

In [1]:

```
import numpy as np
import pandas as pd
import matplotlib.pyplot as plt
import seaborn as sns
import os
```

In [2]:

```
files = os.listdir(r'D:\Career\Udemy\DA 2\Covid 19\Covid-19')
files
```

Out[2]:

```
['country_wise_latest.csv',
 'covid_19_clean_complete.csv',
 'day_wise.csv',
 'full_grouped.csv',
 'usa_country_wise.csv',
 'worldometer_data.csv']
```

In [3]:

```
def read_csv(path,filename):
    return pd.read_csv(path+'/'+filename)
```

In [4]:

```
path = r'D:\Career\Udemy\DA 2\Covid 19\Covid-19'
```

In [5]:

```
world_data = read_csv(path,'worldometer_data.csv')
```

In [6]:

```
day_wise = read_csv(path,files[2])
```

In [7]:

```
group_data = read_csv(path,files[3])
```

In [8]:

```
usa_data = read_csv(path,files[4])
```

In [9]:

```
province_data = read_csv(path,files[1])
```

Which country has maximum total cases, deaths, recovered and active cases

In [10]:

```
world_data.head()
```

Out[10]:

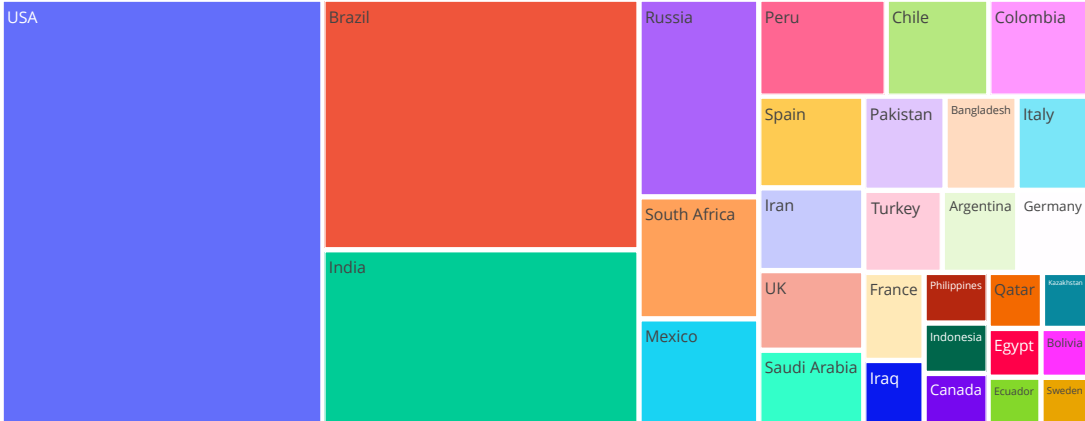
	Country/Region	Continent	Population	TotalCases	NewCases	TotalDeaths	NewDeaths	TotalRecovered	NewRecovered	ActiveCases	Serious,Critical
0	USA	North America	3.311981e+08	5032179	NaN	162804.0	NaN	2576668.0	NaN	2292707.0	18296.0
1	Brazil	South America	2.127107e+08	2917562	NaN	98644.0	NaN	2047660.0	NaN	771258.0	8318.0
2	India	Asia	1.381345e+09	2025409	NaN	41638.0	NaN	1377384.0	NaN	606387.0	8944.0
3	Russia	Europe	1.459409e+08	871894	NaN	14606.0	NaN	676357.0	NaN	180931.0	2300.0
4	South Africa	Africa	5.938157e+07	538184	NaN	9604.0	NaN	387316.0	NaN	141264.0	539.0

In [11]:

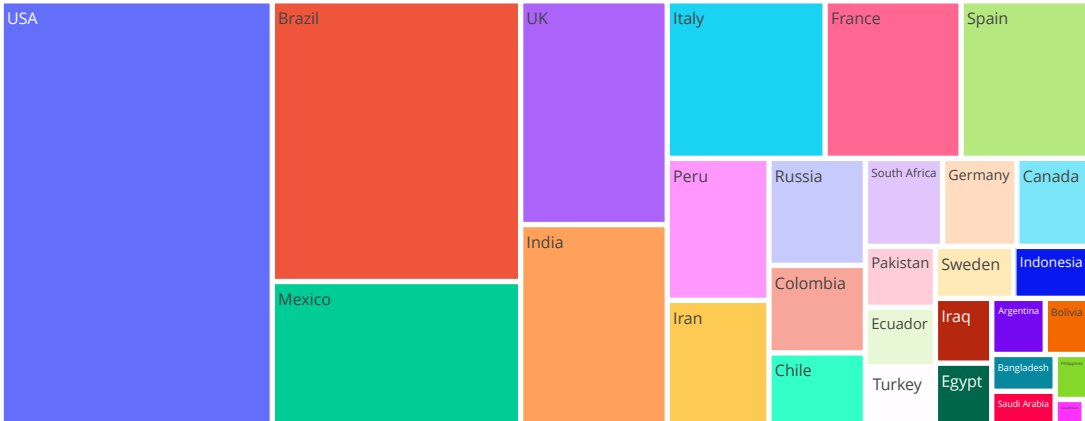
```
import plotly.express as px
```

```
In [12]:
columns = ['TotalCases', 'TotalDeaths', 'TotalRecovered', 'ActiveCases']
for i in columns:
    fig = px.treemap(world_data[0:30], values = i, path = ['Country/Region'], title = 'Treemap of Countries with respect to {}'.format(i))
    fig.show()
```

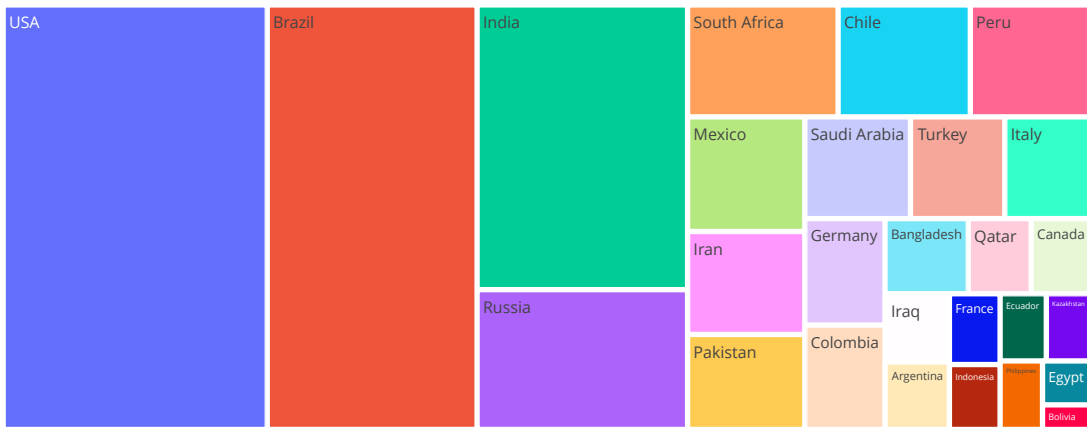
Treemap of Countries with respect to TotalCases



Treemap of Countries with respect to TotalDeaths



Treemap of Countries with respect to TotalRecovered

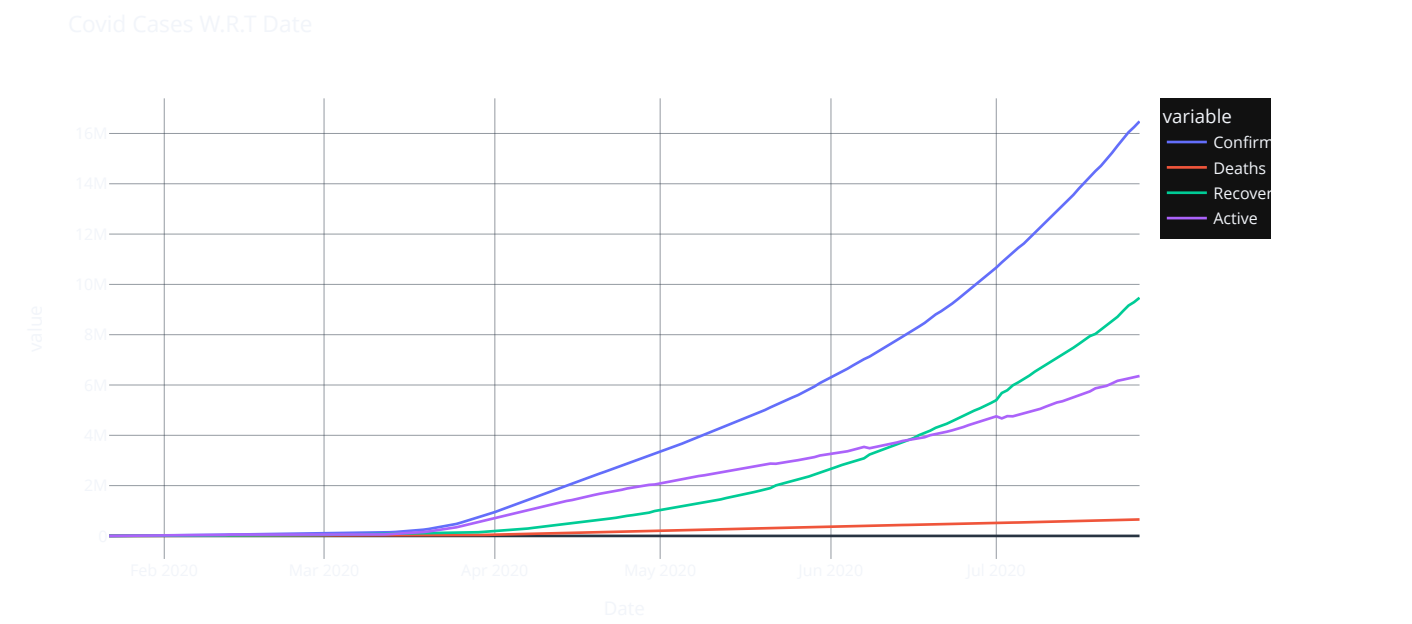


Treemap of Countries with respect to ActiveCases



In [14]:

```
px.line(day_wise, x = 'Date', y = ['Confirmed','Deaths','Recovered','Active'], title = 'Covid Cases W.R.T Date', template = 'plotly_dark')
```



Population Test Ratio

In [15]:

```
world_data['Pop_test_ratio'] = world_data['Population'] / world_data['TotalTests']
```

In [16]:

```
world_data.head()
```

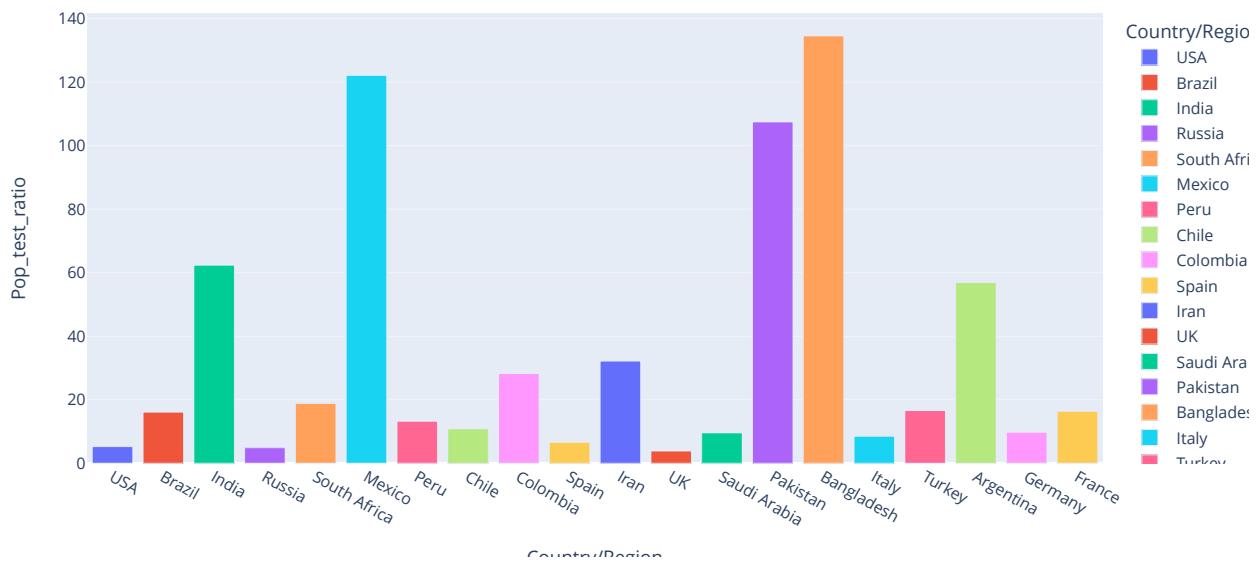
Out[16]:

	Country/Region	Continent	Population	TotalCases	NewCases	TotalDeaths	NewDeaths	TotalRecovered	NewRecovered	ActiveCases	Serious,Critical
0	USA	North America	3.311981e+08	5032179	NaN	162804.0	NaN	2576668.0	NaN	2292707.0	18296.0
1	Brazil	South America	2.127107e+08	2917562	NaN	98644.0	NaN	2047660.0	NaN	771258.0	8318.0
2	India	Asia	1.381345e+09	2025409	NaN	41638.0	NaN	1377384.0	NaN	606387.0	8944.0
3	Russia	Europe	1.459409e+08	871894	NaN	14606.0	NaN	676357.0	NaN	180931.0	2300.0
4	South Africa	Africa	5.938157e+07	538184	NaN	9604.0	NaN	387316.0	NaN	141264.0	539.0

In [17]:

```
px.bar(world_data[0:20], x = 'Country/Region', y = 'Pop_test_ratio', color = 'Country/Region', title = 'Population & Tests Done Ratio')
```

Population &amp; Tests Done Ratio



20 Countries badly affected by Corona

In [18]:

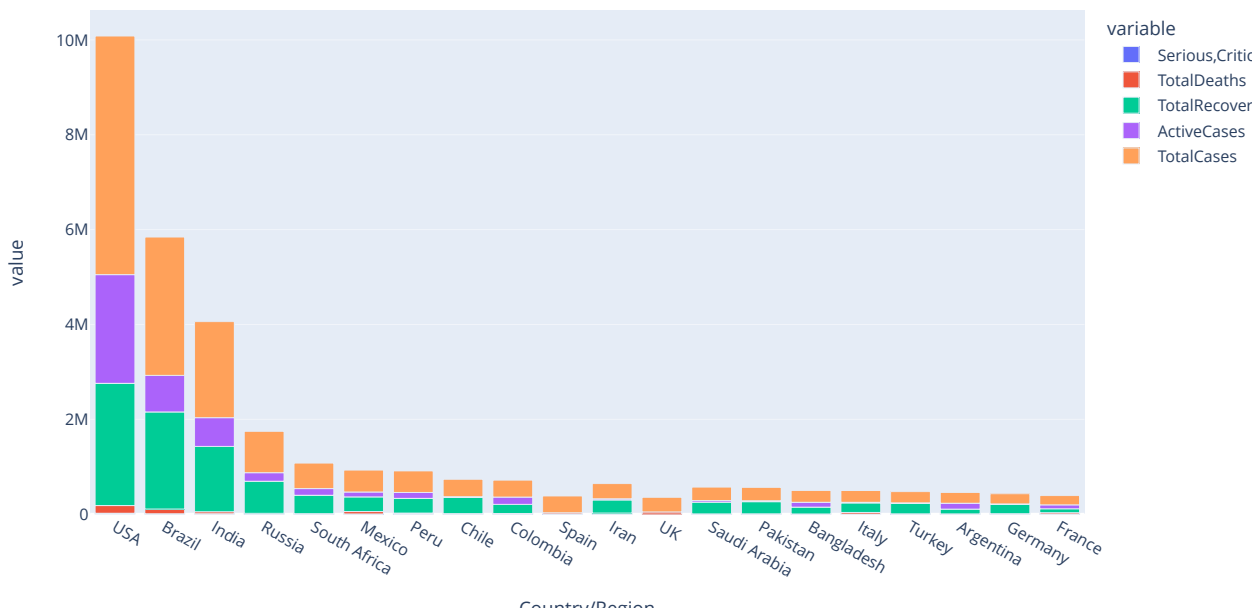
```
world_data.columns
```

Out[18]:

```
Index(['Country/Region', 'Continent', 'Population', 'TotalCases', 'NewCases',
      'TotalDeaths', 'NewDeaths', 'TotalRecovered', 'NewRecovered',
      'ActiveCases', 'Serious,Critical', 'Tot Cases/1M pop', 'Deaths/1M pop',
      'TotalTests', 'Tests/1M pop', 'WHO Region', 'Pop_test_ratio'],
      dtype='object')
```

In [19]:

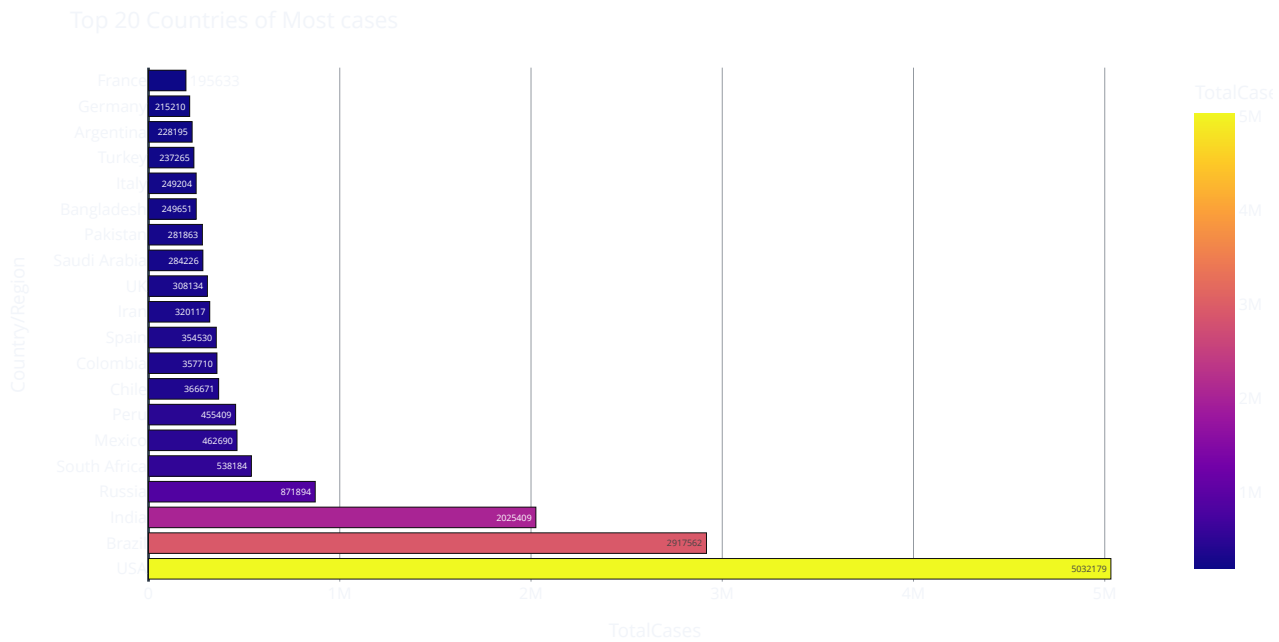
```
px.bar(world_data[0:20], x = 'Country/Region', y = ['Serious,Critical', 'TotalDeaths', 'TotalRecovered', 'ActiveCases', 'TotalCases'])
```



Top 20 countries having maximum no of confirmed cases

In [20]:

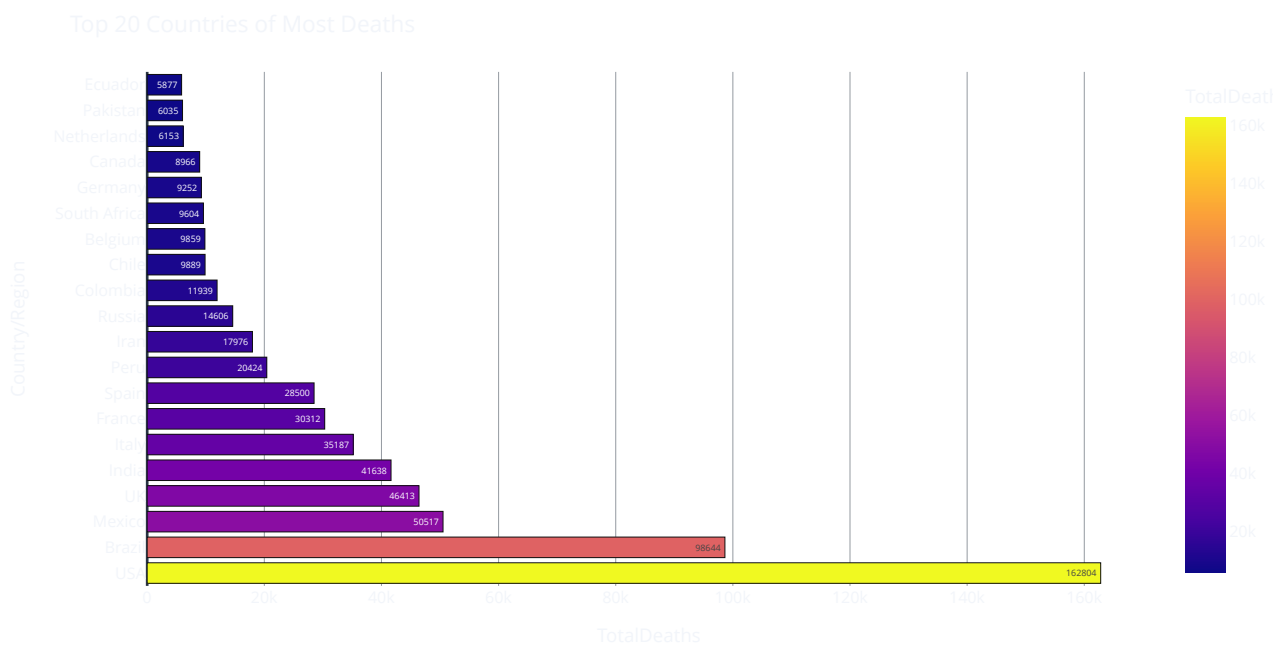
```
fig = px.bar(world_data[0:20], y = 'Country/Region', x = 'TotalCases', color = 'TotalCases', text = 'TotalCases')
fig.update_layout(template = 'plotly_dark', title_text = 'Top 20 Countries of Most cases')
fig.show()
```



Top 20 Countries having Maximum Deaths

In [21]:

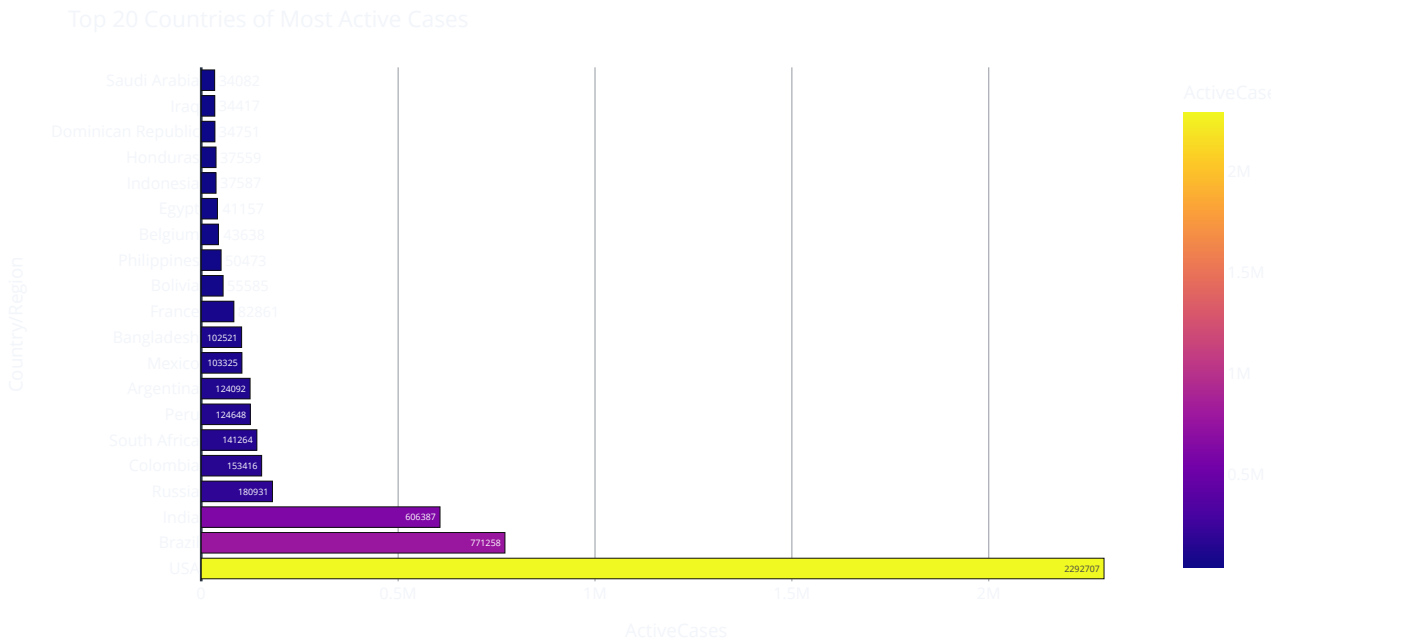
```
fig = px.bar(world_data.sort_values(by = 'TotalDeaths', ascending = False)[0:20], y = 'Country/Region', x = 'TotalDeaths', color = 'TotalDeaths')
fig.update_layout(template = 'plotly_dark', title_text = 'Top 20 Countries of Most Deaths')
fig.show()
```



Top 20 Countries having Maximum Active Cases

In [22]:

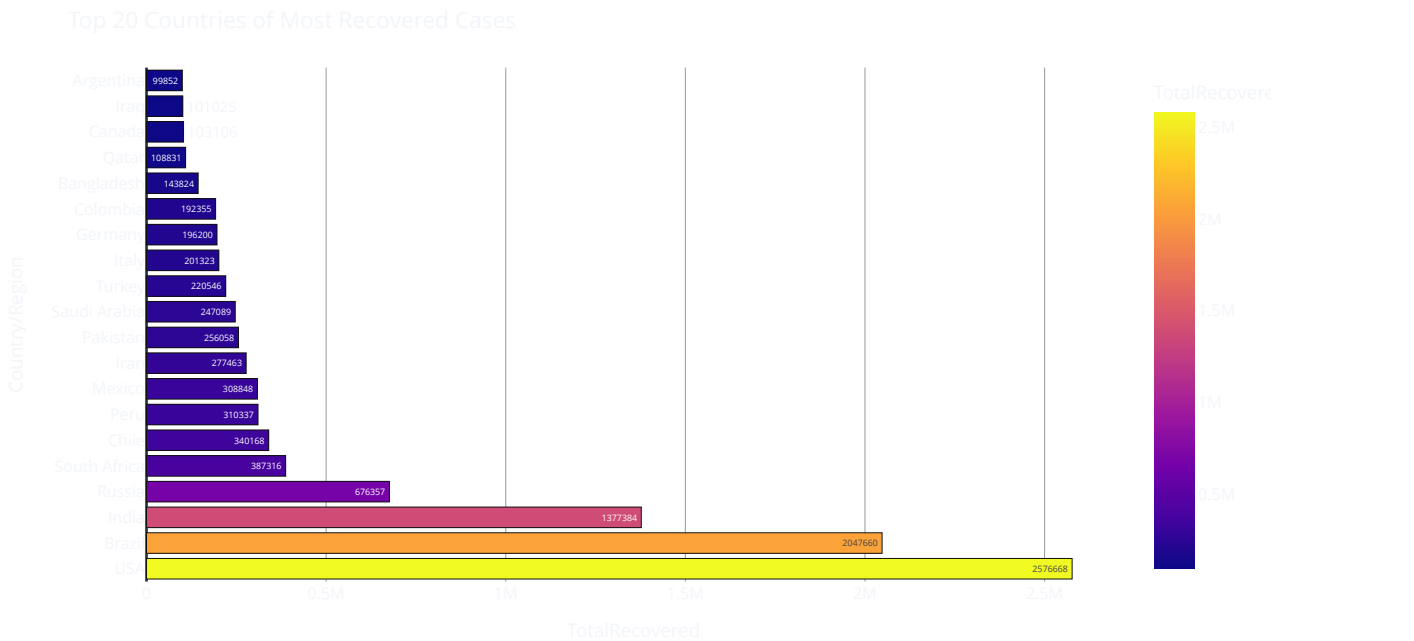
```
fig = px.bar(world_data.sort_values(by = 'ActiveCases', ascending = False)[0:20] , y = 'Country/Region', x = 'ActiveCases',color = 'ActiveCases')
fig.update_layout(template = 'plotly_dark', title_text = 'Top 20 Countries of Most Active Cases')
fig.show()
```



Top 20 Countries having Maximum Recovered Cases

In [23]:

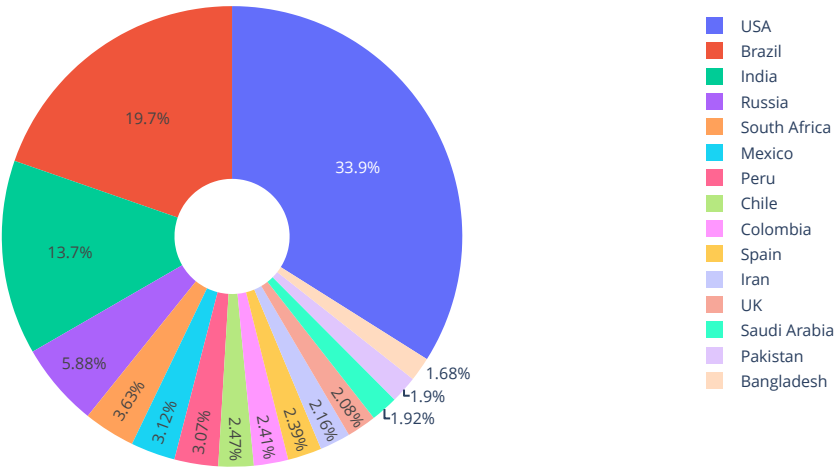
```
fig = px.bar(world_data.sort_values(by = 'TotalRecovered', ascending = False)[0:20] , y = 'Country/Region', x = 'TotalRecovered',color = 'TotalRecovered')
fig.update_layout(template = 'plotly_dark', title_text = 'Top 20 Countries of Most Recovered Cases')
fig.show()
```



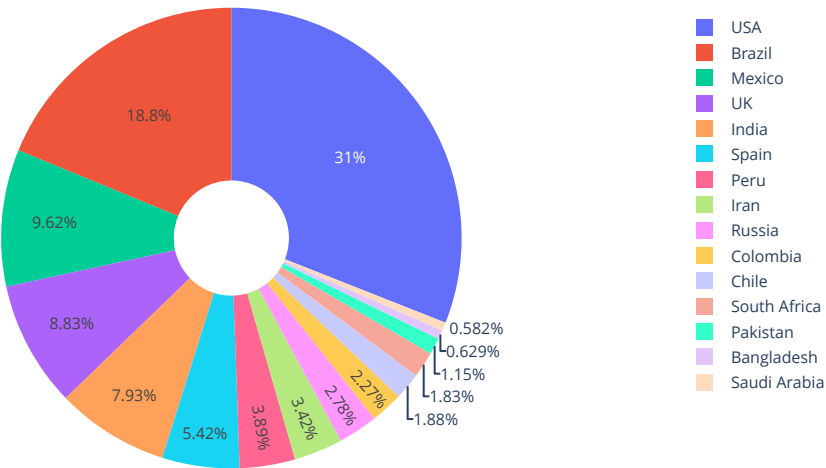
Pie chart of worst affected countries

```
In [24]:
labels = world_data[0:15]['Country/Region'].values
a = ['TotalCases', 'TotalDeaths', 'TotalRecovered', 'ActiveCases']
for i in a:
    fig = px.pie(world_data[0:15], values = i, names = labels, hole = 0.25, title = '{} recorded with respect to WHO of worst affected countries'.format(i))
    fig.show()
```

TotalCases recorded with respect to WHO of worst affected countries

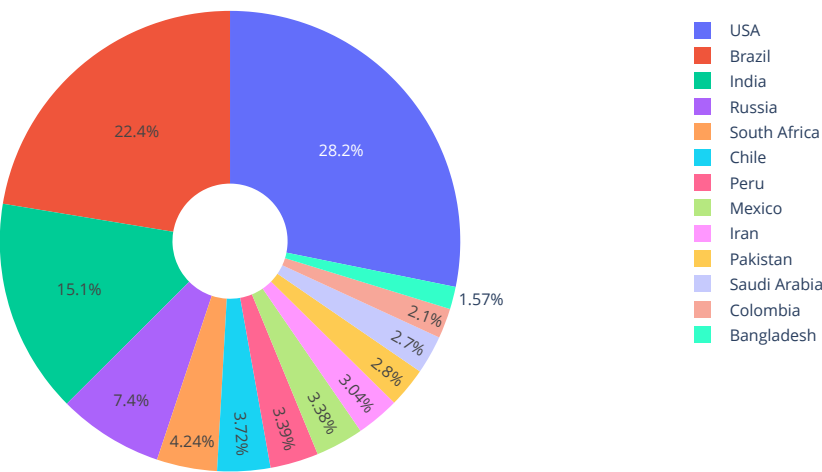


TotalDeaths recorded with respect to WHO of worst affected countries

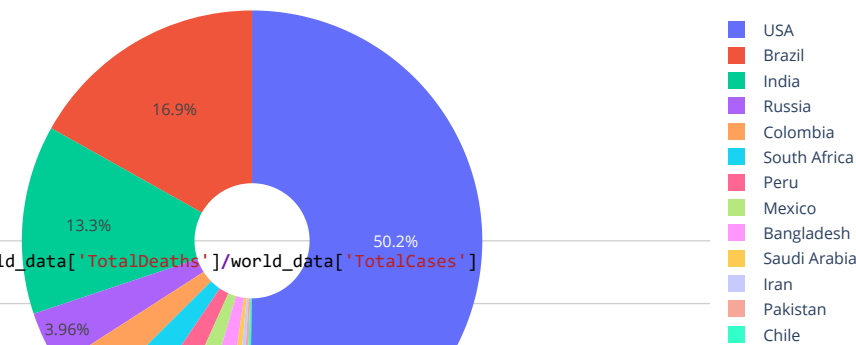




TotalRecovered recorded with respect to WHO of worst affected countries



ActiveCases recorded with respect to WHO of worst affected countries



Deaths to confirmed Ratio

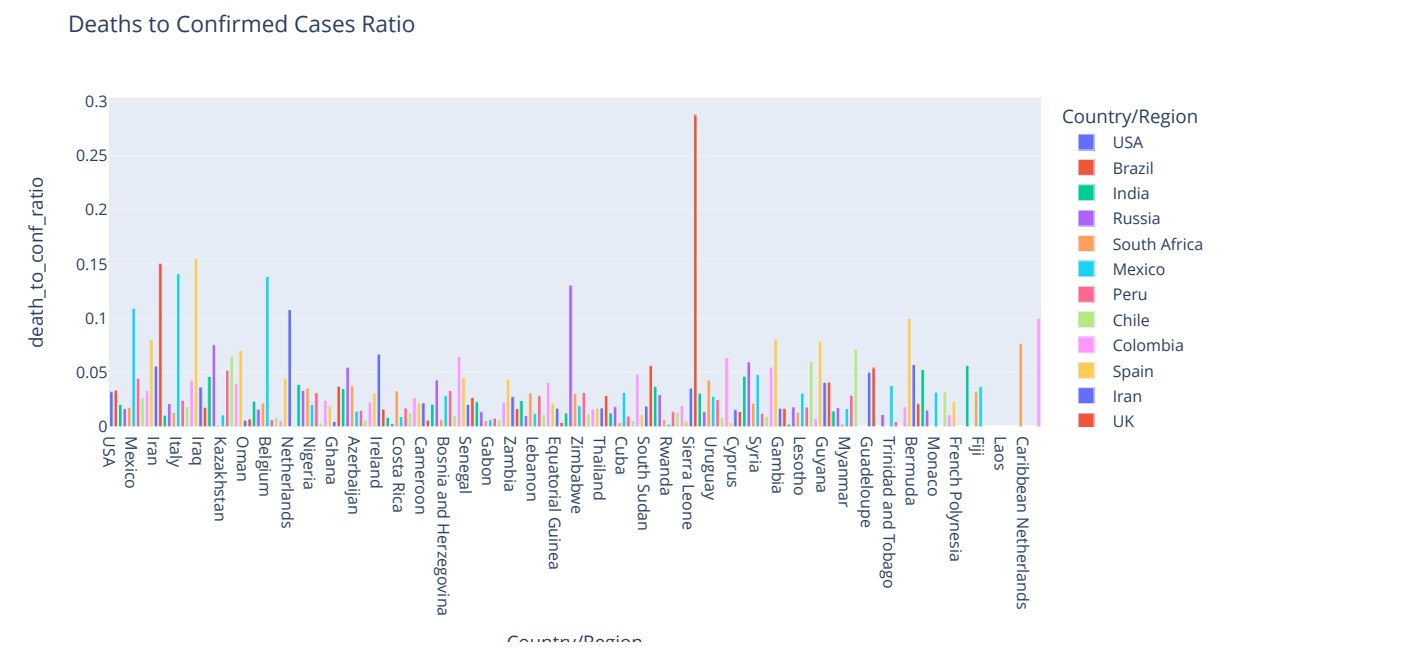
```
In [25]:
world_data['death_to_conf_ratio'] = world_data['TotalDeaths']/world_data['TotalCases']
world_data.head()
```

Out[25]:

	Country/Region	Continent	Population	TotalCases	NewCases	TotalDeaths	NewDeaths	TotalRecovered	NewRecovered	ActiveCases	Serious,Critica
0	USA	North America	3.311981e+08	5032179	NaN	162804.0	NaN	2576668.0	NaN	2292707.0	18296.C
1	Brazil	South America	2.127107e+08	2917562	NaN	98644.0	NaN	2047660.0	NaN	771258.0	8318.C
2	India	Asia	1.381345e+09	2025409	NaN	41638.0	NaN	1377384.0	NaN	606387.0	8944.C
3	Russia	Europe	1.459409e+08	871894	NaN	14606.0	NaN	676357.0	NaN	180931.0	2300.C
4	South Africa	Africa	5.938157e+07	538184	NaN	9604.0	NaN	387316.0	NaN	141264.0	539.C

In [26]:

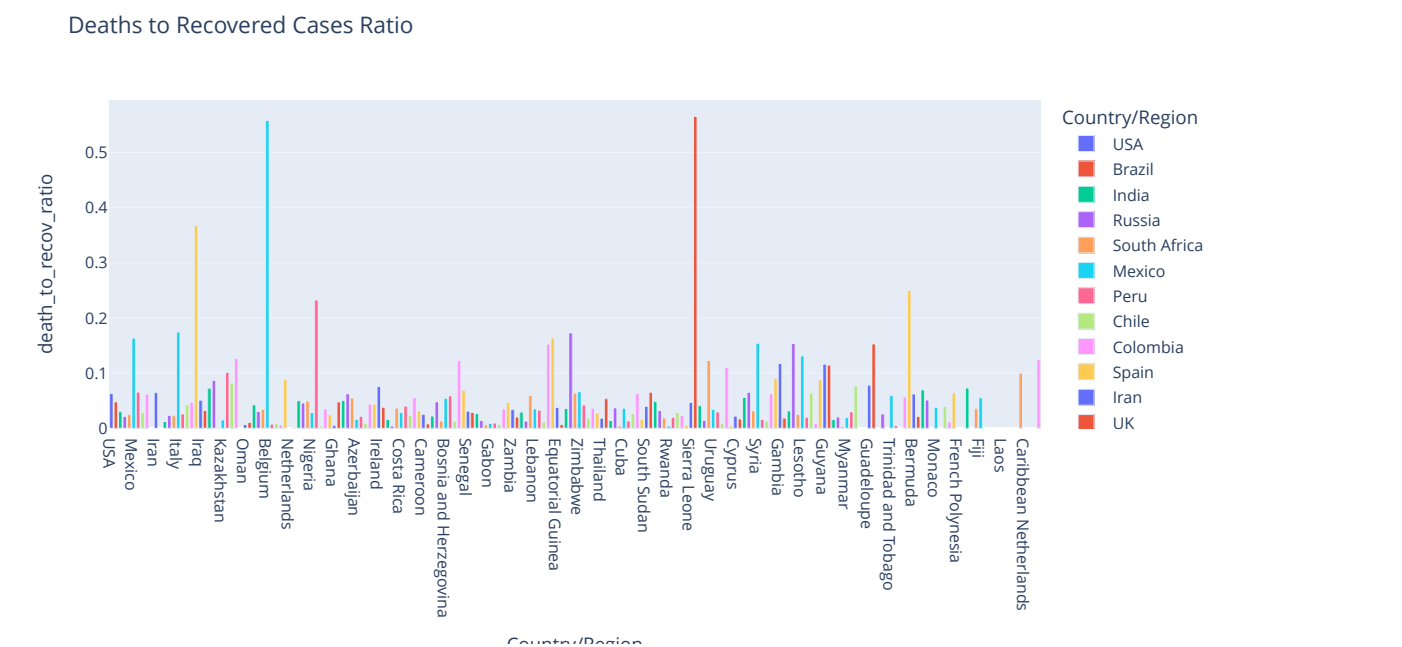
```
px.bar(world_data, x = 'Country/Region', y = 'death_to_conf_ratio', color = 'Country/Region', title = 'Deaths to Confirmed Cases Ratio')
```



Deaths to recovered ratio

In [27]:

```
world_data['death_to_recov_ratio'] = world_data['TotalDeaths']/world_data['TotalRecovered']
px.bar(world_data, x = 'Country/Region', y = 'death_to_recov_ratio', color = 'Country/Region', title = 'Deaths to Recovered Cases Ratio')
```

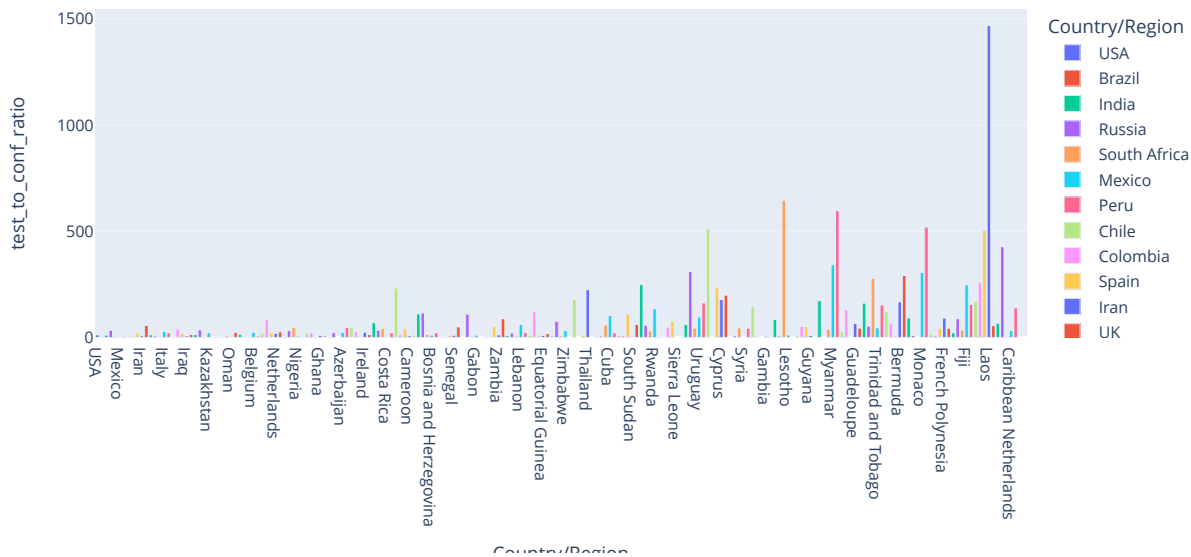


Tests to confirmed Ratio

In [28]:

```
world_data['test_to_conf_ratio'] = world_data['TotalTests']/world_data['TotalCases']
px.bar(world_data, x = 'Country/Region', y = 'test_to_conf_ratio', color = 'Country/Region', title = 'Tests to Confirmed Cases Ratio')
```

Tests to Confirmed Cases Ratio



Serious to Deaths Ratio

In [29]:

```
world_data['serious_to_death_ratio'] = world_data['Serious,Critical']/world_data['TotalDeaths']
px.bar(world_data, x = 'Country/Region', y = 'serious_to_death_ratio', color = 'Country/Region', title = 'Serious/Critical to Death Cases')
```

Serious/Critical to Death Cases Ratio

