

21/07/2023

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

```
In [4]: x=pd.read_csv(r"C:\Users\user\Downloads\2015 - 2015.csv")
x
```

Out[4]:

	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
1	Iceland	Western Europe	2	7.561	0.04884	1.30232	1.40223	0.94784	0.1
2	Denmark	Western Europe	3	7.527	0.03328	1.32548	1.36058	0.87464	0.1
3	Norway	Western Europe	4	7.522	0.03880	1.45900	1.33095	0.88521	0.1
4	Canada	North America	5	7.427	0.03553	1.32629	1.32261	0.90563	0.1
...
153	Rwanda	Sub-Saharan Africa	154	3.465	0.03464	0.22208	0.77370	0.42864	0.1
154	Benin	Sub-Saharan Africa	155	3.340	0.03656	0.28665	0.35386	0.31910	0.1
155	Syria	Middle East and Northern Africa	156	3.006	0.05015	0.66320	0.47489	0.72193	0.1
156	Burundi	Sub-Saharan Africa	157	2.905	0.08658	0.01530	0.41587	0.22396	0.1
157	Togo	Sub-Saharan Africa	158	2.839	0.06727	0.20868	0.13995	0.28443	0.1

158 rows × 12 columns



In [5]: `x.dtypes`

```
Out[5]: Country          object
Region          object
Happiness Rank    int64
Happiness Score   float64
Standard Error    float64
Economy (GDP per Capita) float64
Family           float64
Health (Life Expectancy) float64
Freedom          float64
Trust (Government Corruption) float64
Generosity       float64
Dystopia Residual float64
dtype: object
```

In [6]: `x.head()`

Out[6]:

	Country	Region	Happiness Rank	Happiness Score	Standard Error	Economy (GDP per Capita)	Family	Health (Life Expectancy)	Freedom
0	Switzerland	Western Europe	1	7.587	0.03411	1.39651	1.34951	0.94143	0.668
1	Iceland	Western Europe	2	7.561	0.04884	1.30232	1.40223	0.94784	0.628
2	Denmark	Western Europe	3	7.527	0.03328	1.32548	1.36058	0.87464	0.649
3	Norway	Western Europe	4	7.522	0.03880	1.45900	1.33095	0.88521	0.669
4	Canada	North America	5	7.427	0.03553	1.32629	1.32261	0.90563	0.632

In [9]: `x.tail()`

Out[9]:

	Country	Region	Happiness Rank	Happiness Score	Standard Error	Economy (GDP per Capita)	Family	Health (Life Expectancy)	Freedom
153	Rwanda	Sub-Saharan Africa	154	3.465	0.03464	0.22208	0.77370	0.42864	0.592
154	Benin	Sub-Saharan Africa	155	3.340	0.03656	0.28665	0.35386	0.31910	0.484
155	Syria	Middle East and Northern Africa	156	3.006	0.05015	0.66320	0.47489	0.72193	0.156
156	Burundi	Sub-Saharan Africa	157	2.905	0.08658	0.01530	0.41587	0.22396	0.118
157	Togo	Sub-Saharan Africa	158	2.839	0.06727	0.20868	0.13995	0.28443	0.364

In [13]: `x.columns`

Out[13]: Index(['Country', 'Region', 'Happiness Rank', 'Happiness Score', 'Standard Error', 'Economy (GDP per Capita)', 'Family', 'Health (Life Expectancy)', 'Freedom', 'Trust (Government Corruption)', 'Generosity', 'Dystopia Residual'], dtype='object')

In [15]: `x.index`

Out[15]: RangeIndex(start=0, stop=158, step=1)

In [16]: `x.describe()`

Out[16]:

	Happiness Rank	Happiness Score	Standard Error	Economy (GDP per Capita)	Family	Health (Life Expectancy)	Freedom	(G 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	

In [17]: `x["Family"]`

Out[17]:

```
0      1.34951
1      1.40223
2      1.36058
3      1.33095
4      1.32261
...
153    0.77370
154    0.35386
155    0.47489
156    0.41587
157    0.13995
Name: Family, Length: 158, dtype: float64
```

In [18]: `x[0:2]`

Out[18]:

	Country	Region	Happiness Rank	Happiness Score	Standard Error	Economy (GDP per Capita)	Family	Health (Life Expectancy)	Freedom
0	Switzerland	Western Europe	1	7.587	0.03411	1.39651	1.34951	0.94143	0.668
1	Iceland	Western Europe	2	7.561	0.04884	1.30232	1.40223	0.94784	0.628

In [19]: `x.iloc[0:2]`

Out[19]:

	Country	Region	Happiness Rank	Happiness Score	Standard Error	Economy (GDP per Capita)	Family	Health (Life Expectancy)	Freedom
0	Switzerland	Western Europe	1	7.587	0.03411	1.39651	1.34951	0.94143	0.665
1	Iceland	Western Europe	2	7.561	0.04884	1.30232	1.40223	0.94784	0.628

In [20]: `x.loc[0:3]`

Out[20]:

	Country	Region	Happiness Rank	Happiness Score	Standard Error	Economy (GDP per Capita)	Family	Health (Life Expectancy)	Freedom
0	Switzerland	Western Europe	1	7.587	0.03411	1.39651	1.34951	0.94143	0.665
1	Iceland	Western Europe	2	7.561	0.04884	1.30232	1.40223	0.94784	0.628
2	Denmark	Western Europe	3	7.527	0.03328	1.32548	1.36058	0.87464	0.649
3	Norway	Western Europe	4	7.522	0.03880	1.45900	1.33095	0.88521	0.669

In [21]: `x.loc["Family":"Freedom"]`

Out[21]:

	Country	Region	Happiness Rank	Happiness Score	Standard Error	Economy (GDP per Capita)	Family	Health (Life Expectancy)	Freedom (Index)
--	---------	--------	----------------	-----------------	----------------	--------------------------	--------	--------------------------	-----------------

In [24]: `x[x["Family"]<=2]`

Out[24]:

	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
1	Iceland	Western Europe	2	7.561	0.04884	1.30232	1.40223	0.94784	0.1
2	Denmark	Western Europe	3	7.527	0.03328	1.32548	1.36058	0.87464	0.1
3	Norway	Western Europe	4	7.522	0.03880	1.45900	1.33095	0.88521	0.1
4	Canada	North America	5	7.427	0.03553	1.32629	1.32261	0.90563	0.1
...
153	Rwanda	Sub-Saharan Africa	154	3.465	0.03464	0.22208	0.77370	0.42864	0.1
154	Benin	Sub-Saharan Africa	155	3.340	0.03656	0.28665	0.35386	0.31910	0.1
155	Syria	Middle East and Northern Africa	156	3.006	0.05015	0.66320	0.47489	0.72193	0.1
156	Burundi	Sub-Saharan Africa	157	2.905	0.08658	0.01530	0.41587	0.22396	0.1
157	Togo	Sub-Saharan Africa	158	2.839	0.06727	0.20868	0.13995	0.28443	0.1

158 rows × 12 columns



In [27]: `x.fillna(value=5)`

Out[27]:

	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
1	Iceland	Western Europe	2	7.561	0.04884	1.30232	1.40223	0.94784	0.1
2	Denmark	Western Europe	3	7.527	0.03328	1.32548	1.36058	0.87464	0.1
3	Norway	Western Europe	4	7.522	0.03880	1.45900	1.33095	0.88521	0.1
4	Canada	North America	5	7.427	0.03553	1.32629	1.32261	0.90563	0.1
...
153	Rwanda	Sub-Saharan Africa	154	3.465	0.03464	0.22208	0.77370	0.42864	0.1
154	Benin	Sub-Saharan Africa	155	3.340	0.03656	0.28665	0.35386	0.31910	0.1
155	Syria	Middle East and Northern Africa	156	3.006	0.05015	0.66320	0.47489	0.72193	0.1
156	Burundi	Sub-Saharan Africa	157	2.905	0.08658	0.01530	0.41587	0.22396	0.1
157	Togo	Sub-Saharan Africa	158	2.839	0.06727	0.20868	0.13995	0.28443	0.1

158 rows × 12 columns



In [28]:

x.dropna()

Out[28]:

	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
1	Iceland	Western Europe	2	7.561	0.04884	1.30232	1.40223	0.94784	0.1
2	Denmark	Western Europe	3	7.527	0.03328	1.32548	1.36058	0.87464	0.1
3	Norway	Western Europe	4	7.522	0.03880	1.45900	1.33095	0.88521	0.1
4	Canada	North America	5	7.427	0.03553	1.32629	1.32261	0.90563	0.1
...
153	Rwanda	Sub-Saharan Africa	154	3.465	0.03464	0.22208	0.77370	0.42864	0.1
154	Benin	Sub-Saharan Africa	155	3.340	0.03656	0.28665	0.35386	0.31910	0.1
155	Syria	Middle East and Northern Africa	156	3.006	0.05015	0.66320	0.47489	0.72193	0.1
156	Burundi	Sub-Saharan Africa	157	2.905	0.08658	0.01530	0.41587	0.22396	0.1
157	Togo	Sub-Saharan Africa	158	2.839	0.06727	0.20868	0.13995	0.28443	0.1

158 rows × 12 columns

In []:

In []: