

In [234...]: sb.countplot(data=Caredf, x="Sales Channel")
plt.figure(figsize=(20, 40))
plt.title('Sales Channel Distribution')

Out[234...]: Text(0.5, 1.0, 'Sales Channel Distribution')

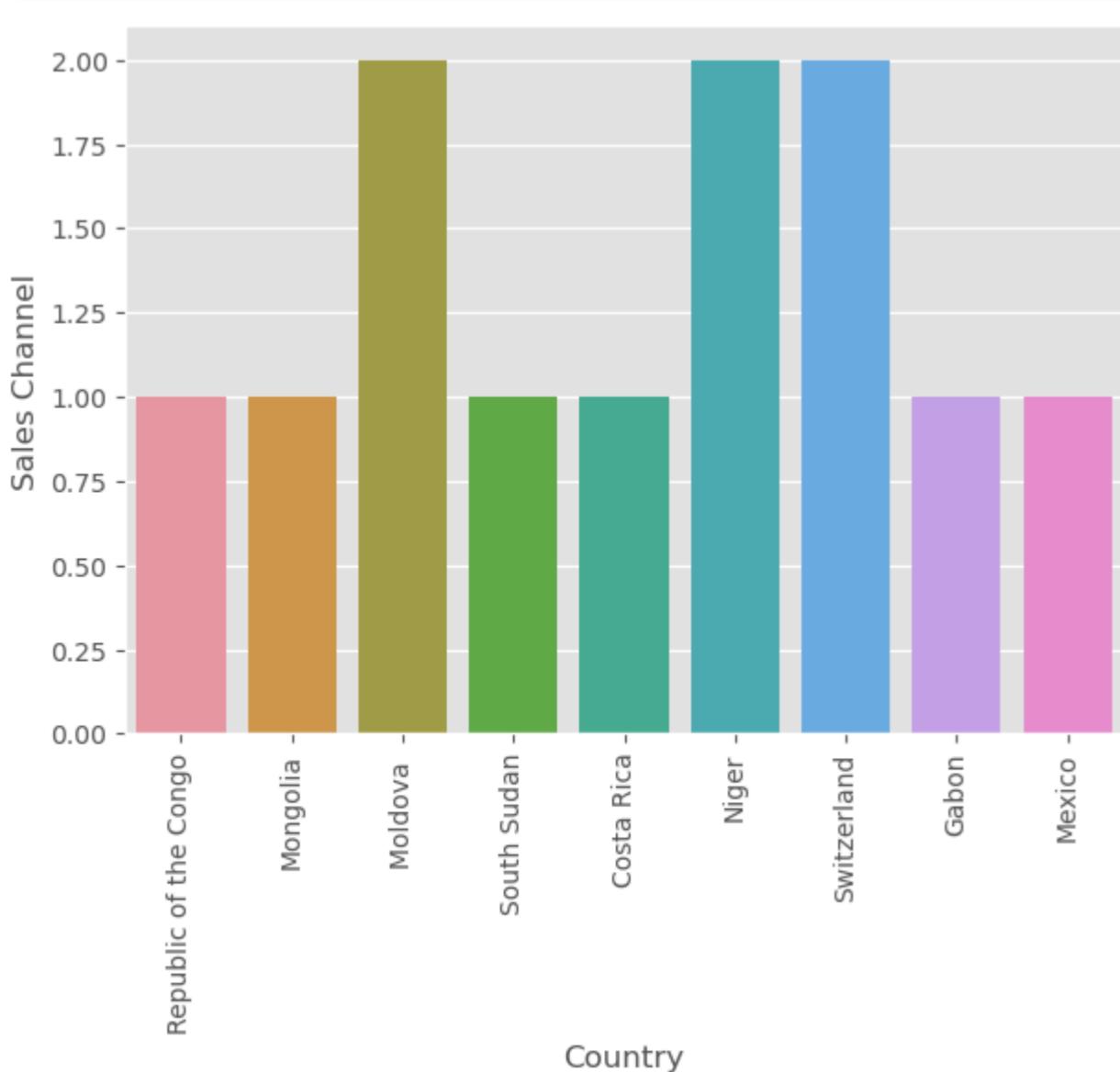


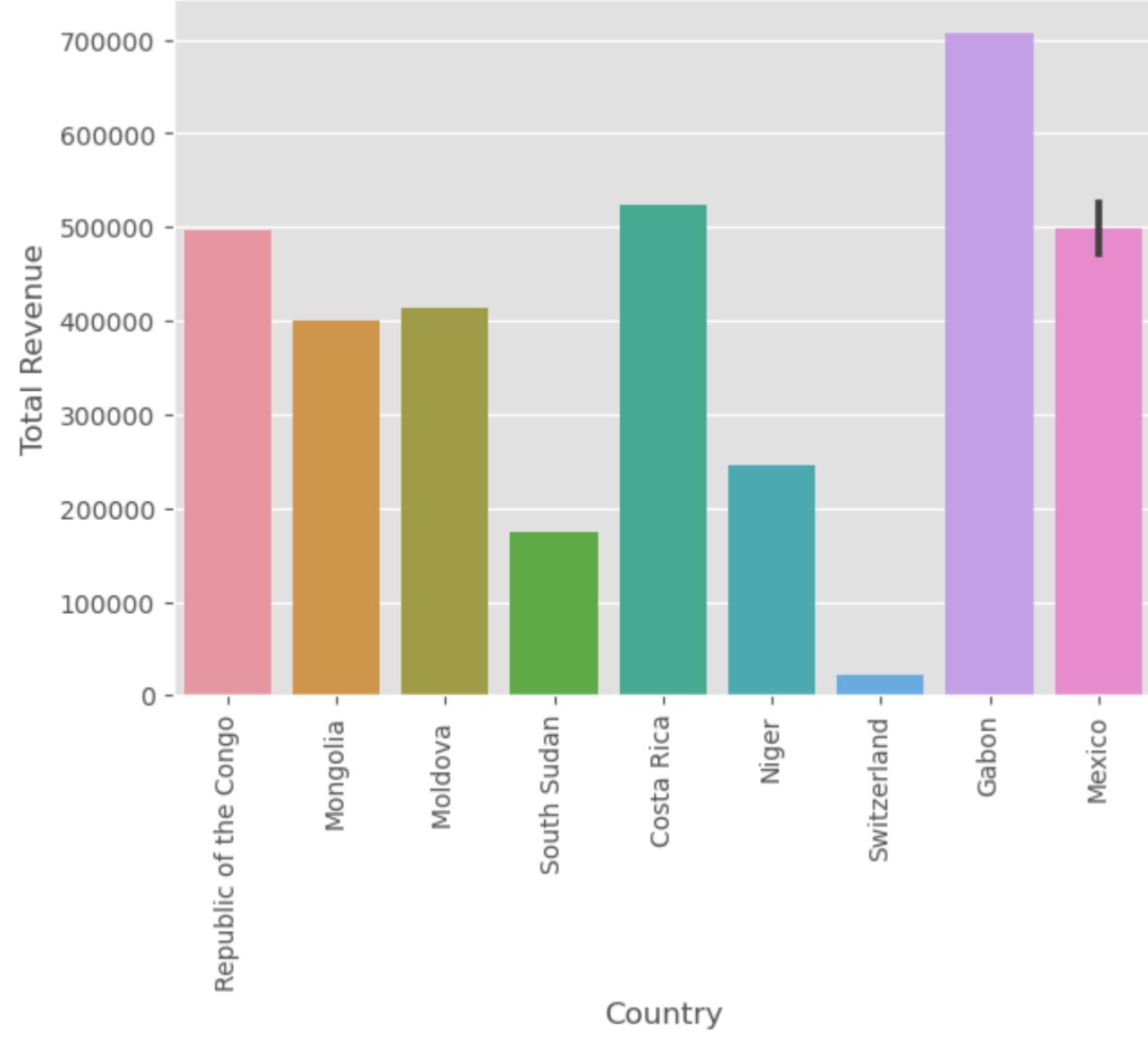
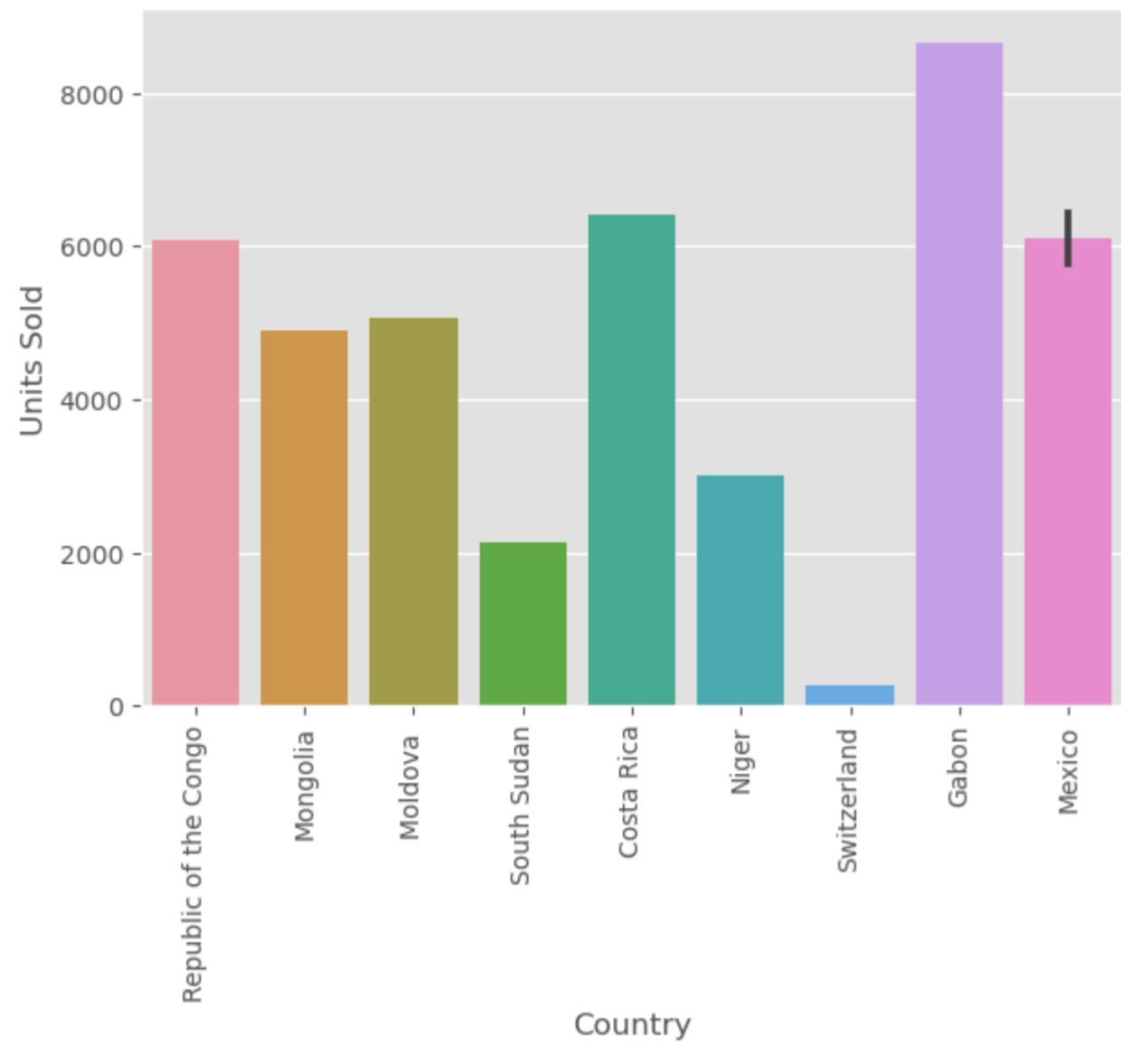
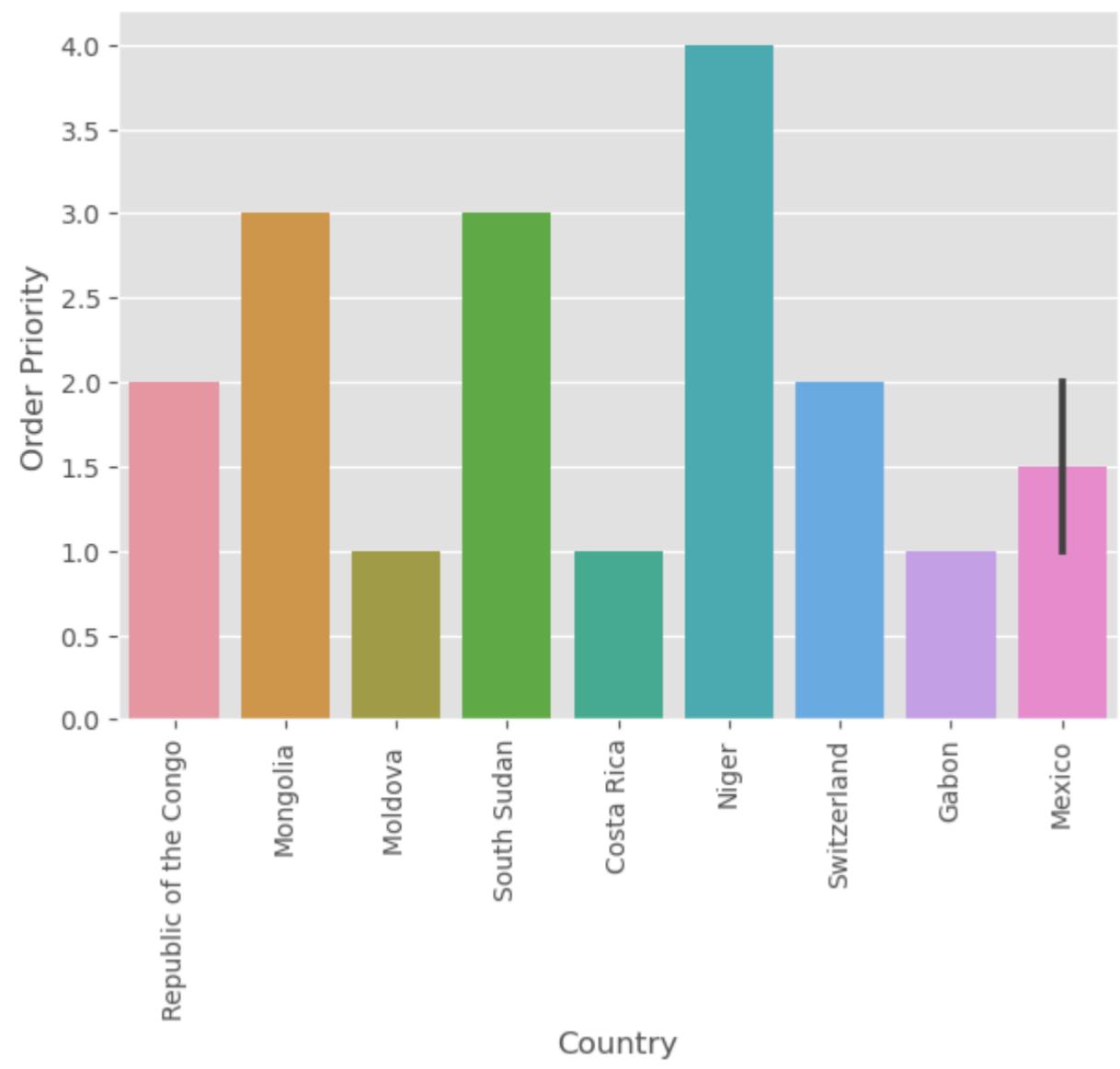
```
In [233...]: def plotter(X, Y, df):
    plt.figure(figsize=(7,5))

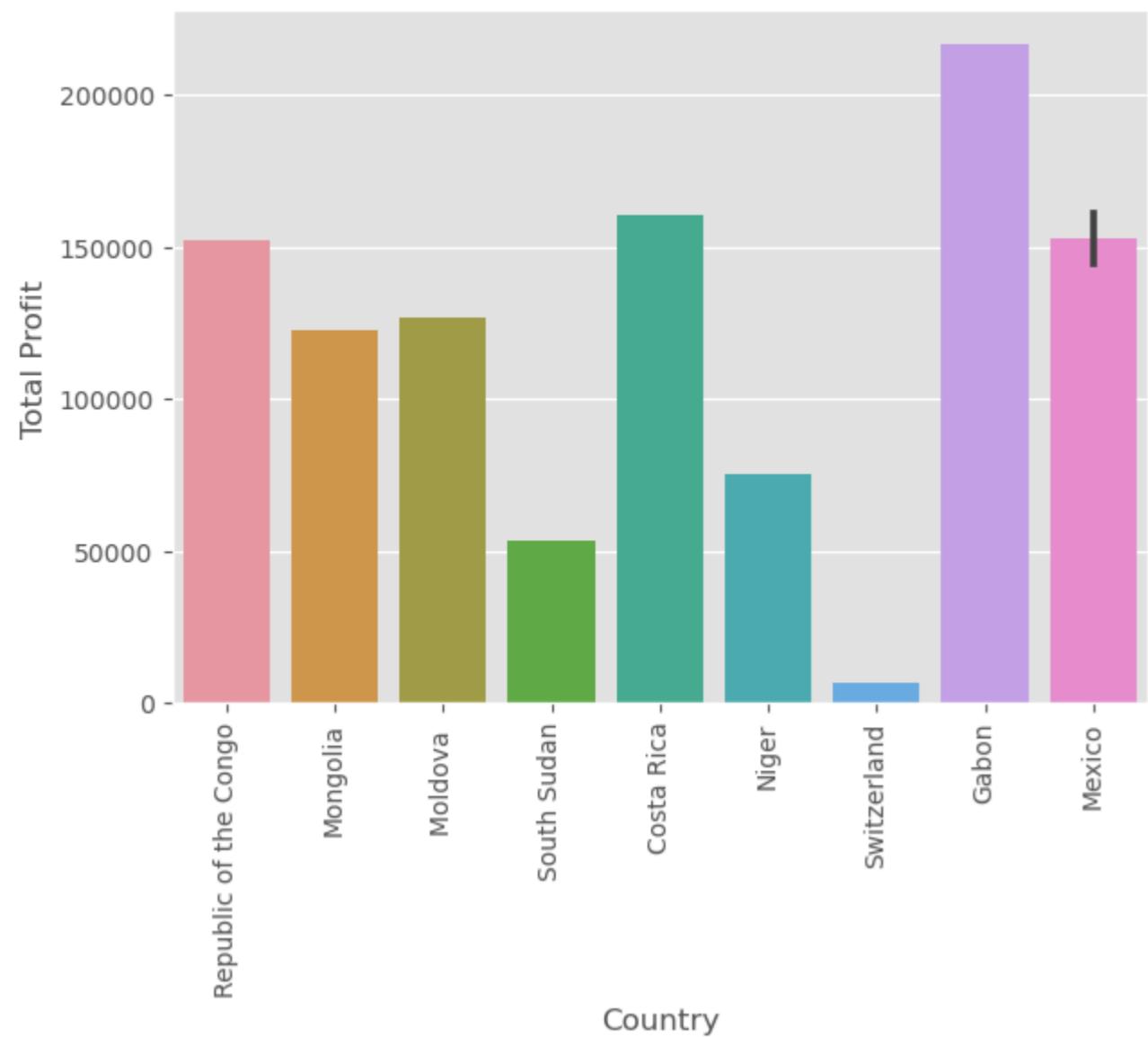
    sb.barplot(x=X, y=Y, data = Caredf)
    plt.xticks(rotation = 90)
    plt.show()

FruitList = ['Sales Channel', 'Order Priority', 'Units Sold',
            'Total Revenue', 'Total Profit']

for column in ColumnList:
    plotter('Country', column, Caredf)
```





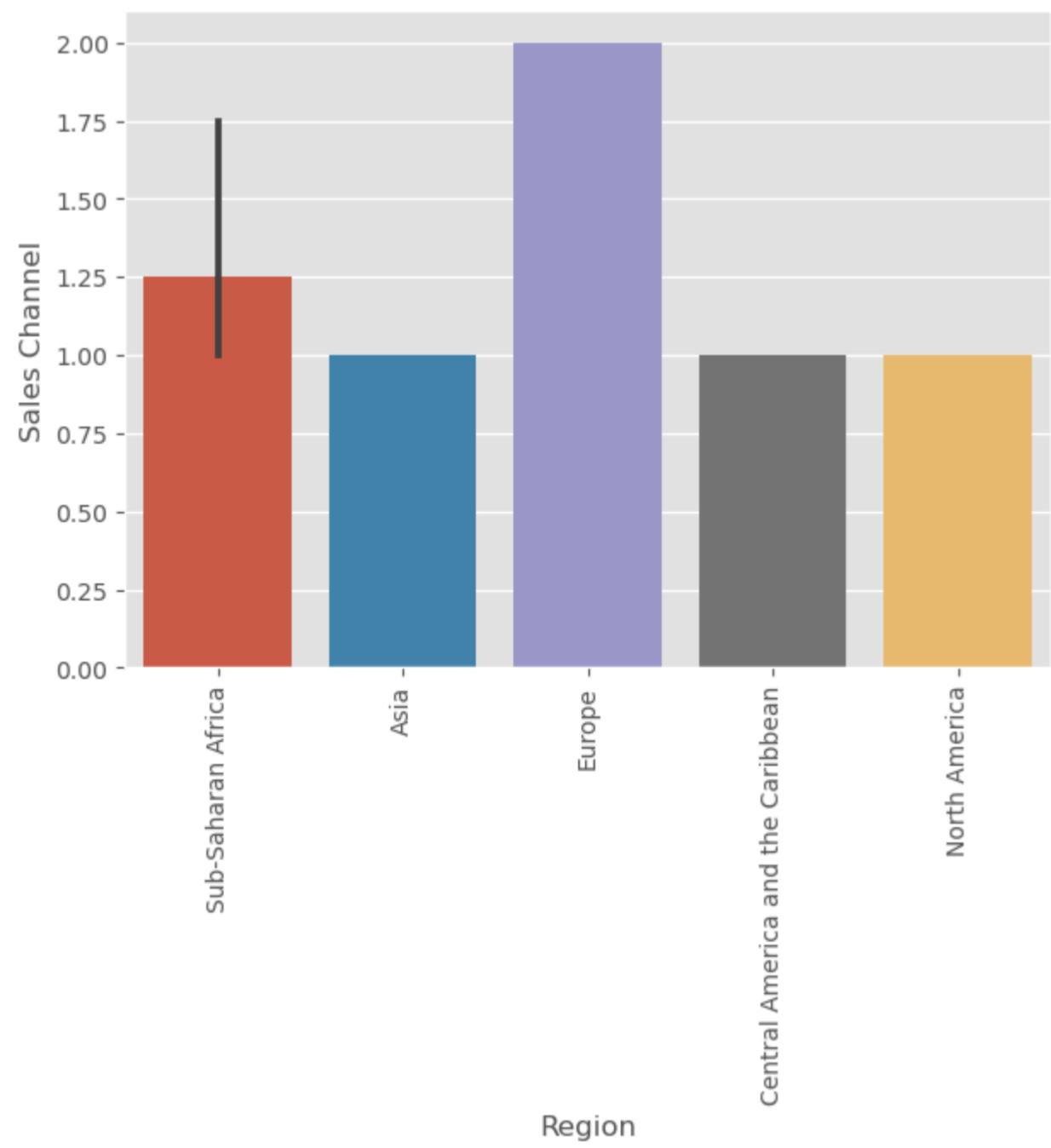


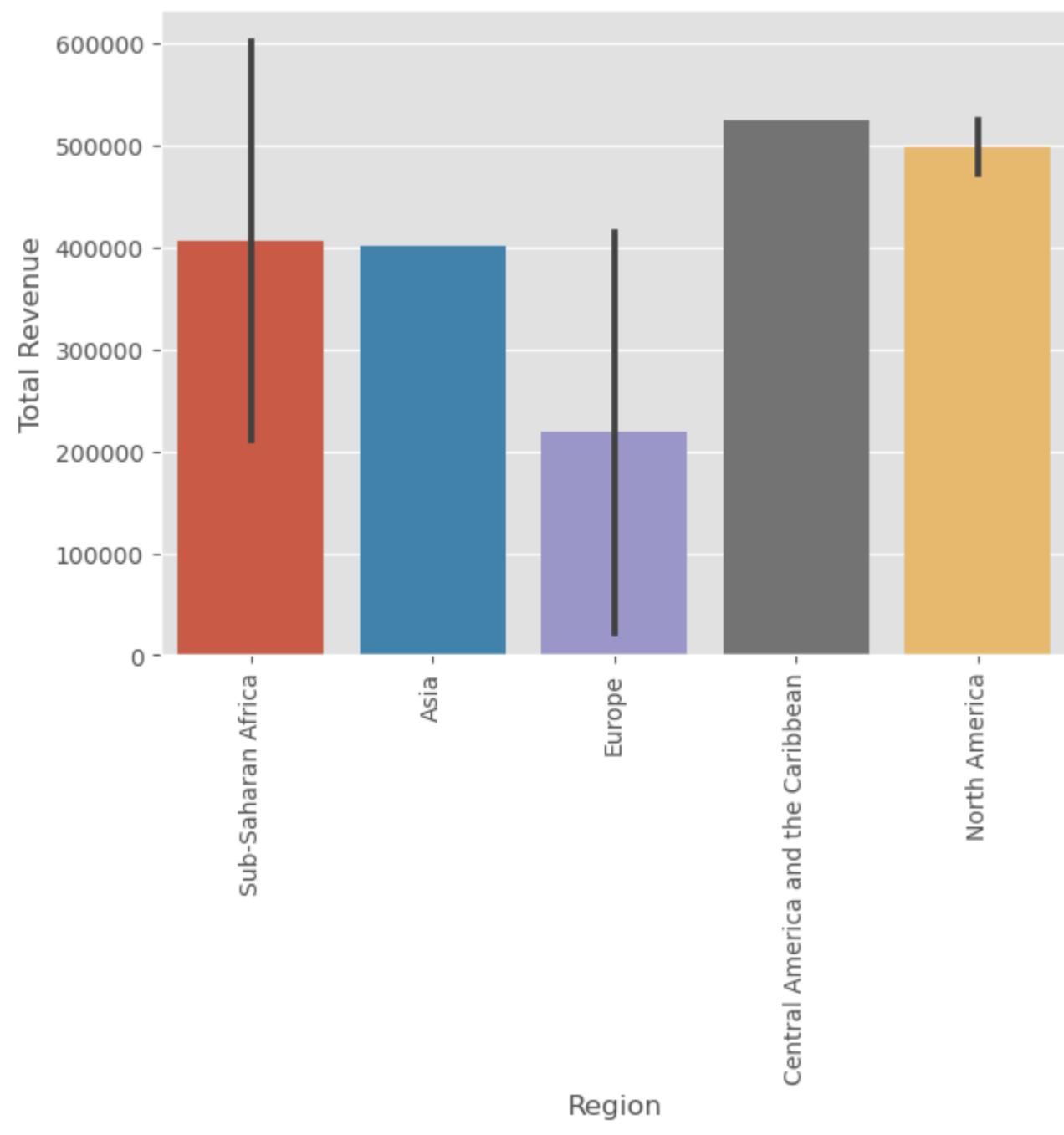
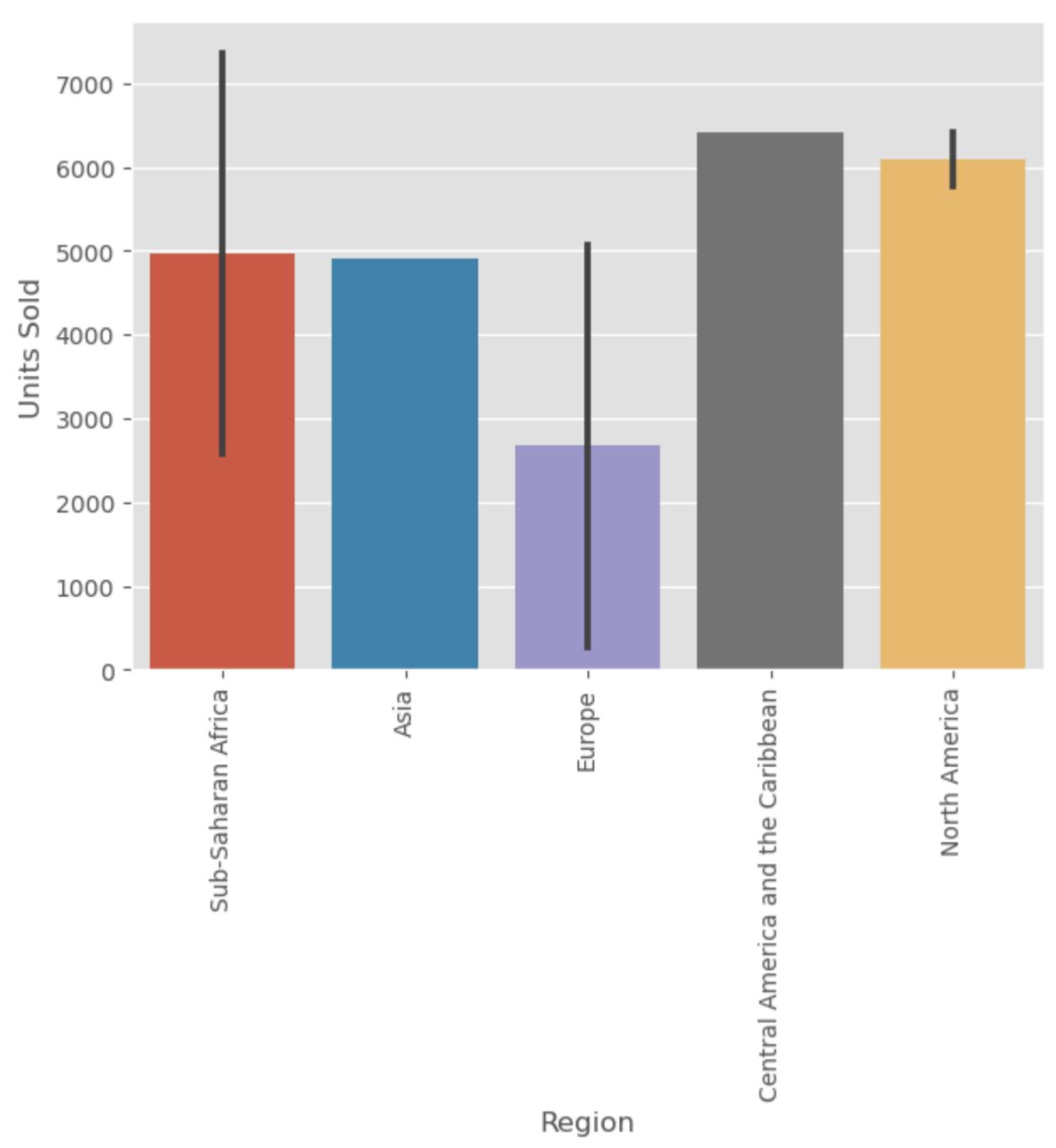
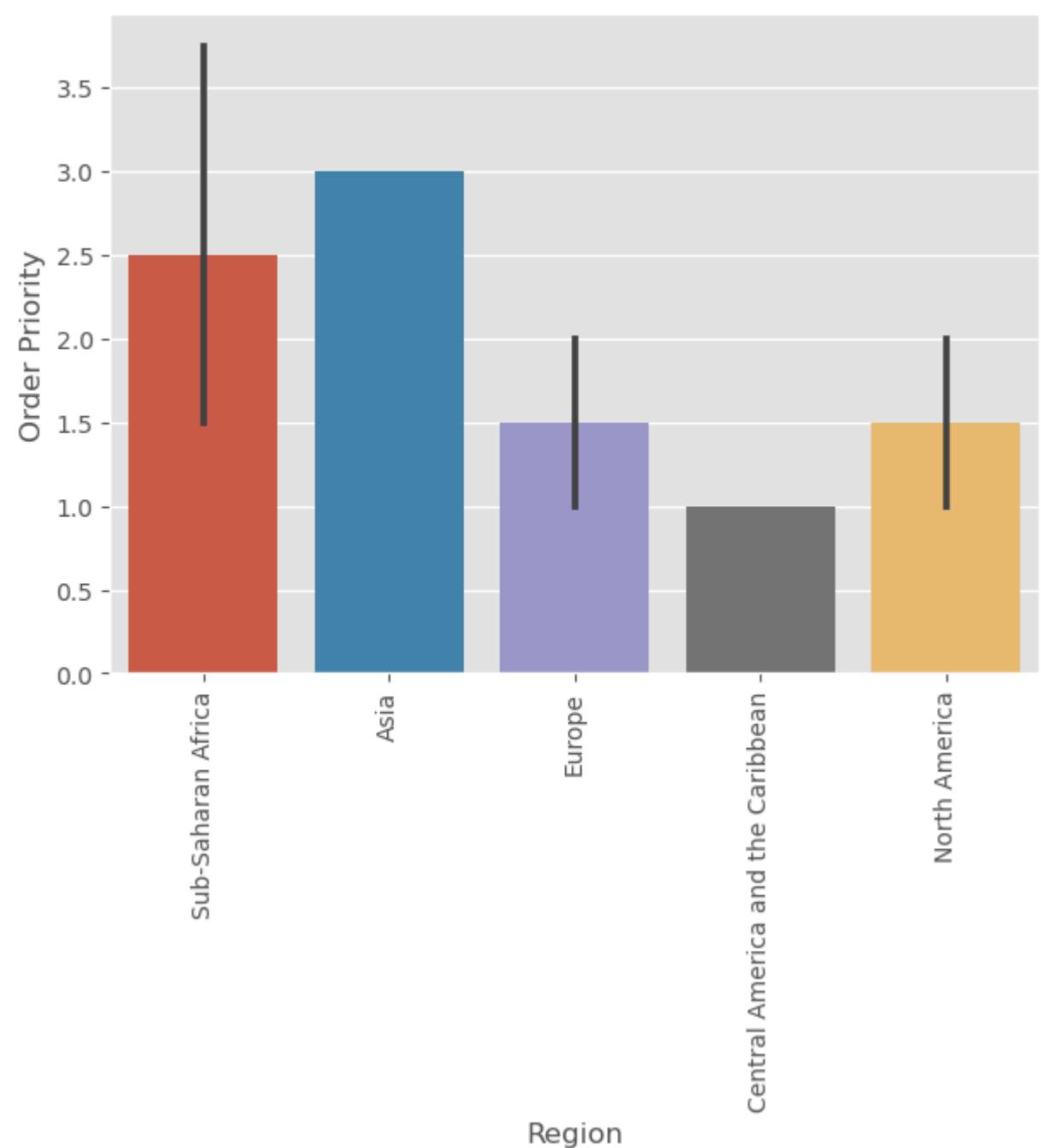
```
In [232]: def plotter( X, Y, df):
    plt.figure(figsize=(7,5))

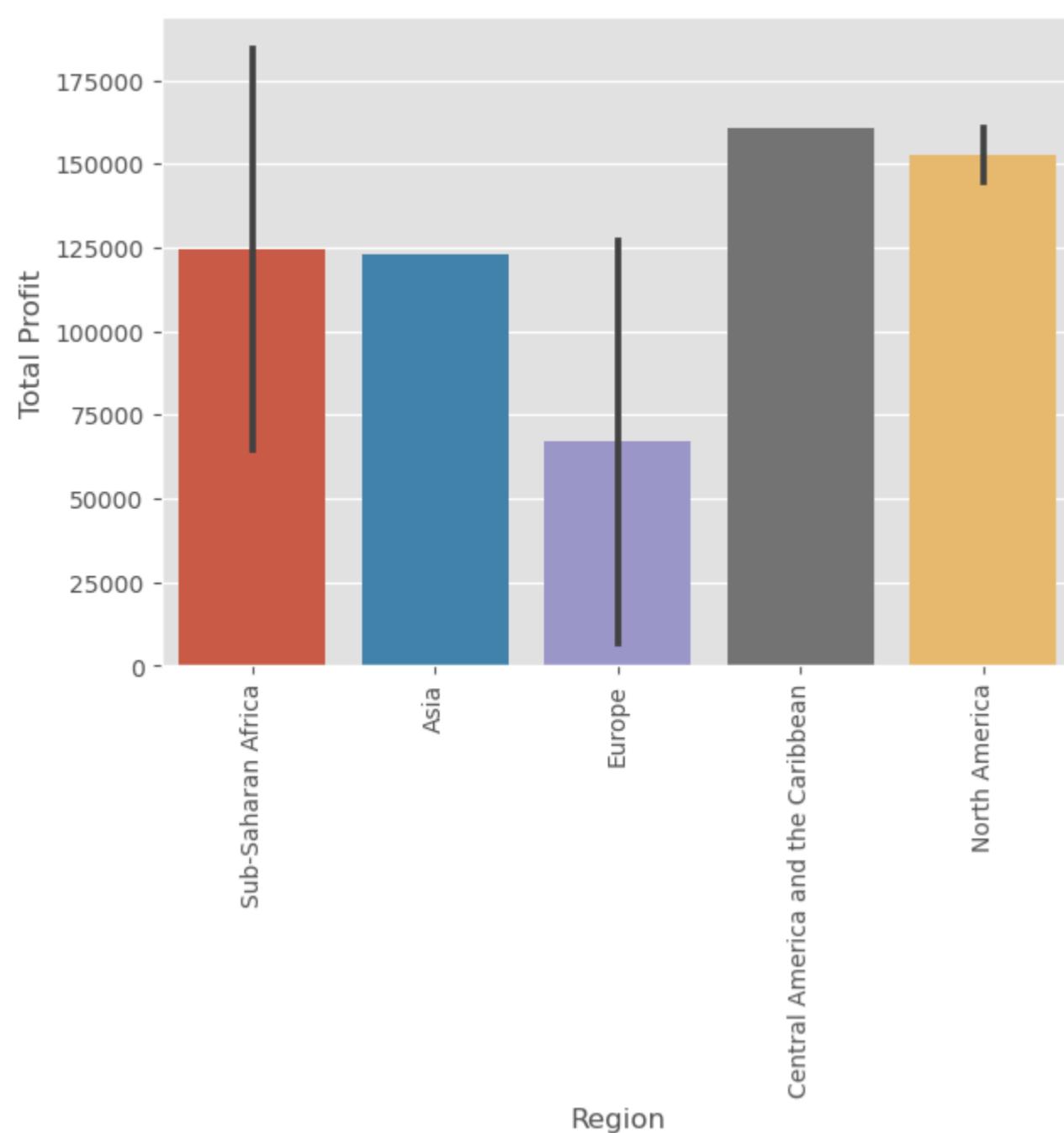
    sb.barplot(x=X, y=Y, data = Caredf)
    plt.xticks(rotation = 90)
    plt.show()

FruitList = ['Sales Channel', 'Order Priority', 'Units Sold',
             'Total Revenue', 'Total Profit']

for column in ColumnList:
    plotter('Region', column, Caredf)
```







```
In [ ]:
```

```
In [ ]:
```

```
In [103...]: Bevdf = AmaCopydf.loc[AmaCopydf['Item Type'] == 'Beverages']
```

```
In [104...]: Bevdf
```

```
Out[104...]:
```

	Region	Country	Item Type	Sales Channel	Order Priority	Order Date	Order ID	Ship Date	Units Sold	Unit Price	Unit Cost	Total Revenue	Total Cost	Total Profit	ShipDate	OrderDate	orderCompTime
17	Sub-Saharan Africa	Cameroon	Beverages	1	3	04-01-2015	519820964	4/18/2015	5430	47.45	31.79	257653.50	172619.70	85033.80	2015-04-18	2015-04-01	17 days
28	Europe	Norway	Beverages	1	3	7/18/2014	435608613	7/30/2014	5124	47.45	31.79	243133.80	162891.96	80241.84	2014-07-30	2014-07-18	12 days
72	Sub-Saharan Africa	Democratic Republic of the Congo	Beverages	2	3	5/26/2011	585920464	7/15/2011	5741	47.45	31.79	272410.45	182506.39	89904.06	2011-07-15	2011-05-26	50 days
76	Australia and Oceania	Federated States of Micronesia	Beverages	2	3	10/28/2014	217221009	11/15/2014	9379	47.45	31.79	445033.55	298158.41	146875.14	2014-11-15	2014-10-28	18 days
86	Sub-Saharan Africa	Sao Tome and Principe	Beverages	1	3	1/16/2011	180283772	1/21/2011	8829	47.45	31.79	418936.05	280673.91	138262.14	2011-01-21	2011-01-16	5 days
89	Europe	Slovenia	Beverages	1	3	10/23/2016	345718562	11/25/2016	4660	47.45	31.79	221117.00	148141.40	72975.60	2016-11-25	2016-10-23	33 days
91	Australia and Oceania	Australia	Beverages	1	4	07-07-2014	240470397	07-11-2014	9389	47.45	31.79	445508.05	298476.31	147031.74	2014-07-11	2014-07-07	4 days
94	Central America and the Caribbean	Nicaragua	Beverages	1	3	02-08-2011	963392674	3/21/2011	8156	47.45	31.79	387002.20	259279.24	127722.96	2011-03-21	2011-02-08	41 days

```
In [105...]: Bevdf.Country.value_counts()
```

```
Out[105...]:
```

Country	Count
Cameroon	1
Norway	1
Democratic Republic of the Congo	1
Federated States of Micronesia	1
Sao Tome and Principe	1
Slovenia	1
Australia	1
Nicaragua	1

```
Name: Country, dtype: int64
```

```
In [106...]: Bevdf.Region.value_counts()
```

```
Out[106...]:
```

Region	Count
Sub-Saharan Africa	3
Europe	2
Australia and Oceania	2
Central America and the Caribbean	1

```
Name: Region, dtype: int64
```

```
In [107...]: Bevdf.loc[Bevdf['orderCompTime'] == Bevdf['orderCompTime'].max()]
```

```
Out[107...]:
```

	Region	Country	Item Type	Sales Channel	Order Priority	Order Date	Order ID	Ship Date	Units Sold	Unit Price	Unit Cost	Total Revenue	Total Cost	Total Profit	ShipDate	OrderDate	orderCompTime
72	Sub-Saharan Africa	Democratic Republic of the Congo	Beverages	2	3	5/26/2011	585920464	7/15/2011	5741	47.45	31.79	272410.45	182506.39	89904.06	2011-07-15	2011-05-26	50 days

```
In [108...]: Bevdf.loc[Bevdf['orderCompTime'] >= '20days']
```

```
Out[108...]:
```

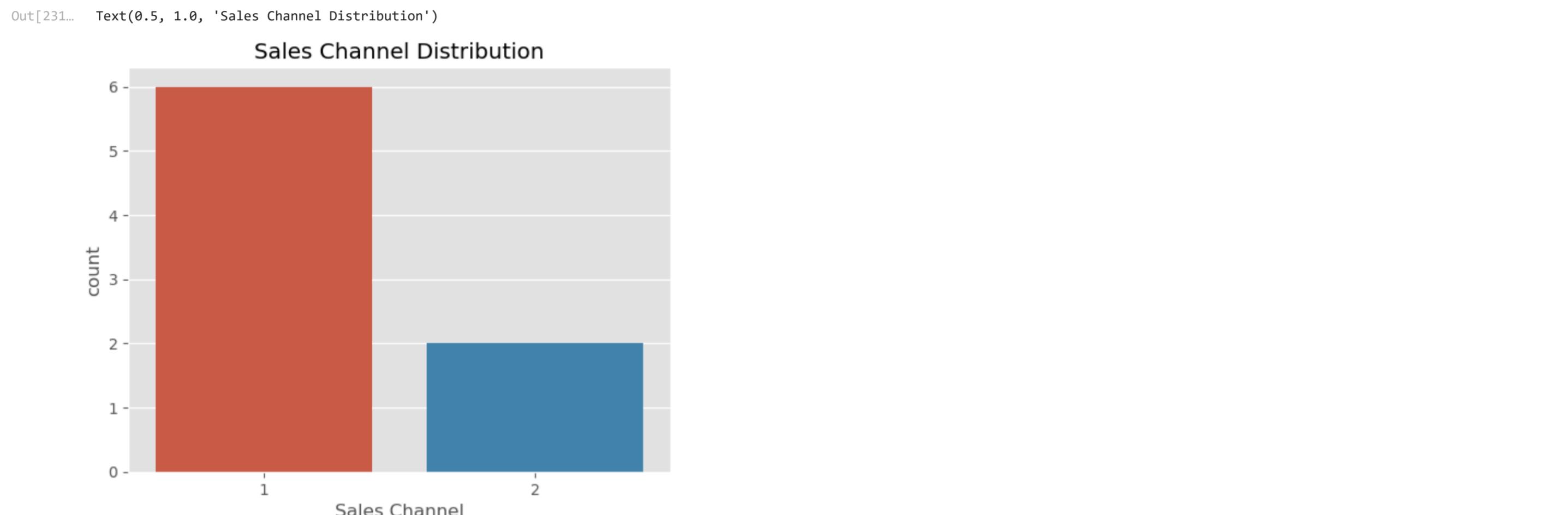
	Region	Country	Item Type	Sales Channel	Order Priority	Order Date	Order ID	Ship Date	Units Sold	Unit Price	Unit Cost	Total Revenue	Total Cost	Total Profit	ShipDate	OrderDate	orderCompTime
72	Sub-Saharan Africa	Democratic Republic of the Congo	Beverages	2	3	5/26/2011	585920464	7/15/2011	5741	47.45	31.79	272410.45	182506.39	89904.06	2011-07-15	2011-05-26	50 days
89	Europe	Slovenia	Beverages	1	3	10/23/2016	345718562	11/25/2016	4660	47.45	31.79	221117.00	148141.40	72975.60	2016-11-25	2016-10-23	33 days
94	Central America and the Caribbean	Nicaragua	Beverages	1	3	02-08-2011	963392674	3/21/2011	8156	47.45	31.79	387002.20	259279.24	127722.96	2011-03-21	2011-02-08	41 days

```
In [109...]: Bevdf.loc[Bevdf['orderCompTime'] == Bevdf['orderCompTime'].min()]
```

Out[109...]	Region	Country	Item Type	Sales Channel	Order Priority	Order Date	Order ID	Ship Date	Units Sold	Unit Price	Unit Cost	Total Revenue	Total Cost	Total Profit	ShipDate	OrderDate	orderCompTime
91	Australia and Oceania	Australia	Beverages	1	4	07-07-2014	240470397	07-11-2014	9389	47.45	31.79	445508.05	298476.31	147031.74	2014-07-11	2014-07-07	4 days

In [110...]	Region	Country	Item Type	Sales Channel	Order Priority	Order Date	Order ID	Ship Date	Units Sold	Unit Price	Unit Cost	Total Revenue	Total Cost	Total Profit	ShipDate	OrderDate	orderCompTime
17	Sub-Saharan Africa	Cameroon	Beverages	1	3	04-01-2015	519820964	4/18/2015	5430	47.45	31.79	257653.50	172619.70	85033.80	2015-04-18	2015-04-01	17 days
28	Europe	Norway	Beverages	1	3	7/18/2014	435608613	7/30/2014	5124	47.45	31.79	243133.80	162891.96	80241.84	2014-07-30	2014-07-18	12 days
72	Sub-Saharan Africa	Democratic Republic of the Congo	Beverages	2	3	5/26/2011	585920464	7/15/2011	5741	47.45	31.79	272410.45	182506.39	89904.06	2011-07-15	2011-05-26	50 days
76	Australia and Oceania	Federated States of Micronesia	Beverages	2	3	10/28/2014	217221009	11/15/2014	9379	47.45	31.79	445033.55	298158.41	146875.14	2014-11-15	2014-10-28	18 days
89	Europe	Slovenia	Beverages	1	3	10/23/2016	345718562	11/25/2016	4660	47.45	31.79	221117.00	148141.40	72975.60	2016-11-25	2016-10-23	33 days
94	Central America and the Caribbean	Nicaragua	Beverages	1	3	02-08-2011	963392674	3/21/2011	8156	47.45	31.79	387002.20	259279.24	127722.96	2011-03-21	2011-02-08	41 days

```
In [231...]: sb.countplot(data=Bevdf, x="Sales Channel")
plt.figure(figsize=(20, 40))
plt.title('Sales Channel Distribution')
```

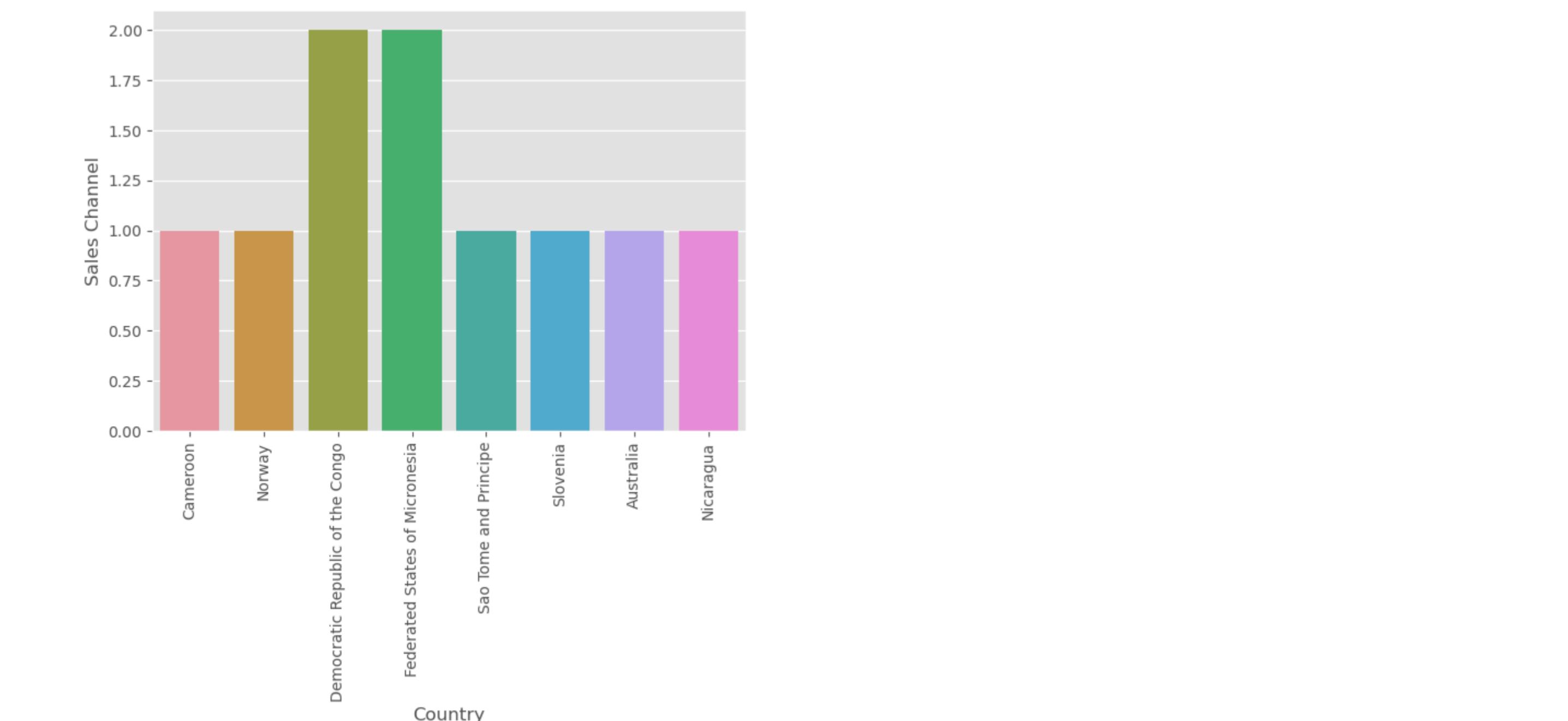


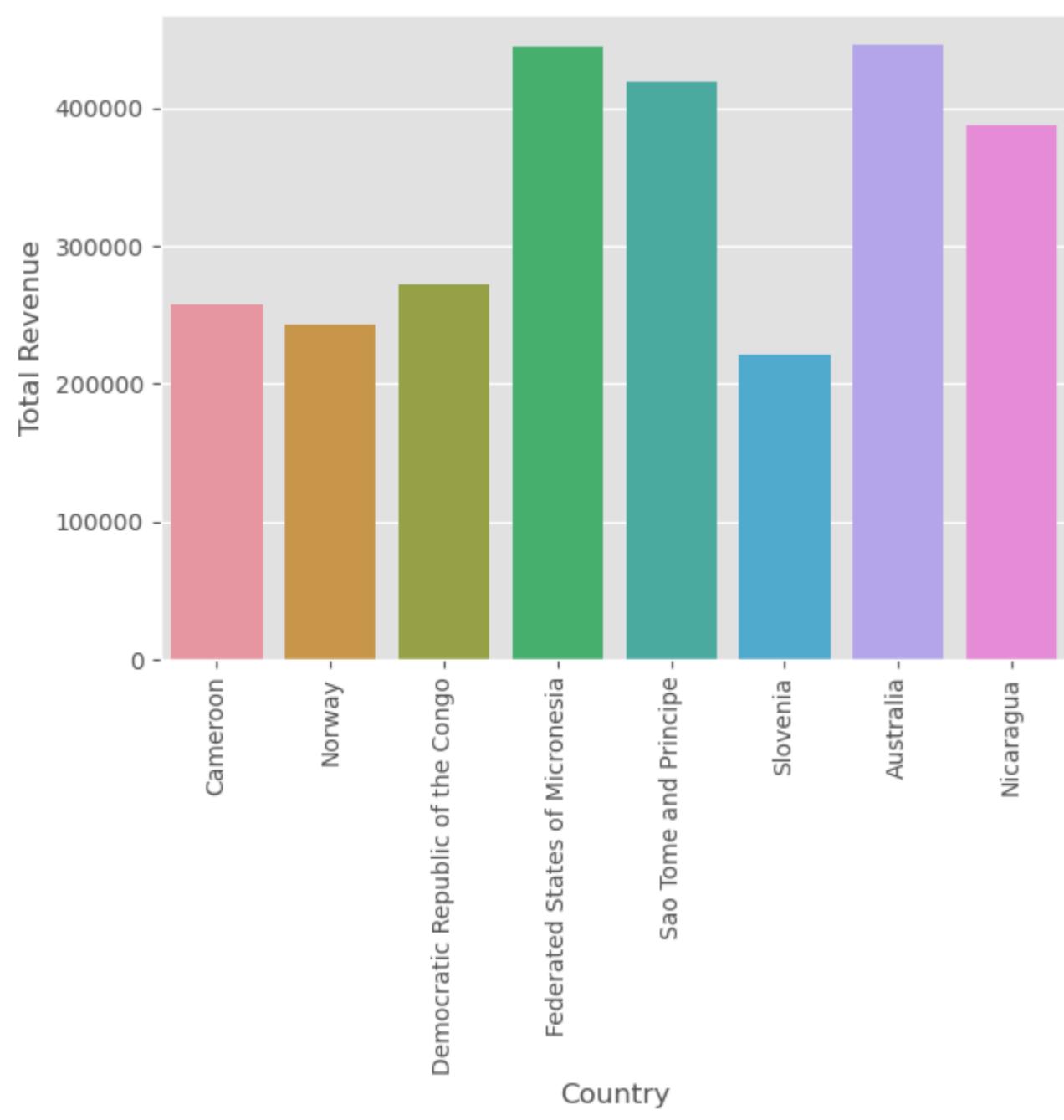
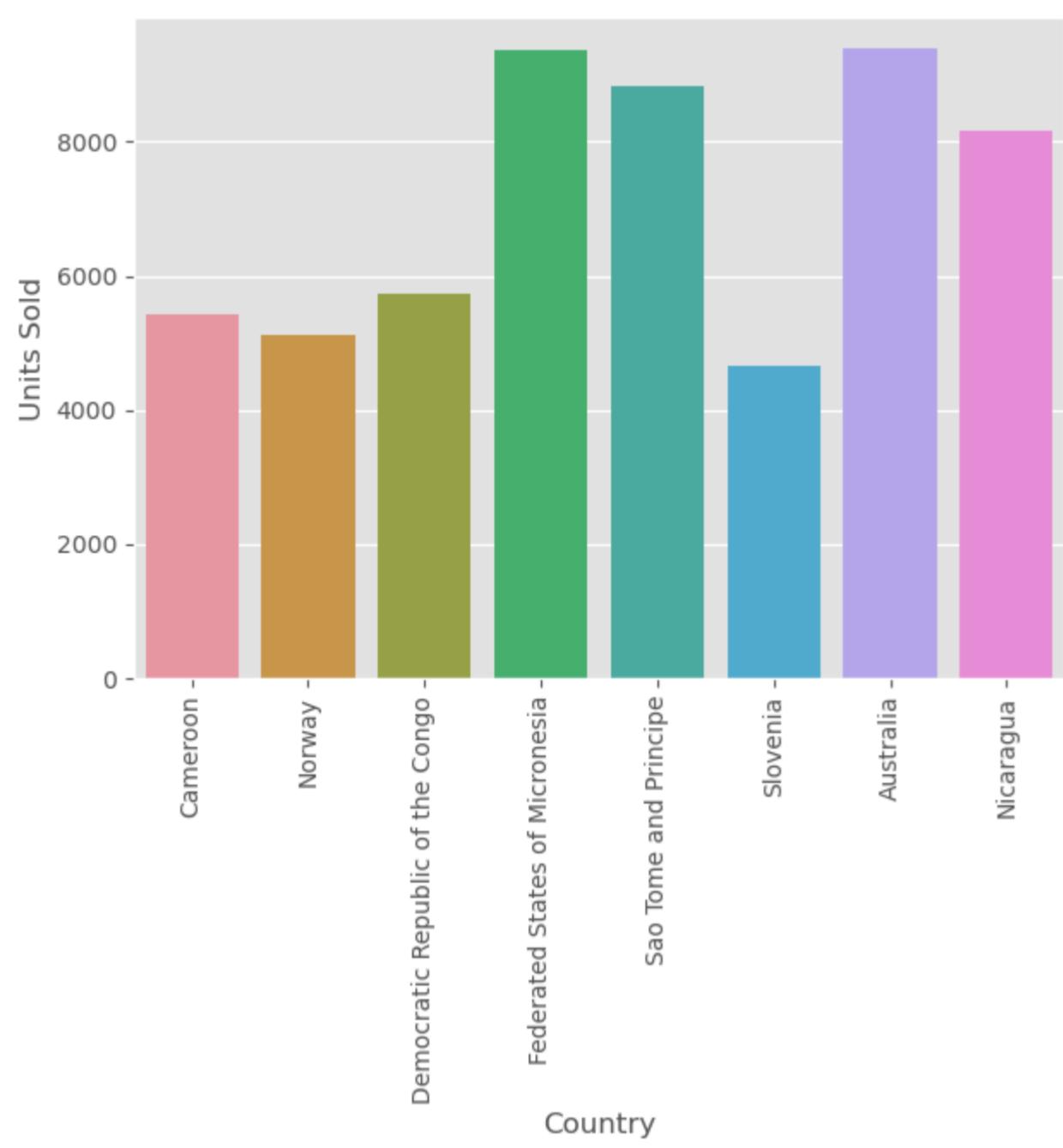
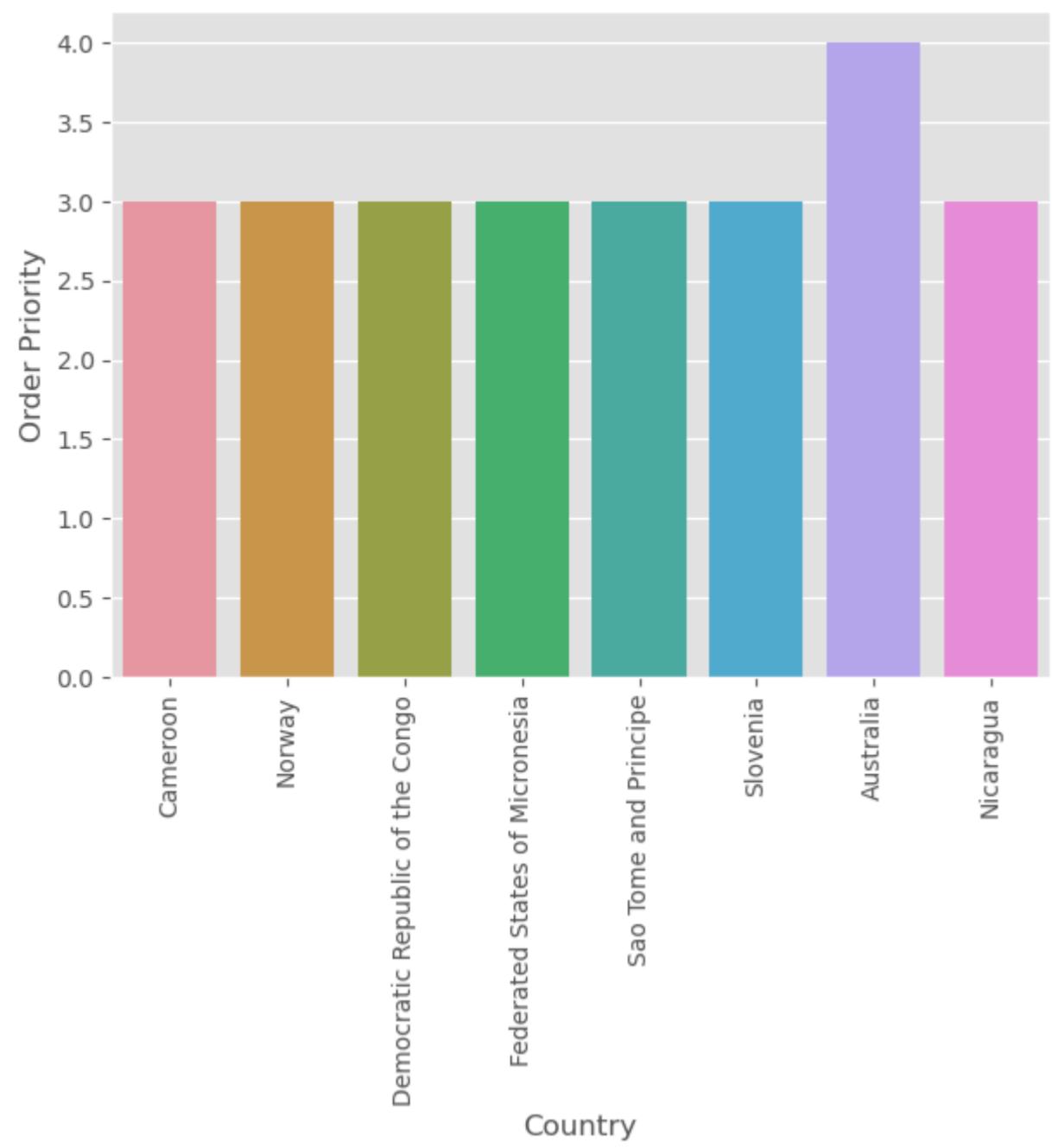
```
In [230...]: def plotter(X, Y, df):
    plt.figure(figsize=(7,5))

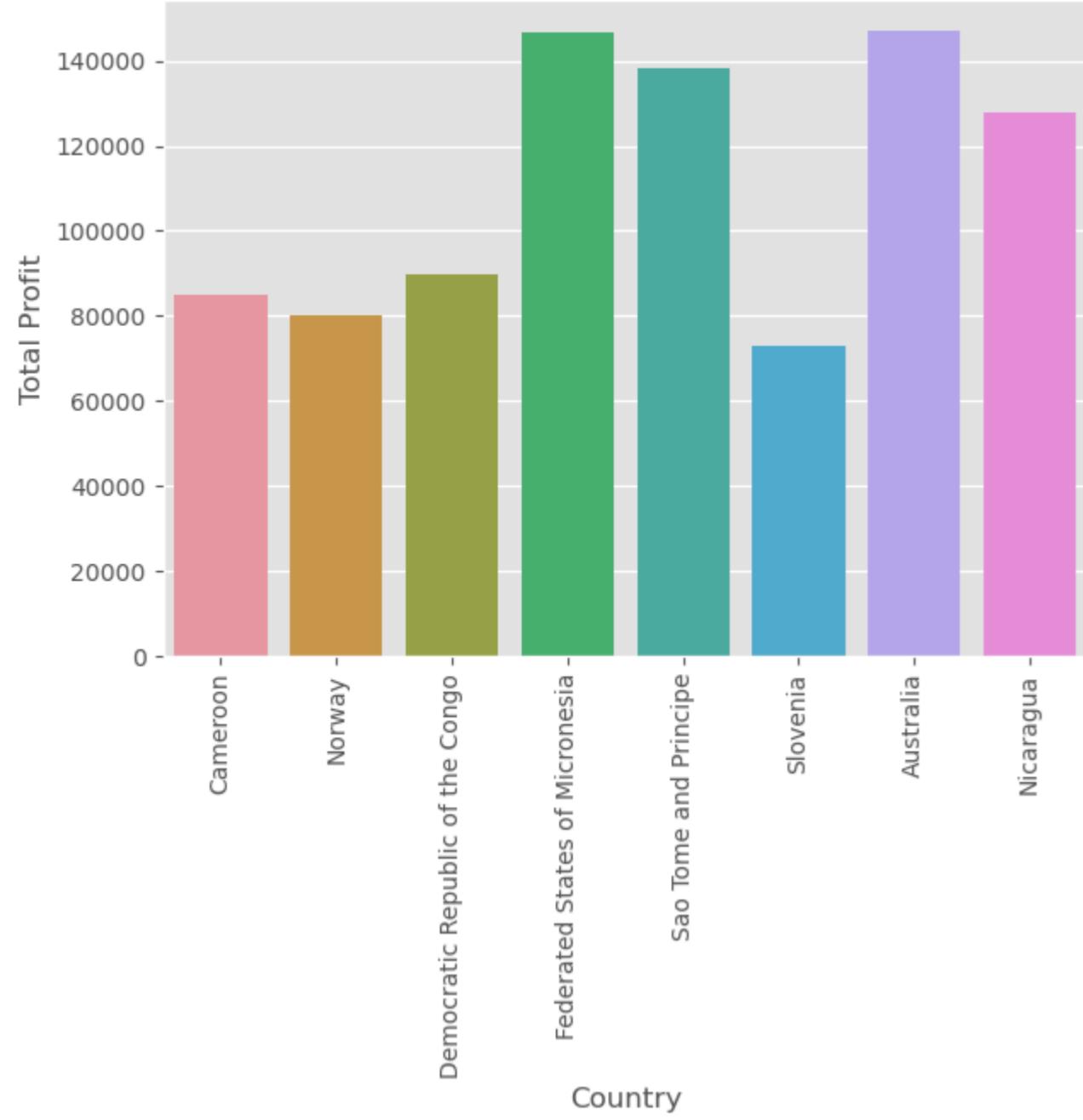
    sb.barplot(x=X, y=Y, data = Bevdf)
    plt.xticks(rotation = 90)
    plt.show()

FruitList = ['Sales Channel', 'Order Priority', 'Units Sold',
            'Total Revenue', 'Total Profit']

for column in ColumnList:
    plotter('Country', column, Bevdf)
```





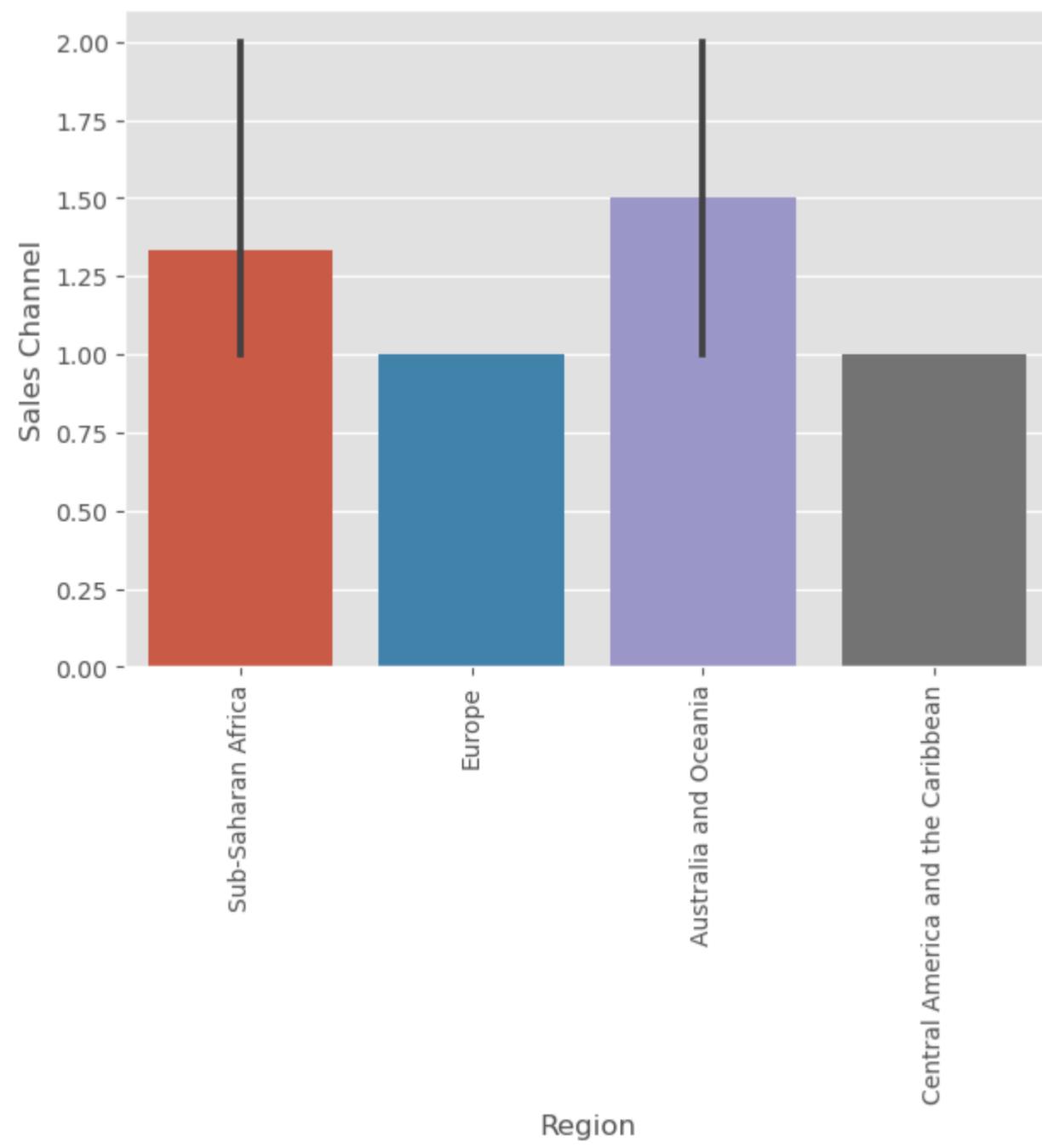


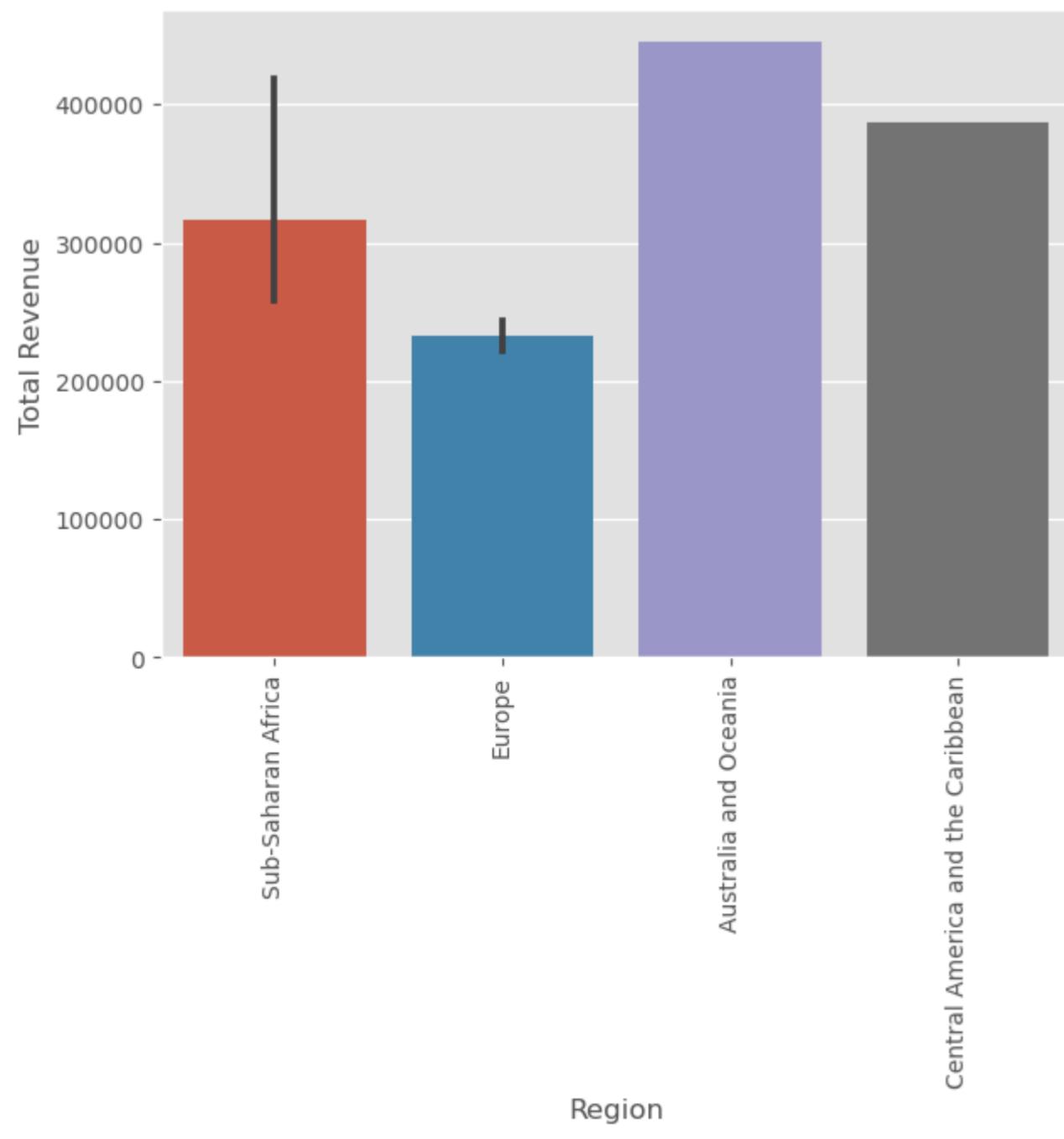
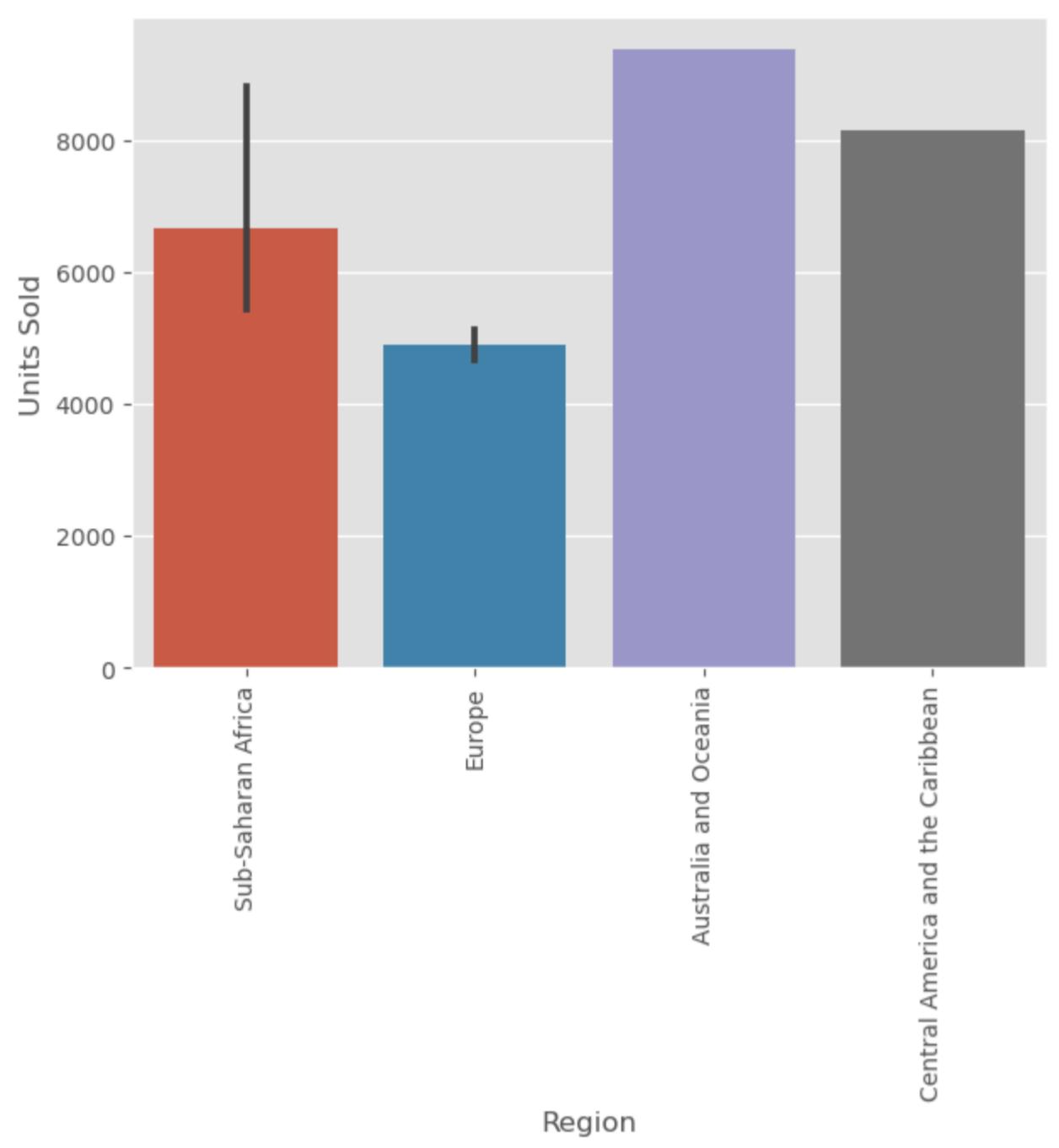
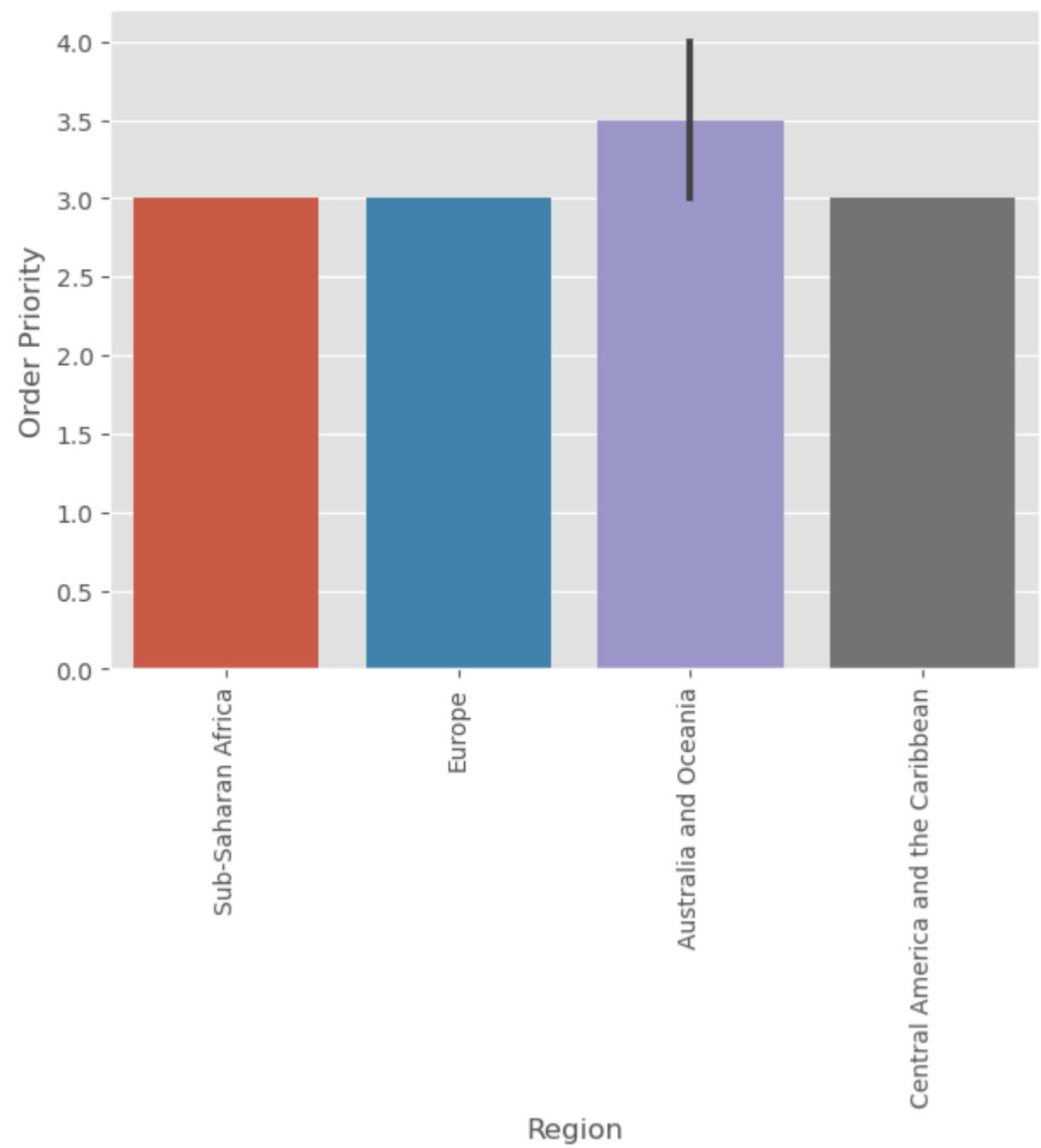
```
In [229]: def plotter( X, Y, df):
    plt.figure(figsize=(7,5))

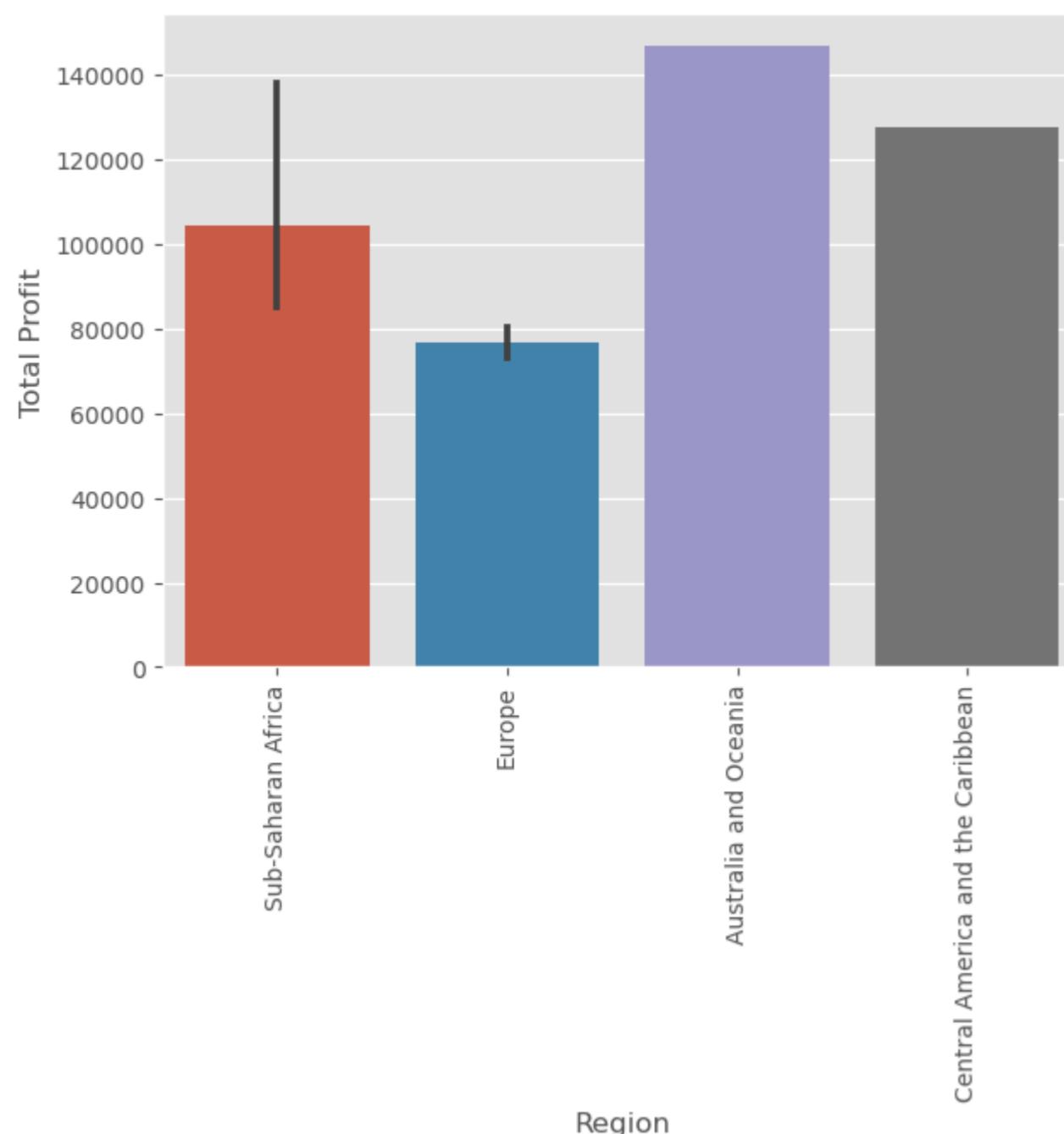
    sb.barplot(x=X, y=Y, data = Bevdf)
    plt.xticks(rotation = 90)
    plt.show()

FruitList = ['Sales Channel', 'Order Priority', 'Units Sold',
             'Total Revenue', 'Total Profit']

for column in ColumnList:
    plotter('Region', column, Bevdf)
```







```
In [ ]:
```

```
In [ ]:
```

```
In [114...]: Babydf = AmaCopydf.loc[AmaCopydf['Item Type'] == 'Baby Food']
```

```
In [115...]: Babydf
```

```
Out[115...]:
```

	Region	Country	Item Type	Sales Channel	Order Priority	Order Date	Order ID	Ship Date	Units Sold	Unit Price	Unit Cost	Total Revenue	Total Cost	Total Profit	ShipDate	OrderDate	orderCompTime
0	Australia and Oceania	Tuvalu	Baby Food	1	4	5/28/2010	669165933	6/27/2010	9925	255.28	159.42	2533654.00	1582243.50	951410.50	2010-06-27	2010-05-28	30 days
5	Australia and Oceania	Solomon Islands	Baby Food	2	3	02-04-2015	547995746	2/21/2015	2974	255.28	159.42	759202.72	474115.08	285087.64	2015-02-21	2015-02-04	17 days
20	Europe	Norway	Baby Food	2	1	5/14/2014	819028031	6/28/2014	7450	255.28	159.42	1901836.00	1187679.00	714157.00	2014-06-28	2014-05-14	45 days
21	Europe	Portugal	Baby Food	2	4	7/31/2015	860673511	09-03-2015	1273	255.28	159.42	324971.44	202941.66	122029.78	2015-09-03	2015-07-31	34 days
61	Europe	San Marino	Baby Food	2	1	6/26/2013	569662845	07-01-2013	4750	255.28	159.42	1212580.00	757245.00	455335.00	2013-07-01	2013-06-26	5 days
78	Europe	Monaco	Baby Food	1	4	5/29/2012	688288152	06-02-2012	8614	255.28	159.42	2198981.92	1373243.88	825738.04	2012-06-02	2012-05-29	4 days
87	Sub-Saharan Africa	The Gambia	Baby Food	1	2	02-03-2014	494747245	3/20/2014	5559	255.28	159.42	1419101.52	886215.78	532885.74	2014-03-20	2014-02-03	45 days

```
In [116...]: Babydf.Country.value_counts()
```

```
Out[116...]:
```

Country	Count
Tuvalu	1
Solomon Islands	1
Norway	1
Portugal	1
San Marino	1
Monaco	1
The Gambia	1

```
Name: Country, dtype: int64
```

```
In [117...]: Babydf.Region.value_counts()
```

```
Out[117...]:
```

Region	Count
Europe	4
Australia and Oceania	2
Sub-Saharan Africa	1

```
Name: Region, dtype: int64
```

```
In [118...]: Babydf.loc[Babydf['orderCompTime'] == Babydf['orderCompTime'].max()]
```

```
Out[118...]:
```

	Region	Country	Item Type	Sales Channel	Order Priority	Order Date	Order ID	Ship Date	Units Sold	Unit Price	Unit Cost	Total Revenue	Total Cost	Total Profit	ShipDate	OrderDate	orderCompTime
20	Europe	Norway	Baby Food	2	1	5/14/2014	819028031	6/28/2014	7450	255.28	159.42	1901836.00	1187679.00	714157.00	2014-06-28	2014-05-14	45 days
87	Sub-Saharan Africa	The Gambia	Baby Food	1	2	02-03-2014	494747245	3/20/2014	5559	255.28	159.42	1419101.52	886215.78	532885.74	2014-03-20	2014-02-03	45 days

```
In [119...]: Babydf.loc[Babydf['orderCompTime'] == Babydf['orderCompTime'].min()]
```

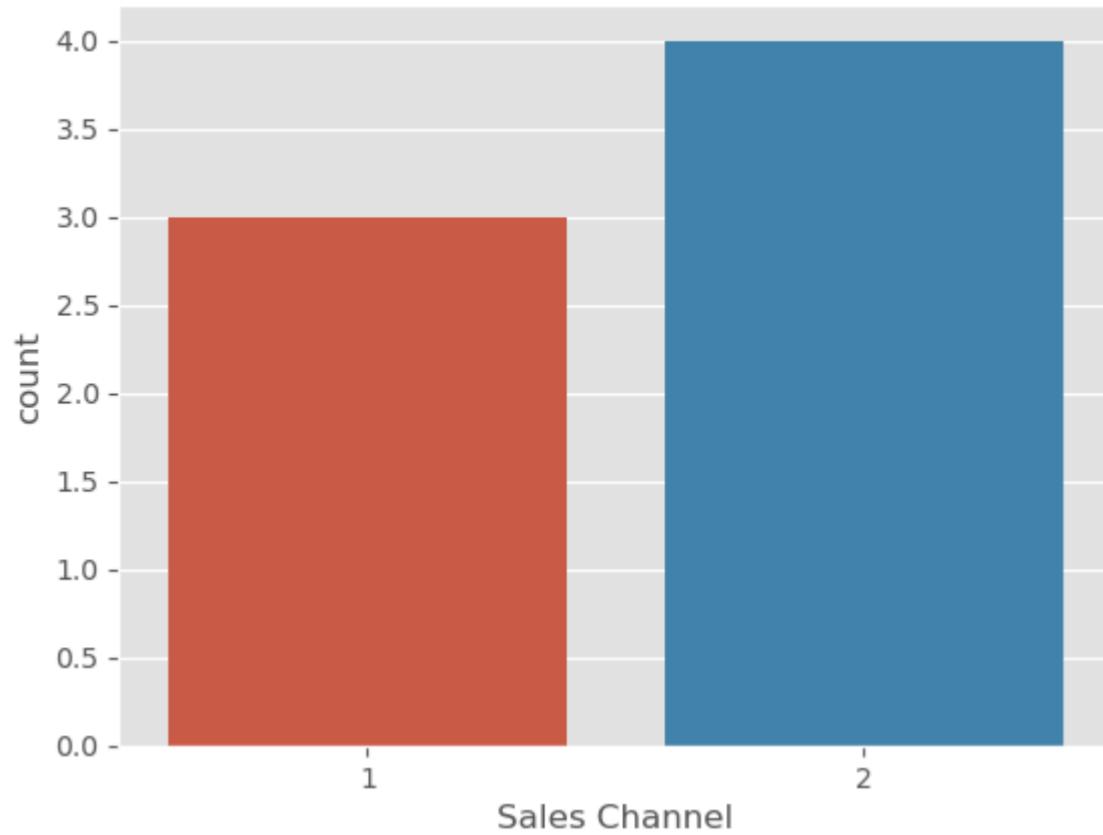
```
Out[119...]:
```

	Region	Country	Item Type	Sales Channel	Order Priority	Order Date	Order ID	Ship Date	Units Sold	Unit Price	Unit Cost	Total Revenue	Total Cost	Total Profit	ShipDate	OrderDate	orderCompTime
78	Europe	Monaco	Baby Food	1	4	5/29/2012	688288152	06-02-2012	8614	255.28	159.42	2198981.92	1373243.88	825738.04	2012-06-02	2012-05-29	4 days

```
In [228...]: sb.countplot(data=Babydf, x="Sales Channel")
plt.figure(figsize=(20, 40))
plt.title('Sales Channel Distribution')
```

```
Out[228...]: Text(0.5, 1.0, 'Sales Channel Distribution')
```

Sales Channel Distribution

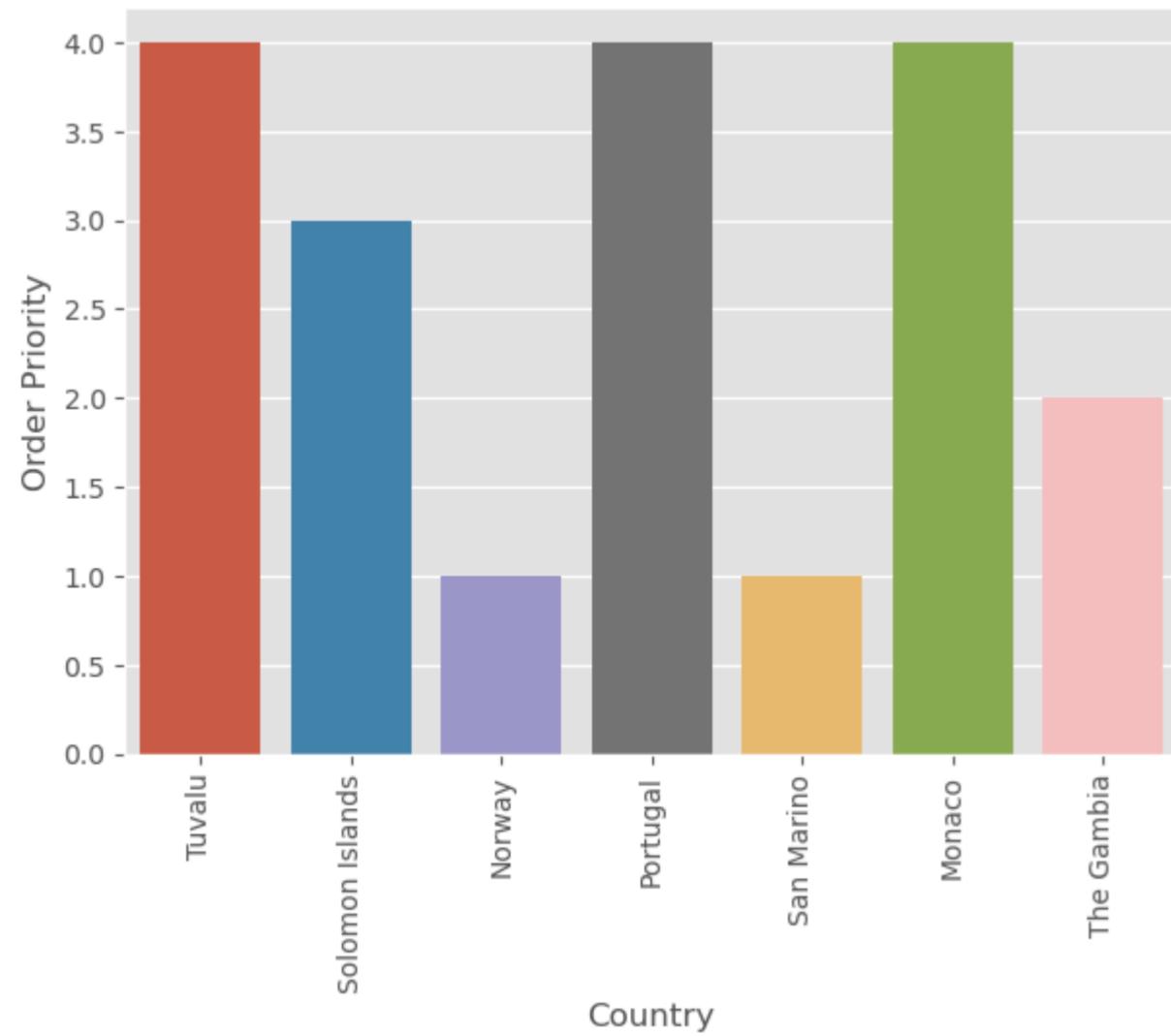
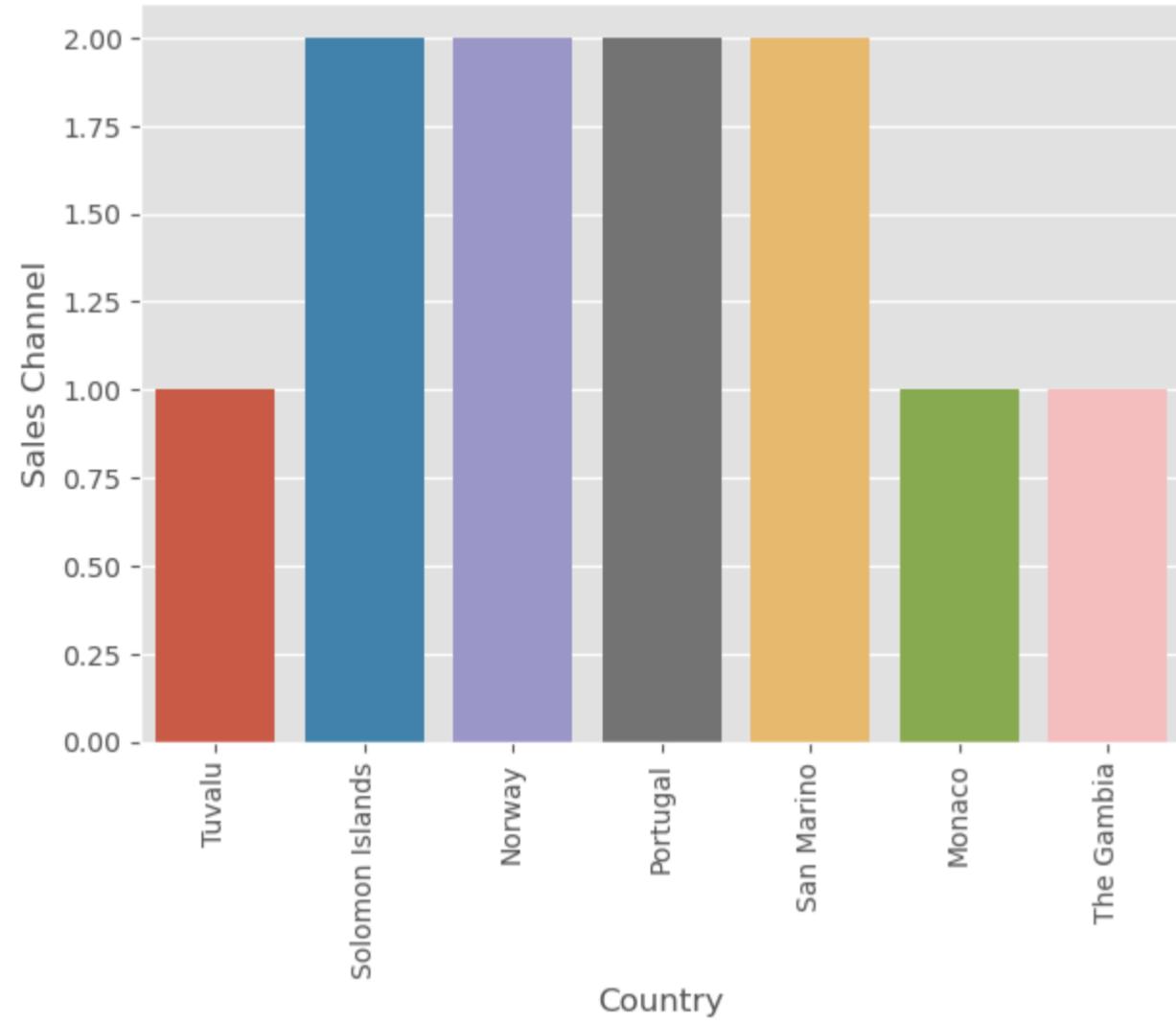


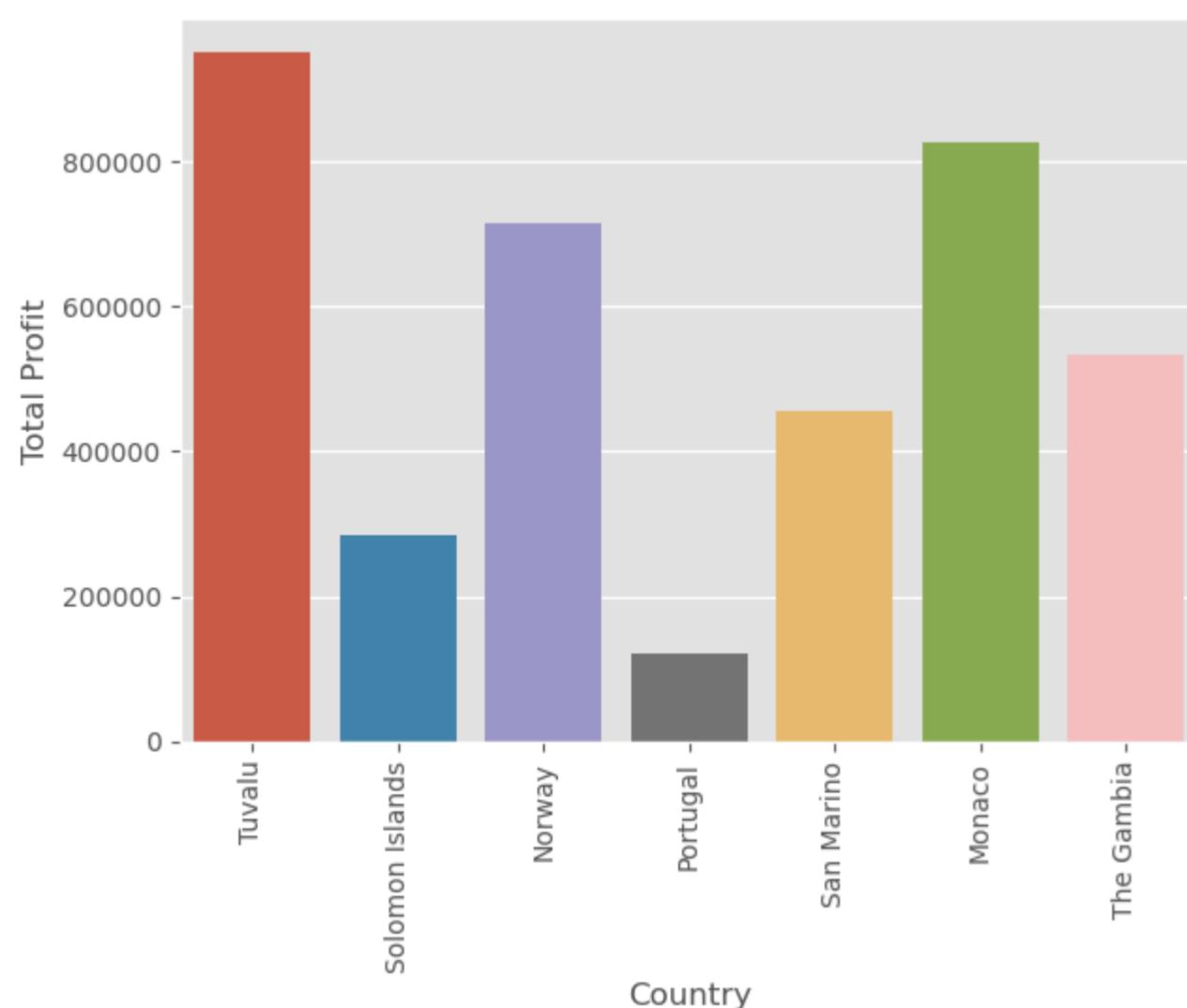
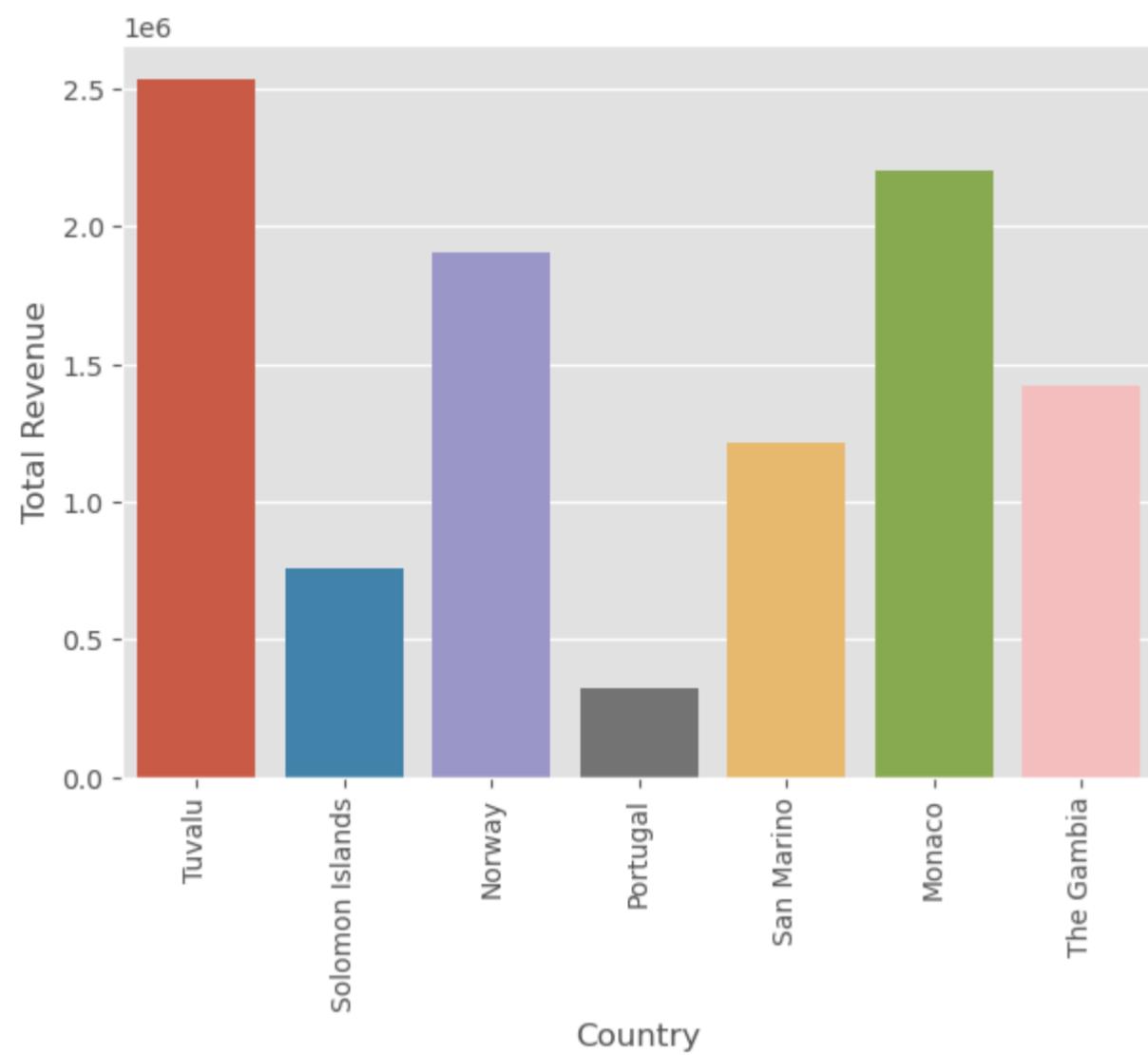
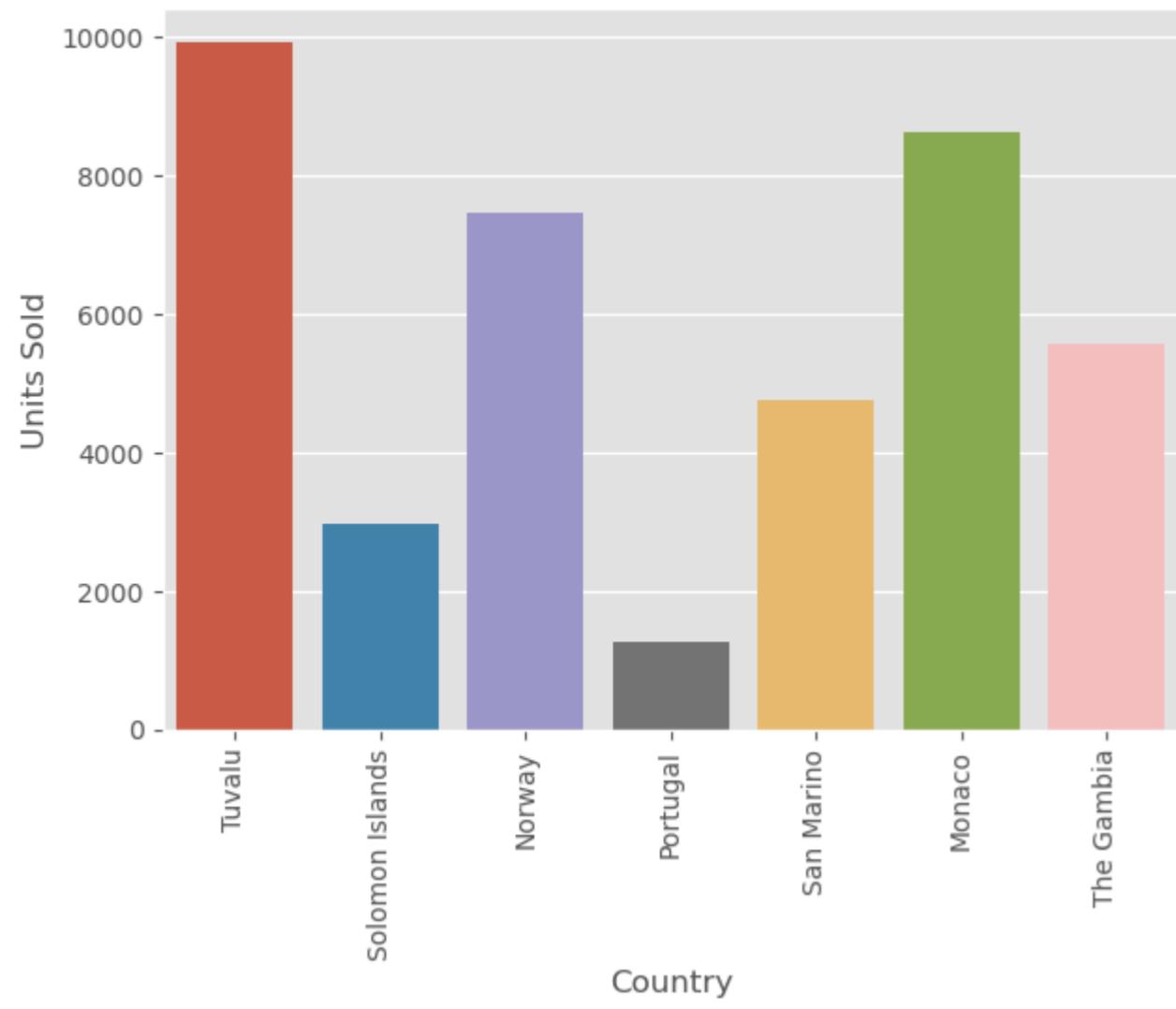
```
In [226]: def plotter( X, Y, df):
    plt.figure(figsize=(7,5))
```

```
    sb.barplot(x=X, y=Y, data = Babydf)
    plt.xticks(rotation = 90)
    plt.show()
```

```
FruitList = ['Sales Channel', 'Order Priority', 'Units Sold',
             'Total Revenue', 'Total Profit']
```

```
for column in ColumnList:
    plotter('Country', column, Babydf)
```





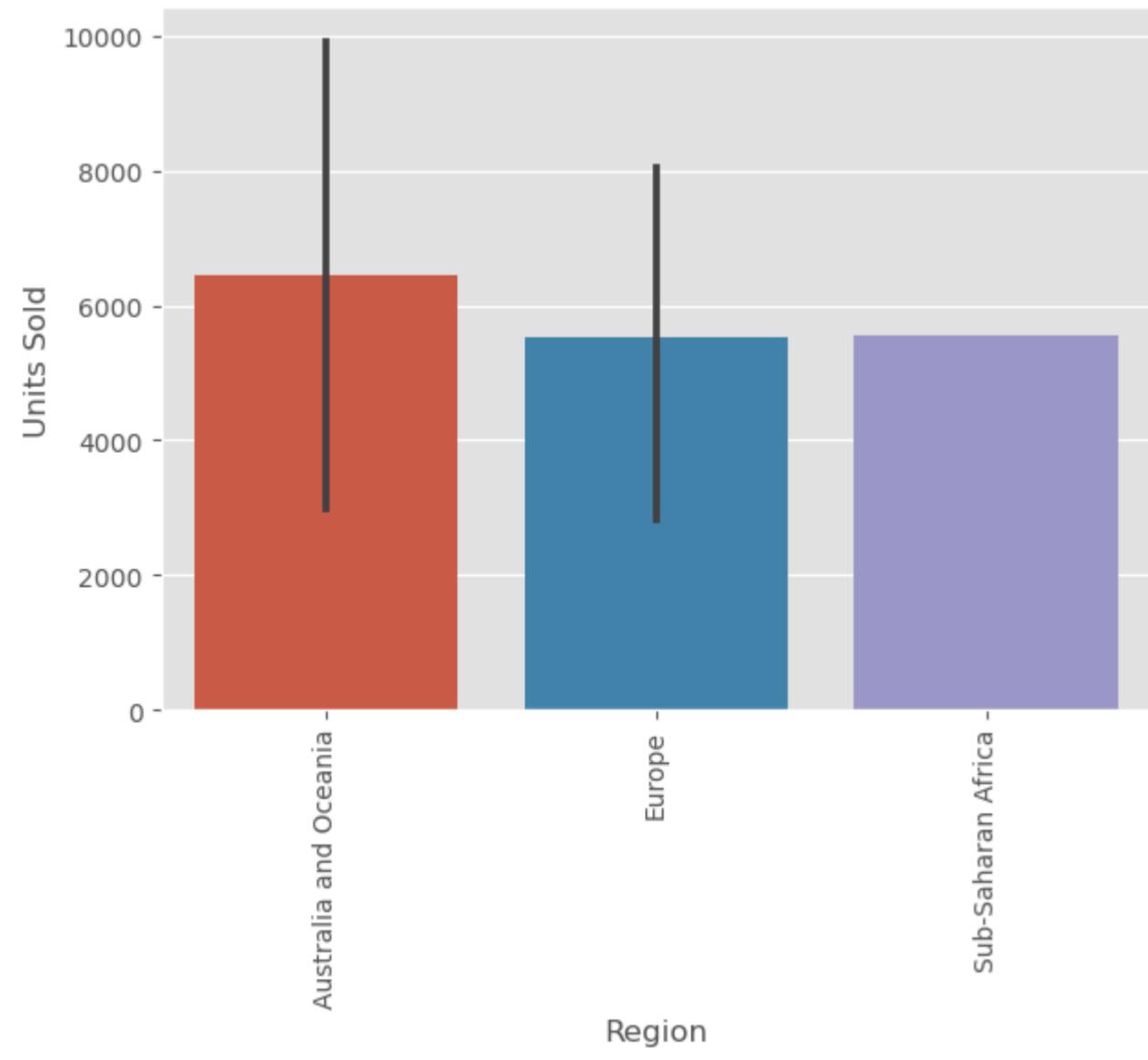
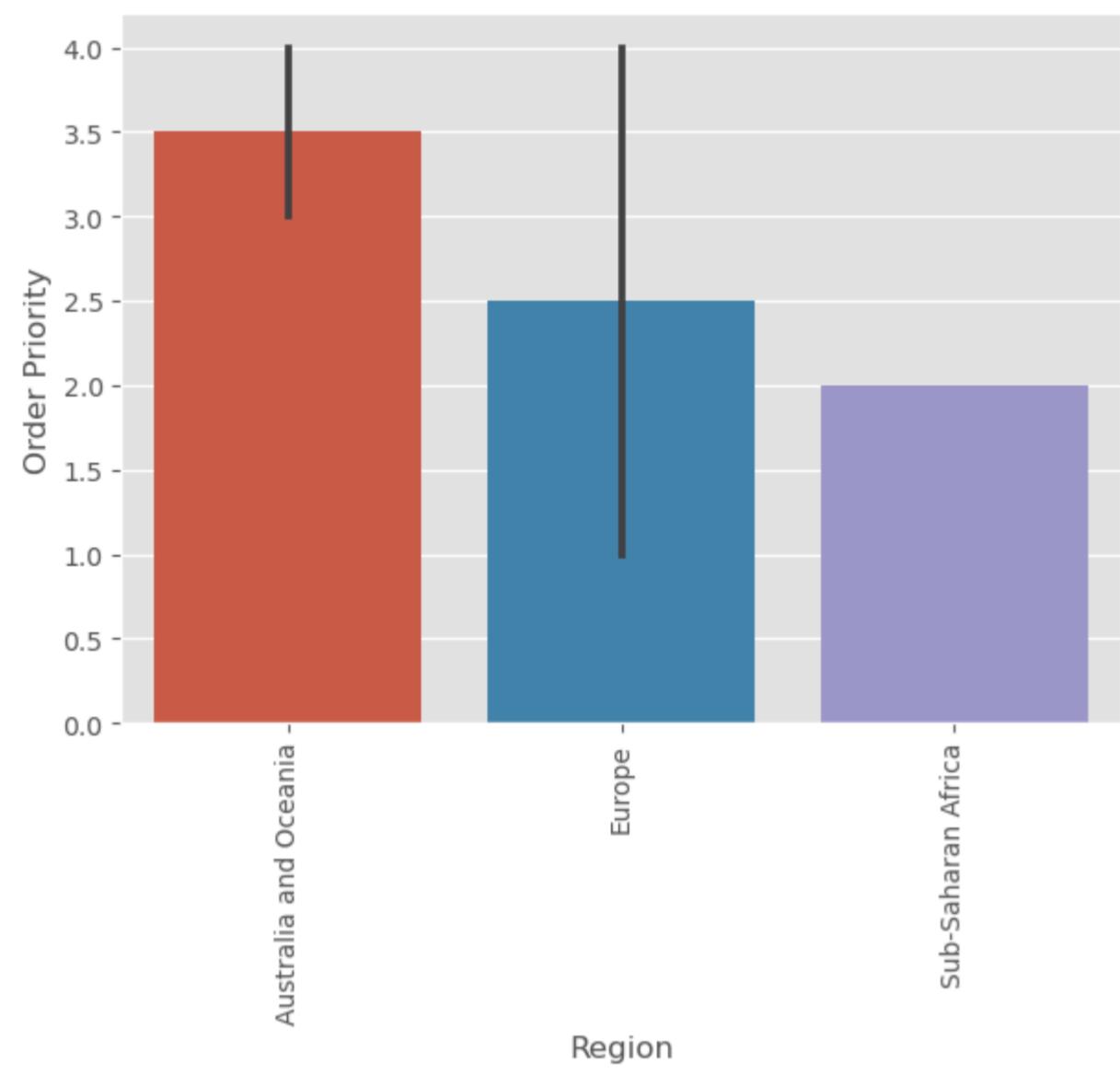
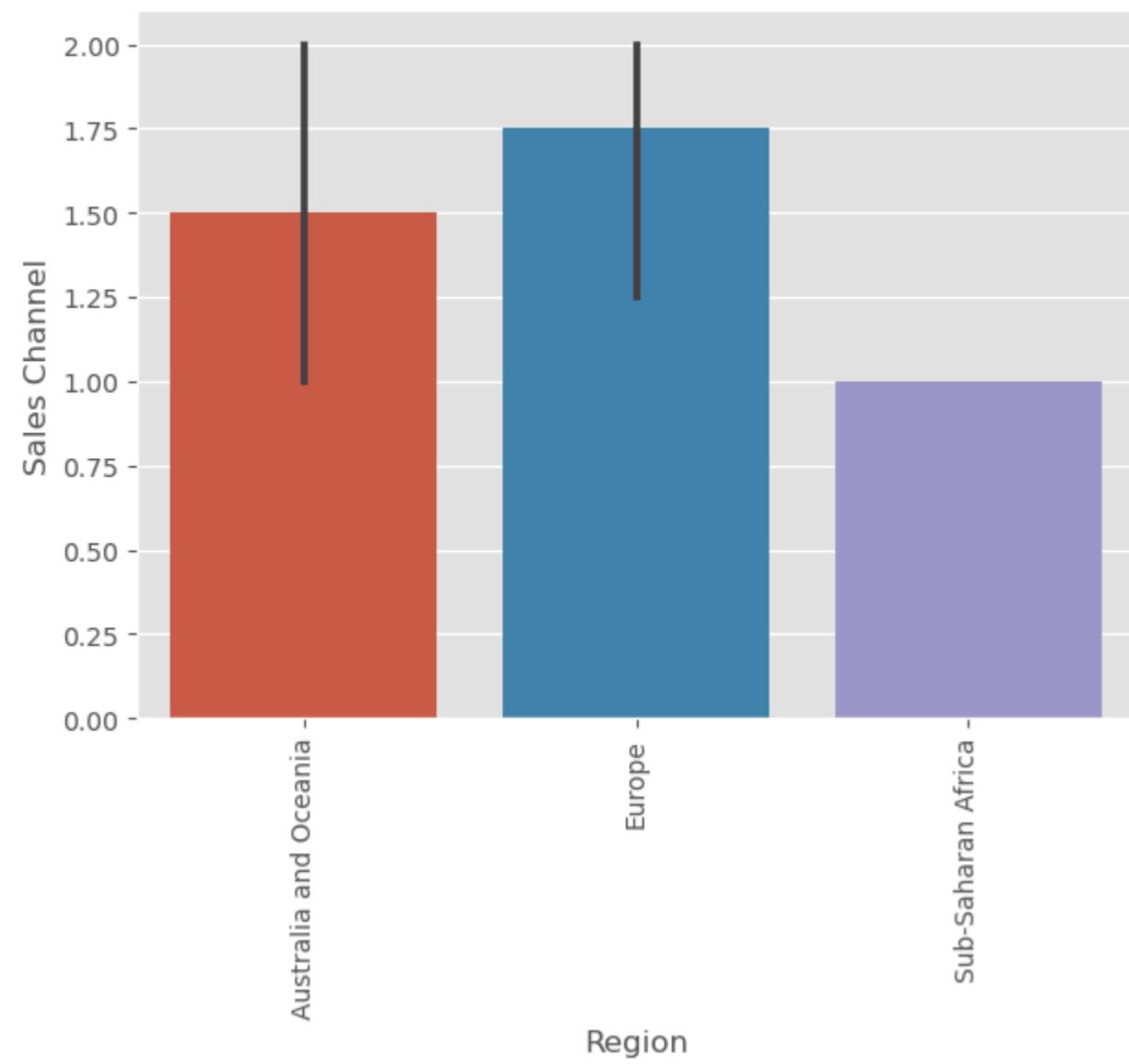
In [227]:

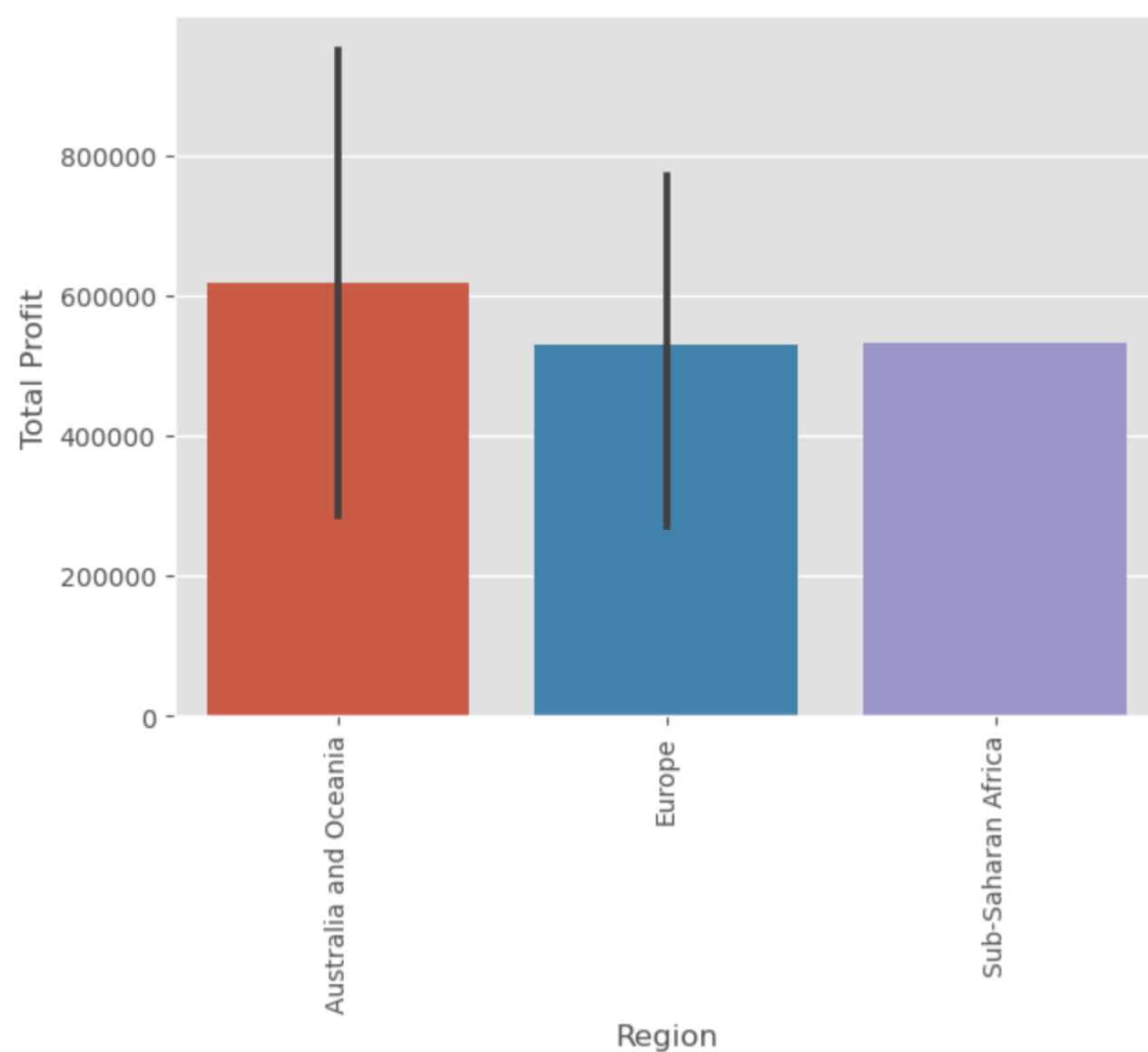
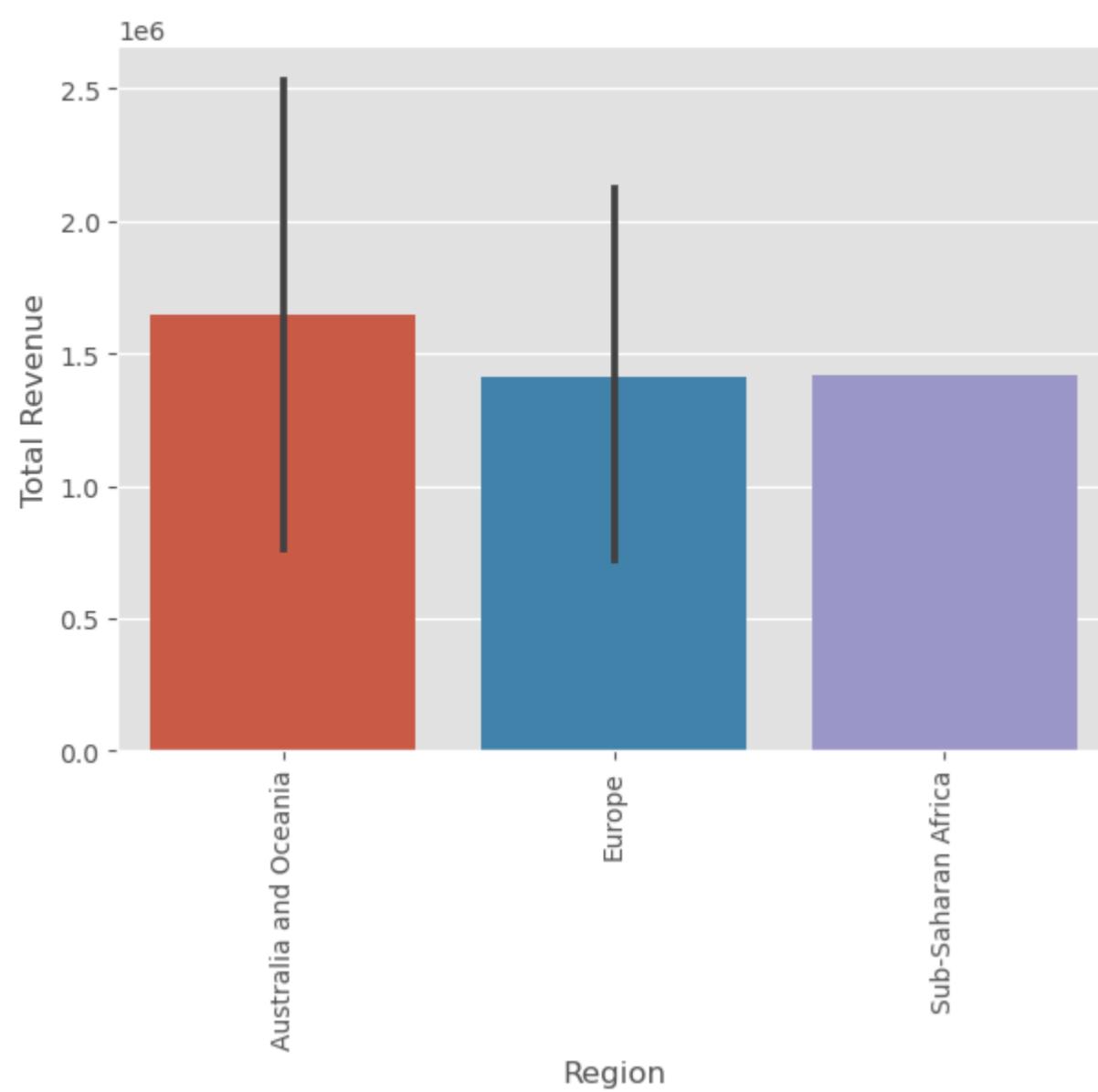
```
def plotter( X, Y, df):
    plt.figure(figsize=(7,5))

    sb.barplot(x=X, y=Y, data = Babydf)
    plt.xticks(rotation = 90)
    plt.show()

FruitList = ['Sales Channel', 'Order Priority', 'Units Sold',
             'Total Revenue', 'Total Profit']

for column in ColumnList:
    plotter('Region', column, Babydf)
```





```
In [ ]:
```

```
In [ ]:
```

```
In [123...]: Cerealdf = AmaCopydf.loc[AmaCopydf['Item Type'] == 'Cereal']
```

```
In [124...]: Cerealdf
```

```
Out[124...]:
```

	Region	Country	Item Type	Sales Channel	Order Priority	Order Date	Order ID	Ship Date	Units Sold	Unit Price	Unit Cost	Total Revenue	Total Cost	Total Profit	ShipDate	OrderDate	orderCompTime
1	Central America and the Caribbean	Grenada	Cereal	2	3	8/22/2012	963881480	9/15/2012	2804	205.7	117.11	576782.8	328376.44	248406.36	2012-09-15	2012-08-22	24 days
9	Sub-Saharan Africa	Senegal	Cereal	2	4	4/18/2014	616607081	5/30/2014	6593	205.7	117.11	1356180.1	772106.23	584073.87	2014-05-30	2014-04-18	42 days
42	Sub-Saharan Africa	The Gambia	Cereal	1	4	06-07-2012	994022214	06-08-2012	2117	205.7	117.11	435466.9	247921.87	187545.03	2012-06-08	2012-06-07	1 days
45	Sub-Saharan Africa	Comoros	Cereal	1	4	3/29/2016	902102267	4/29/2016	962	205.7	117.11	197883.4	112659.82	85223.58	2016-04-29	2016-03-29	31 days
52	Middle East and North Africa	Saudi Arabia	Cereal	2	2	3/25/2013	844530045	3/28/2013	4063	205.7	117.11	835759.1	475817.93	359941.17	2013-03-28	2013-03-25	3 days
60	Australia and Oceania	Australia	Cereal	1	4	06-09-2013	450563752	07-02-2013	682	205.7	117.11	140287.4	79869.02	60418.38	2013-07-02	2013-06-09	23 days
73	Sub-Saharan Africa	Djibouti	Cereal	2	4	5/20/2017	555990016	6/17/2017	8656	205.7	117.11	1780539.2	1013704.16	766835.04	2017-06-17	2017-05-20	28 days

```
In [125...]: Cerealdf.Country.value_counts()
```

```
Out[125...]:
```

Country	Count
Grenada	1
Senegal	1
The Gambia	1
Comoros	1
Saudi Arabia	1
Australia	1
Djibouti	1

```
Name: Country, dtype: int64
```

```
In [126...]: Cerealdf.Region.value_counts()
```

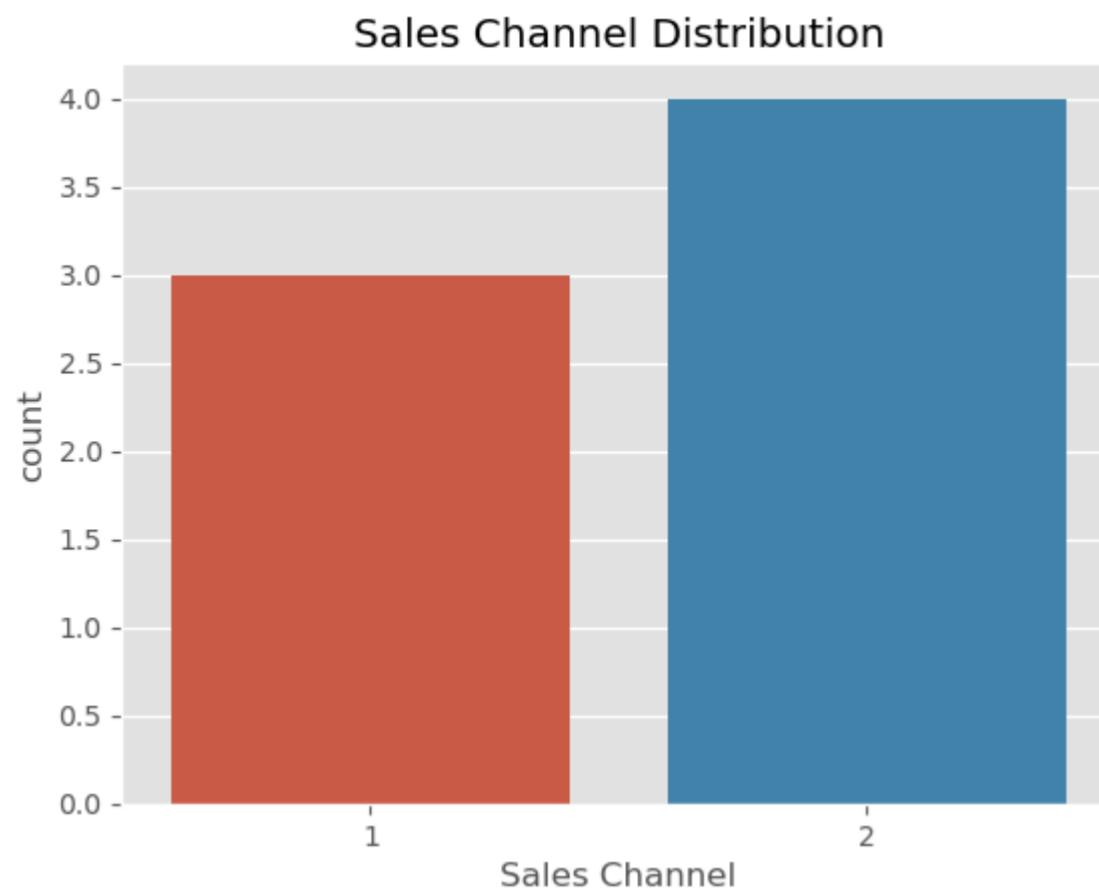
```
Out[126...]:
```

Region	Count
Sub-Saharan Africa	4
Central America and the Caribbean	1
Middle East and North Africa	1
Australia and Oceania	1

```
Name: Region, dtype: int64
```

```
In [225...]: sb.countplot(data=Cerealdf, x="Sales Channel")
plt.figure(figsize=(20, 40))
plt.title('Sales Channel Distribution')
```

```
out[225... Text(0.5, 1.0, 'Sales Channel Distribution')
```



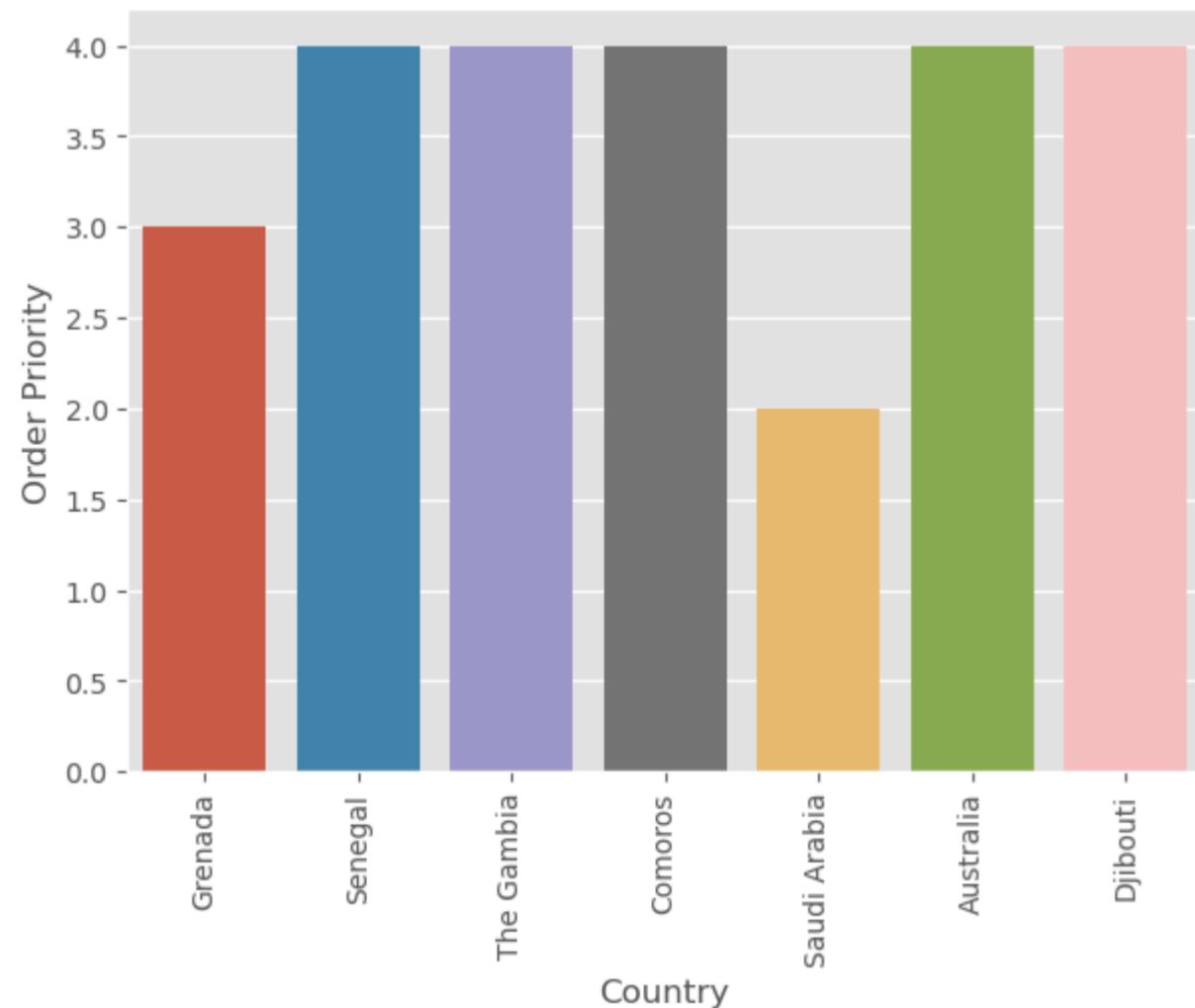
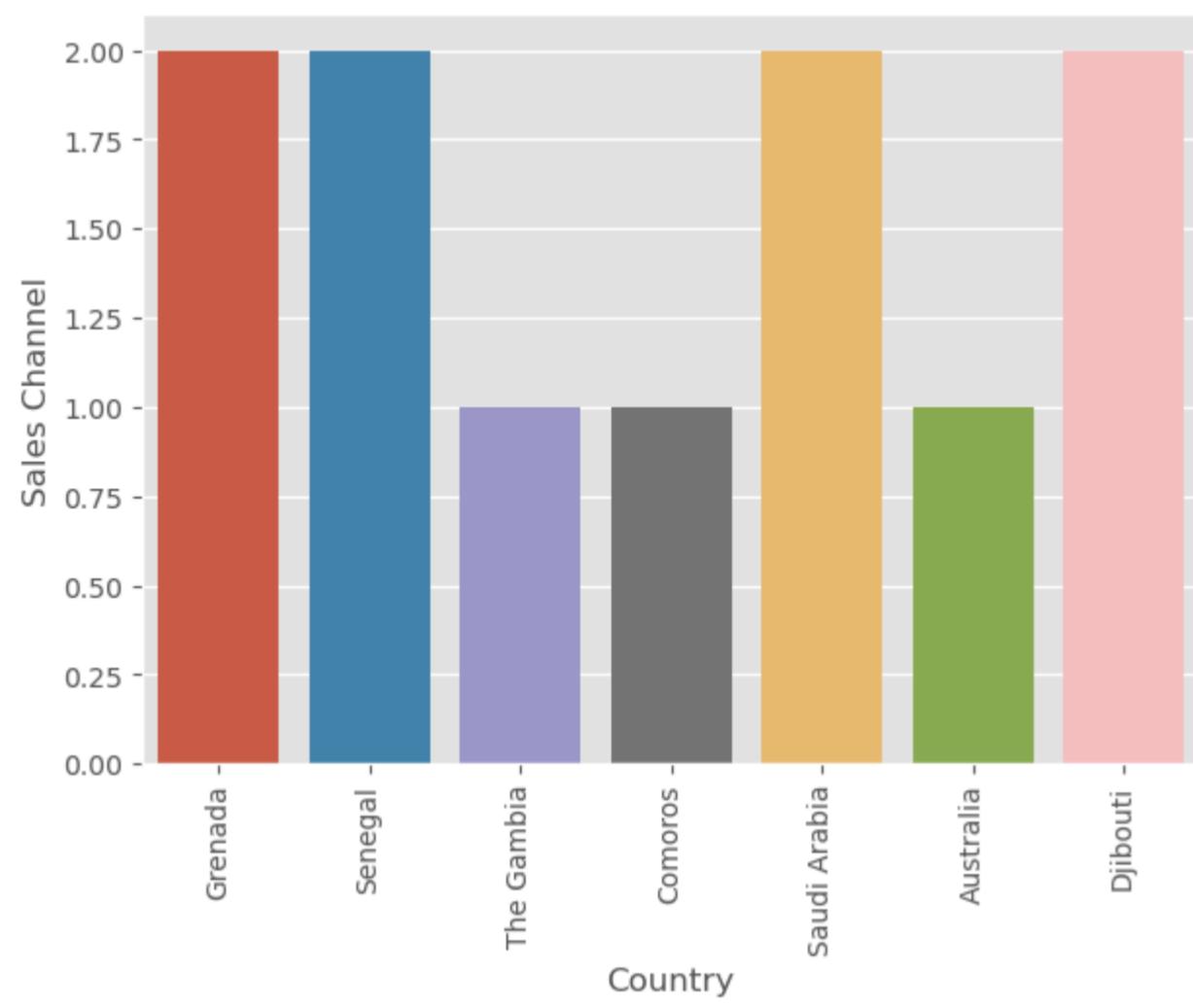
```
In [224... 
```

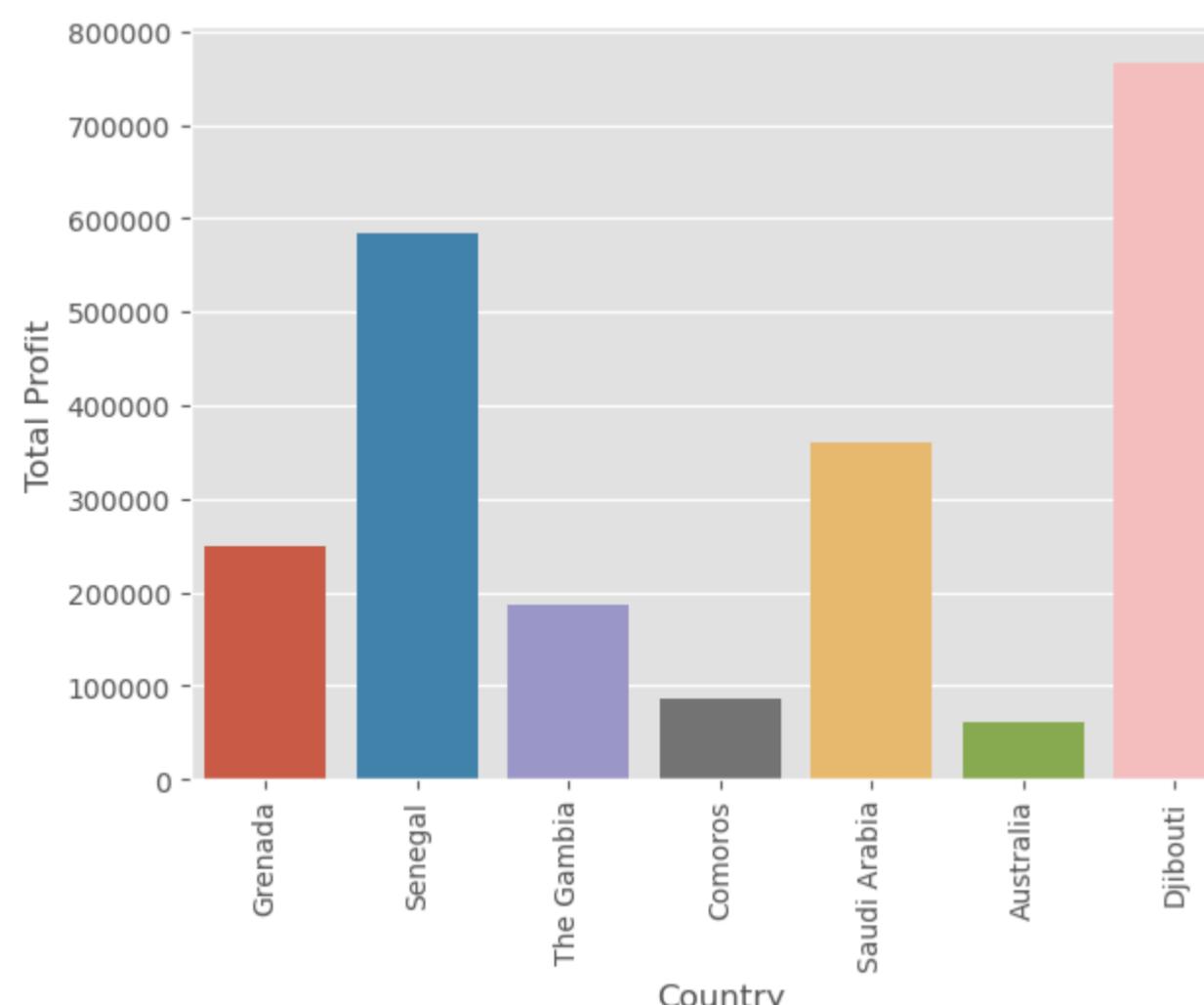
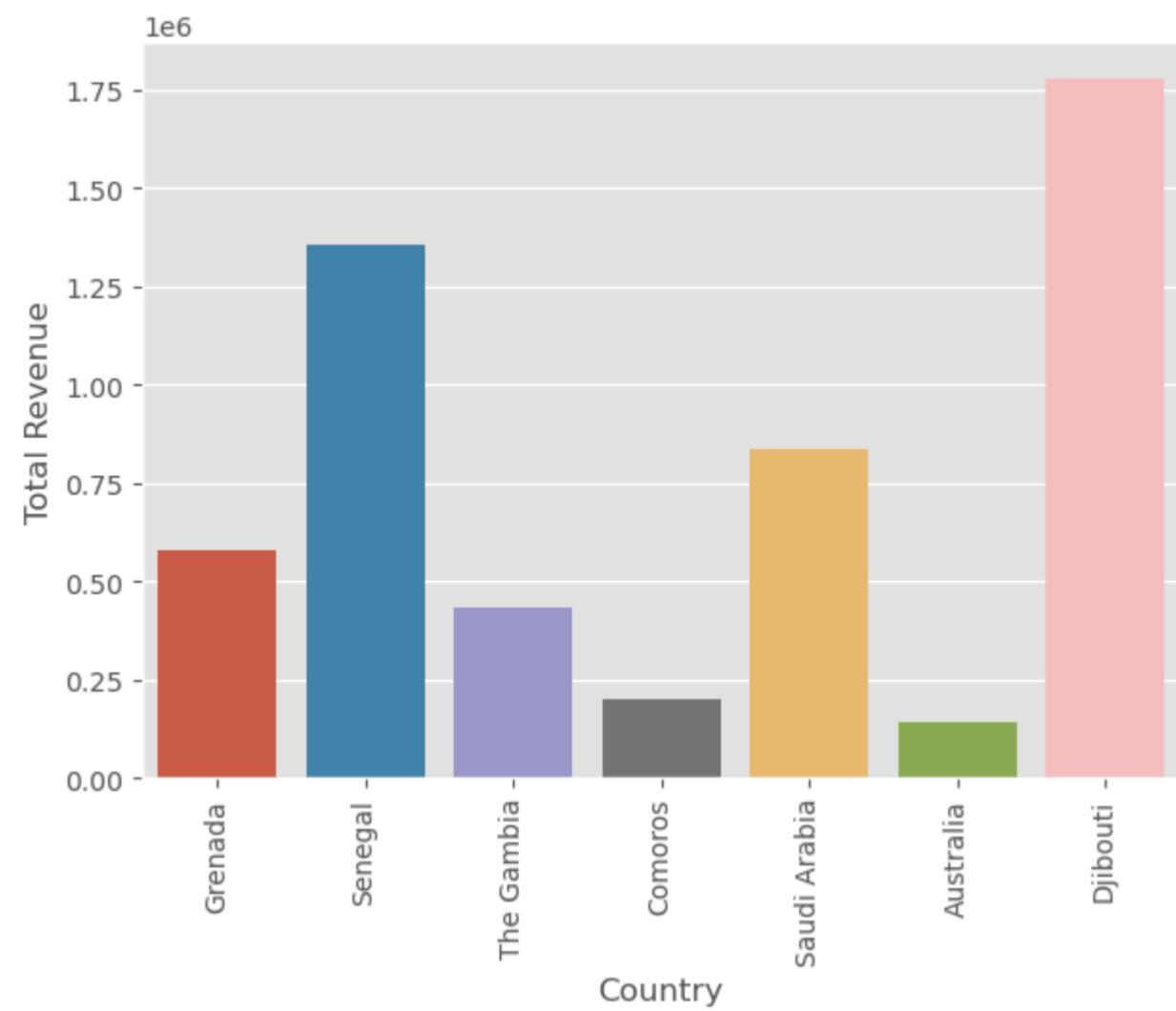
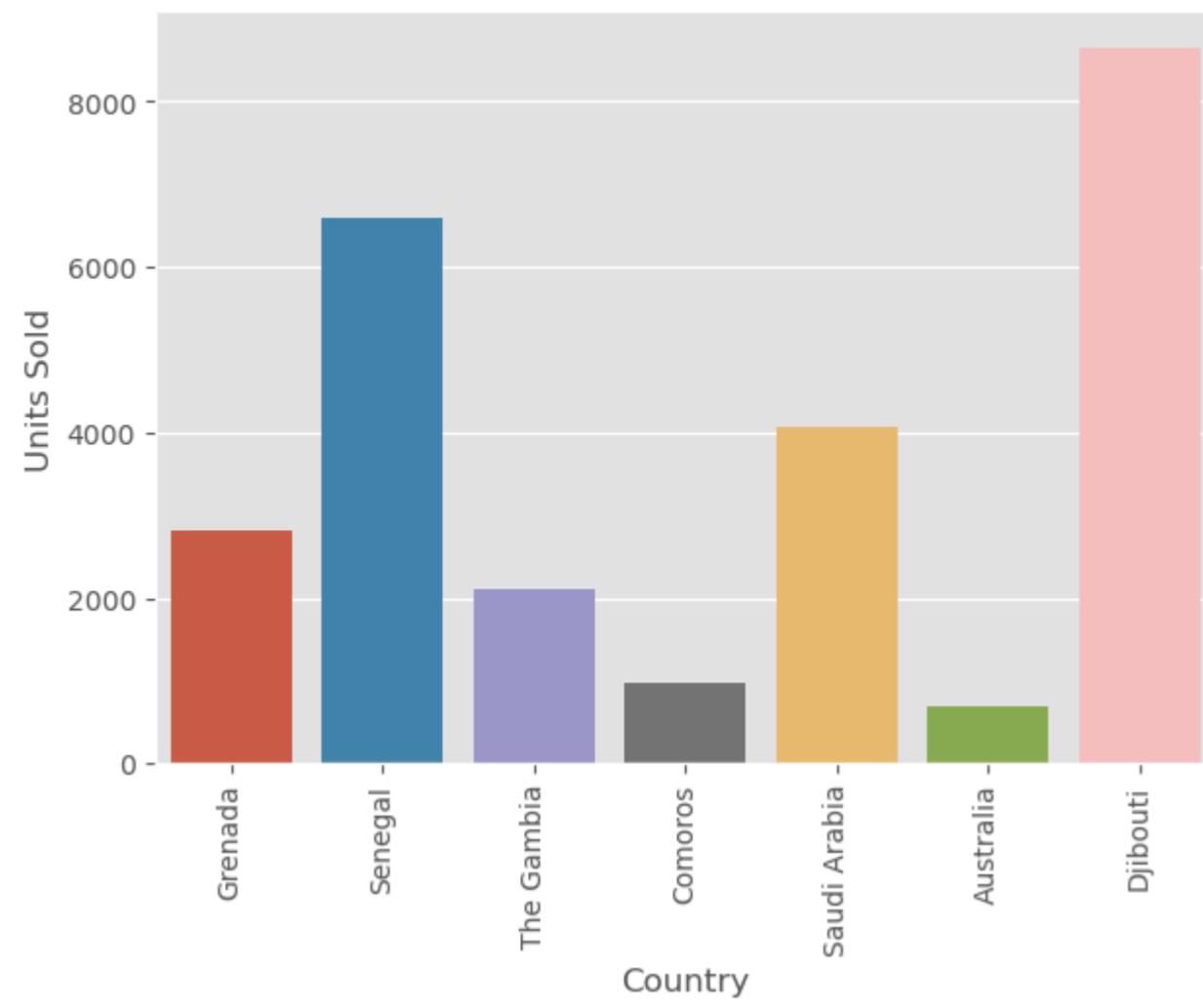
```
def plotter( X, Y, df):
    plt.figure(figsize=(7,5))

    sb.barplot(x=X, y=Y, data = Cerealdf)
    plt.xticks(rotation = 90)
    plt.show()

FruitList = ['Sales Channel', 'Order Priority', 'Units Sold',
             'Total Revenue', 'Total Profit']

for column in ColumnList:
    plotter('Country', column, Cerealdf)
```





In [223...]

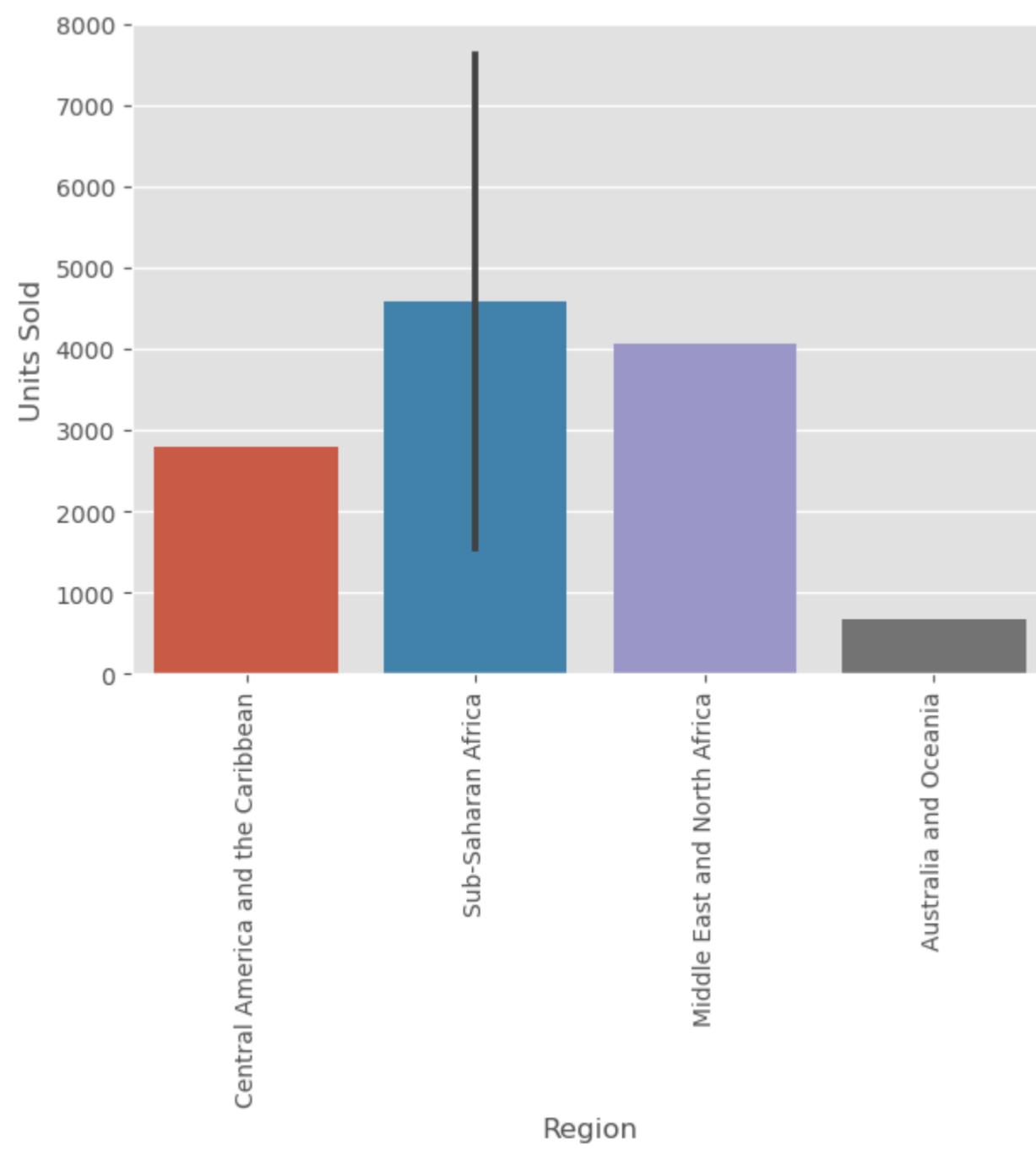
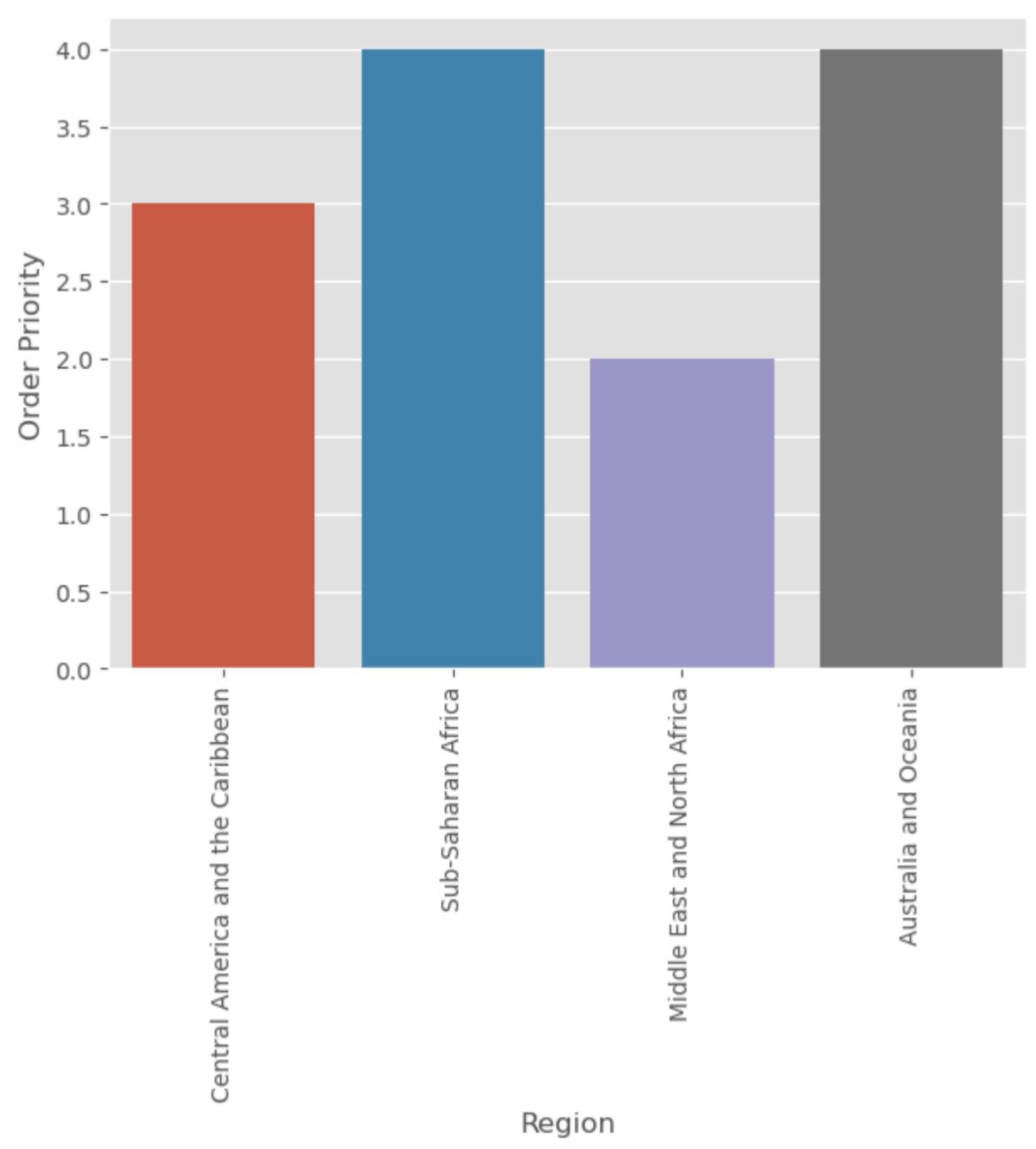
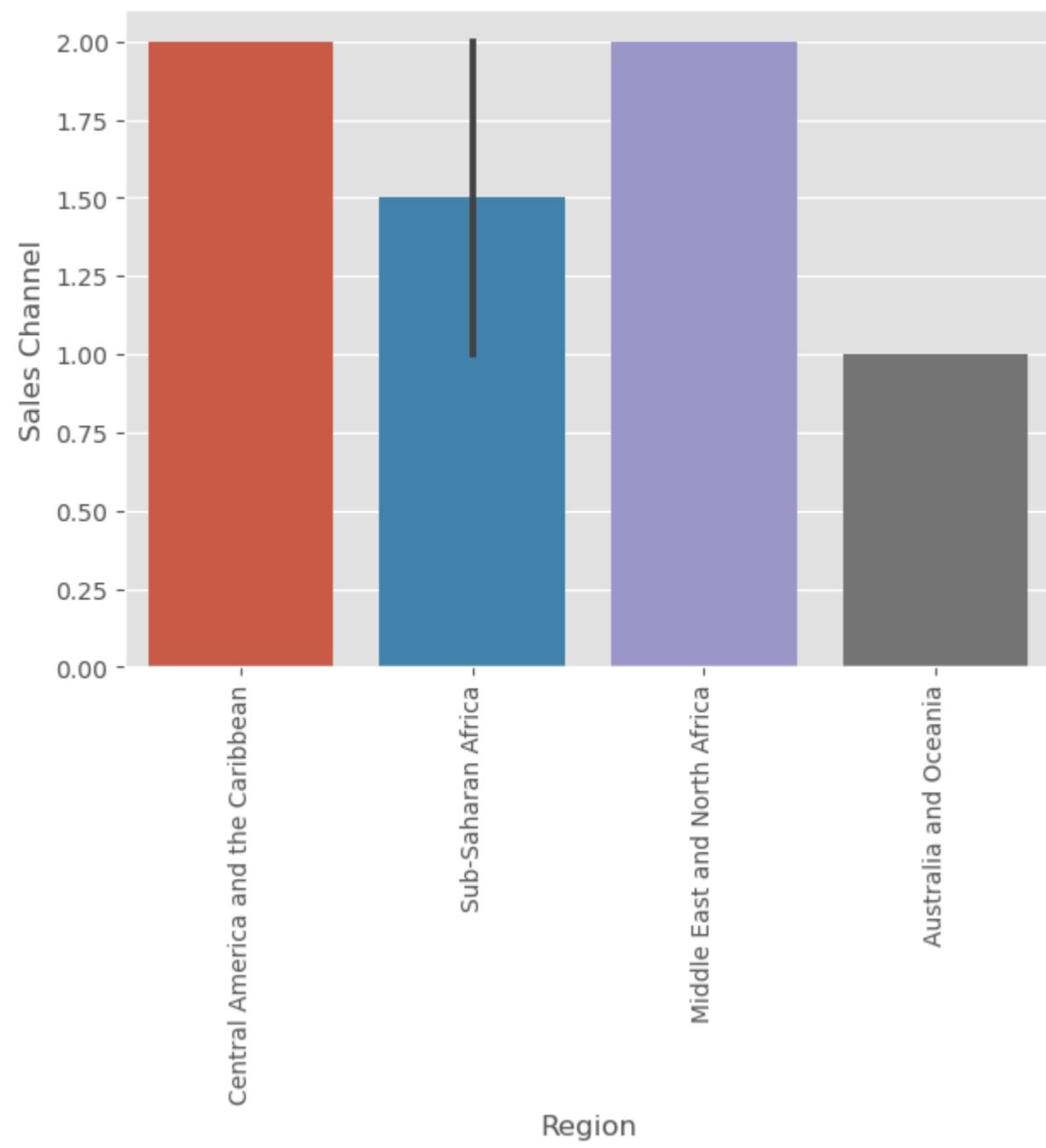
```
def plotter( X, Y, df):
    plt.figure(figsize=(7,5))

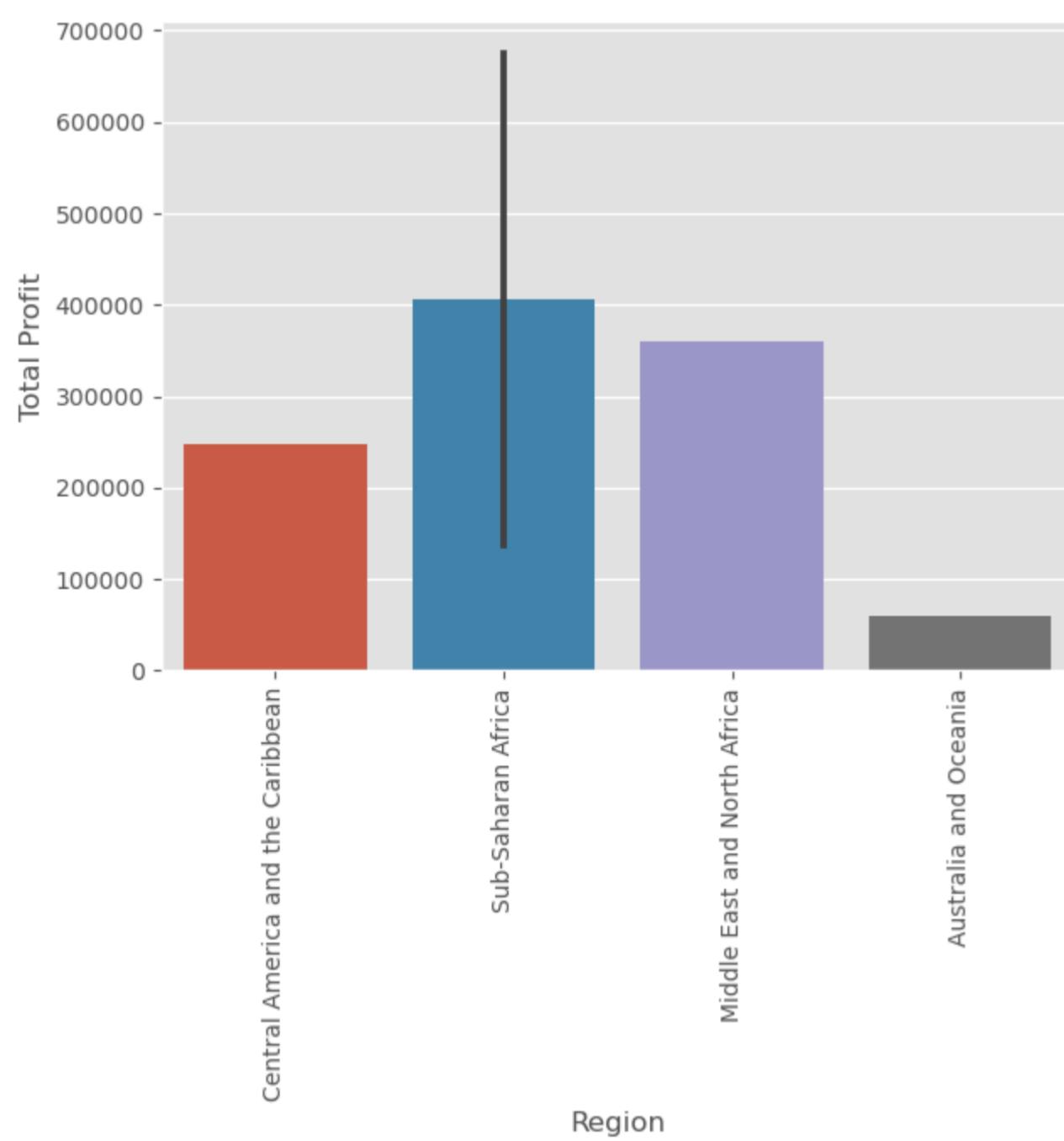
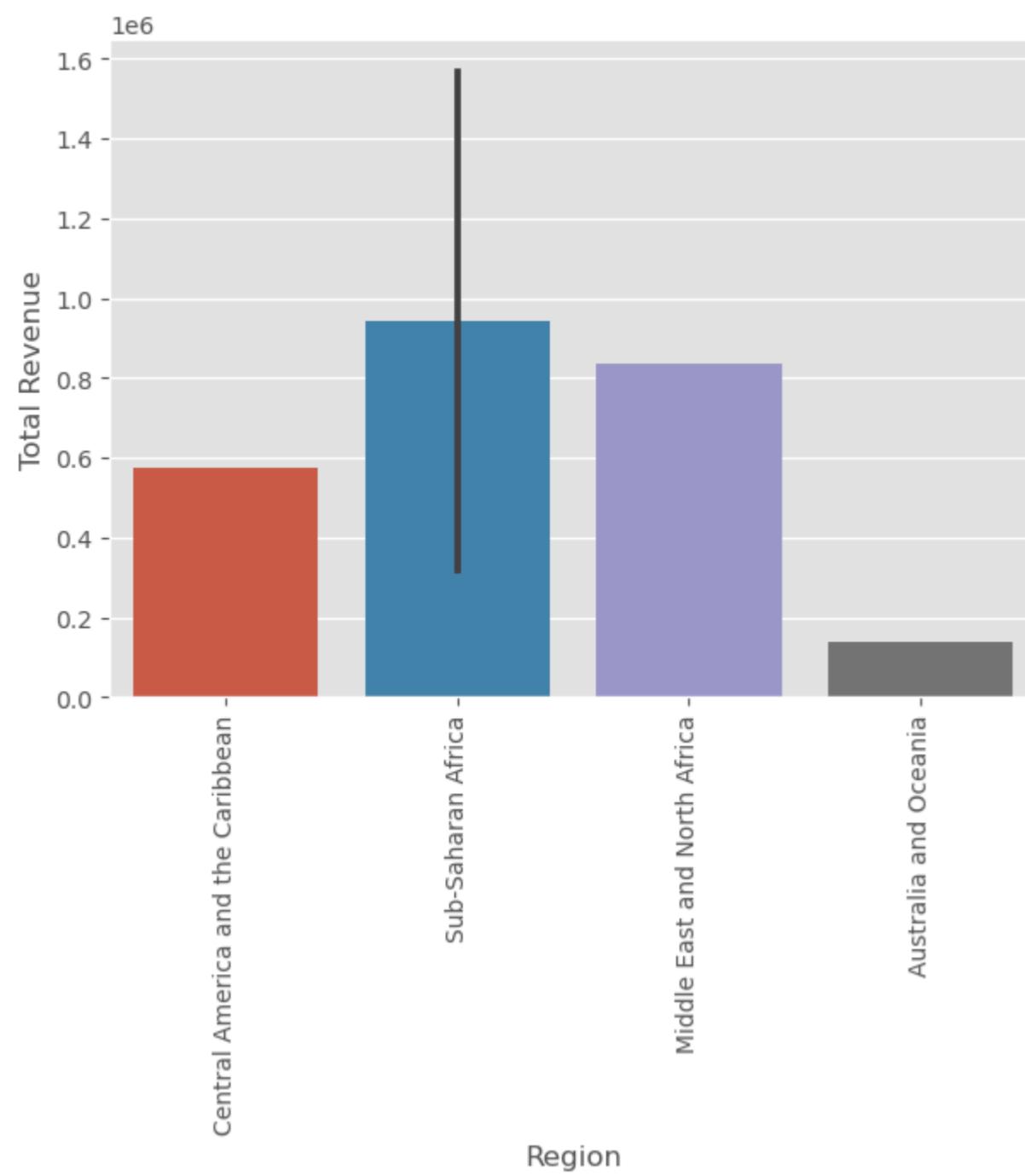
    sb.barplot(x=X, y=Y, data = Cerealdf)
    plt.xticks(rotation = 90)

    plt.show()

FruitList = ['Sales Channel', 'Order Priority', 'Units Sold',
            'Total Revenue', 'Total Profit']

for column in ColumnList:
    plotter('Region', column, Cerealdf)
```





```
In [ ]: 
In [ ]: 
In [130... Vegdf = AmaCopydf.loc[AmaCopydf['Item Type'] == 'Vegetables']
In [131... Vegdf
Out[131...]
```

	Region	Country	Item Type	Sales Channel	Order Priority	Order Date	Order ID	Ship Date	Units Sold	Unit Price	Unit Cost	Total Revenue	Total Cost	Total Profit	ShipDate	OrderDate	orderCompTime
7	Sub-Saharan Africa	Burkina Faso	Vegetables	2	4	7/17/2012	871543967	7/27/2012	8082	154.06	90.93	1245112.92	734896.26	510216.66	2012-07-27	2012-07-17	10 days
10	Asia	Kyrgyzstan	Vegetables	2	4	6/24/2011	814711606	07-12-2011	124	154.06	90.93	19103.44	11275.32	7828.12	2011-07-12	2011-06-24	18 days
43	Europe	Slovakia	Vegetables	2	4	10-06-2012	759224212	11-10-2012	171	154.06	90.93	26344.26	15549.03	10795.23	2012-11-10	2012-10-06	35 days
77	Asia	Laos	Vegetables	1	3	9/15/2011	789176547	10/23/2011	3732	154.06	90.93	574951.92	339350.76	235601.16	2011-10-23	2011-09-15	38 days
84	Sub-Saharan Africa	Kenya	Vegetables	2	1	3/18/2012	827844560	04-07-2012	6457	154.06	90.93	994765.42	587135.01	407630.41	2012-04-07	2012-03-18	20 days
97	Sub-Saharan Africa	Sierra Leone	Vegetables	1	3	06-01-2016	728815257	6/29/2016	1485	154.06	90.93	228779.10	135031.05	93748.05	2016-06-29	2016-06-01	28 days

```
In [132... Vegdf.Country.value_counts()
Out[132...]
Burkina Faso    1
Kyrgyzstan      1
Slovakia        1
Laos            1
Kenya           1
Sierra Leone    1
Name: Country, dtype: int64
In [133... Vegdf.Region.value_counts()
```

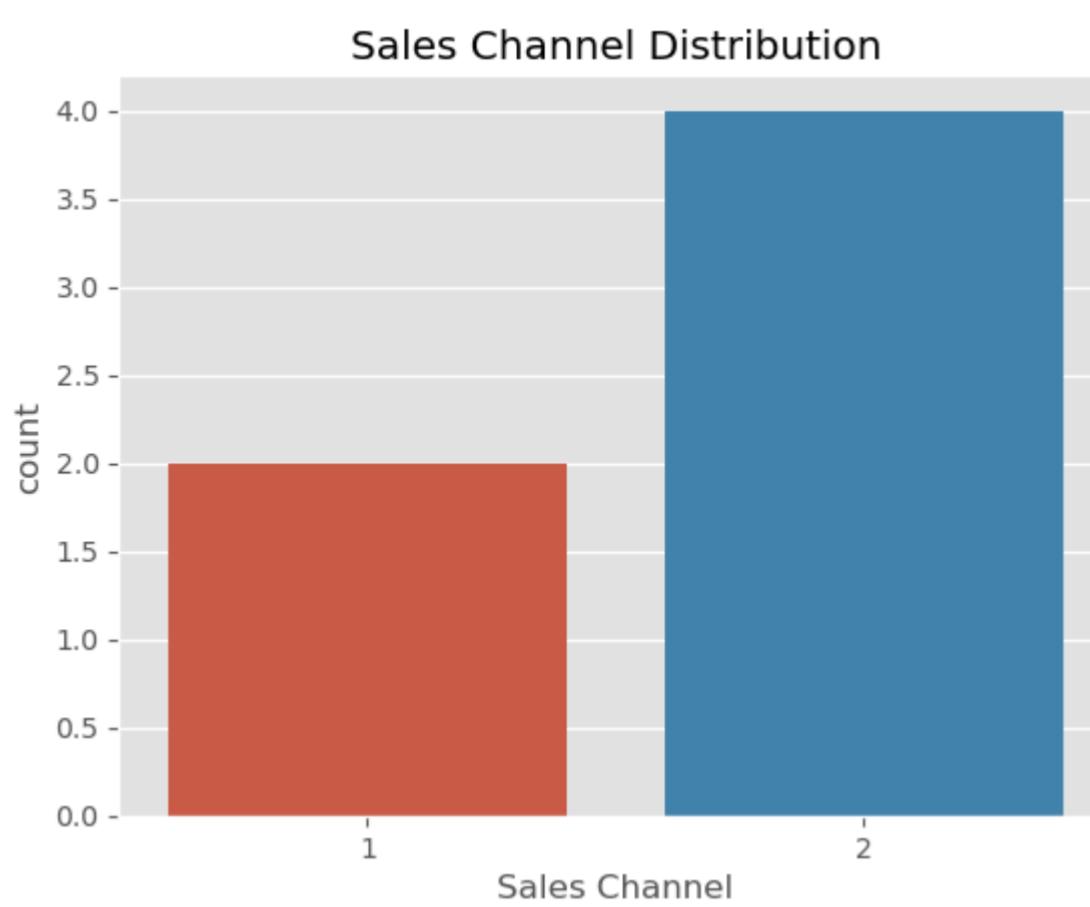
```

Out[133]: Sub-Saharan Africa    3
          Asia                  2
          Europe                1
          Name: Region, dtype: int64

In [222... sb.countplot(data=Vegdf, x="Sales Channel")
plt.figure(figsize=(20, 40))
plt.title('Sales Channel Distribution')

Out[222]: Text(0.5, 1.0, 'Sales Channel Distribution')

```



```

In [221... def plotter(X, Y, df):
    plt.figure(figsize=(7,5))

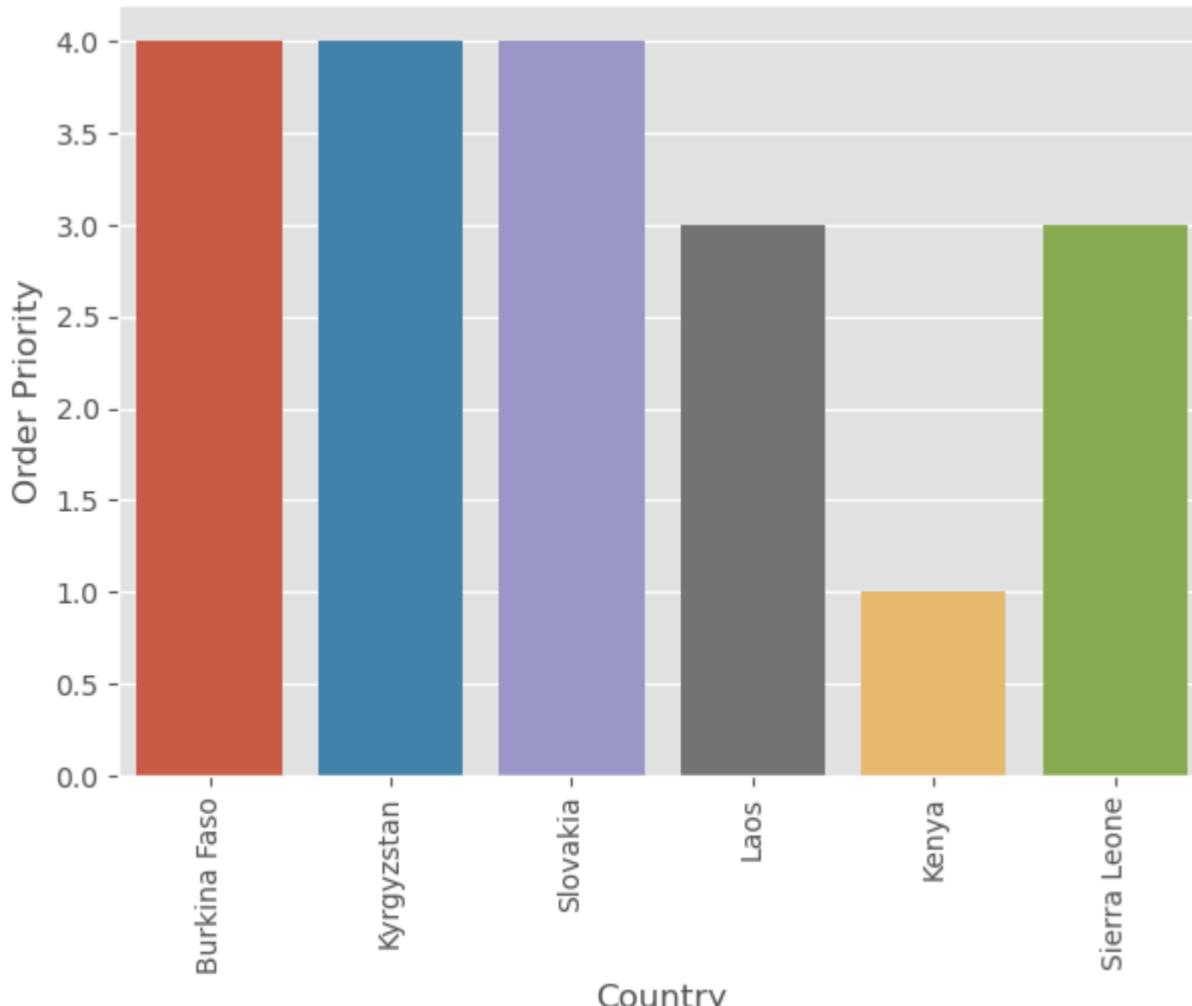
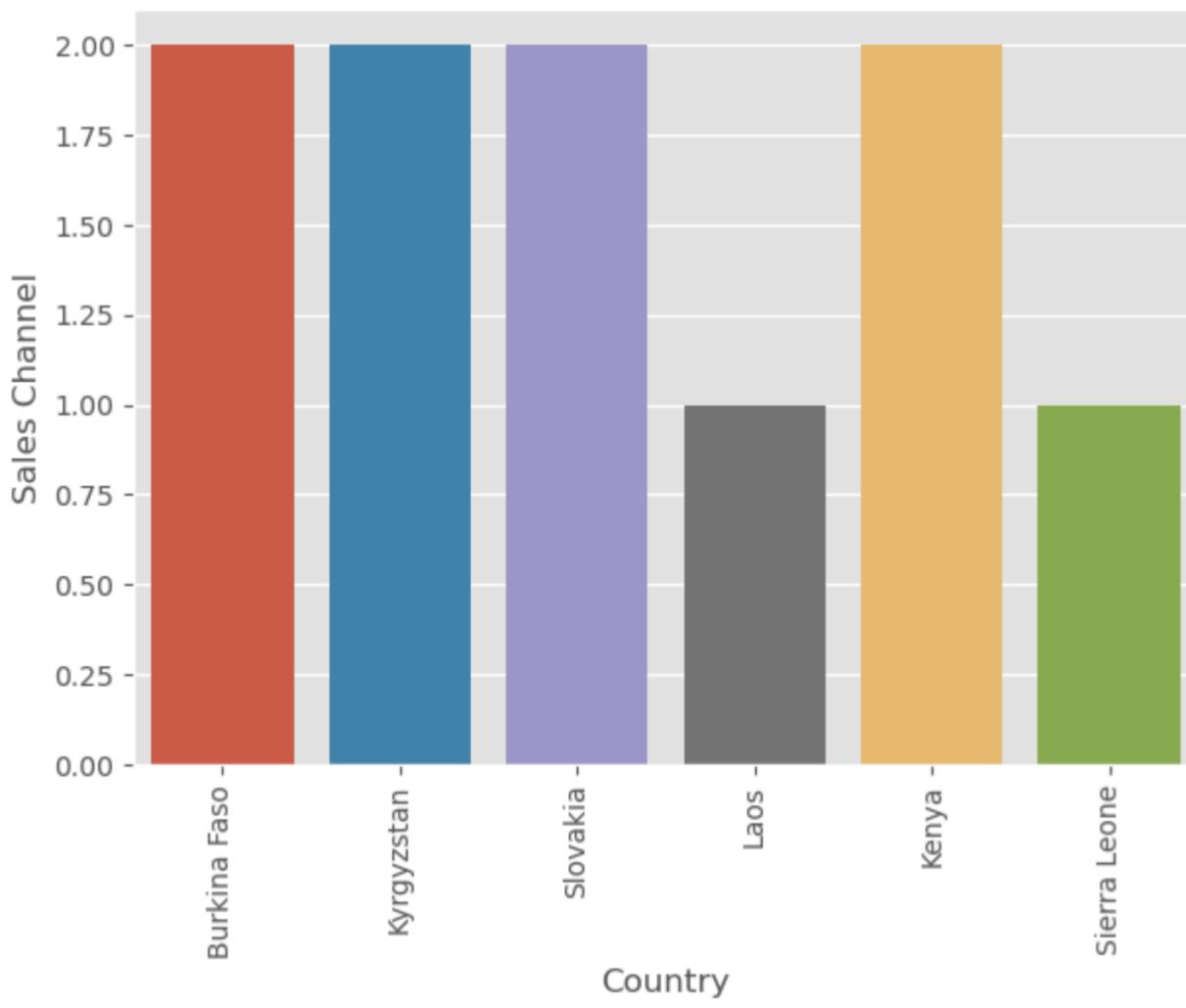
    sb.barplot(x=X, y=Y, data = Vegdf)
    plt.xticks(rotation = 90)

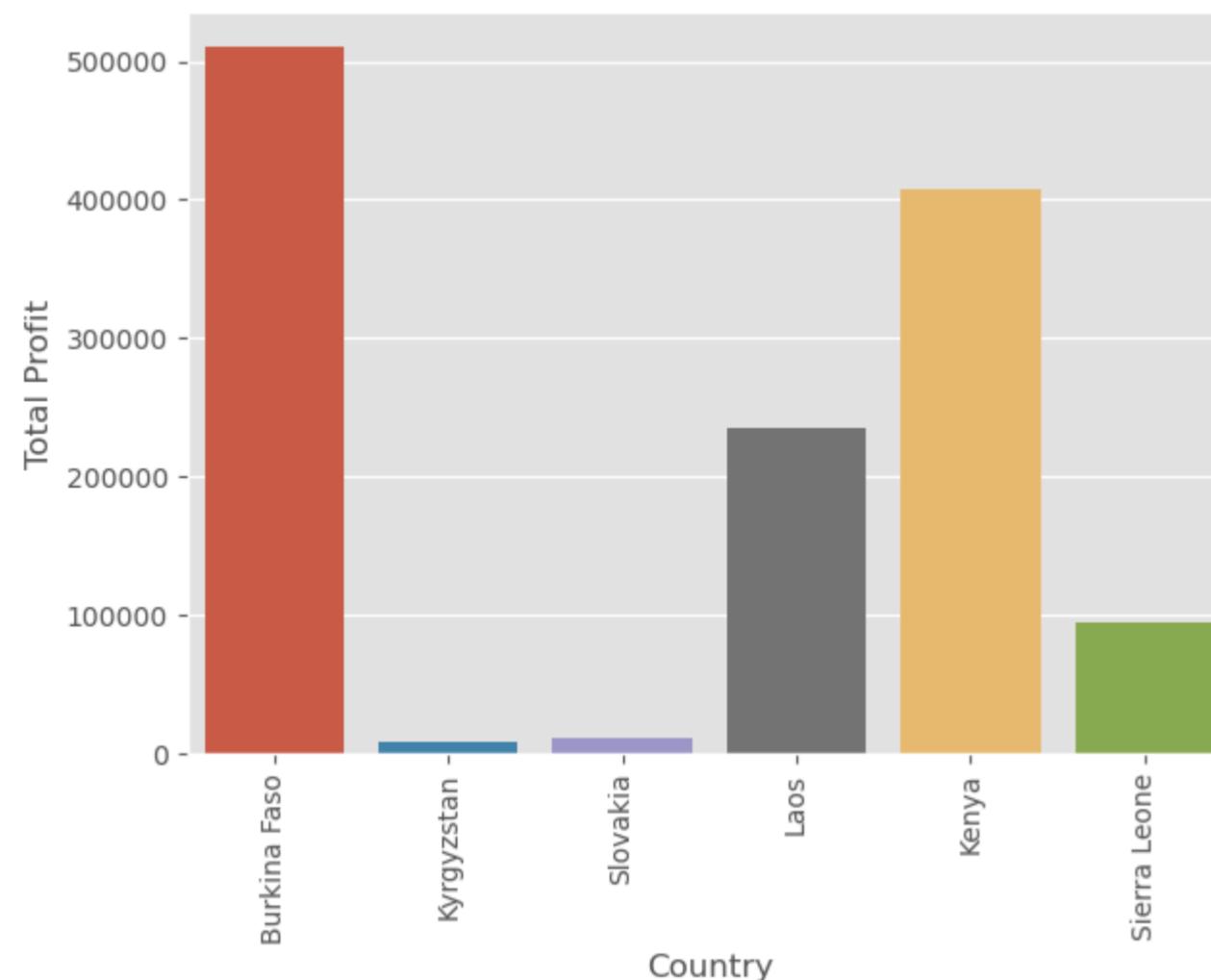
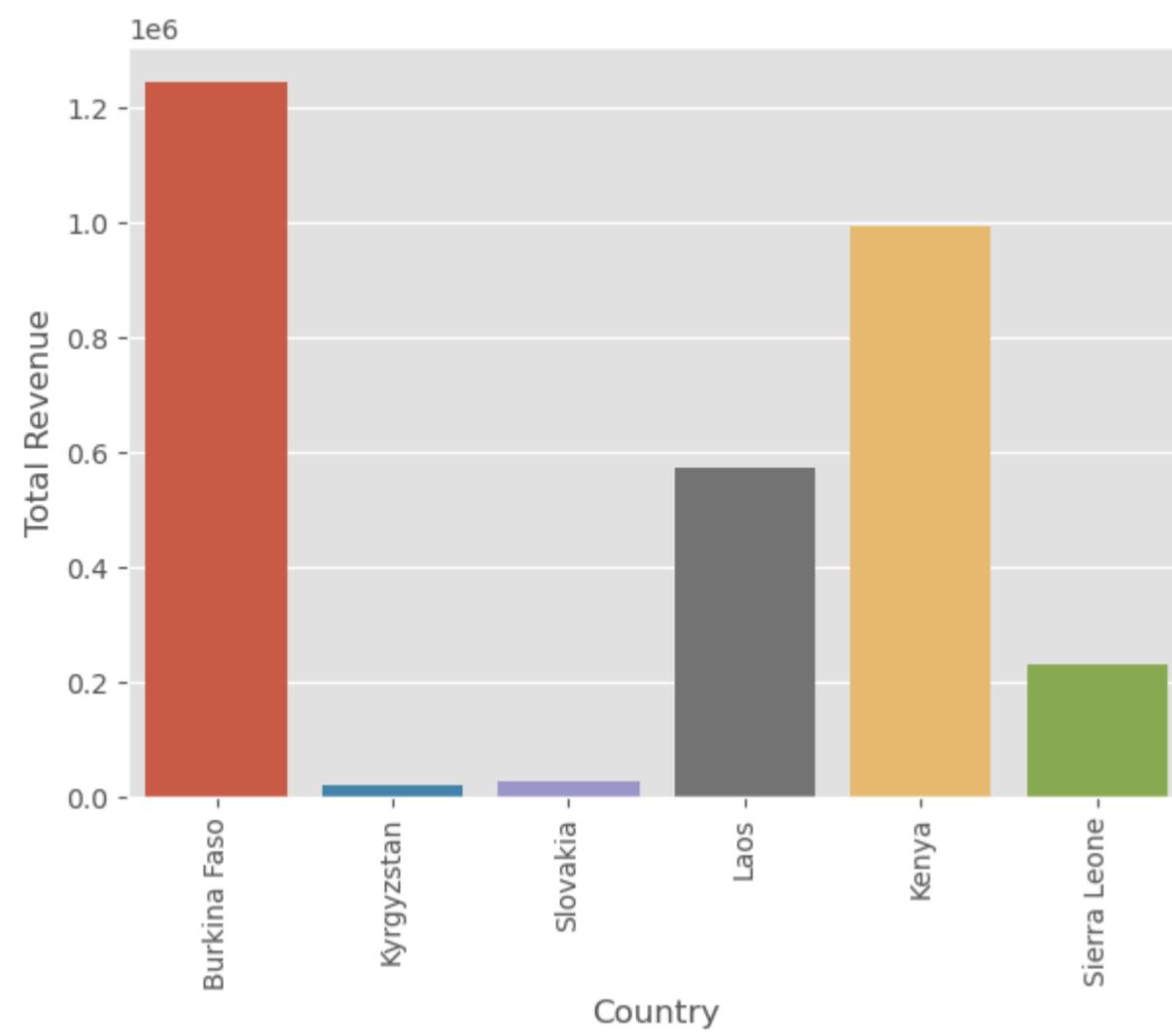
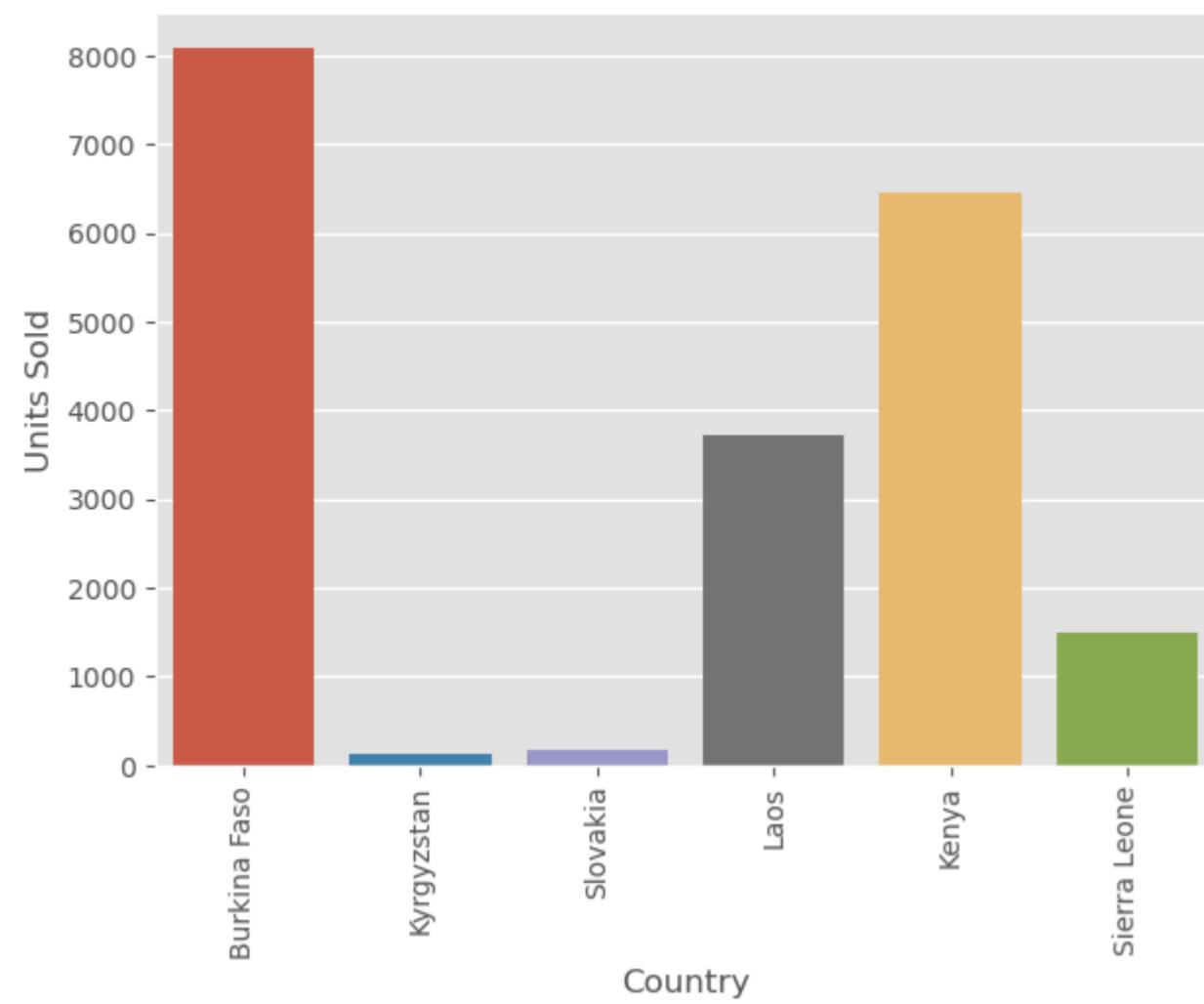
    plt.show()

FruitList = ['Sales Channel', 'Order Priority', 'Units Sold',
            'Total Revenue', 'Total Profit']

for column in ColumnList:
    plotter('Country', column, Vegdf)

```





In [220]:

```

def plotter( X, Y, df):
    plt.figure(figsize=(7,5))

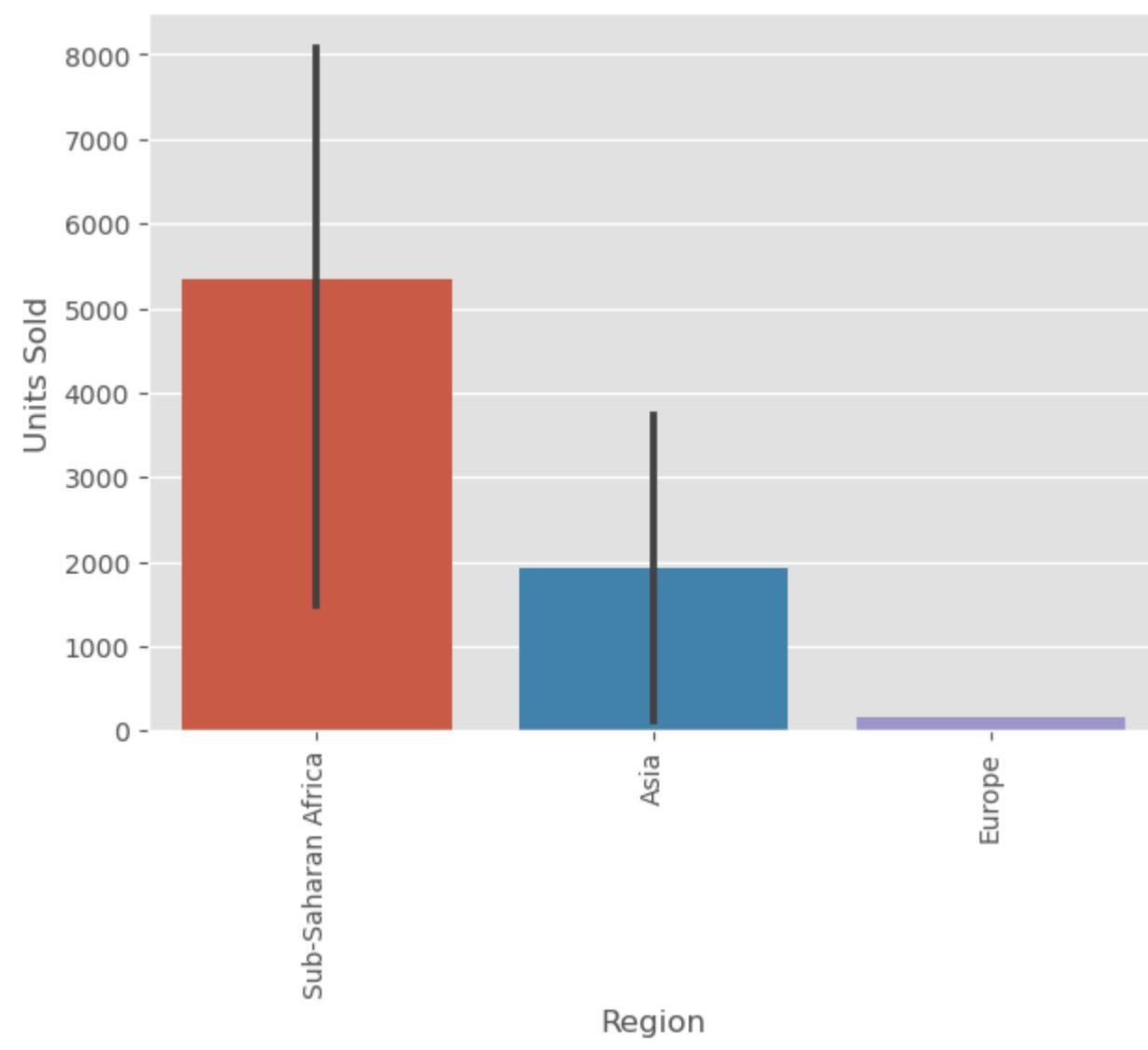
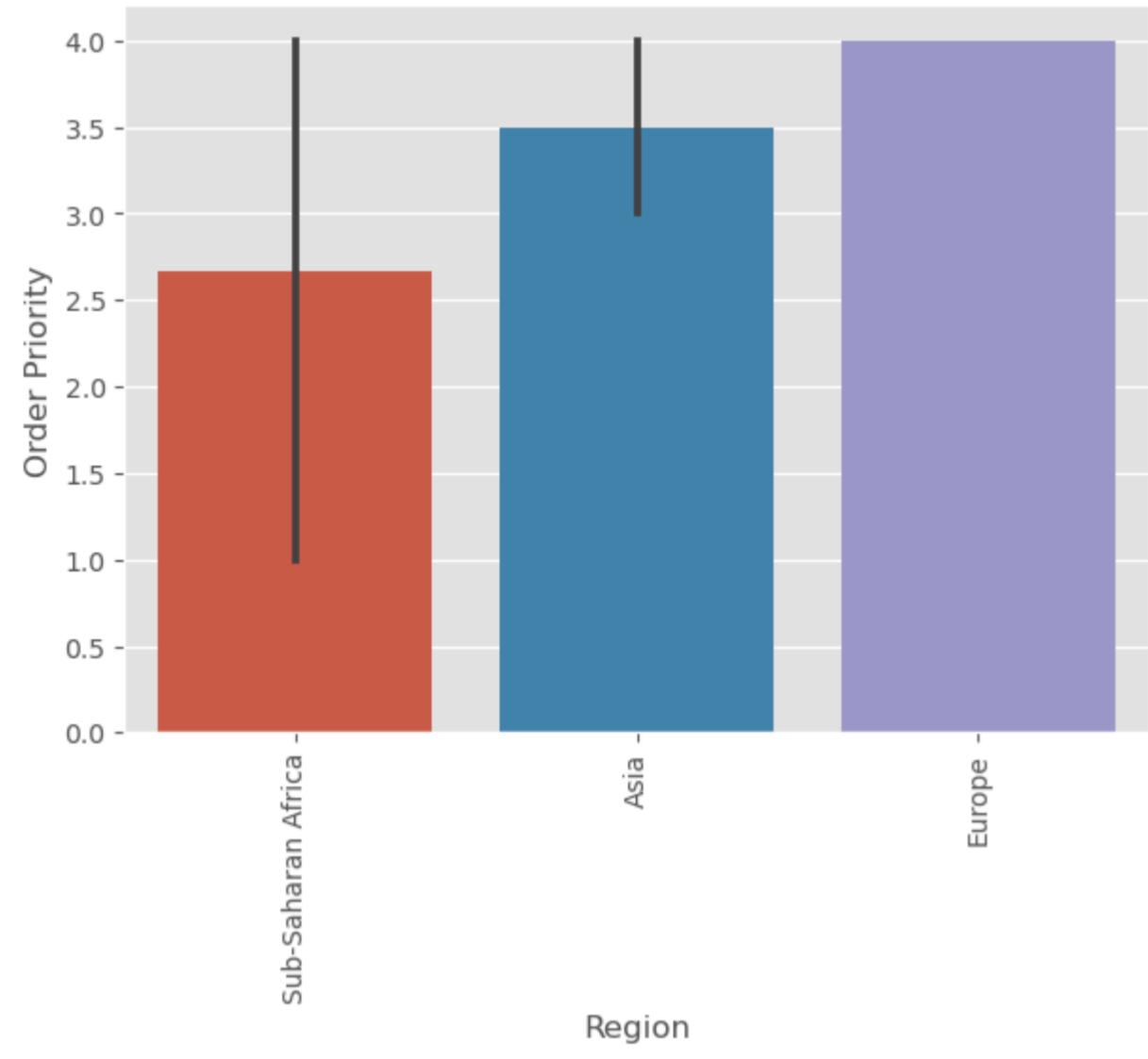
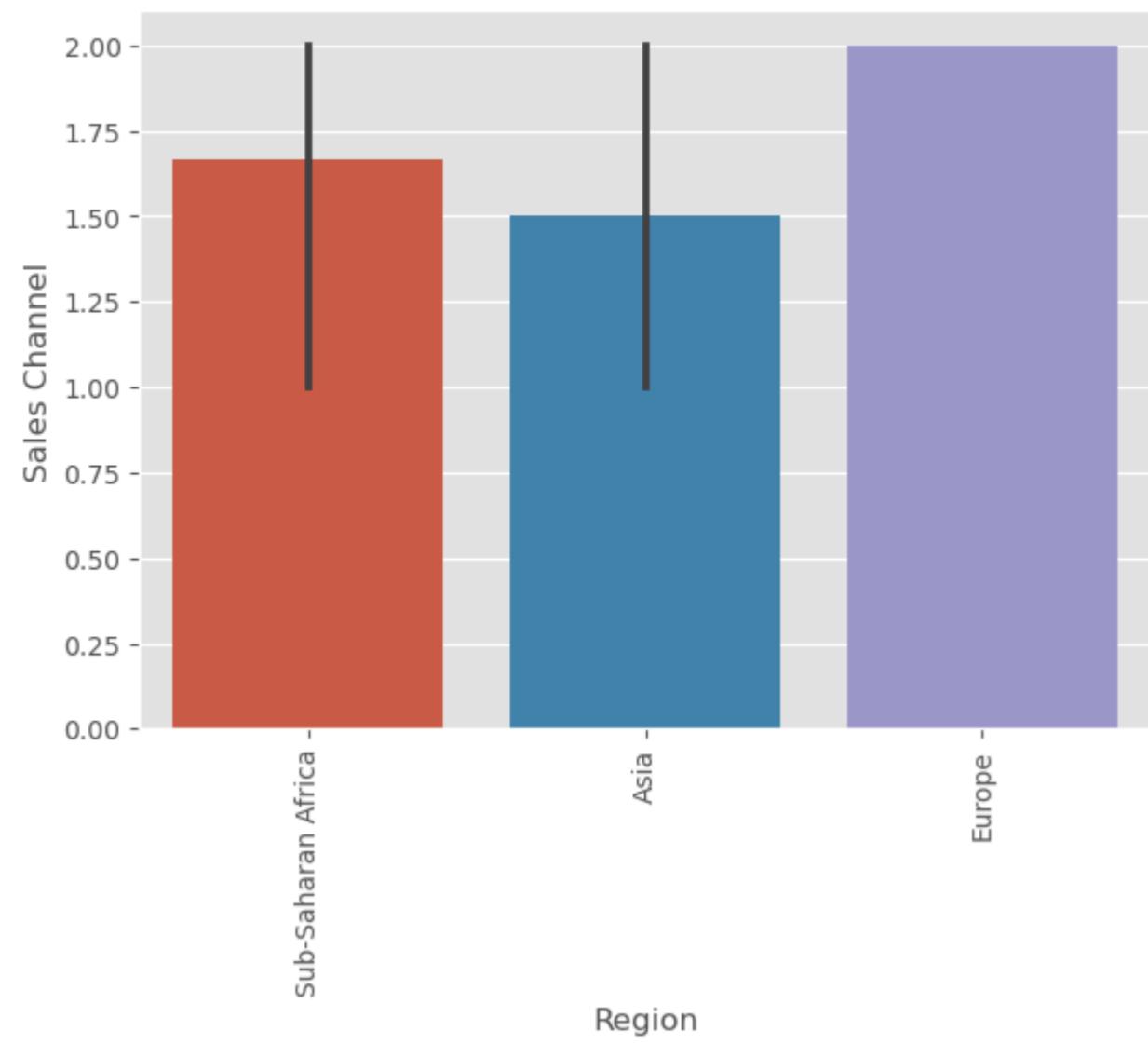
    sb.barplot(x=X, y=Y, data = Vegdf)
    plt.xticks(rotation = 90)

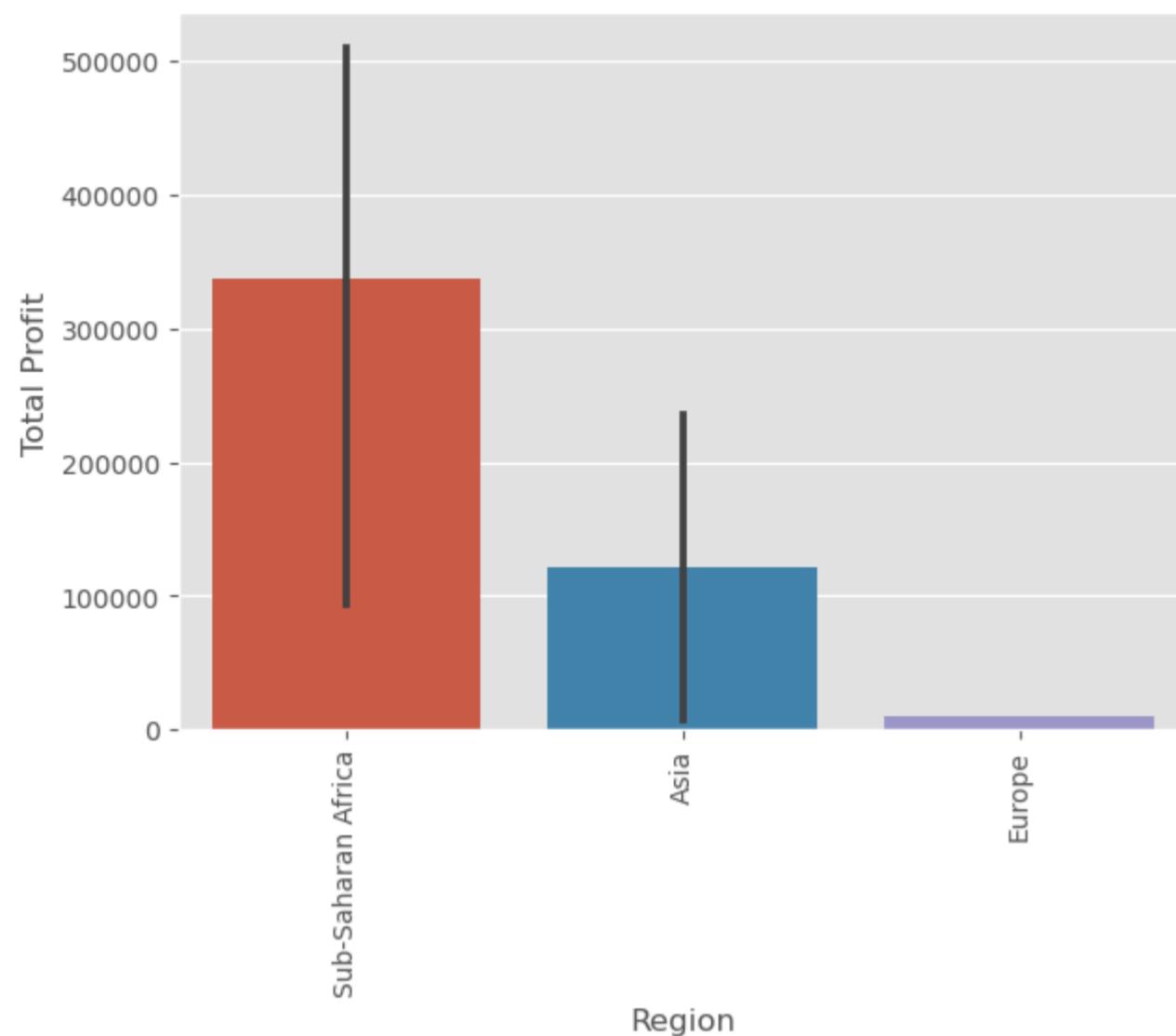
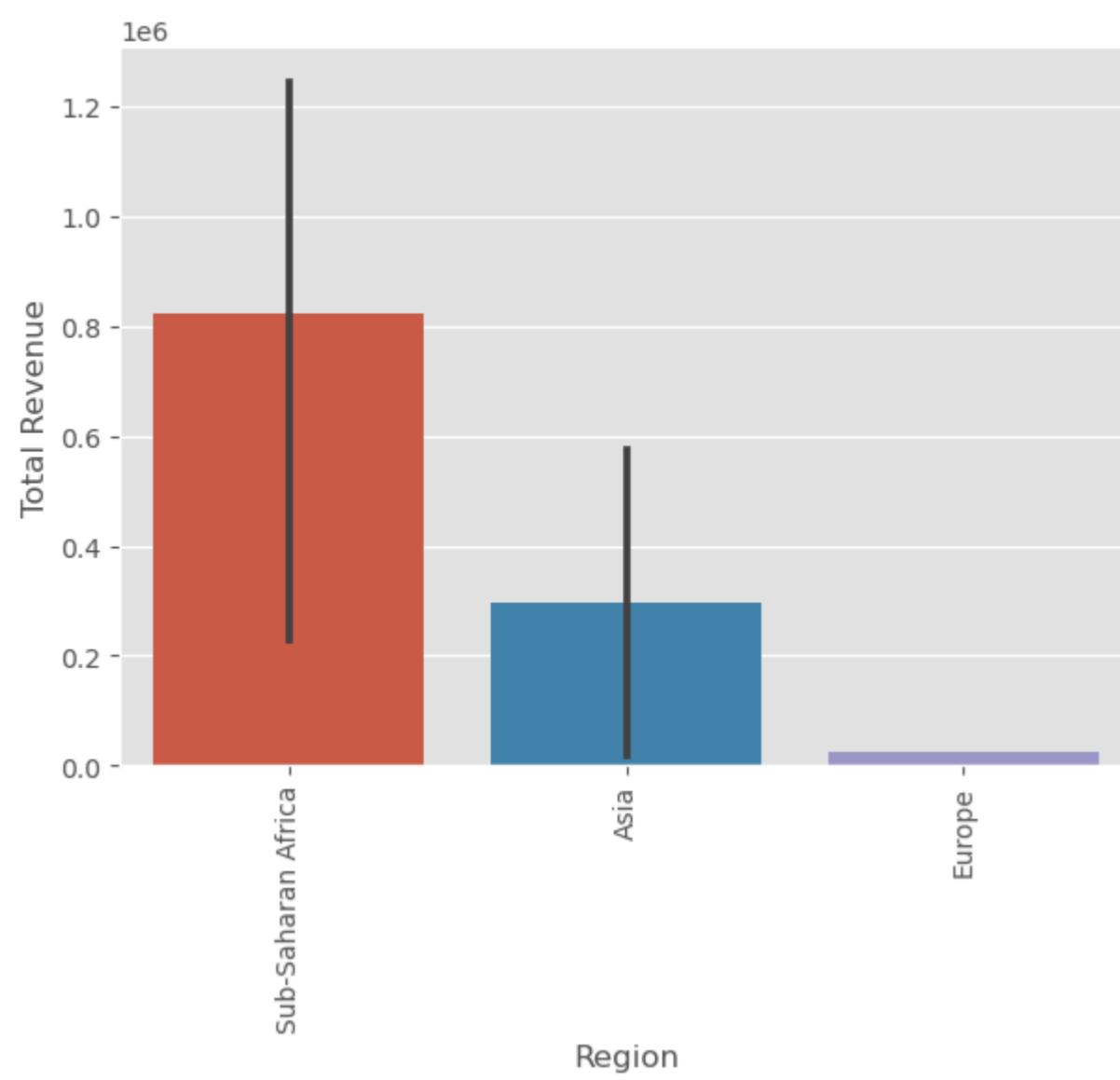
    plt.show()

FruitList = ['Sales Channel', 'Order Priority', 'Units Sold',
            'Total Revenue', 'Total Profit']

for column in ColumnList:
    plotter('Region', column, Vegdf)

```





```
In [ ]:
```

```
In [ ]:
```

```
In [137...]: Snackdf = AmaCopydf.loc[AmaCopydf['Item Type'] == 'Snacks']
```

```
In [138...]: Snackdf
```

```
Out[138...]:
```

	Region	Country	Item Type	Sales Channel	Order Priority	Order Date	Order ID	Ship Date	Units Sold	Unit Price	Unit Cost	Total Revenue	Total Cost	Total Profit	ShipDate	OrderDate	orderCompTime
22	Central America and the Caribbean	Honduras	Snacks	2	1	6/30/2016	795490682	7/26/2016	2225	152.58	97.44	339490.50	216804.00	122686.50	2016-07-26	2016-06-30	26 days
34	Sub-Saharan Africa	Djibouti	Snacks	2	2	2/25/2017	756274640	2/25/2017	7327	152.58	97.44	1117953.66	713942.88	404010.78	2017-02-25	2017-02-25	0 days
83	Sub-Saharan Africa	Zambia	Snacks	2	1	01-04-2011	122583663	01-05-2011	4085	152.58	97.44	623289.30	398042.40	225246.90	2011-01-05	2011-01-04	1 days

```
In [ ]:
```

```
In [139...]: Meatdf = AmaCopydf.loc[AmaCopydf['Item Type'] == 'Meat']
```

```
In [140...]: Meatdf
```

```
Out[140...]:
```

	Region	Country	Item Type	Sales Channel	Order Priority	Order Date	Order ID	Ship Date	Units Sold	Unit Price	Unit Cost	Total Revenue	Total Cost	Total Profit	ShipDate	OrderDate	orderCompTime
19	Australia and Oceania	East Timor	Meat	2	1	7/31/2012	322067916	09-11-2012	5908	421.89	364.69	2492526.12	2154588.52	337937.6	2012-09-11	2012-07-31	42 days
37	Sub-Saharan Africa	The Gambia	Meat	2	2	1/14/2017	825304400	1/23/2017	4767	421.89	364.69	2011149.63	1738477.23	272672.4	2017-01-23	2017-01-14	9 days

```
In [ ]:
```

```
In [218...]: import matplotlib.image as mpimg
plt.style.use('ggplot')

# creating matplotlib subplot structure to hold our plots

fig, axes = plt.subplots(5,3, figsize=(23,28))
fig.subplots_adjust(top=0.85, bottom=0.15, left=0.2, hspace=0.8)

fig.patch.set_linewidth(15)
fig.patch.set_edgecolor('Maroon')

# setting the background image for the entire figure
background_image = mpimg.imread(r"C:\Users\Owner\Documents\amazon-logo-transparent.png")
fig.figimage(background_image, xo=0, yo=0, alpha=0.5, zorder=-1)
```

```

# Distribution of Sales Channel
# Plot 1
Sales_Channel_counts = AmaCopydf['Sales Channel'].value_counts().sort_index()
sb.barplot(x=Sales_Channel_counts.index, y=Sales_Channel_counts.values, ax=axes[0,0] )
axes[0,0].set_title('Sales Channel Distribution', )
axes[0,0].set_ylabel('Channel Count', )

#Plot 2
# Order Priority distribution?
Order_Priority_counts = AmaCopydf['Order Priority'].value_counts().sort_index()
sb.barplot(x=Order_Priority_counts.index, y=Order_Priority_counts.values, ax=axes[0,1])
axes[0,1].set_title('Order Priority Distribution')
axes[0,1].set_ylabel('Count')

# Plot 3
# Profit by Region

Region_Profit = AmaCopydf.groupby('Region')['Total Profit'].mean().transpose()
Region_Profit.plot(kind='bar', ax=axes[0,2], legend=False)
axes[0,2].set_title('Profit by Region')
axes[0,2].set_ylabel('Total Profit(Avg) ')
axes[0,2].tick_params(axis='x', rotation=90)

# Plot 4
# Revenue by Region
Region_Revenue = AmaCopydf.groupby('Region')['Total Revenue'].mean().transpose()
Region_Revenue.plot(kind='bar', ax=axes[1,0], legend=False)
axes[1, 0].set_title('Region_Revenue (Avg)')
axes[1, 0].set_ylabel('Average Revenue')

### Plot 5: Region by Channel

# Purchases by Channel (Region)
sb.countplot(data=AmaCopydf, x="Region", hue="Sales Channel", ax=axes[1,1])
axes[1,1].tick_params(axis='x', rotation=90)
axes[1,1].set_title('Sales Channel by Region')

# Plot 6:
#Order Priority by Region
sb.countplot(data=AmaCopydf, x="Region", hue="Order Priority", ax=axes[1,2])
axes[1,2].tick_params(axis='x', rotation=90)
axes[1,2].set_title('Order Priority by Region')

# Plot 7: Order Priority by Product
sb.countplot(data=AmaCopydf, x="Item Type", hue="Order Priority", ax=axes[2,0])
axes[2,0].tick_params(axis='x', rotation=90)
axes[2,0].set_title('Order Priority by Product')

# Plot 8: Sales Channel by Product
sb.countplot(data=AmaCopydf, x="Item Type", hue="Sales Channel", ax=axes[2,1])
axes[2,1].tick_params(axis='x', rotation=90)
axes[2,1].set_title('Sales Channel by Product')

# Plot 9: Profit by Product
sb.barplot(data=AmaCopydf, x="Item Type", y="Total Profit", ax=axes[2,2])
axes[2,2].tick_params(axis='x', rotation=90)
axes[2,2].set_title('Profit by Product')

# Plot 10: Profit Distribution
sb.histplot(AmaCopydf['Total Profit'], kde=True, ax=axes[3,0])
axes[3,0].tick_params(axis='x', rotation=90)
axes[3,0].set_title('Profit Distribution')

# Plot 11: Revenue Distribution
sb.histplot(AmaCopydf['Total Revenue'], kde=True, ax=axes[3,1])
axes[3,1].tick_params(axis='x', rotation=90)
axes[3,1].set_title('Revenue Distribution')

# Plot 12: Profit by Country (First Seg)
sb.barplot(x= AmaCopydf.iloc[:50, 1], y= 'Total Profit', data= AmaCopydf, ax=axes[3,2] )
axes[3,2].tick_params(axis='x', rotation=90)
axes[3,2].set_title('Profit by Country (First Seg)')

#Plot 13 Profit by Country (Second Seg)
sb.barplot(x= AmaCopydf.iloc[50:101, 1], y= 'Total Profit', data= AmaCopydf, ax=axes[4,0] )
axes[4,0].tick_params(axis='x', rotation=90)
axes[4,0].set_title('Profit by Country (Second Seg)')

#Plot 14 Revenue by Country (First Seg)
sb.barplot(x= AmaCopydf.iloc[:50, 1], y= 'Total Revenue', data= AmaCopydf, ax=axes[4,1] )
axes[4,1].tick_params(axis='x', rotation=90)
axes[4,1].set_title('Revenue by Country (First Seg)')

#Plot 15 Revenue by Country (Second Seg)
sb.barplot(x= AmaCopydf.iloc[:50, 1], y= 'Total Revenue', data= AmaCopydf, ax=axes[4,2] )
axes[4,2].tick_params(axis='x', rotation=90)
axes[4,2].set_title('Revenue by Country (Second Seg)')

plt.tight_layout(rect=[0, 0, 1, 0.95])

# Display the figure
plt.show()

```

