

COUNTRY WISE COVID-19 STATISTICAL ANALYSIS (2020-2021)

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INTRODUCTION

Covid 19 has affected people's lives in many ways all over the world.

In the first part of the workshop, we will use Python libraries such as Pandas, Numpy, Seaborn and Matplotlib to download, clean, analyze and visualize the coronavirus open dataset from kaggle Database.

Course will look at the Center for Disease Control's COVID-related dataset, "Country wise of death by jurisdiction and cause of death".

This dataset is interesting because it is highly structured and yet somewhat messy in ways that meaningfully relate to real-world problems. We will learn how to parse this data by causes and Countries, some advanced Pandas, Matplotlib, Seaborn functionality to deal with the data's messiness, and how to use the Python "Surveillance" package's reproduce the CDC's outbreak-detection Charts.

This workshop puts together the skills we learned in the previous Python workshops and apply them on real data through the whole data wrangling workflow.

Code and Resources

We attempted to analyse the dataset using python. The dataset contains country wise covid cases statistics of the world. Our goal was to be able to find out the major confirmed cases, confirmed death, new cases.

Importing Libraries and Loading Data into Pandas

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

import warnings
warnings.filterwarnings('ignore')
%matplotlib inline
```

to read data from dataset

```
In [3]: data=pd.read_csv('country_wise_latest.csv')
#to display all data from dataset
data
```

Out[3]:

	Country/Region	Confirmed	Deaths	Recovered	Active	New cases	New deaths	New recovered	Deaths / 100 Cases	Recovered / 100 Cases	Deaths / 100 Recovered	Confirmed last week	1 week change	1 wee % increase
0	Afghanistan	36263	1269	25198	9796	106	10	18	3.50	69.49	5.04	35526	737	2.0
1	Albania	4880	144	2745	1991	117	6	63	2.95	56.25	5.25	4171	709	17.0
2	Algeria	27973	1163	18837	7973	616	8	749	4.16	67.34	6.17	23691	4282	18.0
3	Andorra	907	52	803	52	10	0	0	5.73	88.53	6.48	884	23	2.6
4	Angola	950	41	242	667	18	1	0	4.32	25.47	16.94	749	201	26.8
...
182	West Bank and Gaza	10621	78	3752	6791	152	2	0	0.73	35.33	2.08	8916	1705	19.1
183	Western Sahara	10	1	8	1	0	0	0	10.00	80.00	12.50	10	0	0.0
184	Yemen	1691	483	833	375	10	4	36	28.56	49.26	57.98	1619	72	4.4
185	Zambia	4552	140	2815	1597	71	1	465	3.08	61.84	4.97	3326	1226	36.8
186	Zimbabwe	2704	36	542	2126	192	2	24	1.33	20.04	6.64	1713	991	57.8

187 rows × 15 columns

to check row and column

In [3]: `data.shape`

Out[3]: (187, 15)

To check null value

In [4]: `data.isnull()`

Out[4]:

	Country/Region	Confirmed	Deaths	Recovered	Active	New cases	New deaths	New recovered	Deaths / 100 Cases	Recovered / 100 Cases	Deaths / 100 Recovered	Confirmed last week	1 week change	1 week increase
0		False	False	False	False	False	False	False	False	False	False	False	False	False
1		False	False	False	False	False	False	False	False	False	False	False	False	False
2		False	False	False	False	False	False	False	False	False	False	False	False	False
3		False	False	False	False	False	False	False	False	False	False	False	False	False
4		False	False	False	False	False	False	False	False	False	False	False	False	False
...
182		False	False	False	False	False	False	False	False	False	False	False	False	False
183		False	False	False	False	False	False	False	False	False	False	False	False	False
184		False	False	False	False	False	False	False	False	False	False	False	False	False
185		False	False	False	False	False	False	False	False	False	False	False	False	False
186		False	False	False	False	False	False	False	False	False	False	False	False	False

187 rows × 15 columns

```
In [5]: # print the sum of null value  
data.isnull().sum()
```

```
Out[5]: Country/Region      0  
Confirmed          0  
Deaths            0  
Recovered          0  
Active             0  
New cases          0  
New deaths         0  
New recovered       0  
Deaths / 100 Cases  0  
Recovered / 100 Cases 0  
Deaths / 100 Recovered 0  
Confirmed last week 0  
1 week change       0  
1 week % increase    0  
WHO Region          0  
dtype: int64
```

to display first ten data

In [6]:

```
data.head(10)
```

Out[6]:

	Country/Region	Confirmed	Deaths	Recovered	Active	New cases	New deaths	New recovered	Deaths / 100 Cases	Recovered / 100 Cases	Deaths / 100 Recovered	Confirmed last week	1 week change	1 week % increase
0	Afghanistan	36263	1269	25198	9796	106	10	18	3.50	69.49	5.04	35526	737	2.07
1	Albania	4880	144	2745	1991	117	6	63	2.95	56.25	5.25	4171	709	17.00
2	Algeria	27973	1163	18837	7973	616	8	749	4.16	67.34	6.17	23691	4282	18.07
3	Andorra	907	52	803	52	10	0	0	5.73	88.53	6.48	884	23	2.60
4	Angola	950	41	242	667	18	1	0	4.32	25.47	16.94	749	201	26.84
5	Antigua and Barbuda	86	3	65	18	4	0	5	3.49	75.58	4.62	76	10	13.16
6	Argentina	167416	3059	72575	91782	4890	120	2057	1.83	43.35	4.21	130774	36642	28.02
7	Armenia	37390	711	26665	10014	73	6	187	1.90	71.32	2.67	34981	2409	6.89
8	Australia	15303	167	9311	5825	368	6	137	1.09	60.84	1.79	12428	2875	23.13
9	Austria	20558	713	18246	1599	86	1	37	3.47	88.75	3.91	19743	815	4.13



to display bottom ten data

In [7]: `data.tail(10)`

Out[7]:

	Country/Region	Confirmed	Deaths	Recovered	Active	New cases	New deaths	New recovered	Deaths / 100 Cases	Recovered / 100 Cases	Deaths / 100 Recovered	Confirmed last week	1 week change	1 week increase
177	United Kingdom	301708	45844	1437	254427	688	7	3	15.19	0.48	3190.26	296944	4764	1.6
178	Uruguay	1202	35	951	216	10	1	3	2.91	79.12	3.68	1064	138	12.9
179	Uzbekistan	21209	121	11674	9414	678	5	569	0.57	55.04	1.04	17149	4060	23.6
180	Venezuela	15988	146	9959	5883	525	4	213	0.91	62.29	1.47	12334	3654	29.6
181	Vietnam	431	0	365	66	11	0	0	0.00	84.69	0.00	384	47	12.1
182	West Bank and Gaza	10621	78	3752	6791	152	2	0	0.73	35.33	2.08	8916	1705	19.1
183	Western Sahara	10	1	8	1	0	0	0	10.00	80.00	12.50	10	0	0.0
184	Yemen	1691	483	833	375	10	4	36	28.56	49.26	57.98	1619	72	4.4
185	Zambia	4552	140	2815	1597	71	1	465	3.08	61.84	4.97	3326	1226	36.8
186	Zimbabwe	2704	36	542	2126	192	2	24	1.33	20.04	6.64	1713	991	57.8



to display the information of DataSet

In [8]: `data.info()`

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 187 entries, 0 to 186
Data columns (total 15 columns):
 #   Column           Non-Null Count  Dtype  
--- 
 0   Country/Region    187 non-null    object  
 1   Confirmed         187 non-null    int64  
 2   Deaths            187 non-null    int64  
 3   Recovered         187 non-null    int64  
 4   Active             187 non-null    int64  
 5   New cases         187 non-null    int64  
 6   New deaths        187 non-null    int64  
 7   New recovered     187 non-null    int64  
 8   Deaths / 100 Cases 187 non-null    float64 
 9   Recovered / 100 Cases 187 non-null    float64 
 10  Deaths / 100 Recovered 187 non-null    float64 
 11  Confirmed last week 187 non-null    int64  
 12  1 week change     187 non-null    int64  
 13  1 week % increase 187 non-null    float64 
 14  WHO Region        187 non-null    object  
dtypes: float64(4), int64(9), object(2)
memory usage: 22.0+ KB
```

to display summary statistics

```
In [9]: #to print descriptive statistics  
data.describe()
```

Out[9]:

	Confirmed	Deaths	Recovered	Active	New cases	New deaths	New recovered	Deaths / 100 Cases	Recovered / 100 Cases	Deaths / 100 Recovered	c
count	1.870000e+02	187.000000	1.870000e+02	1.870000e+02	187.000000	187.000000	187.000000	187.000000	187.000000	187.00	1.87
mean	8.813094e+04	3497.518717	5.063148e+04	3.400194e+04	1222.957219	28.957219	933.812834	3.019519	64.820535	inf	7.86
std	3.833187e+05	14100.002482	1.901882e+05	2.133262e+05	5710.374790	120.037173	4197.719635	3.454302	26.287694	NaN	3.38
min	1.000000e+01	0.000000	0.000000e+00	0.000000e+00	0.000000	0.000000	0.000000	0.000000	0.000000	0.00	1.00
25%	1.114000e+03	18.500000	6.265000e+02	1.415000e+02	4.000000	0.000000	0.000000	0.945000	48.770000	1.45	1.05
50%	5.059000e+03	108.000000	2.815000e+03	1.600000e+03	49.000000	1.000000	22.000000	2.150000	71.320000	3.62	5.02
75%	4.046050e+04	734.000000	2.260600e+04	9.149000e+03	419.500000	6.000000	221.000000	3.875000	86.885000	6.44	3.70
max	4.290259e+06	148011.000000	1.846641e+06	2.816444e+06	56336.000000	1076.000000	33728.000000	28.560000	100.000000	inf	3.83

```
In [10]: #to print descriptive statistics  
data.describe(include='all')
```

Out[10]:

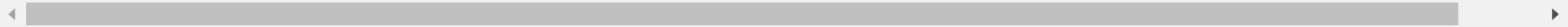
	Country/Region	Confirmed	Deaths	Recovered	Active	New cases	New deaths	New recovered	Deaths / 100 Cases	Recovered / 100 Cases
count		187	1.870000e+02	187.000000	1.870000e+02	1.870000e+02	187.000000	187.000000	187.000000	187.000000
unique		187	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN
top	Afghanistan	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN
freq		1	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN
mean		NaN	8.813094e+04	3497.518717	5.063148e+04	3.400194e+04	1222.957219	28.957219	933.812834	3.019519
std		NaN	3.833187e+05	14100.002482	1.901882e+05	2.133262e+05	5710.374790	120.037173	4197.719635	3.454302
min		NaN	1.000000e+01	0.000000	0.000000e+00	0.000000e+00	0.000000	0.000000	0.000000	0.000000
25%		NaN	1.114000e+03	18.500000	6.265000e+02	1.415000e+02	4.000000	0.000000	0.000000	0.945000
50%		NaN	5.059000e+03	108.000000	2.815000e+03	1.600000e+03	49.000000	1.000000	22.000000	2.150000
75%		NaN	4.046050e+04	734.000000	2.260600e+04	9.149000e+03	419.500000	6.000000	221.000000	3.875000
max		NaN	4.290259e+06	148011.000000	1.846641e+06	2.816444e+06	56336.000000	1076.000000	33728.000000	28.560000

correlation and covariance

In [11]: `data.corr()`

Out[11]:

	Confirmed	Deaths	Recovered	Active	New cases	New deaths	New recovered	Deaths / 100 Cases	Recovered / 100 Cases	Deaths / 100 Recovered	Confirmed last week	1 week change	1 week % increase
Confirmed	1.000000	0.934698	0.906377	0.927018	0.909720	0.871683	0.859252	0.063550	-0.064815	0.025175	0.999127	0.954710	-0.010161
Deaths	0.934698	1.000000	0.832098	0.871586	0.806975	0.814161	0.765114	0.251565	-0.114529	0.169006	0.939082	0.855330	-0.034708
Recovered	0.906377	0.832098	1.000000	0.682103	0.818942	0.820338	0.919203	0.048438	0.026610	-0.027277	0.899312	0.910013	-0.013697
Active	0.927018	0.871586	0.682103	1.000000	0.851190	0.781123	0.673887	0.054380	-0.132618	0.058386	0.931459	0.847642	-0.003752
New cases	0.909720	0.806975	0.818942	0.851190	1.000000	0.935947	0.914765	0.020104	-0.078666	-0.011637	0.896084	0.959993	-0.030791
New deaths	0.871683	0.814161	0.820338	0.781123	0.935947	1.000000	0.889234	0.060399	-0.062792	-0.020750	0.862118	0.894915	-0.025293
New recovered	0.859252	0.765114	0.919203	0.673887	0.914765	0.889234	1.000000	0.017090	-0.024293	-0.023340	0.839692	0.954321	-0.032662
Deaths / 100 Cases	0.063550	0.251565	0.048438	0.054380	0.020104	0.060399	0.017090	1.000000	-0.168920	0.334594	0.069894	0.015095	-0.134534
Recovered / 100 Cases	-0.064815	-0.114529	0.026610	-0.132618	-0.078666	-0.062792	-0.024293	-0.168920	1.000000	-0.295381	-0.064600	-0.063013	-0.394254
Deaths / 100 Recovered	0.025175	0.169006	-0.027277	0.058386	-0.011637	-0.020750	-0.023340	0.334594	-0.295381	1.000000	0.030460	-0.013763	-0.049083
Confirmed last week	0.999127	0.939082	0.899312	0.931459	0.896084	0.862118	0.839692	0.069894	-0.064600	0.030460	1.000000	0.941448	-0.015247
1 week change	0.954710	0.855330	0.910013	0.847642	0.959993	0.894915	0.954321	0.015095	-0.063013	-0.013763	0.941448	1.000000	-0.026594
1 week % increase	-0.010161	-0.034708	-0.013697	-0.003752	0.030791	0.025293	0.032662	-0.134534	-0.394254	-0.049083	-0.015247	0.026594	-0.001000



In [14]: `data.cov()`

Out[14]:

	Confirmed	Deaths	Recovered	Active	New cases	New deaths	New recovered	Deaths / 100 Cases	Recovered / 100 Cases
Confirmed	1.469332e+11	5.051853e+09	6.607730e+10	7.580405e+10	1.991280e+09	4.010829e+07	1.382592e+09	84147.015507	-653114.250019
Deaths	5.051853e+09	1.988101e+08	2.231400e+09	2.621643e+09	6.497460e+07	1.377988e+06	4.528545e+07	12252.660305	-42450.966354
Recovered	6.607730e+10	2.231400e+09	3.617155e+10	2.767435e+10	8.894084e+08	1.872804e+07	7.338522e+08	31822.317652	133038.943128
Active	7.580405e+10	2.621643e+09	2.767435e+10	4.550806e+10	1.036897e+09	2.000227e+07	6.034547e+08	40072.037550	-743702.226793
New cases	1.991280e+09	6.497460e+07	8.894084e+08	1.036897e+09	3.260838e+07	6.415514e+05	2.192741e+07	396.563528	-11808.692719
New deaths	4.010829e+07	1.377988e+06	1.872804e+07	2.000227e+07	6.415514e+05	1.440892e+04	4.480694e+05	25.044065	-198.139009
New recovered	1.382592e+09	4.528545e+07	7.338522e+08	6.034547e+08	2.192741e+07	4.480694e+05	1.762085e+07	247.806952	-2680.701512
Deaths / 100 Cases	8.414702e+04	1.225266e+04	3.182232e+04	4.007204e+04	3.965635e+02	2.504407e+01	2.478070e+02	11.932206	-15.338873
Recovered / 100 Cases	-6.531143e+05	-4.245097e+04	1.330389e+05	-7.437022e+05	-1.180869e+04	-1.981390e+02	-2.680702e+03	-15.338873	691.042870
Deaths / 100 Recovered	Nan	Nan							
Confirmed last week	1.295534e+11	4.479102e+09	5.785783e+10	6.721650e+10	1.730937e+09	3.500665e+07	1.192344e+09	81670.701413	-574447.153374
1 week change	1.737976e+10	5.727502e+08	8.219465e+09	8.587547e+09	2.603425e+08	5.101644e+06	1.902481e+08	2476.314093	-78667.096645
1 week % increase	-9.546070e+04	-1.199456e+04	-6.384851e+04	-1.961763e+04	4.309459e+03	7.441435e+01	3.360460e+03	-11.390256	-254.020816



display full data from dataset

In [12]: data

Out[12]:

	Country/Region	Confirmed	Deaths	Recovered	Active	New cases	New deaths	New recovered	Deaths / 100 Cases	Recovered / 100 Cases	Deaths / 100 Recovered	Confirmed last week	1 week change	1 week % increase
0	Afghanistan	36263	1269	25198	9796	106	10	18	3.50	69.49	5.04	35526	737	2.0
1	Albania	4880	144	2745	1991	117	6	63	2.95	56.25	5.25	4171	709	17.0
2	Algeria	27973	1163	18837	7973	616	8	749	4.16	67.34	6.17	23691	4282	18.0
3	Andorra	907	52	803	52	10	0	0	5.73	88.53	6.48	884	23	2.6
4	Angola	950	41	242	667	18	1	0	4.32	25.47	16.94	749	201	26.8
...
182	West Bank and Gaza	10621	78	3752	6791	152	2	0	0.73	35.33	2.08	8916	1705	19.1
183	Western Sahara	10	1	8	1	0	0	0	10.00	80.00	12.50	10	0	0.0
184	Yemen	1691	483	833	375	10	4	36	28.56	49.26	57.98	1619	72	4.4
185	Zambia	4552	140	2815	1597	71	1	465	3.08	61.84	4.97	3326	1226	36.8
186	Zimbabwe	2704	36	542	2126	192	2	24	1.33	20.04	6.64	1713	991	57.8

187 rows × 15 columns

To display columns

In [13]: data.columns

Out[13]: Index(['Country/Region', 'Confirmed', 'Deaths', 'Recovered', 'Active', 'New cases', 'New deaths', 'New recovered', 'Deaths / 100 Cases', 'Recovered / 100 Cases', 'Deaths / 100 Recovered', 'Confirmed last week', '1 week change', '1 week % increase', 'WHO Region'], dtype='object')

to display Country wise Confirmed, Active, Recovered, Deaths Cases

```
In [14]: #to display data using iloc(column wise)
top_20 = data.groupby("Country/Region")['Confirmed', 'Active', 'Recovered', 'Deaths'].sum().reset_index()
top_20.head(20)
```

Out[14]:

	Country/Region	Confirmed	Active	Recovered	Deaths
0	Afghanistan	36263	9796	25198	1269
1	Albania	4880	1991	2745	144
2	Algeria	27973	7973	18837	1163
3	Andorra	907	52	803	52
4	Angola	950	667	242	41
5	Antigua and Barbuda	86	18	65	3
6	Argentina	167416	91782	72575	3059
7	Armenia	37390	10014	26665	711
8	Australia	15303	5825	9311	167
9	Austria	20558	1599	18246	713
10	Azerbaijan	30446	6781	23242	423
11	Bahamas	382	280	91	11
12	Bahrain	39482	3231	36110	141
13	Bangladesh	226225	97577	125683	2965
14	Barbados	110	9	94	7
15	Belarus	67251	6221	60492	538
16	Belgium	66428	39154	17452	9822
17	Belize	48	20	26	2
18	Benin	1770	699	1036	35
19	Bhutan	99	13	86	0

to display Country wise New cases, New deaths,New recovered

```
In [20]: top_20 = data.groupby("Country/Region")['New cases', 'New deaths', 'New recovered'].sum().reset_index()
top_20.head(20)
```

Out[20]:

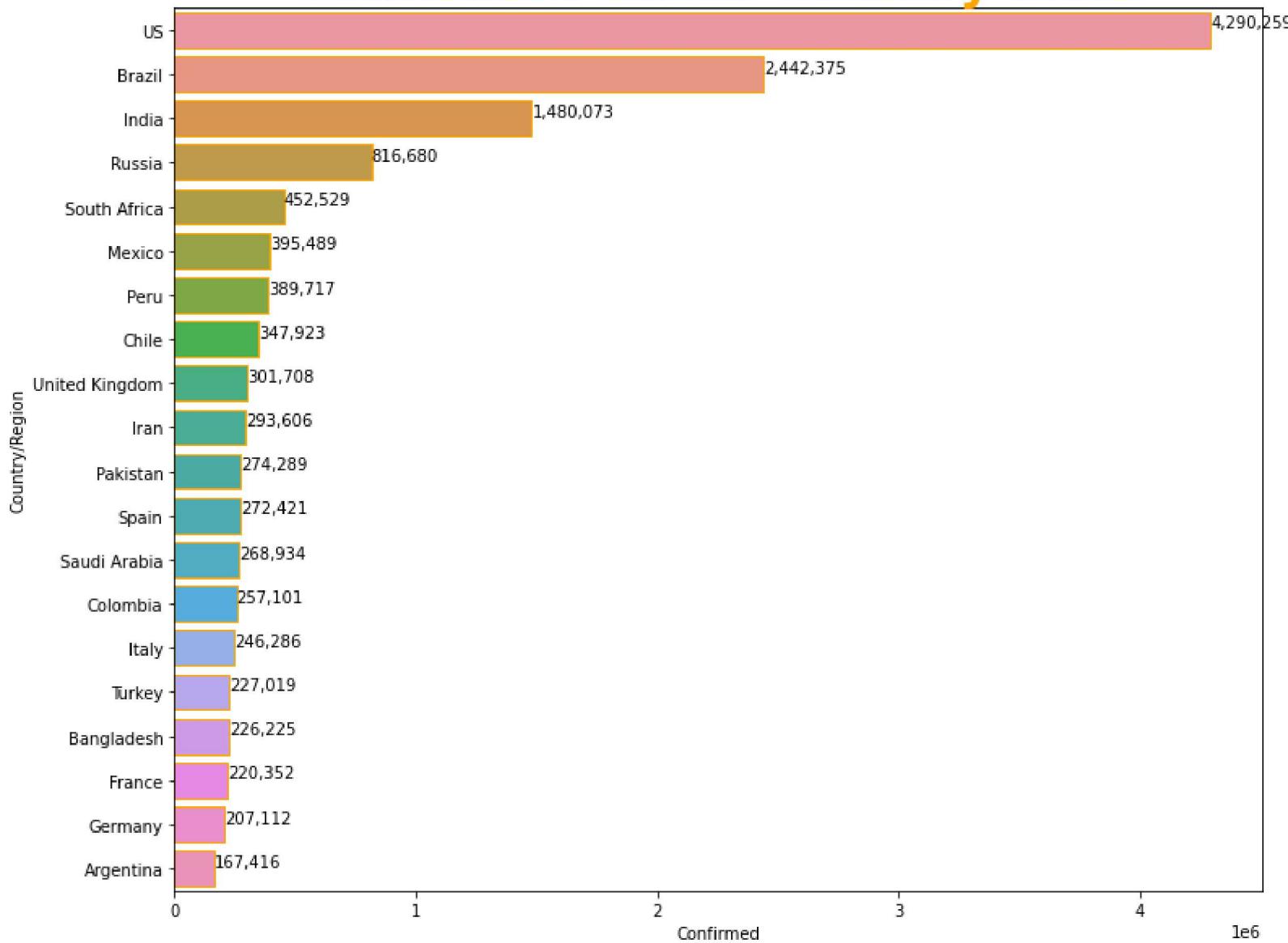
	Country/Region	New cases	New deaths	New recovered
0	Afghanistan	106	10	18
1	Albania	117	6	63
2	Algeria	616	8	749
3	Andorra	10	0	0
4	Angola	18	1	0
5	Antigua and Barbuda	4	0	5
6	Argentina	4890	120	2057
7	Armenia	73	6	187
8	Australia	368	6	137
9	Austria	86	1	37
10	Azerbaijan	396	6	558
11	Bahamas	40	0	0
12	Bahrain	351	1	421
13	Bangladesh	2772	37	1801
14	Barbados	0	0	0
15	Belarus	119	4	67
16	Belgium	402	1	14
17	Belize	0	0	0
18	Benin	0	0	0
19	Bhutan	4	0	1

data visualization

```
In [18]: ### Find top 20 countries with maximum number of confirmed cases
top_20 = data.sort_values(by=['Confirmed'], ascending=False).head(20)

### Generating a Barplot
plt.figure(figsize=(12,10))
plot = sns.barplot(top_20['Confirmed'], top_20['Country/Region'], edgecolor='orange')
for i,(value,name) in enumerate(zip(top_20['Confirmed'],top_20['Country/Region'])):
    plot.text(value,i-0.05,f'{value:.0f}',size=10)
plt.title('Confirmed Cases Country Wise',fontsize=30,color='orange', fontweight='bold')
plt.show()
```

Confirmed Cases Country Wise

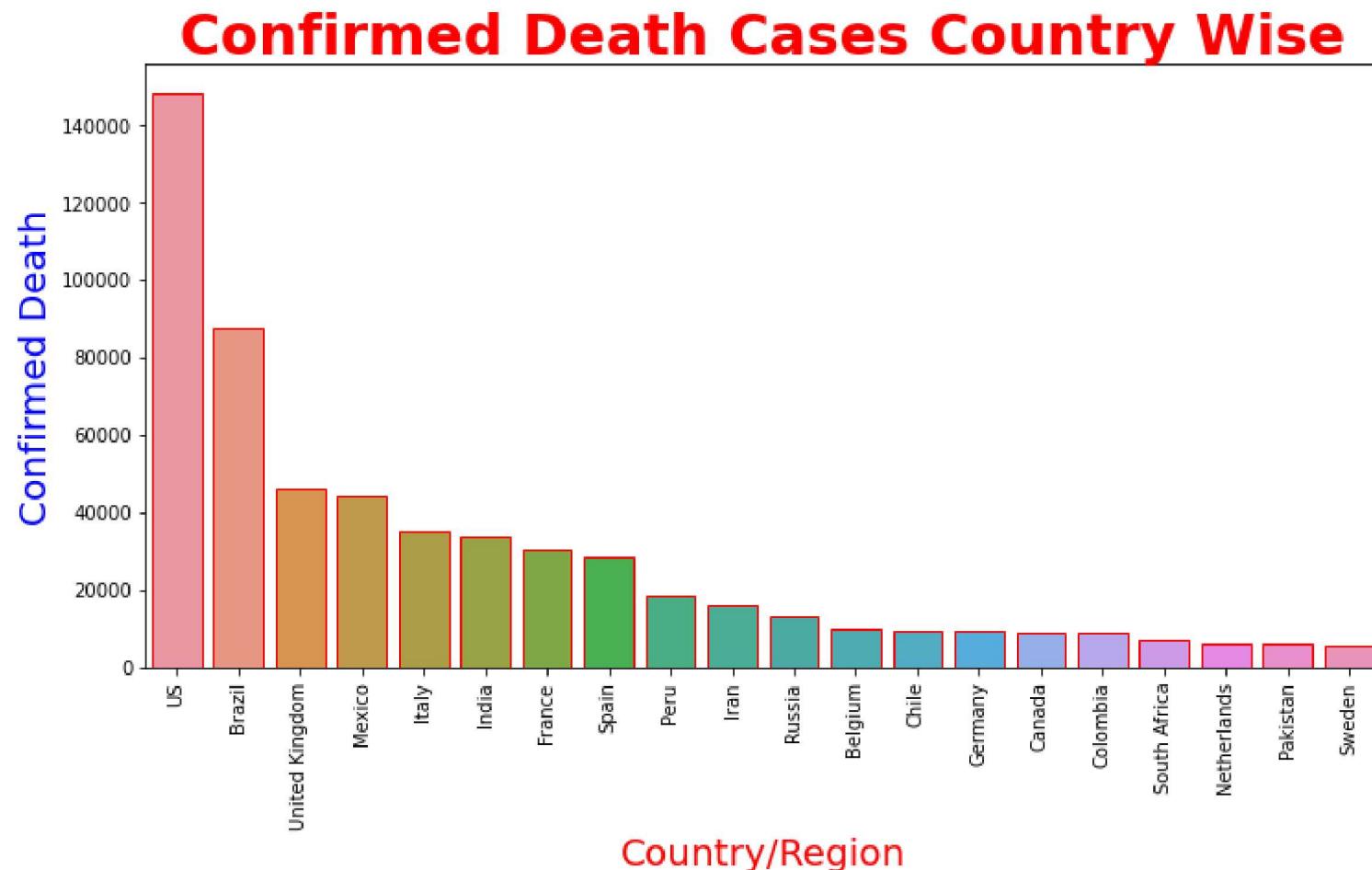


Confirmed Death Cases Country Wise

```
In [19]: top_20 = data.sort_values(by=['Deaths'], ascending=False).head(20)
plt.figure(figsize=(12,6))

sns.barplot('Country/Region','Deaths',data=top_20, edgecolor='red')
plt.title('Confirmed Death Cases Country Wise', fontsize=30, color='red', fontweight='bold')
plt.xlabel('Country/Region', fontsize=20, color='red')
plt.ylabel('Confirmed Death', fontsize=20, color='blue')
plt.xticks(rotation=90)

plt.show()
```

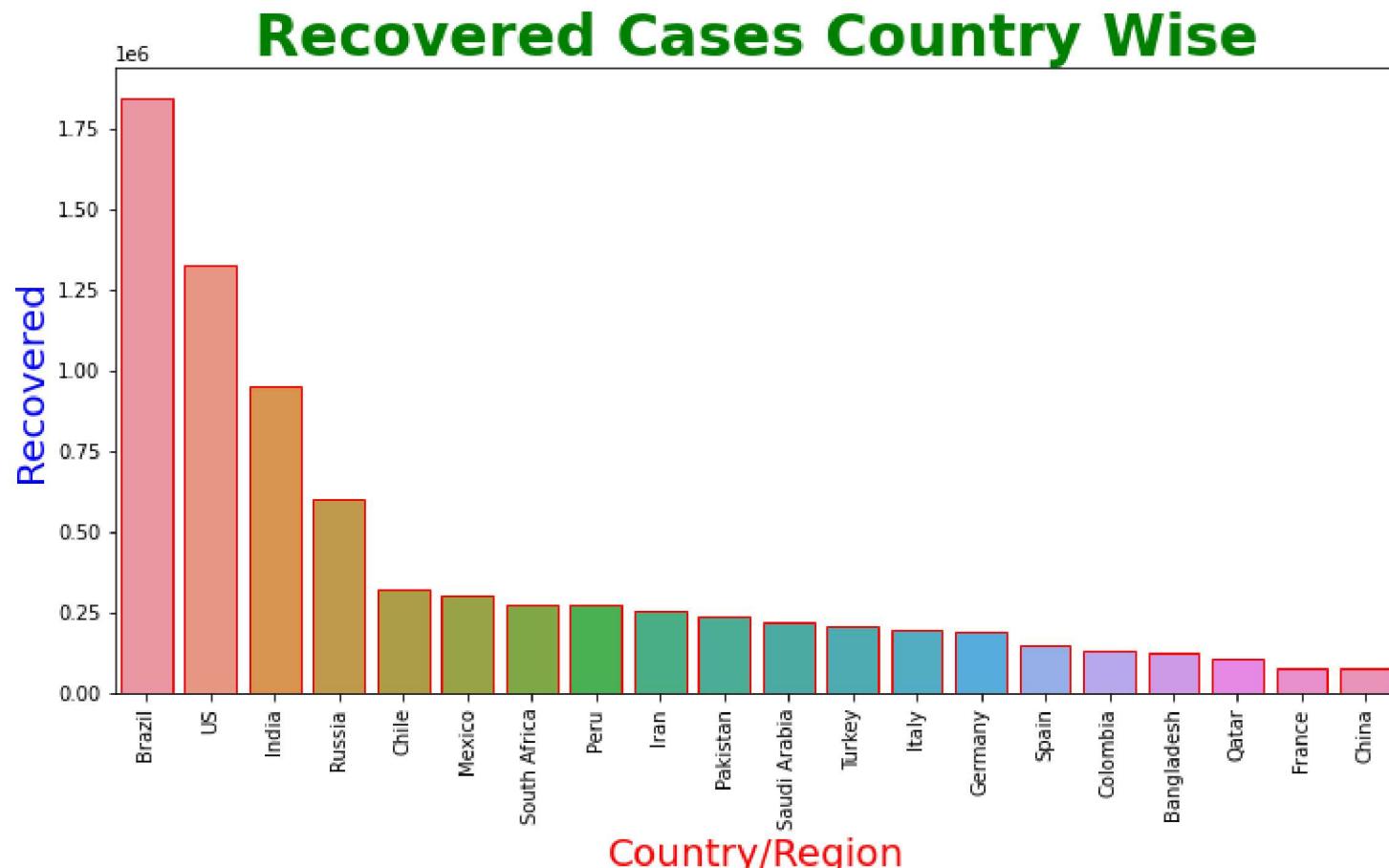


Country Wise Recovered Cases

```
In [42]: top_20 = data.sort_values(by=[ 'Recovered'], ascending=False).head(20)
plt.figure(figsize=(12,6))

sns.barplot('Country/Region','Recovered',data=top_20, edgecolor='red')
plt.title('Recovered Cases Country Wise', fontsize=30,color='green', fontweight='bold')
plt.xlabel('Country/Region', fontsize=20,color='red')
plt.ylabel('Recovered', fontsize=20,color='blue')
plt.xticks(rotation=90)

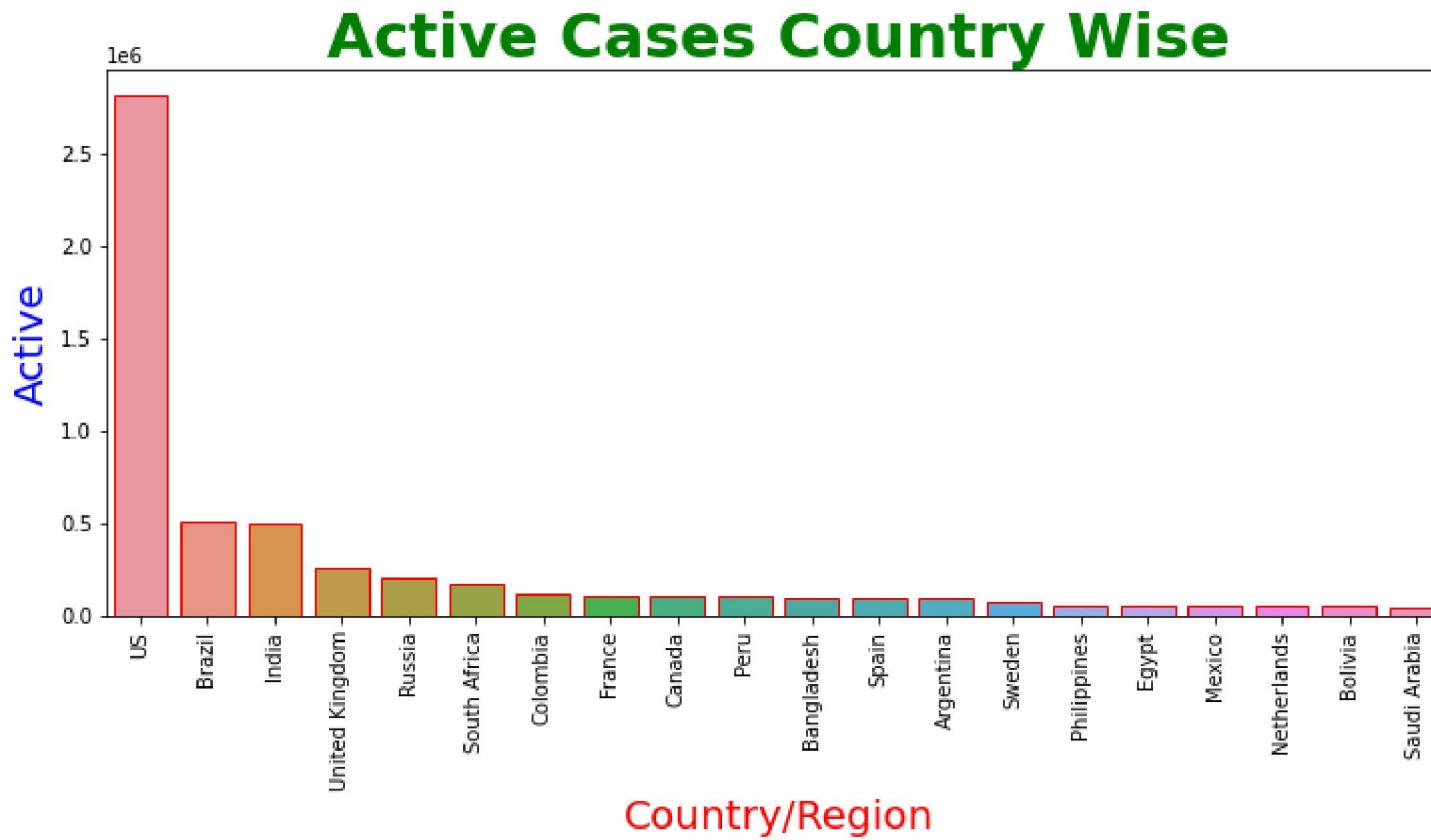
plt.show()
```



Country Wise Active Cases

```
In [41]: top_20 = data.sort_values(by=['Active'], ascending=False).head(20)

plt.figure(figsize=(12,5))
sns.barplot('Country/Region','Active',data=top_20, edgecolor='red')
plt.title('Active Cases Country Wise', fontsize=30, color='green', fontweight='bold')
plt.xlabel('Country/Region', fontsize=20, color='red')
plt.ylabel('Active', fontsize=20, color='blue')
plt.xticks(rotation=90)
plt.show()
```

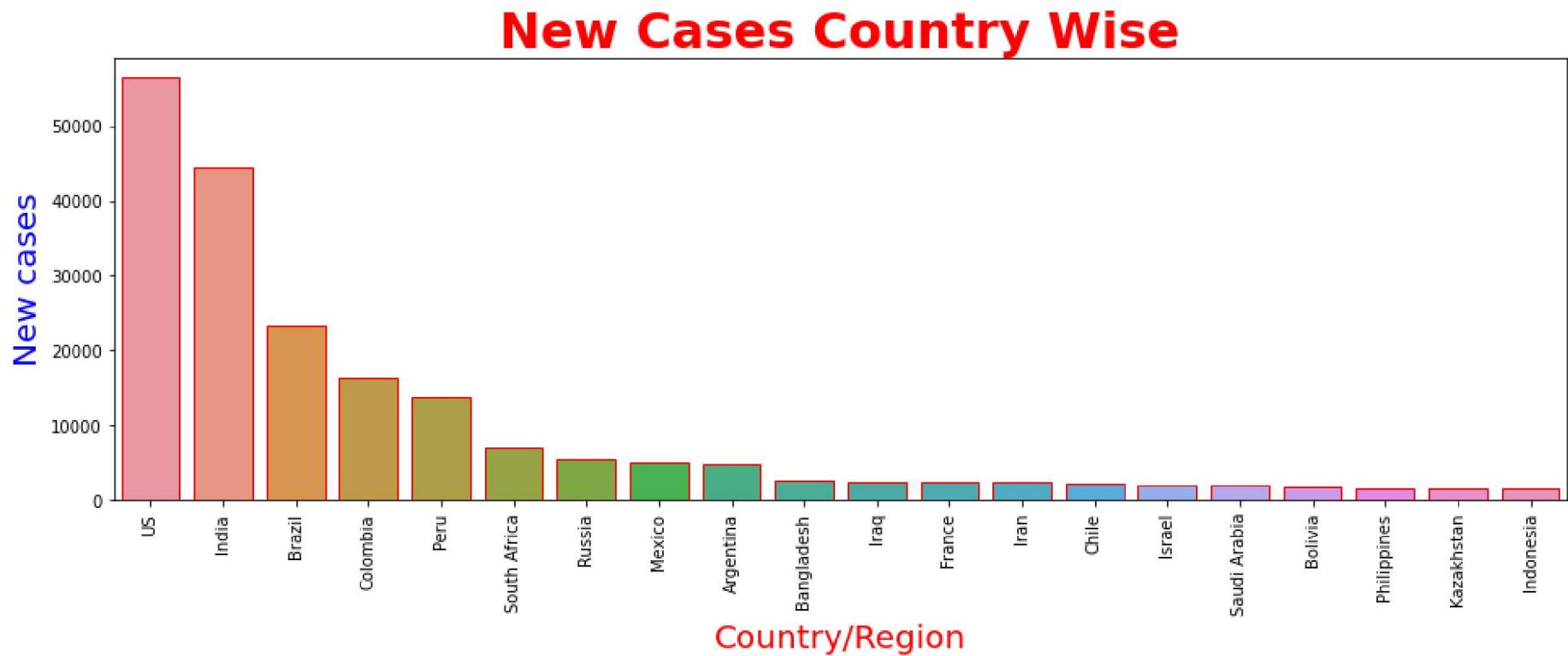


```
In [ ]:
```

Country Wise New Cases

In [40]:

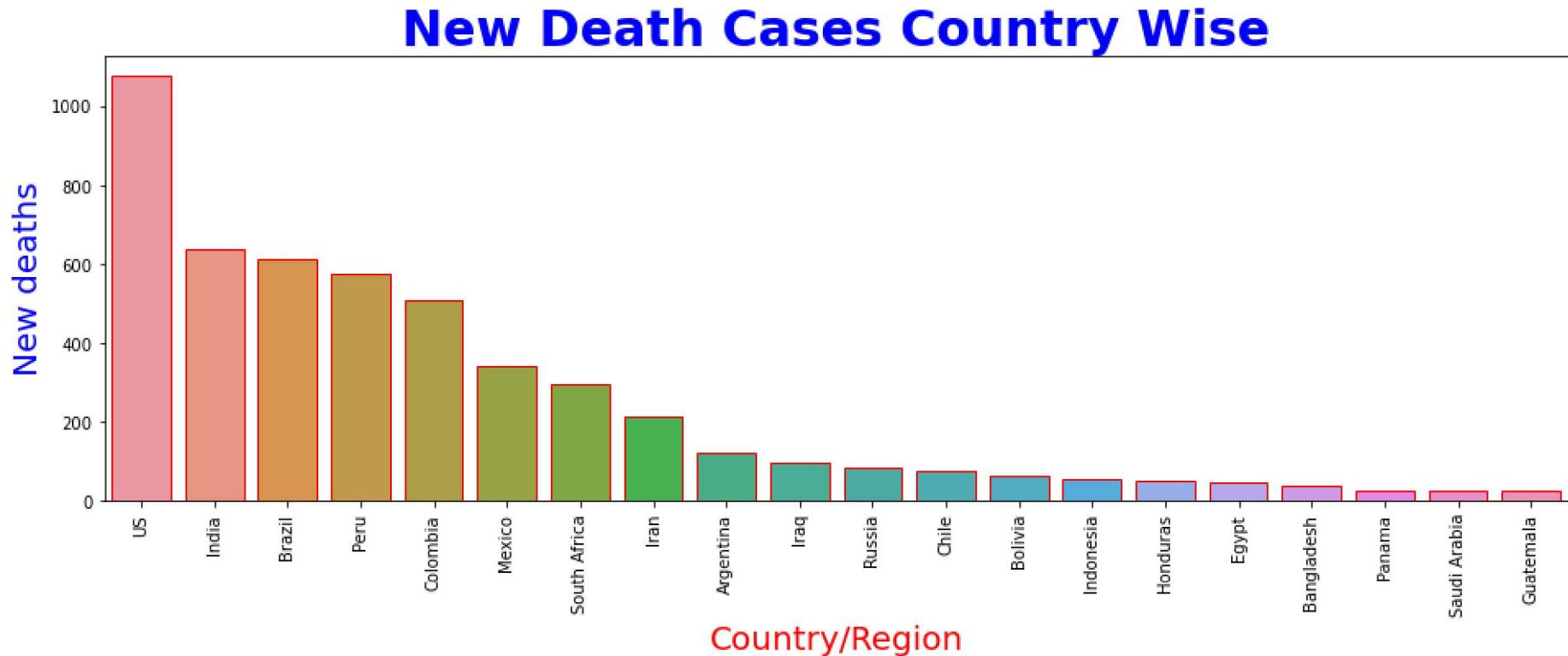
```
top_20 = data.sort_values(by=['New cases'], ascending=False).head(20)
plt.figure(figsize=(16,5))
sns.barplot('Country/Region','New cases',data=top_20,edgecolor='red')
plt.title('New Cases Country Wise',fontsize=30,color='red', fontweight='bold')
plt.xlabel('Country/Region',fontsize=20,color='red')
plt.ylabel('New cases',fontsize=20,color='blue')
plt.xticks(rotation=90)
plt.show()
```



Country Wise New Death Cases

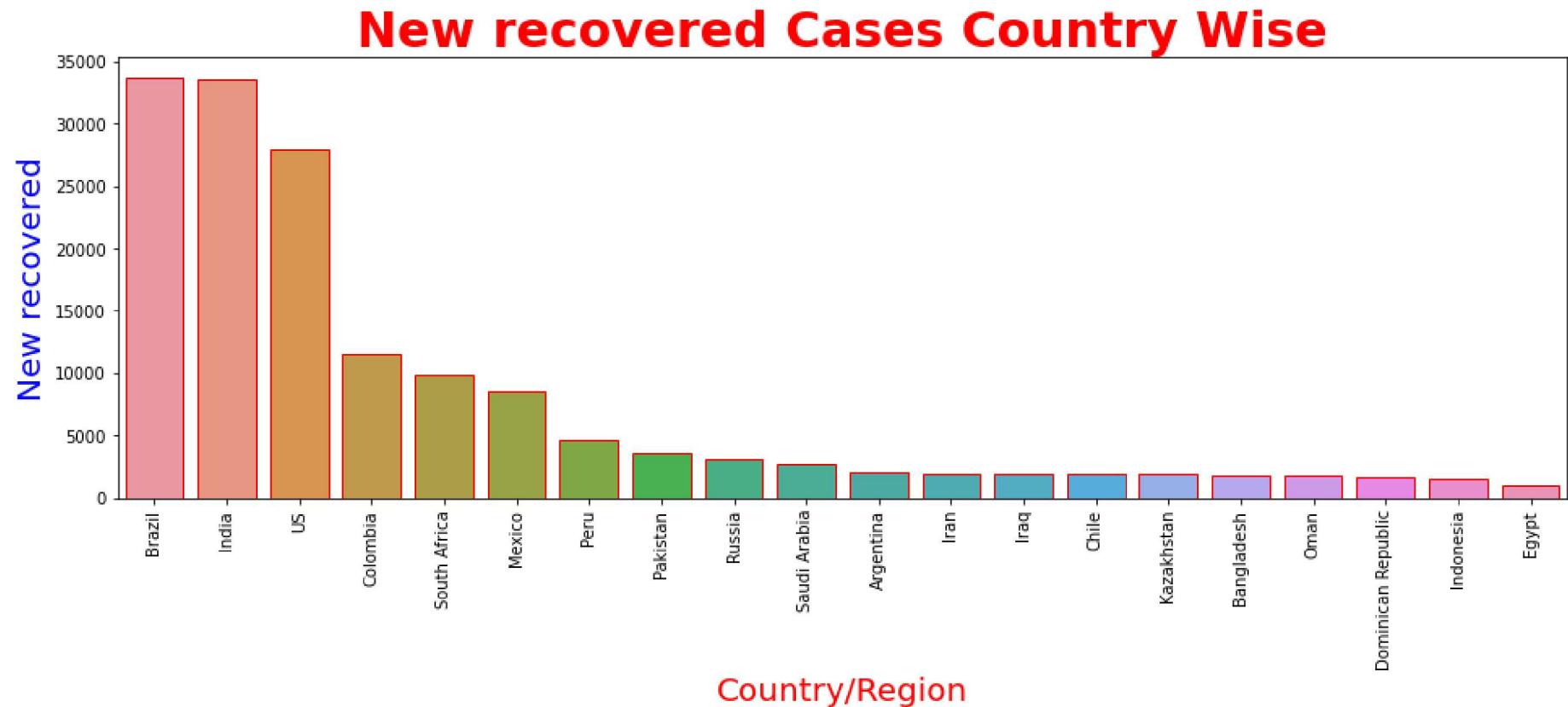
In [39]:

```
top_20 = data.sort_values(by=['New deaths'], ascending=False).head(20)
plt.figure(figsize=(16,5))
sns.barplot('Country/Region','New deaths',data=top_20, edgecolor='red')
plt.title('New Death Cases Country Wise',fontsize=30,color='blue', fontweight='bold')
plt.xlabel('Country/Region',fontsize=20,color='red')
plt.ylabel('New deaths',fontsize=20,color='blue')
plt.xticks(rotation=90)
plt.show()
```



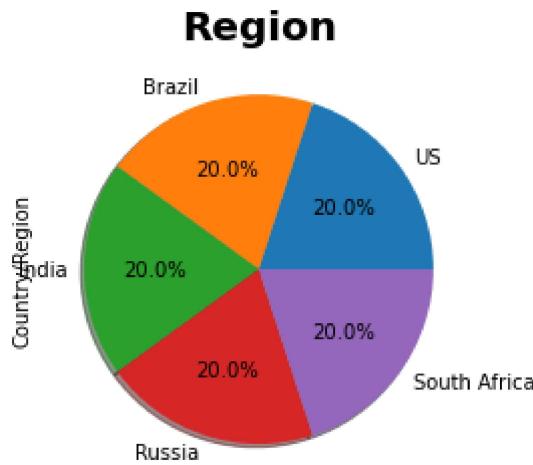
Country Wise New recovered Cases

```
In [37]: top_20 = data.sort_values(by=['New recovered'], ascending=False).head(20)
plt.figure(figsize=(16,5))
sns.barplot('Country/Region','New recovered',data=top_20, edgecolor='red')
plt.title('New recovered Cases Country Wise',fontsize=30,color='red', fontweight='bold')
plt.xlabel('Country/Region',fontsize=20,color='red')
plt.ylabel('New recovered',fontsize=20,color='blue')
plt.xticks(rotation=90)
plt.show()
```



Plotting Pie-chart of major countrywise confirmed cases

```
In [36]: top_20 = data.sort_values(by=['Confirmed'], ascending=False).head()
plt.title('Region', fontsize=20, fontweight='bold')
top_20['Country/Region'].value_counts().plot.pie(autopct='%1.1f%%', shadow=True)
plt.show()
```



```
In [ ]:
```

Plotting a Choropleth map on World Map

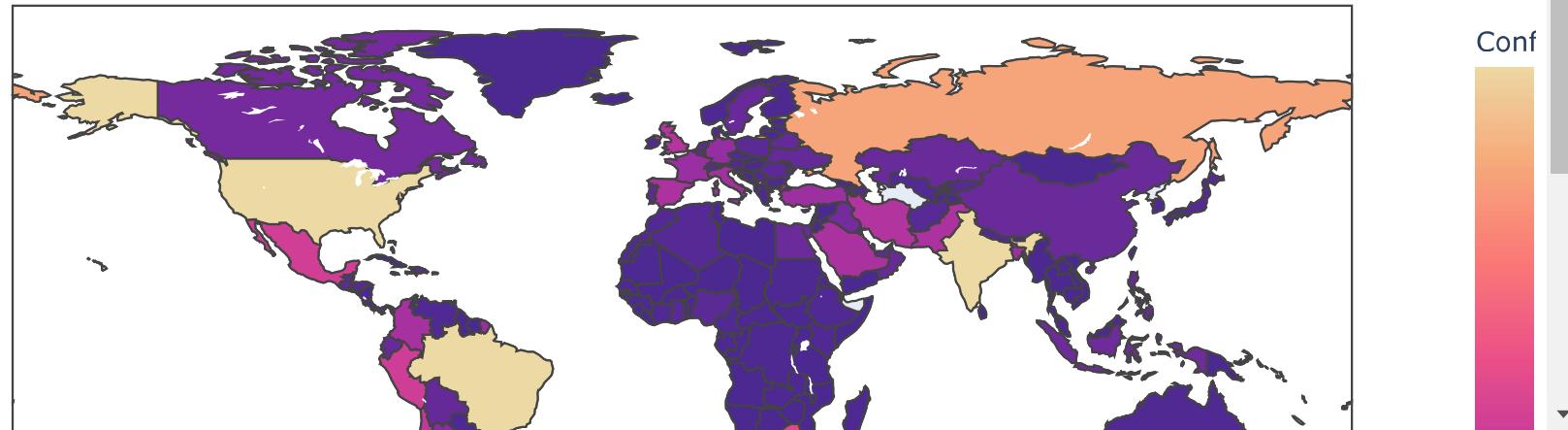
Choropleth maps provide an easy way to visualize how a measurement varies across a geographic area or show the level of variability within a region

We can zoom into the map and hover over a particular region to see the confirmed number of cases for that country

```
In [4]: import plotly.express as px

figure = px.choropleth(data,locations='Country/Region', locationmode='country names', color='Confirmed' ,
                      hover_name='Country/Region', color_continuous_scale='agsunset', range_color= [1,1000000],
                      title='Country/Region with Confirmed cases')
figure.show()
```

Country/Region with Confirmed cases



Summary

The Analysis of the World Covid Cases Statistics Depicts that the Major Confirmed, Active, Recovered, Deaths Cases are in US ,Brazil ,India and in South Africa and about 20% of Cases are belong to these Major Countries. countries Brazil , India , US and Africa are Major Countries where New cases , New deaths , New recovereds Cases Country US is the Only country where Most Active Cases

The Quality of the information about Cases is quite limited the Picture drawn from the cases identifies in this review indicates

that it is an important and growing public Health Problem that is not being given sufficeint Medicin by the Authorities.

In []: