Santhosh Gopi B

import libraries

```
In [1]:  import pandas as pd
         import numpy as np
```

Read file

```
In [5]:  df=pd.read_csv(r"E:\154\2015 - 2015.csv")
```

Display File

In [6]: `display(data)`

	Country	Region	Happiness Rank	Happiness Score	Standard Error	Economy (GDP per Capita)	Family	Health (Life Expectancy)	Fre
0	Switzerland	Western Europe	1	7.587	0.03411	1.39651	1.34951	0.94143	0.
1	Iceland	Western Europe	2	7.561	0.04884	1.30232	1.40223	0.94784	0.
2	Denmark	Western Europe	3	7.527	0.03328	1.32548	1.36058	0.87464	0.
3	Norway	Western Europe	4	7.522	0.03880	1.45900	1.33095	0.88521	0.
4	Canada	North America	5	7.427	0.03553	1.32629	1.32261	0.90563	0.
...	...	...	...	...	...	...	...	...	
153	Rwanda	Sub-Saharan Africa	154	3.465	0.03464	0.22208	0.77370	0.42864	0.
154	Benin	Sub-Saharan Africa	155	3.340	0.03656	0.28665	0.35386	0.31910	0.
155	Syria	Middle East and Northern Africa	156	3.006	0.05015	0.66320	0.47489	0.72193	0.
156	Burundi	Sub-Saharan Africa	157	2.905	0.08658	0.01530	0.41587	0.22396	0.
157	Togo	Sub-Saharan Africa	158	2.839	0.06727	0.20868	0.13995	0.28443	0.

158 rows × 12 columns

MEAN

In [7]: `df.mean()`

Out[7]:
```
Happiness Rank                   79.493671
Happiness Score                   5.375734
Standard Error                    0.047885
Economy (GDP per Capita)          0.846137
Family                            0.991046
Health (Life Expectancy)          0.630259
Freedom                           0.428615
Trust (Government Corruption)     0.143422
Generosity                        0.237296
Dystopia Residual                 2.098977
dtype: float64
```

Median

In [8]: `df.median()`

Out[8]:
```
Happiness Rank                   79.500000
Happiness Score                   5.232500
Standard Error                    0.043940
Economy (GDP per Capita)          0.910245
Family                            1.029510
Health (Life Expectancy)          0.696705
Freedom                           0.435515
Trust (Government Corruption)     0.107220
Generosity                        0.216130
Dystopia Residual                 2.095415
dtype: float64
```

Mode

In [9]: `df.mode()`

Out[9]:

	Country	Region	Happiness Rank	Happiness Score	Standard Error	Economy (GDP per Capita)	Family	Health (Life Expectancy)	Fre
0	Afghanistan	Sub-Saharan Africa	82.0	5.192	0.03751	0.00000	0.00000	0.92356	0.
1	Albania	NaN	NaN	NaN	0.03780	0.01530	0.13995	NaN	0.
2	Algeria	NaN	NaN	NaN	0.04394	0.01604	0.30285	NaN	0.
3	Angola	NaN	NaN	NaN	0.04934	0.06940	0.35386	NaN	0.
4	Argentina	NaN	NaN	NaN	0.05051	0.07120	0.38174	NaN	0.
...	...	...	...	...	...	...	...	...	
153	Venezuela	NaN	NaN	NaN	NaN	1.45900	1.34043	NaN	0.
154	Vietnam	NaN	NaN	NaN	NaN	1.52186	1.34951	NaN	0.
155	Yemen	NaN	NaN	NaN	NaN	1.55422	1.36058	NaN	0.
156	Zambia	NaN	NaN	NaN	NaN	1.56391	1.36948	NaN	0.
157	Zimbabwe	NaN	NaN	NaN	NaN	1.69042	1.40223	NaN	0.

158 rows × 12 columns

Descibe

In [10]: `df.describe()`

Out[10]:

	Happiness Rank	Happiness Score	Standard Error	Economy (GDP per Capita)	Family	Health (Life Expectancy)	Freedom	(Go C
count	158.000000	158.000000	158.000000	158.000000	158.000000	158.000000	158.000000	1
mean	79.493671	5.375734	0.047885	0.846137	0.991046	0.630259	0.428615	
std	45.754363	1.145010	0.017146	0.403121	0.272369	0.247078	0.150693	
min	1.000000	2.839000	0.018480	0.000000	0.000000	0.000000	0.000000	
25%	40.250000	4.526000	0.037268	0.545808	0.856823	0.439185	0.328330	
50%	79.500000	5.232500	0.043940	0.910245	1.029510	0.696705	0.435515	
75%	118.750000	6.243750	0.052300	1.158448	1.214405	0.811013	0.549092	
max	158.000000	7.587000	0.136930	1.690420	1.402230	1.025250	0.669730	

Sum

In [11]:
```python
df.sum()
```

Out[11]:
```
Country                        SwitzerlandIcelandDenmarkNorwayCanadaFinland
Ne...
Region                         Western EuropeWestern EuropeWestern EuropeWe
st...
Happiness Rank
12560
Happiness Score                                                          84
9.366
Standard Error                                                           7.
56579
Economy (GDP per Capita)                                               133.
68968
Family                                                                 156.
58526
Health (Life Expectancy)                                               99.
58098
Freedom                                                                 67.
72116
Trust (Government Corruption)                                           22.
66065
Generosity                                                              37.
49269
Dystopia Residual                                                      331.
63833
dtype: object
```

Cumulative Sum

In [12]: `df.cumsum()`

154	SwitzerlandIcelandDenmarkNorwayCanadaFinlandNe...	Western EuropeWestern EuropeWestern EuropeWest...	12089	840.616
155	SwitzerlandIcelandDenmarkNorwayCanadaFinlandNe...	Western EuropeWestern EuropeWestern EuropeWest...	12245	843.622
156	SwitzerlandIcelandDenmarkNorwayCanadaFinlandNe...	Western EuropeWestern EuropeWestern EuropeWest...	12402	846.527
157	SwitzerlandIcelandDenmarkNorwayCanadaFinlandNe...	Western EuropeWestern EuropeWestern EuropeWest...	12560	849.366

158 rows × 12 columns

Minimum Values

In [13]: `df.min()`

Out[13]:
```
Country                            Afghanistan
Region                 Australia and New Zealand
Happiness Rank                               1
Happiness Score                          2.839
Standard Error                         0.01848
Economy (GDP per Capita)                   0.0
Family                                     0.0
Health (Life Expectancy)                   0.0
Freedom                                    0.0
Trust (Government Corruption)              0.0
Generosity                                 0.0
Dystopia Residual                      0.32858
dtype: object
```

Maximum Values

In [14]: `df.max()`

Out[14]:
```
Country                          Zimbabwe
Region                      Western Europe
Happiness Rank                        158
Happiness Score                     7.587
Standard Error                    0.13693
Economy (GDP per Capita)          1.69042
Family                            1.40223
Health (Life Expectancy)          1.02525
Freedom                           0.66973
Trust (Government Corruption)     0.55191
Generosity                        0.79588
Dystopia Residual                 3.60214
dtype: object
```

Correlation

In [16]:
```python
from scipy.stats import spearmanr
print(spearmanr(df['Happiness Rank'],df['Happiness Score']))
```

```
SpearmanrResult(correlation=-0.9999999999999999, pvalue=0.0)
```

Co variance

In [17]:
```python
from scipy.stats import pearsonr
print(pearsonr(df['Happiness Rank'],df['Happiness Score']))
```

```
(-0.9921053148284924, 1.4013759581587442e-142)
```

In [ ]: