```
import numpy as np
import pandas as pd

import matplotlib.pyplot as plt
import seaborn as sns
import plotly as pltly
```

```
from google.colab import files
```

```
uploaded = files.upload()
```

Choose Files No file chosen Upload widget is only available when the cell has been executed in the current browser session. Please rerun this cell to enable.

Saving 2019.csv to 2019 (1).csv

```
import io

df = pd.read_csv(io.BytesIO(uploaded['2019.csv']))

print(df)
```

```
      Overall rank  ... Perceptions of corruption
0                1  ...                      0.393
1                2  ...                      0.410
2                3  ...                      0.341
3                4  ...                      0.118
4                5  ...                      0.298
..             ...  ...                        ...
151            152  ...                      0.411
152            153  ...                      0.147
153            154  ...                      0.025
154            155  ...                      0.035
155            156  ...                      0.091

[156 rows x 9 columns]
```

```
df1 = pd.Series([80,75,60,20,80,90,100,55,60,40],
                index = ['A','B','C','D','E','F','G','H','I','J'])
```

```
#fancy indexing
print(df1[[4,1]])
```

```
E    80
B    75
dtype: int64
```

```
df.head()
```

df.head()

	Overall rank	Country or region	Score	GDP per capita	Social support	Healthy life expectancy	Freedom to make life choices	Generosity	Percept corrup
0	1	Finland	7.769	1.340	1.587	0.986	0.596	0.153	(
1	2	Denmark	7.600	1.383	1.573	0.996	0.592	0.252	(
2	3	Norway	7.554	1.488	1.582	1.028	0.603	0.271	(

```
pd.pivot_table(df,index=["Overall rank"])
```

	Freedom to make life choices	GDP per capita	Generosity	Healthy life expectancy	Perceptions of corruption	Score	Social support
Overall rank							
1	0.596	1.340	0.153	0.986	0.393	7.769	1.587
2	0.592	1.383	0.252	0.996	0.410	7.600	1.573
3	0.603	1.488	0.271	1.028	0.341	7.554	1.582
4	0.591	1.380	0.354	1.026	0.118	7.494	1.624
5	0.557	1.396	0.322	0.999	0.298	7.488	1.522
...	...	...	...	...	...	...	...
152	0.555	0.359	0.217	0.614	0.411	3.334	0.711
153	0.417	0.476	0.276	0.499	0.147	3.231	0.885
154	0.000	0.350	0.158	0.361	0.025	3.203	0.517
155	0.225	0.026	0.235	0.105	0.035	3.083	0.000

```
pd.pivot_table(df,index=["Overall rank","Country or region","Score"])
```

Overall rank	Country or region	Score	Freedom to make life choices	GDP per capita	Generosity	Healthy life expectancy	Perceptions of corruption	Soci suppo
1	Finland	7.769	0.596	1.340	0.153	0.986	0.393	1.5
2	Denmark	7.600	0.592	1.383	0.252	0.996	0.410	1.5

```
pd.pivot_table(df,index=["Countrya or region"],values=["GDP per capita"],aggfunc=np.mean)
```

Country or region	GDP per capita
Afghanistan	0.350
Albania	0.947
Algeria	1.002
Argentina	1.092
Armenia	0.850
...	...
Venezuela	0.960
Vietnam	0.741
Yemen	0.287
Zambia	0.578
Zimbabwe	0.366

156 rows × 1 columns

```
pd.pivot_table(df,index=["Country or region"],values=["GDP per capita"],aggfunc=[np.mean,len]
```

	mean	len
	GDP per capita	GDP per capita
Country or region		
Afghanistan	0.350	1.0
Albania	0.947	1.0
Algeria	1.002	1.0
Argentina	1.092	1.0

```
pd.pivot_table(df,index=["Overall rank","Country or region"],values=["GDP per capita"],aggfun
```

		mean	len
		GDP per capita	GDP per capita
Overall rank	Country or region		
1	Finland	1.340	1.0
2	Denmark	1.383	1.0
3	Norway	1.488	1.0
4	Iceland	1.380	1.0
5	Netherlands	1.396	1.0
...	...	...	...
152	Rwanda	0.359	1.0
153	Tanzania	0.476	1.0
154	Afghanistan	0.350	1.0
155	Central African Republic	0.026	1.0
156	South Sudan	0.306	1.0

156 rows × 2 columns