faostat casestudy

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```
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Task: Take your Own Dataset and do as directed in Video
```

1 1. Libraries

```
[]: import numpy as np
import pandas as pd
import matplotlib.pyplot as plt
import seaborn as sns
```

2 Excel file import

```
[]: chilla = pd.read_csv("faostat_casestudy.csv")
chilla
```

```
[]:
         Domain Code
                                             Domain
                                                     Area Code
                                                                    Area
                                                                          \
                 QCL Crops and livestock products
     0
                                                             79
                                                                 Germany
     1
                 QCL Crops and livestock products
                                                             79
                                                                 Germany
     2
                 QCL
                      Crops and livestock products
                                                             79
                                                                 Germany
     3
                 QCL Crops and livestock products
                                                             79
                                                                 Germany
     4
                 QCL Crops and livestock products
                                                             79
                                                                 Germany
                 QCL Crops and livestock products
     175
                                                             79
                                                                 Germany
     176
                 QCL Crops and livestock products
                                                             79
                                                                 Germany
     177
                 QCL Crops and livestock products
                                                             79
                                                                 Germany
     178
                 QCL
                      Crops and livestock products
                                                             79
                                                                 Germany
     179
                 QCL
                      Crops and livestock products
                                                             79
                                                                 Germany
                                Element
                                                                     Year Code
          Element Code
                                         Item Code
                                                               Item
                                                                                Year
     0
                  5312
                        Area harvested
                                              1717
                                                    Cereals, Total
                                                                          1961
                                                                                1961
                  5419
                                                    Cereals, Total
     1
                                  Yield
                                              1717
                                                                          1961
                                                                                1961
     2
                  5510
                                              1717 Cereals, Total
                            Production
                                                                          1961
                                                                                1961
```

```
3
             5312
                    Area harvested
                                          1717
                                                 Cereals, Total
                                                                       1962
                                                                             1962
                                          1717
4
             5419
                                                Cereals, Total
                                                                       1962
                                                                             1962
                             Yield
. .
              •••
175
             5419
                             Yield
                                          1717
                                                 Cereals, Total
                                                                       2019
                                                                              2019
176
             5510
                        Production
                                          1717 Cereals, Total
                                                                       2019
                                                                              2019
177
             5312
                   Area harvested
                                          1717
                                                 Cereals, Total
                                                                       2020
                                                                              2020
178
                                                 Cereals, Total
             5419
                             Yield
                                          1717
                                                                       2020
                                                                              2020
179
             5510
                        Production
                                          1717
                                                Cereals, Total
                                                                       2020
                                                                              2020
       Unit
                 Value Flag
                                                                 Flag Description
0
         ha
               7138919
                             Aggregate, may include official, semi-official...
1
      hg/ha
                 24174
                         Fc
                                                                  Calculated data
2
     tonnes
             17257340
                          Α
                             Aggregate, may include official, semi-official...
3
         ha
               7145685
                          Α
                             Aggregate, may include official, semi-official...
4
      hg/ha
                 29622
                         Fc
                                                                  Calculated data
. .
175
      hg/ha
                 69520
                                                                  Calculated data
                         Fc
176
     tonnes
             44302400
                             Aggregate, may include official, semi-official...
177
               6065200
                             Aggregate, may include official, semi-official...
         ha
178
                 71333
                                                                  Calculated data
      hg/ha
                         Fc
179
     tonnes
             43265100
                          Α
                             Aggregate, may include official, semi-official...
```

[180 rows x 14 columns]

3.0.1 Delete multiple consecutive Rows

Deleting Rows and Column

```
[]: # delete multiple rows consecutive chilla= chilla.drop(chilla.index[1:3])
```

delete consecutive rows
chilla=chilla.drop(5)

chilla

3

```
[]:
         Domain Code
                                             Domain
                                                     Area Code
                                                                    Area
                      Crops and livestock products
     0
                 QCL
                                                             79
                                                                 Germany
     3
                 QCL
                      Crops and livestock products
                                                             79
                                                                 Germany
     4
                 QCL
                      Crops and livestock products
                                                             79
                                                                 Germany
     6
                 QCL
                      Crops and livestock products
                                                             79
                                                                 Germany
     7
                 QCL
                      Crops and livestock products
                                                             79
                                                                 Germany
     175
                 QCL Crops and livestock products
                                                             79
                                                                 Germany
     176
                 QCL Crops and livestock products
                                                             79
                                                                 Germany
     177
                 QCL Crops and livestock products
                                                             79
                                                                 Germany
     178
                 QCL Crops and livestock products
                                                             79
                                                                 Germany
     179
                 QCL
                      Crops and livestock products
                                                             79
                                                                 Germany
```

```
Element Code
                           Element
                                     Item Code
                                                            Item
                                                                  Year Code
                                                                             Year
                                                 Cereals, Total
0
             5312
                    Area harvested
                                          1717
                                                                       1961
                                                                              1961
3
             5312
                    Area harvested
                                           1717
                                                 Cereals, Total
                                                                       1962
                                                                              1962
                                                 Cereals, Total
4
             5419
                              Yield
                                           1717
                                                                       1962
                                                                              1962
6
             5312
                    Area harvested
                                                 Cereals, Total
                                                                             1963
                                          1717
                                                                       1963
7
             5419
                             Yield
                                          1717
                                                 Cereals, Total
                                                                       1963
                                                                              1963
175
             5419
                             Yield
                                          1717
                                                 Cereals, Total
                                                                       2019
                                                                              2019
                                                 Cereals, Total
176
                                                                       2019
                                                                              2019
             5510
                        Production
                                          1717
177
             5312
                    Area harvested
                                          1717
                                                 Cereals, Total
                                                                       2020
                                                                              2020
                                                 Cereals, Total
                                          1717
178
             5419
                              Yield
                                                                       2020
                                                                              2020
179
             5510
                        Production
                                           1717
                                                 Cereals, Total
                                                                       2020
                                                                              2020
       Unit
                 Value Flag
                                                                 Flag Description
0
         ha
               7138919
                             Aggregate, may include official, semi-official...
                             Aggregate, may include official, semi-official...
3
         ha
               7145685
4
                                                                  Calculated data
      hg/ha
                 29622
                         Fc
6
                             Aggregate, may include official, semi-official...
         ha
               7168885
                          Α
7
      hg/ha
                 29252
                         Fc
                                                                  Calculated data
. .
                 69520
175
      hg/ha
                         Fc
                                                                  Calculated data
                             Aggregate, may include official, semi-official...
176
             44302400
     tonnes
177
               6065200
                             Aggregate, may include official, semi-official...
         ha
                          Α
                                                                  Calculated data
178
      hg/ha
                 71333
                         Fc
                             Aggregate, may include official, semi-official...
179
     tonnes
             43265100
```

[177 rows x 14 columns]

3.0.2 Delete Alternate Rows

```
[]: chilla= chilla.drop([3,4,6,7]) chilla
```

```
[]:
         Domain Code
                                             Domain
                                                     Area Code
                                                                    Area
                      Crops and livestock products
                 QCL
                                                             79
                                                                 Germany
     8
                 QCL
                      Crops and livestock products
                                                            79
                                                                 Germany
     9
                 QCL
                      Crops and livestock products
                                                            79
                                                                 Germany
                 QCL
                      Crops and livestock products
     10
                                                            79
                                                                 Germany
                      Crops and livestock products
     11
                 QCL
                                                            79
                                                                 Germany
     . .
                 QCL Crops and livestock products
                                                                Germany
     175
                                                            79
     176
                 QCL Crops and livestock products
                                                            79
                                                                 Germany
                 QCL Crops and livestock products
     177
                                                            79
                                                                 Germany
     178
                      Crops and livestock products
                                                            79
                 QCL
                                                                 Germany
     179
                 QCL
                      Crops and livestock products
                                                            79
                                                                 Germany
                               Element Item Code
          Element Code
                                                               Item Year Code Year \
```

.

0		5312 Area harvested		1717 Cere	eals, Total	1961	1961	
8		5510 Prod	luction	1717 Cere	eals, Total	1963	1963	
9		5312 Area har	rvested	1717 Cere	eals, Total	1964	1964	
10		5419	Yield	1717 Cere	eals, Total	1964	1964	
11		5510 Production		1717 Cere	eals, Total	1964	1964	
						••		
175		5419 Yield		1717 Cere	eals, Total	2019	2019	
176		5510 Production		1717 Cere	eals, Total	2019	2019	
177		5312 Area harvested		1717 Cere	eals, Total	2020	2020	
178		5419	Yield	1717 Cere	eals, Total	2020	2020	
179		5510 Prod	luction	1717 Cere	eals, Total	2020	2020	
	Unit	Value Flag				Flag Descri	ption	
0	ha	7138919 A	Aggregate,	may include	e official,	semi-offici	al	
8	tonnes	20970320 A	Aggregate,	may include	e official,	semi-offici	al	
9	ha	7285822 A	Aggregate,	may include	may include official,		semi-official	
10	hg/ha	31208 Fc				Calculated data		
11	tonnes	22737326 A	Aggregate,	may include	e official,	semi-offici	al	
	•••	•••				•••		
175	hg/ha	69520 Fc				Calculated	data	
176	tonnes	44302400 A	Aggregate,	may include	e official,	semi-offici	al	
177	ha	6065200 A	Aggregate,	may include official,		semi-official		
178	hg/ha	71333 Fc				Calculated	data	
179	tonnes	43265100 A	Aggregate,	may include	e official,	semi-offici	al…	

[173 rows x 14 columns]

3.0.3 Deleting Columns

[]: del chilla["Domain"] chilla

[]:		Domain Code	Area (Code	Area	Element	Code	Element	Item Code	\
	0	QCL		79	Germany		5312	Area harvested	1717	
	8	QCL		79	Germany		5510	Production	1717	
	9	QCL		79	Germany		5312	Area harvested	1717	
	10	QCL		79	Germany		5419	Yield	1717	
	11	QCL		79	Germany		5510	Production	1717	
		•••			•••	•••				
	175	QCL		79	Germany		5419	Yield	1717	
	176	QCL		79	Germany		5510	Production	1717	
	177	QCL		79	Germany		5312	Area harvested	1717	
	178	QCL		79	Germany		5419	Yield	1717	
	179	QCL		79	Germany		5510	Production	1717	
			Item Ye	ear Co	ode Year	Unit	V	alue Flag \		
	Ω	Cereals T	'otal	10	961 1961	ha	713	2919 Δ		

O Cereals, Total 1961 1961 7138919

```
8
          Cereals, Total
                                1963 1963
                                             tonnes
                                                     20970320
                                                                  Α
     9
          Cereals, Total
                                1964
                                      1964
                                                 ha
                                                      7285822
                                                                  Α
     10
          Cereals, Total
                                1964
                                      1964
                                              hg/ha
                                                        31208
                                                                 Fc
          Cereals, Total
     11
                                1964
                                      1964
                                             tonnes
                                                     22737326
                                                                  Α
     . .
     175 Cereals, Total
                                2019
                                      2019
                                                        69520
                                              hg/ha
                                                                 Fc
     176 Cereals, Total
                                      2019
                                             tonnes
                                2019
                                                    44302400
                                                                  Α
     177 Cereals, Total
                                2020
                                      2020
                                                 ha
                                                      6065200
                                                                  Α
     178 Cereals, Total
                                2020
                                      2020
                                              hg/ha
                                                        71333
                                                                 Fc
     179
         Cereals, Total
                                             tonnes
                                2020
                                      2020
                                                     43265100
                                                                  Α
                                             Flag Description
     0
          Aggregate, may include official, semi-official...
     8
          Aggregate, may include official, semi-official...
     9
          Aggregate, may include official, semi-official...
     10
                                              Calculated data
     11
          Aggregate, may include official, semi-official...
     . .
     175
                                              Calculated data
          Aggregate, may include official, semi-official...
     176
     177
          Aggregate, may include official, semi-official...
     178
                                              Calculated data
     179
         Aggregate, may include official, semi-official...
     [173 rows x 13 columns]
[]: chilla.drop(["Flag", "Domain Code"], axis=1)
[]:
          Area Code
                         Area Element Code
                                                     Element
                                                              Item Code \
     0
                 79
                     Germany
                                       5312
                                              Area harvested
                                                                    1717
     8
                 79
                     Germany
                                       5510
                                                  Production
                                                                    1717
     9
                 79
                     Germany
                                       5312
                                             Area harvested
                                                                    1717
     10
                 79
                     Germany
                                       5419
                                                       Yield
                                                                    1717
                 79
                     Germany
                                       5510
                                                  Production
     11
                                                                    1717
     . .
     175
                 79
                     Germany
                                       5419
                                                       Yield
                                                                    1717
     176
                 79
                     Germany
                                       5510
                                                  Production
                                                                    1717
     177
                 79
                     Germany
                                       5312 Area harvested
                                                                    1717
     178
                 79
                     Germany
                                       5419
                                                       Yield
                                                                    1717
     179
                 79
                     Germany
                                       5510
                                                  Production
                                                                    1717
```

```
175
         Cereals, Total
                                      2019
                                2019
                                             hg/ha
                                                        69520
     176 Cereals, Total
                                2019
                                      2019
                                             tonnes
                                                     44302400
          Cereals, Total
     177
                                2020
                                      2020
                                                      6065200
                                                 ha
     178 Cereals, Total
                                      2020
                                             hg/ha
                                2020
                                                        71333
                                                     43265100
     179
          Cereals, Total
                                2020
                                      2020
                                            tonnes
                                            Flag Description
          Aggregate, may include official, semi-official...
     0
     8
          Aggregate, may include official, semi-official...
          Aggregate, may include official, semi-official...
     9
     10
                                              Calculated data
     11
          Aggregate, may include official, semi-official...
     . .
     175
                                             Calculated data
         Aggregate, may include official, semi-official...
     176
     177
          Aggregate, may include official, semi-official...
     178
                                             Calculated data
     179
          Aggregate, may include official, semi-official...
     [173 rows x 11 columns]
    chilla[chilla["Year Code"] < 2005].groupby(["Unit", "Element"]).mean("Value")
[]:
                             Area Code Element Code Item Code
                                                                     Year Code
     Unit
            Element
     ha
            Area harvested
                                  79.0
                                               5312.0
                                                          1717.0
                                                                  1983.452381
```

- Year Value
- Unit Element

tonnes Production

hg/ha Yield

ha Area harvested 1983.452381 7.226688e+06 hg/ha Yield 1984.000000 4.845746e+04 tonnes Production 1983.500000 3.434010e+07

1. My question here is what if I want to restrict the mean of the number.

79.0

79.0

2. For suppose there is no logic in calculating the mean of the year column (series)

5419.0

5510.0

1717.0

1984.000000

1717.0 1983.500000

3.1 Convert to CSV final Data

[]: chilla.to_csv("faodata_updated")