Analyzing KAGGLE Dataset.

Importing the needed librarys

In [1]:
```
import plotly.express as px
import pycountry
import pandas as pd
import numpy as np
import matplotlib.pyplot as plt
import seaborn as sns

import warnings
warnings.filterwarnings('ignore')
```

Adding the Dataset

In [2]:
```
Dataset = pd.read_csv('PetrolDataset_June_20_2022.csv' , encoding='latin-1')
```

Dataset Pre-work visualizing

In [3]:
```
Dataset
```

Out[3]:

	#	Country	Daily Oil Consumption (Barrels)	World Share	Yearly Gallons Per Capita	Price Per Gallon (USD)	Price Per Liter (USD)	Price Per Liter (OMR)
0	1	United States	19687287	20.30%	934.3	5.19	1.37	0.5343
1	2	China	12791553	13.20%	138.7	5.42	1.43	0.5577
2	3	India	4443000	4.60%	51.4	5.05	1.33	0.5187
3	4	Japan	4012877	4.10%	481.5	4.69	1.24	0.4836
4	5	Russia	3631287	3.70%	383.2	3.41	0.90	0.3510
...	...	...	...	...	...	...	...	...
175	177	Saint Pierre & Miquelon	660	0.00%	1705.1	8.27	2.19	0.8541
176	178	Kiribati	400	0.00%	54.5	4.09	1.08	0.4212
177	179	Montserrat	400	0.00%	1231.1	4.57	1.21	0.4719
178	180	Saint Helena	70	0.00%	180.2	5.53	1.46	0.5694
179	181	Niue	51	0.00%	484.4	11.43	3.02	1.1778

180 rows × 8 columns

Dropping unnecessary columns

In [4]:
```
#Passing a value to carry the columns which will be dropped
columnsToDrop = ['#']

# Dropping the unneeded columns from axis 1 as its on the first line of the dataset
Dataset = Dataset.drop(columnsToDrop,axis=1)
```

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

Out[5]: (180, 7)

In [6]:
```
Dataset.head(4)
```

Out[6]:

	Country	Daily Oil Consumption (Barrels)	World Share	Yearly Gallons Per Capita	Price Per Gallon (USD)	Price Per Liter (USD)	Price Per Liter (OMR)
0	United States	19687287	20.30%	934.3	5.19	1.37	0.5343
1	China	12791553	13.20%	138.7	5.42	1.43	0.5577
2	India	4443000	4.60%	51.4	5.05	1.33	0.5187
3	Japan	4012877	4.10%	481.5	4.69	1.24	0.4836

In [7]:
```
Dataset.columns
```

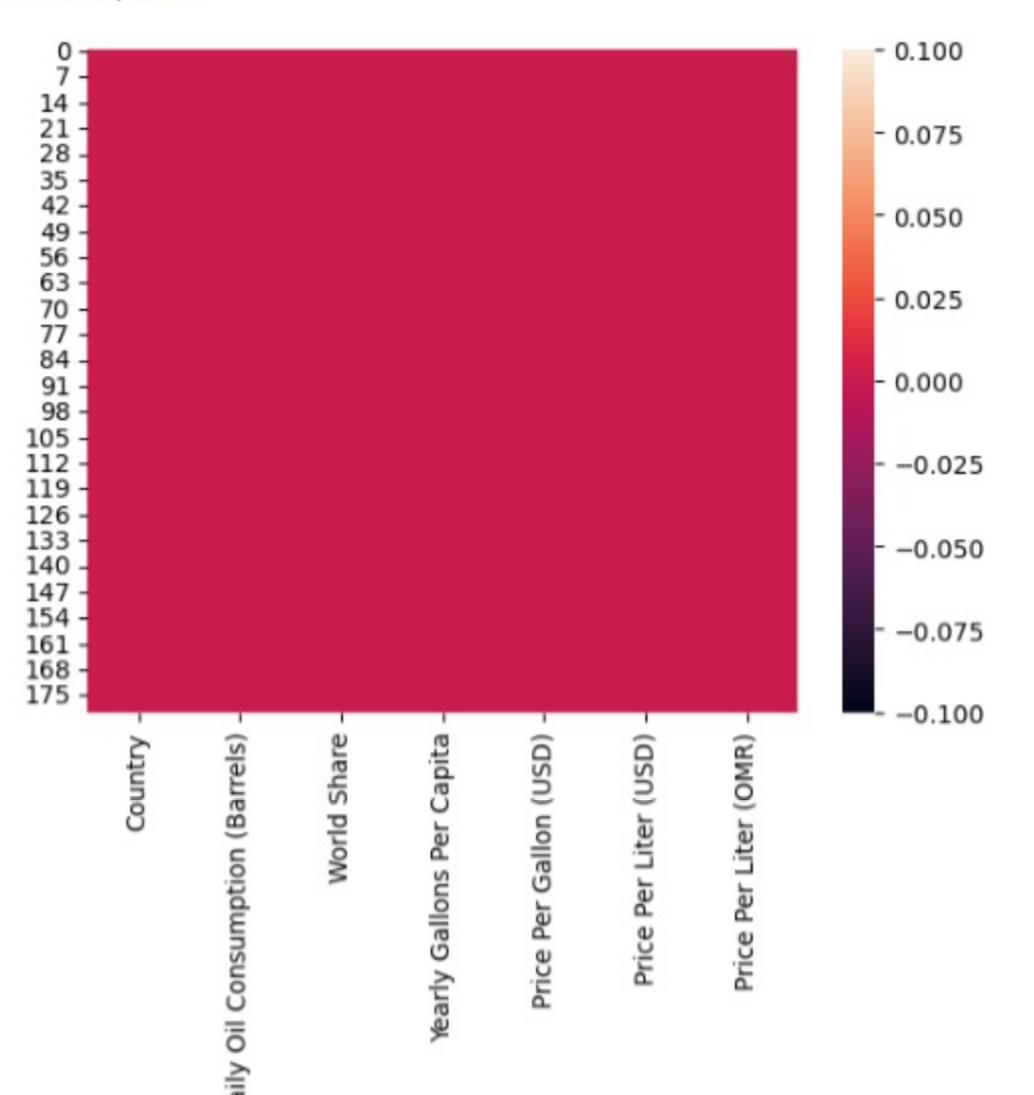
Out[7]:
```
Index(['Country', 'Daily Oil Consumption (Barrels)', 'World Share',
       'Yearly Gallons Per Capita', 'Price Per Gallon (USD)',
       'Price Per Liter (USD)', 'Price Per Liter (OMR)'],
      dtype='object')
```

In [8]:
```
Dataset.isnull().sum()
```

Out[8]:
```
Country                            0
Daily Oil Consumption (Barrels)    0
World Share                        0
Yearly Gallons Per Capita          0
Price Per Gallon (USD)             0
Price Per Liter (USD)              0
Price Per Liter (OMR)              0
dtype: int64
```

In [9]:
```
sns.heatmap(Dataset.isnull())
```

Out[9]: <AxesSubplot:>



In [10]:
```
Dataset.info()
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 180 entries, 0 to 179
Data columns (total 7 columns):
 #   Column                           Non-Null Count  Dtype
---  ------                           --------------  -----
 0   Country                          180 non-null    object
 1   Daily Oil Consumption (Barrels)  180 non-null    int64
 2   World Share                      180 non-null    object
 3   Yearly Gallons Per Capita        180 non-null    float64
 4   Price Per Gallon (USD)           180 non-null    float64
 5   Price Per Liter (USD)            180 non-null    float64
 6   Price Per Liter (OMR)            180 non-null    float64
dtypes: float64(4), int64(1), object(2)
memory usage: 10.0+ KB
```

In [11]:
```
Dataset.describe().T
```

Out[11]:

	count	mean	std	min	25%	50%	75%	max
Daily Oil Consumption (Barrels)	180.0	535224.850000	1.863117e+06	51.0000	20027.00000	60806.00000	265514.000000	1.968729e+07
Yearly Gallons Per Capita	180.0	331.370000	4.376922e+02	2.2000	53.50000	177.40000	424.225000	3.679500e+03
Price Per Gallon (USD)	180.0	5.683222	4.379446e+00	0.0800	4.13500	5.27500	6.752500	5.489000e+01
Price Per Liter (USD)	180.0	1.501833	1.156937e+00	0.0200	1.09500	1.39500	1.782500	1.450000e+01
Price Per Liter (OMR)	180.0	0.585715	4.512053e-01	0.0078	0.42705	0.54405	0.695175	5.655000e+00

In [12]:
```
def analyze(Dataset):
    print()
    cols = Dataset.columns.values
    total = float(len(Dataset))

    print("{} Total Number of Rows\n".format(int(total)))
    for col in cols:
        uniques = Dataset[col].unique()
        unique_count = len(uniques)
        if unique_count > 10:
            print("{}: {} Unique Data \n".format(col,unique_count))
        else:
            pass

analyze(Dataset)
```

```
180 Total Number of Rows

Country: 180 Unique Data

Daily Oil Consumption (Barrels): 155 Unique Data

World Share: 37 Unique Data

Yearly Gallons Per Capita: 179 Unique Data

Price Per Gallon (USD): 155 Unique Data

Price Per Liter (USD): 117 Unique Data

Price Per Liter (OMR): 117 Unique Data
```

In [13]:
```
Dataset.head(4)
```

Out[13]:

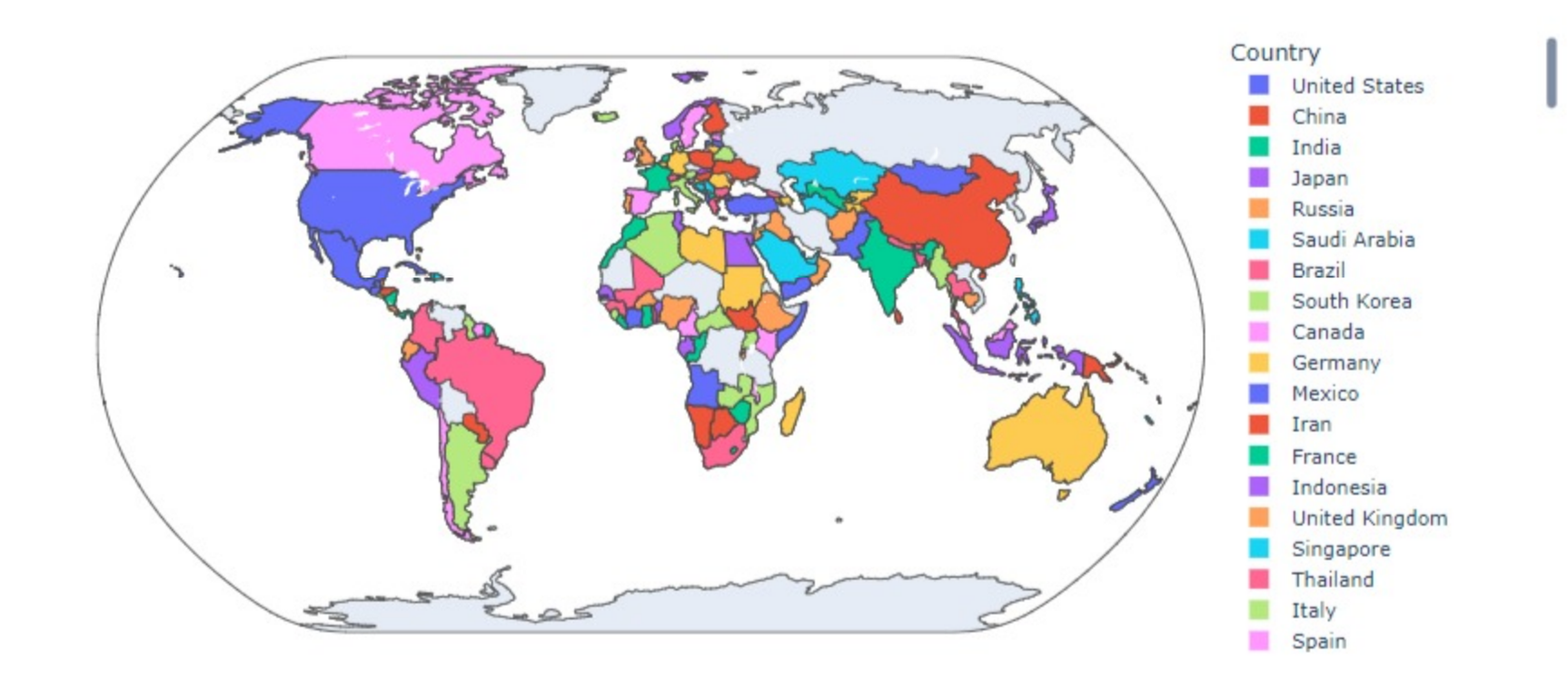
	Country	Daily Oil Consumption (Barrels)	World Share	Yearly Gallons Per Capita	Price Per Gallon (USD)	Price Per Liter (USD)	Price Per Liter (OMR)
0	United States	19687287	20.30%	934.3	5.19	1.37	0.5343
1	China	12791553	13.20%	138.7	5.42	1.43	0.5577
2	India	4443000	4.60%	51.4	5.05	1.33	0.5187
3	Japan	4012877	4.10%	481.5	4.69	1.24	0.4836

In [14]:
```
Dataset.columns
```

Out[14]:
```
Index(['Country', 'Daily Oil Consumption (Barrels)', 'World Share',
       'Yearly Gallons Per Capita', 'Price Per Gallon (USD)',
       'Price Per Liter (USD)', 'Price Per Liter (OMR)'],
      dtype='object')
```

All Data Results are Plotted Out on a Worldwide Map

In [15]:
```
countries = {}
for country in pycountry.countries:
    countries[country.name] = country.alpha_3

Dataset["Code"] = [countries.get(names, 'Unknown code') for names in Dataset["Country"]]

fig = px.choropleth(Dataset, locations="Code",
                    hover_name="Country",
                    hover_data=Dataset.columns,
                    color="Country",
                    color_continuous_scale="Viridis",
                    projection="natural earth"

                    )


fig.show()
```



Analyzing Only the Top 15 Country

According to Daily Oil Consumption

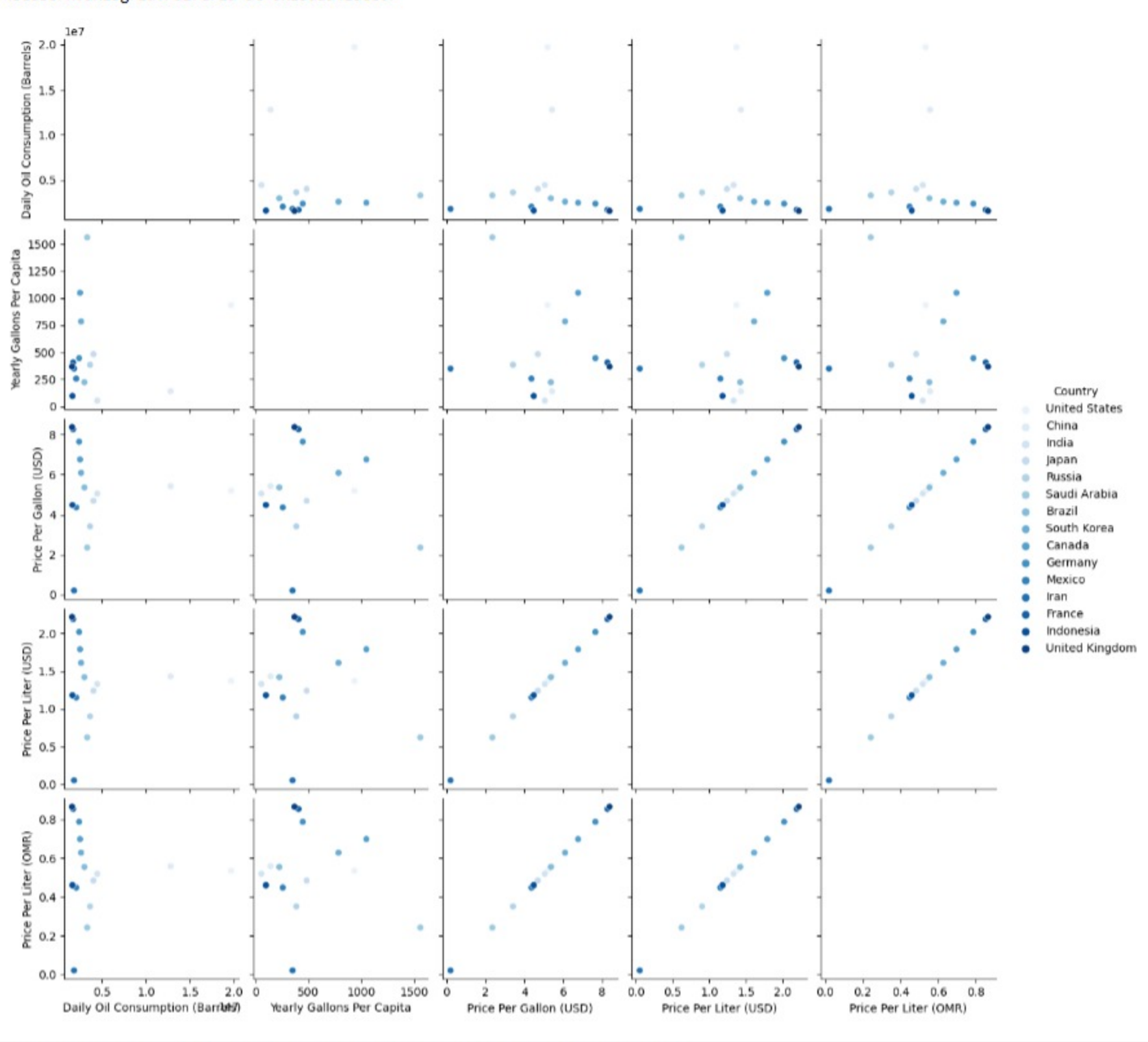
In [16]:
```
DatasetTop = Dataset.sort_values(by=['Daily Oil Consumption (Barrels)'], ascending=False)
DatasetTop = DatasetTop.head(15)

DatasetTop
```

Out[16]:

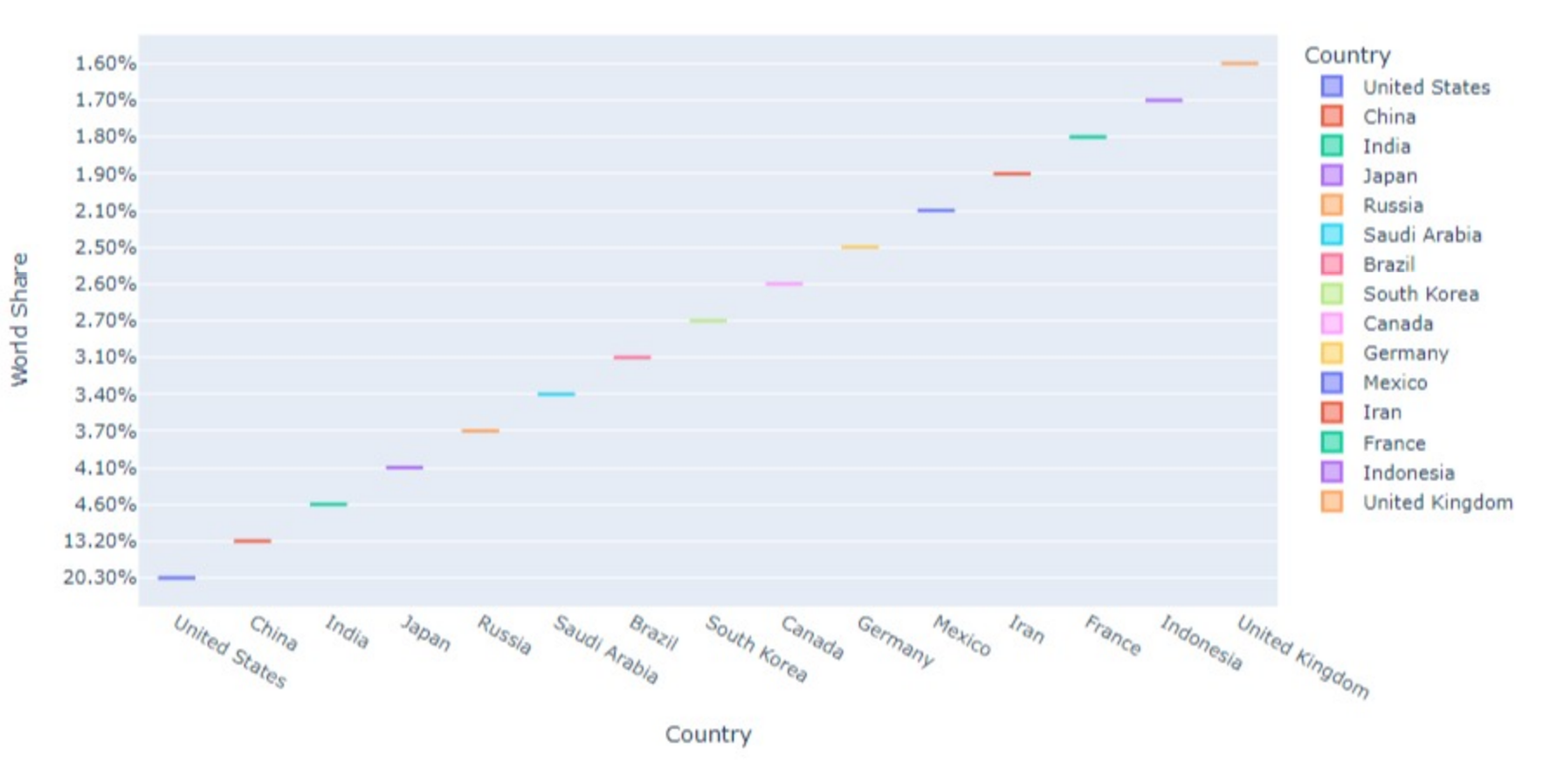
	Country	Daily Oil Consumption (Barrels)	World Share	Yearly Gallons Per Capita	Price Per Gallon (USD)	Price Per Liter (USD)	Price Per Liter (OMR)	Code
0	United States	19687287	20.30%	934.3	5.19	1.37	0.5343	USA
1	China	12791553	13.20%	138.7	5.42	1.43	0.5577	CHN
2	India	4443000	4.60%	51.4	5.05	1.33	0.5187	IND
3	Japan	4012877	4.10%	481.5	4.69	1.24	0.4836	JPN
4	Russia	3631287	3.70%	383.2	3.41	0.90	0.3510	Unknown code
5	Saudi Arabia	3302000	3.40%	1560.2	2.35	0.62	0.2418	SAU
6	Brazil	2984000	3.10%	221.9	5.36	1.42	0.5538	BRA
7	South Korea	2605440	2.70%	783.4	6.09	1.61	0.6279	Unknown code
8	Canada	2486301	2.60%	1047.6	6.76	1.79	0.6981	CAN
9	Germany	2383393	2.50%	444.5	7.65	2.02	0.7878	DEU
10	Mexico	2052607	2.10%	255.1	4.36	1.15	0.4485	MEX
11	Iran	1803999	1.90%	347.6	0.20	0.05	0.0195	Unknown code
12	France	1705568	1.80%	404.3	8.27	2.19	0.8541	FRA
13	Indonesia	1623000	1.70%	95.1	4.48	1.18	0.4602	IDN
14	United Kingdom	1583896	1.60%	366.2	8.38	2.22	0.8658	GBR

In [17]:
```
sns.pairplot(DatasetTop,hue='Country',palette='Blues')
```

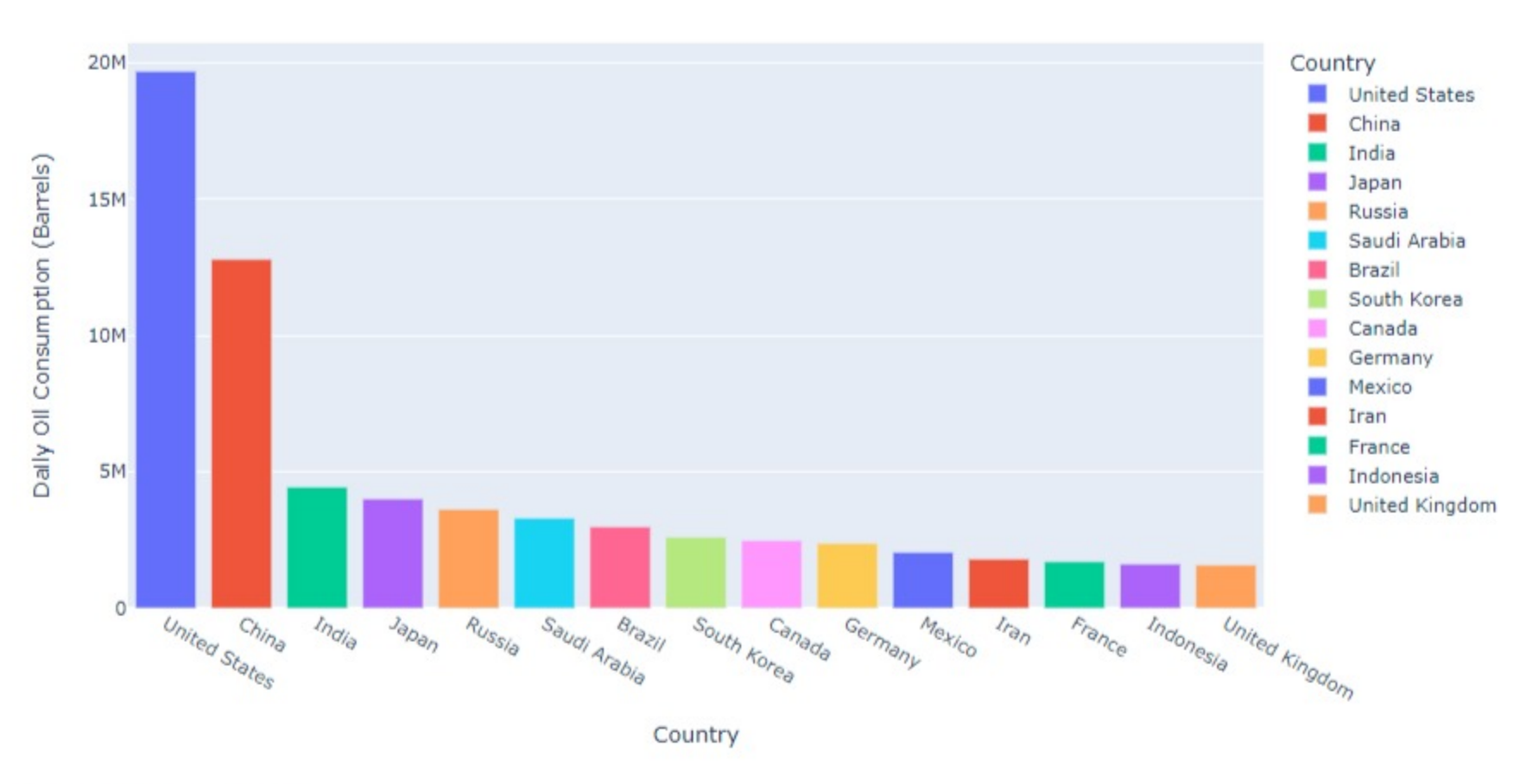
Out[17]: <seaborn.axisgrid.PairGrid at 0x15dad42aee0>



In [18]:
```
px.box(DatasetTop, x="Country", y="World Share",color='Country',notched=True)
```

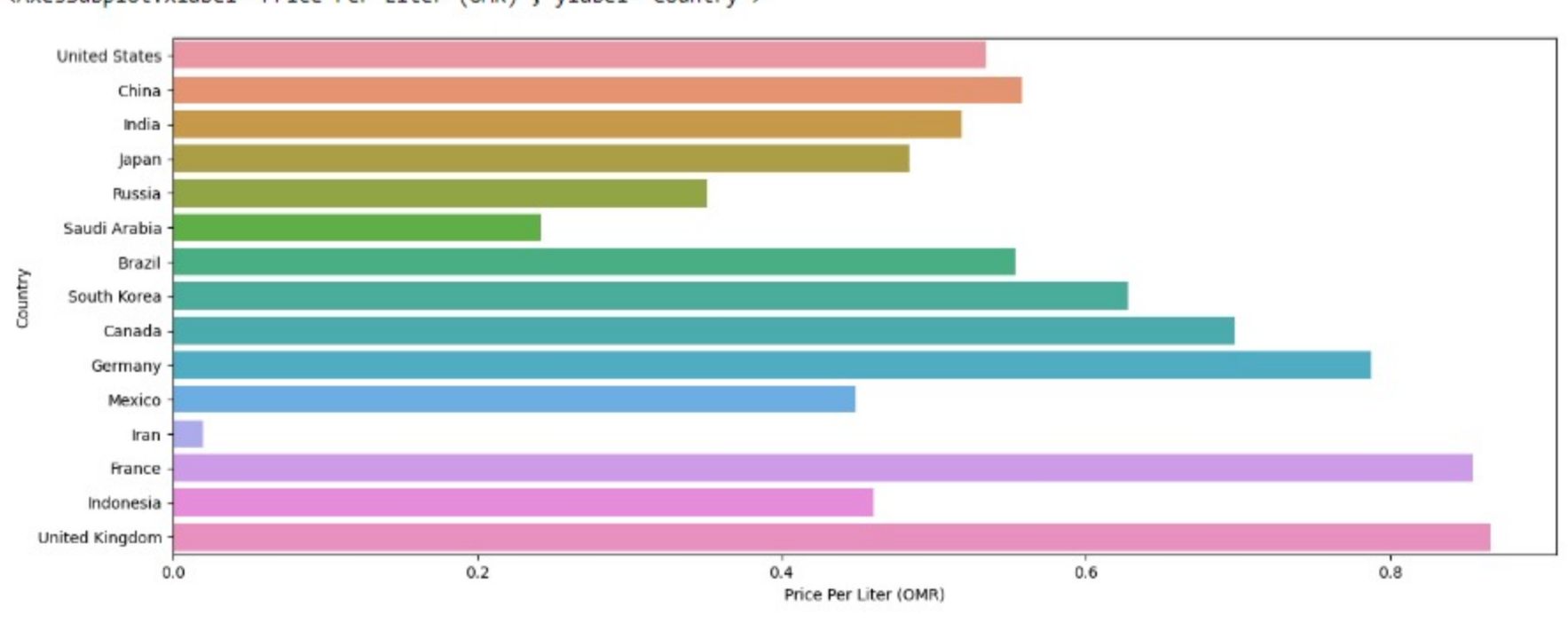


In [19]:
```
# Lets see the top 10 countries where have the highest Daily Oil Consumption
px.bar(DatasetTop, x='Country', y='Daily Oil Consumption (Barrels)',color='Country')
```



In [20]:
```
plt.figure(figsize=(16,6))
sns.barplot(data=DatasetTop,y='Country',x='Price Per Liter (OMR)')
```

Out[20]: <AxesSubplot:xlabel='Price Per Liter (OMR)', ylabel='Country'>



Analyzing the Lowest 15 Country

According to Daily Oil Consumption

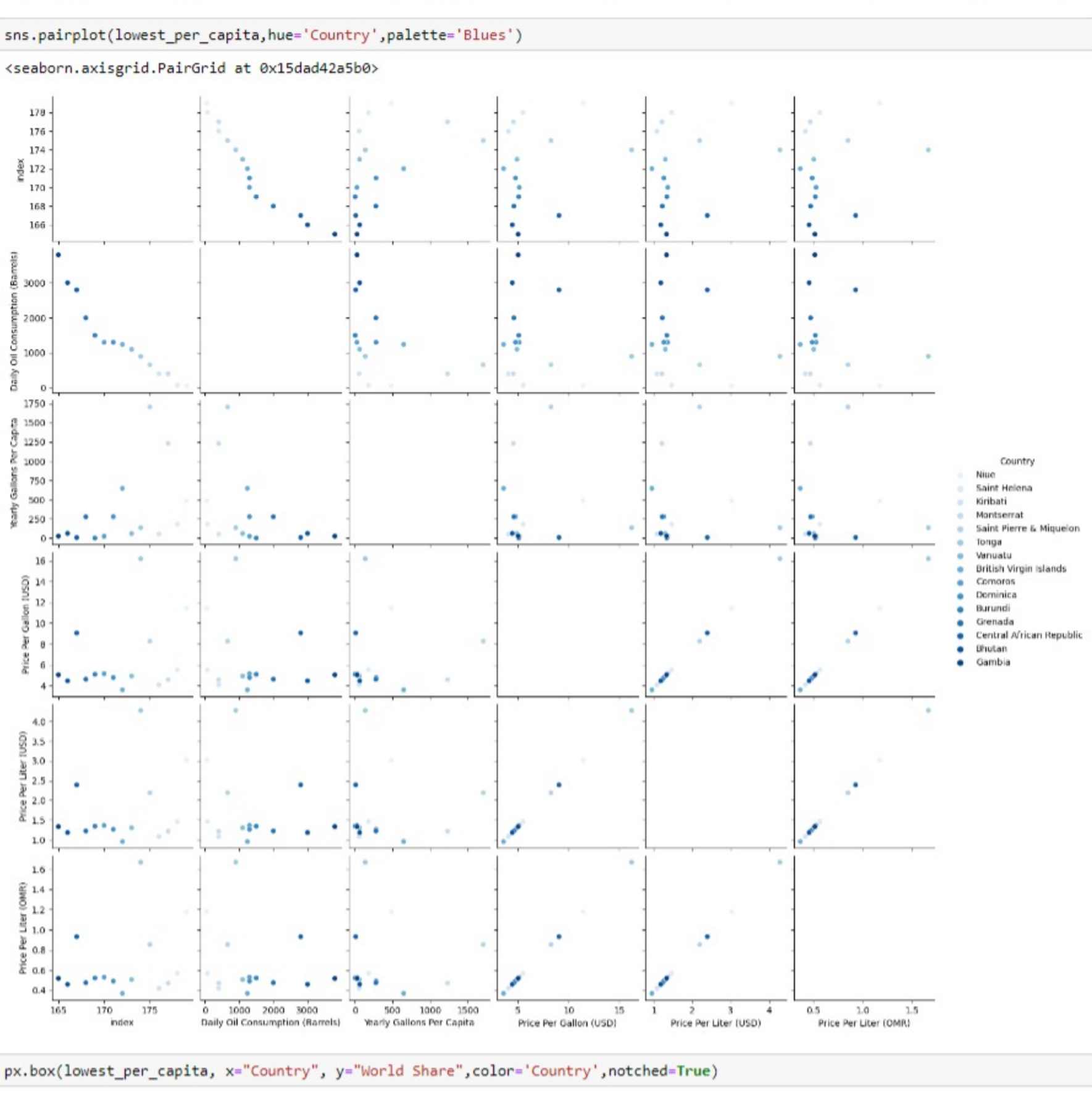
In [21]:
```
lowest_per_capita=Dataset.nsmallest(15,'Daily Oil Consumption (Barrels)').reset_index()
lowest_per_capita
```

Out[21]:

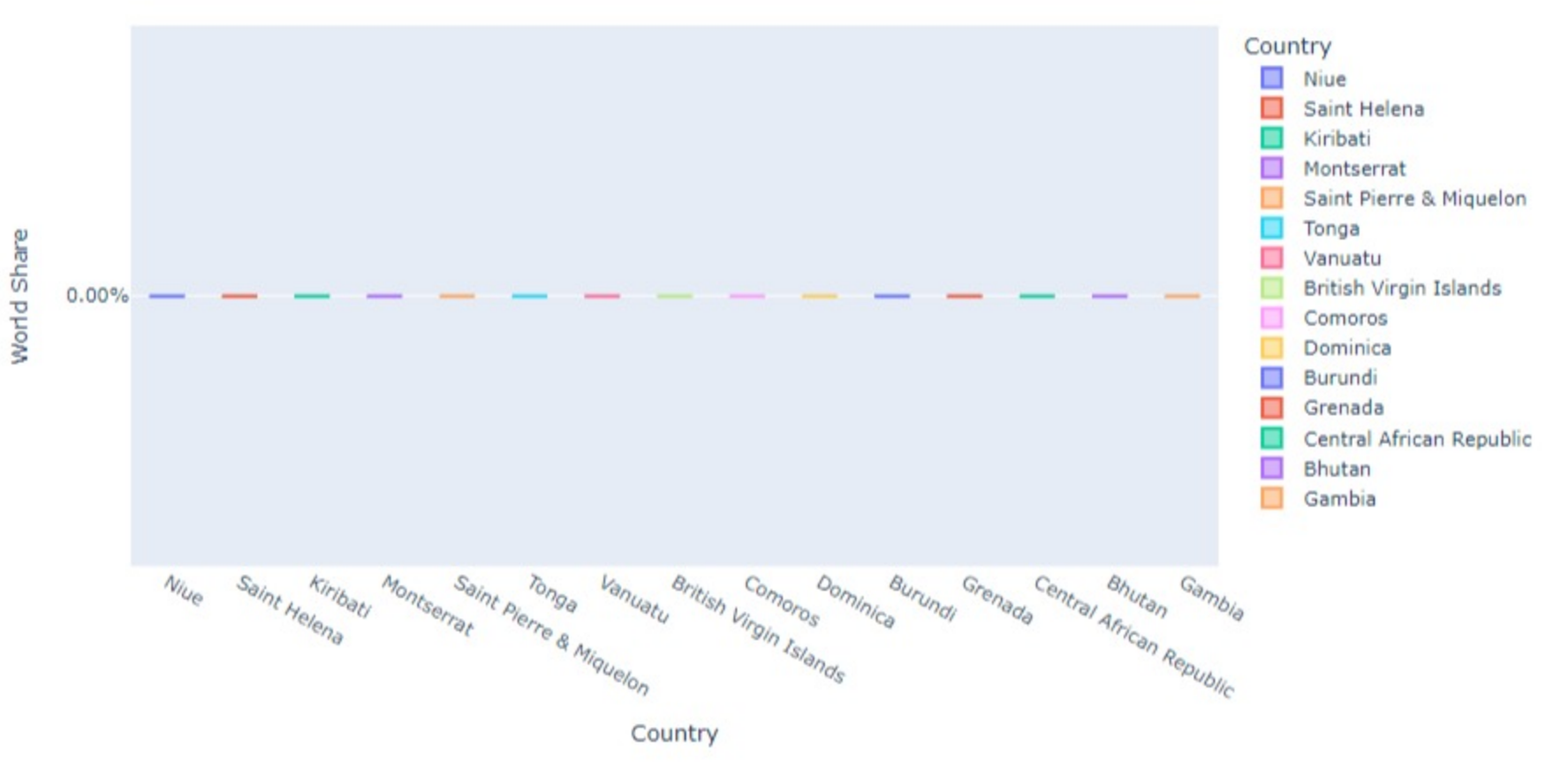
	index	Country	Daily Oil Consumption (Barrels)	World Share	Yearly Gallons Per Capita	Price Per Gallon (USD)	Price Per Liter (USD)	Price Per Liter (OMR)	Code
0	179	Niue	51	0.00%	484.4	11.43	3.02	1.1778	NIU
1	178	Saint Helena	70	0.00%	180.2	5.53	1.46	0.5694	Unknown code
2	176	Kiribati	400	0.00%	54.5	4.09	1.08	0.4212	KIR
3	177	Montserrat	400	0.00%	1231.1	4.57	1.21	0.4719	MSR
4	175	Saint Pierre & Miquelon	660	0.00%	1705.1	8.27	2.19	0.8541	Unknown code
5	174	Tonga	899	0.00%	136.3	16.20	4.28	1.6692	TON
6	173	Vanuatu	1100	0.00%	60.6	4.92	1.30	0.5070	VUT
7	172	British Virgin Islands	1240	0.00%	647.6	3.60	0.95	0.3705	Unknown code
8	170	Comoros	1300	0.00%	25.0	5.15	1.36	0.5304	COM
9	171	Dominica	1301	0.00%	279.7	4.78	1.26	0.4914	DMA
10	169	Burundi	1499	0.00%	2.2	5.09	1.34	0.5226	BDI
11	168	Grenada	2000	0.00%	278.1	4.62	1.22	0.4758	GRD
12	167	Central African Republic	2800	0.00%	9.5	9.06	2.39	0.9321	CAF
13	166	Bhutan	3001	0.00%	62.4	4.46	1.18	0.4602	BTN
14	165	Gambia	3800	0.00%	27.1	5.04	1.33	0.5187	GMB

In [22]:
```
sns.pairplot(lowest_per_capita,hue='Country',palette='Blues')
```

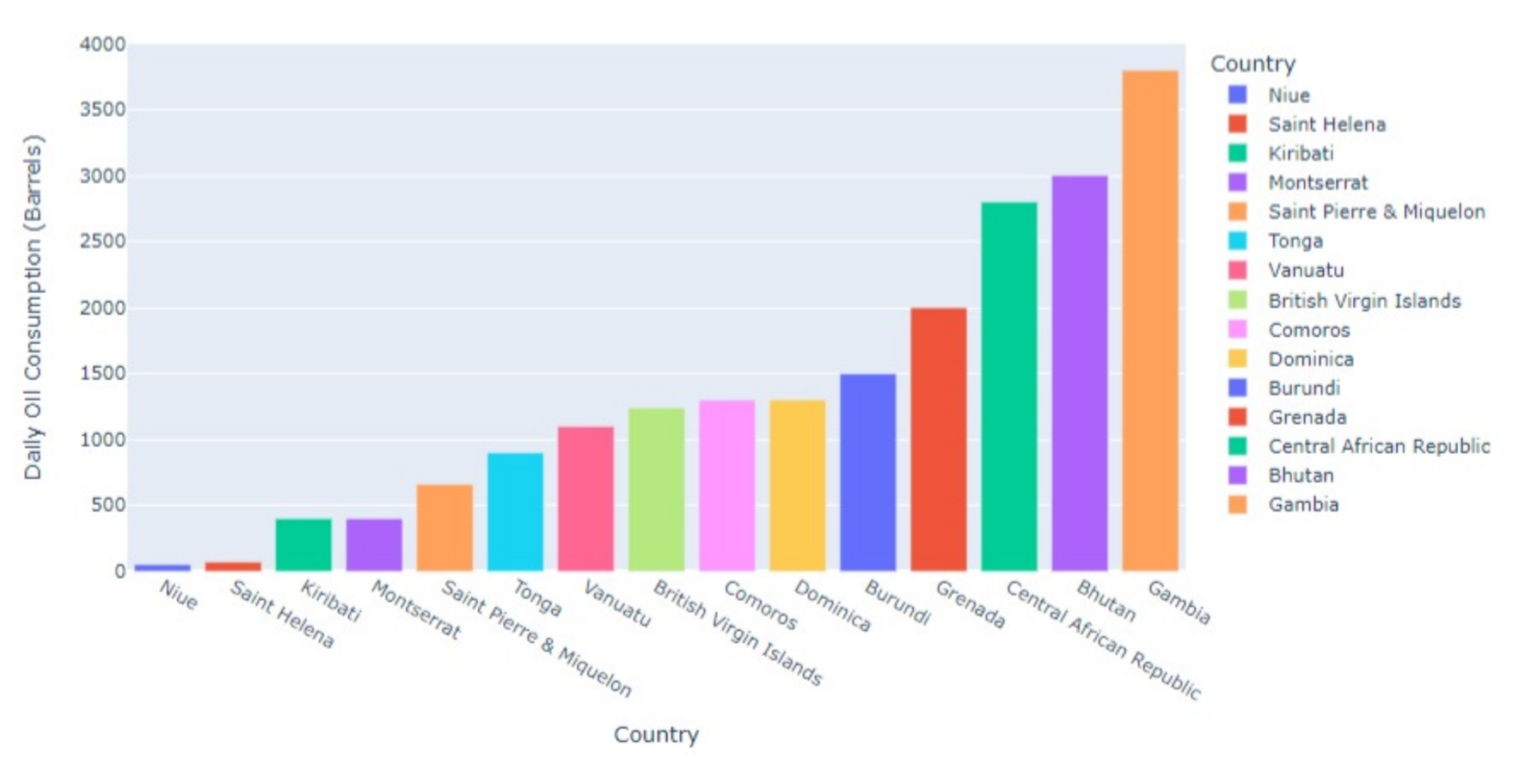
Out[22]: <seaborn.axisgrid.PairGrid at 0x15dad42a5b0>



In [23]:
```
px.box(lowest_per_capita, x="Country", y="World Share",color='Country',notched=True)
```



In [24]:
```
# Lets see the top 10 countries where have the highest Daily Oil Consumption
px.bar(lowest_per_capita, x='Country', y='Daily Oil Consumption (Barrels)',color='Country')
```



In [25]:
```
plt.figure(figsize=(16,6))
sns.barplot(data=lowest_per_capita,y='Country',x='Price Per Liter (OMR)')
```

Out[25]: <AxesSubplot:xlabel='Price Per Liter (OMR)', ylabel='Country'>