

Assignment On Case-Study --- Tutorial 26

Annual population of neighborhood country of Pakistan

```
In [ ]: # import Libarary
import pandas as pd
import numpy as np
import matplotlib as mp
import seaborn as sns
```

Read CSV file using pandas

```
In [ ]: fd = pd.read_csv("Annual_Population.csv")
fd.head(4)
# fd.to_numpy()
```

Out[]:

	Domain Code	Domain	Area Code (FAO)	Area	Element Code	Element	Item Code	Item	Year Code	Year	Unit
0	OA	Annual population	2	Afghanistan	511	Total Population - Both sexes	3010	Population - Est. & Proj.	2014	2014	1 pers
1	OA	Annual population	2	Afghanistan	512	Total Population - Male	3010	Population - Est. & Proj.	2014	2014	1 pers
2	OA	Annual population	2	Afghanistan	513	Total Population - Female	3010	Population - Est. & Proj.	2014	2014	1 pers
3	OA	Annual population	2	Afghanistan	551	Rural population	3010	Population - Est. & Proj.	2014	2014	1 pers

Drop coloumn from dataframe for unwanted data

```
In [ ]: population = fd.drop(["Domain Code", "Domain", "Item", "Unit", "Year Code", "Flag"], axis=1)
population = population.drop(["Flag Description", "Item Code"], axis=1)
population.head(3)
```

Out[]:

	Area Code (FAO)	Area	Element Code	Element	Year	Value	Note
0	2	Afghanistan	511	Total Population - Both sexes	2014	33370.794	NaN
1	2	Afghanistan	512	Total Population - Male	2014	17138.803	NaN
2	2	Afghanistan	513	Total Population - Female	2014	16232.001	NaN

Change/Replace the value to short meaningful name

```
In [ ]: population["Element"].replace({"Urban population": "Urban", "Rural population": "Rural"}, inplace=True)
population["Note"].replace({"UNDESA, Population Division ? World Urbanization Prospects": "UNDESA, Population Division ? World Urbanization Prospects"}, inplace=True)
population.head()
```

Out []:

	Area Code (FAO)	Area	Element Code	Element	Year	Value	Note
0	2	Afghanistan	511	Both_Sex	2014	33370.794	NaN
1	2	Afghanistan	512	Male	2014	17138.803	NaN
2	2	Afghanistan	513	Female	2014	16232.001	NaN
3	2	Afghanistan	551	Rural	2014	24703.798	NaN
4	2	Afghanistan	561	Urban	2014	8054.222	UNDESA

dataframe to excel format

In []:

```
population.to_excel("Neighbourhoob Annual Population.xlsx")
```

Find means population and count catogries

In []:

```
population.mean()
print(population.value_counts( population["Element"] == "Urban" ))
print(population.value_counts( population["Area"] == "Pakistan" ))
```

```
Element
False    100
True      25
dtype: int64
Area
False    100
True      25
dtype: int64
```

Finding means of each group

In []:

```
population.groupby(["Area", "Value"]).mean()
population.groupby(["Element", "Value"]).mean()

population[population["Note"] == "UNDESA"].groupby(["Area", "Element", "Value"]).mean
```

Out []:

	Area Code (FAO)	Element Code	Year
Area	Element	Value	
Afghanistan	Urban	8054.222	2 561 2014
		8367.571	2 561 2015
		8670.939	2 561 2016
		8971.472	2 561 2017
		9273.302	2 561 2018
Bangladesh	Urban	53455.788	16 561 2014
		55305.132	16 561 2015
		57168.030	16 561 2016
		59046.818	16 561 2017
		60944.245	16 561 2018
India	Urban	419001.673	100 561 2014

		Area Code (FAO)	Element Code	Year
Area	Element	Value		
Iran (Islamic Republic of)		429069.459	100	561 2015
		439391.699	100	561 2016
		449963.381	100	561 2017
		460779.764	100	561 2018
	Urban	57106.555	102	561 2014
		58217.032	102	561 2015
		59308.845	102	561 2016
		60380.188	102	561 2017
		61425.055	102	561 2018
Pakistan	Urban	66461.625	165	561 2014
		68226.783	165	561 2015
		70005.271	165	561 2016
		71795.700	165	561 2017
		73630.430	165	561 2018