In [1]:

```
import pandas as pd
```

In [2]:

```
df = pd.read_csv(r'C:\Users\eddy2\Downloads\FoodBalanceSheets_E_Africa_NOFLAG.csv')
df
```

Out[2]:

	Area Code	Area	Item Code	Item	Element Code	Element	Unit	Y2014
0	4	Algeria	2501	Population	511	Total Population - Both sexes	1000 persons	38924.00
1	4	Algeria	2501	Population	5301	Domestic supply quantity	1000 tonnes	0.00
2	4	Algeria	2901	Grand Total	664	Food supply (kcal/capita/day)	kcal/capita/day	3377.00
3	4	Algeria	2901	Grand Total	674	Protein supply quantity (g/capita/day)	g/capita/day	94.90
4	4	Algeria	2901	Grand Total	684	Fat supply quantity (g/capita/day)	g/capita/day	80.06
...	...	...	...	...	...	...	...	...
60938	181	Zimbabwe	2899	Miscellaneous	5142	Food	1000 tonnes	42.00
60939	181	Zimbabwe	2899	Miscellaneous	645	Food supply quantity (kg/capita/yr)	kg	3.06
60940	181	Zimbabwe	2899	Miscellaneous	664	Food supply (kcal/capita/day)	kcal/capita/day	3.00
60941	181	Zimbabwe	2899	Miscellaneous	674	Protein supply quantity (g/capita/day)	g/capita/day	0.10
60942	181	Zimbabwe	2899	Miscellaneous	684	Fat supply quantity (g/capita/day)	g/capita/day	0.04

60943 rows × 12 columns

GROUPBY SUM OF ANIMAL FAT FOR YEAR 2014

In [19]:

```
df.groupby('Item')['Y2014'].sum()
```

Out[19]:

```
Item
Alcohol, Non-Food        2403.00
Alcoholic Beverages    102410.11
Animal Products         11935.65
Animal fats            209460.54
Apples and products      9499.23
                          ...
Vegetables, Other      155038.96
Vegetal Products       107145.19
Wheat and products     232670.13
Wine                     4497.36
Yams                   200396.96
Name: Y2014, Length: 119, dtype: float64
```

GROUPBY SUM OF ANIMAL FAT FOR YEAR 2017

In [20]:

```
df.groupby('Item')['Y2017'].sum()
```

Out[20]:

```
Item
Alcohol, Non-Food        2348.00
Alcoholic Beverages     95581.06
Animal Products         11547.65
Animal fats            269617.53
Apples and products     10198.90
                          ...
Vegetables, Other      157752.59
Vegetal Products       107655.20
Wheat and products     240047.62
Wine                     4178.02
Yams                   229174.59
Name: Y2017, Length: 119, dtype: float64
```

TO GET THE MEAN AND STANDARD DEVIATION FOR YEAR 2015

In [21]:

```
df.describe()
```

Out[21]:

	Area Code	Item Code	Element Code	Y2014	Y2015	Y2016
count	60943.000000	60943.000000	60943.000000	59354.000000	59395.000000	59408.000000
mean	134.265576	2687.176706	3814.856456	134.196282	135.235966	136.555222
std	72.605709	146.055739	2212.007033	1567.663696	1603.403984	1640.007194
min	4.000000	2501.000000	511.000000	-1796.000000	-3161.000000	-3225.000000
25%	74.000000	2562.000000	684.000000	0.000000	0.000000	0.000000
50%	136.000000	2630.000000	5142.000000	0.090000	0.080000	0.080000
75%	195.000000	2775.000000	5511.000000	8.340000	8.460000	8.430000
max	276.000000	2961.000000	5911.000000	176405.000000	181137.000000	185960.000000

CHECKING FOR MISSING VALUES

In [33]:

```
null_2016 = (df['Y2016'].isnull()).sum()
null_2016
```

Out[33]:

```
1535
```

CALCULATING THE PERCENTAGE AND PUTTING IN 2 DECIMAL PLACES

In [37]:

```
percent_null = (null_2016/60943) * 100
percent_null.round(2)
```

Out[37]:

```
2.52
```

HIGHEST COLLERATION WITH ELEMENT CODE

In [41]:

```
df[['Element Code','Y2014']].max()
```

Out[41]:

```
Element Code      5911.0
Y2014           176405.0
dtype: float64
```

YEAR WITH HIGHEST SUM OF IMPORT QUANTITY

SUM OF IMPORT QUANTITY FOR YEAR 2014 AND SUM OF PRODUCTION

In [47]:

```
df.groupby('Element')['Y2014'].sum()
```

Out[47]:

```
Element
Domestic supply quantity                  1996716.35
Export Quantity                            150020.64
Fat supply quantity (g/capita/day)          10225.56
Feed                                       216927.89
Food                                      1212332.49
Food supply (kcal/capita/day)              454257.00
Food supply quantity (kg/capita/yr)         49650.63
Import Quantity                            274144.48
Losses                                     153223.00
Other uses (non-food)                       78718.13
Processing                                 282923.00
Production                                1931287.75
Protein supply quantity (g/capita/day)      11836.46
Residuals                                   30149.00
Seed                                        21922.92
Stock Variation                             58749.83
Total Population - Both sexes             1031585.00
Tourist consumption                           416.00
Name: Y2014, dtype: float64
```

SUM OF IMPORT QUNATITY FOR YEAR 2015

In [43]:

```
df.groupby('Element')['Y2015'].sum()
```

Out[43]:

```
Element
Domestic supply quantity                  2021493.55
Export Quantity                            157614.47
Fat supply quantity (g/capita/day)          10235.74
Feed                                       225050.22
Food                                      1232361.10
Food supply (kcal/capita/day)              453383.00
Food supply quantity (kg/capita/yr)         49345.13
Import Quantity                            267018.46
Losses                                     155439.00
Other uses (non-food)                       66254.41
Processing                                 287929.00
Production                                1947019.39
Protein supply quantity (g/capita/day)      11833.95
Residuals                                   30045.00
Seed                                        23976.82
Stock Variation                             34910.99
Total Population - Both sexes             1058081.00
Tourist consumption                           349.00
Name: Y2015, dtype: float64
```

SUM OF IMPORT QUNATITY FOR YEAR 2016

In [44]:

```
df.groupby('Element')['Y2016'].sum()
```

Out[44]:

```
Element
Domestic supply quantity                  2044842.70
Export Quantity                            151920.46
Fat supply quantity (g/capita/day)          10102.77
Feed                                       228958.65
Food                                      1247022.17
Food supply (kcal/capita/day)              451810.00
Food supply quantity (kg/capita/yr)         48985.28
Import Quantity                            286582.78
Losses                                     157787.00
Other uses (non-food)                       69563.68
Processing                                 280631.00
Production                                1943537.15
Protein supply quantity (g/capita/day)      11779.69
Residuals                                   37224.00
Seed                                        23389.20
Stock Variation                             33140.12
Total Population - Both sexes             1085107.00
Tourist consumption                           89.00
Name: Y2016, dtype: float64
```

SUM OF IMPORT QUNATITY FOR YEAR 2017

In [45]:

```
df.groupby('Element')['Y2017'].sum()
```

Out[45]:

```
Element
Domestic supply quantity                  2088198.10
Export Quantity                            182338.80
Fat supply quantity (g/capita/day)          10253.84
Feed                                       223705.68
Food                                      1258888.28
Food supply (kcal/capita/day)              454681.00
Food supply quantity (kg/capita/yr)         48690.04
Import Quantity                            294559.09
Losses                                     160614.00
Other uses (non-food)                       91645.97
Processing                                 292836.00
Production                                2030056.89
Protein supply quantity (g/capita/day)      11842.45
Residuals                                   35500.00
Seed                                        24870.14
Stock Variation                             54316.91
Total Population - Both sexes             1112641.00
Tourist consumption                            91.00
Name: Y2017, dtype: float64
```

SUM OF IMPORT QUNATITY FOR YEAR 2018 AND ELEMENT WITH THE HIGHEST SUM

In [54]:

```
df.groupby('Element')['Y2018'].sum()
```

Out[54]:

```
Element
Domestic supply quantity                  2161192.10
Export Quantity                            181594.80
Fat supply quantity (g/capita/day)          10258.69
Feed                                       233489.68
Food                                      1303841.28
Food supply (kcal/capita/day)              455261.00
Food supply quantity (kg/capita/yr)         49056.85
Import Quantity                            287997.09
Losses                                     163902.00
Other uses (non-food)                       91300.97
Processing                                 308429.00
Production                                2075072.89
Protein supply quantity (g/capita/day)      11833.56
Residuals                                   34864.00
Seed                                        25263.14
Stock Variation                             20577.91
Total Population - Both sexes             1140605.00
Tourist consumption                            90.00
Name: Y2018, dtype: float64
```

TOTAL IMPORT QUANTITY IN ALGERIA IN 2018

In [65]:

```
algeria = df.loc[df['Area'] == 'Algeria']
algeria
```

Out[65]:

	Area Code	Area	Item Code	Item	Element Code	Element	Unit	Y2014	
0	4	Algeria	2501	Population	511	Total Population - Both sexes	1000 persons	38924.00	39
1	4	Algeria	2501	Population	5301	Domestic supply quantity	1000 tonnes	0.00	
2	4	Algeria	2901	Grand Total	664	Food supply (kcal/capita/day)	kcal/capita/day	3377.00	3
3	4	Algeria	2901	Grand Total	674	Protein supply quantity (g/capita/day)	g/capita/day	94.90	
4	4	Algeria	2901	Grand Total	684	Fat supply quantity (g/capita/day)	g/capita/day	80.06	
...	...	...	...	...	...	...	...	...	
1308	4	Algeria	2899	Miscellaneous	5142	Food	1000 tonnes	75.00	
1309	4	Algeria	2899	Miscellaneous	645	Food supply quantity (kg/capita/yr)	kg	1.93	
1310	4	Algeria	2899	Miscellaneous	664	Food supply (kcal/capita/day)	kcal/capita/day	2.00	
1311	4	Algeria	2899	Miscellaneous	674	Protein supply quantity (g/capita/day)	g/capita/day	0.06	
1312	4	Algeria	2899	Miscellaneous	684	Fat supply quantity (g/capita/day)	g/capita/day	0.03	

1313 rows × 12 columns

In [67]:

```
algeria.groupby('Element')['Y2018'].sum()
```

Out[67]:

```
Element
Domestic supply quantity                  90023.42
Export Quantity                             811.54
Fat supply quantity (g/capita/day)          309.09
Feed                                      10668.00
Food                                      63736.33
Food supply (kcal/capita/day)             13288.00
Food supply quantity (kg/capita/yr)        1509.28
Import Quantity                           36238.29
Losses                                     7708.00
Other uses (non-food)                      3970.08
Processing                                 2479.00
Production                                60766.67
Protein supply quantity (g/capita/day)      367.28
Residuals                                   630.00
Seed                                        825.00
Stock Variation                            6172.00
Total Population - Both sexes             42228.00
Name: Y2018, dtype: float64
```

UNIQUE NUMBER OF COUNTRIES

In [80]:

```
unique_countries = df['Area'].nunique()
unique_countries
```

Out[80]:

```
49
```

In [ ]:

```

```