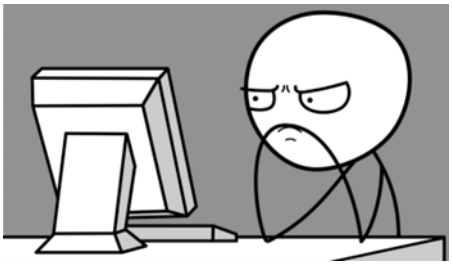
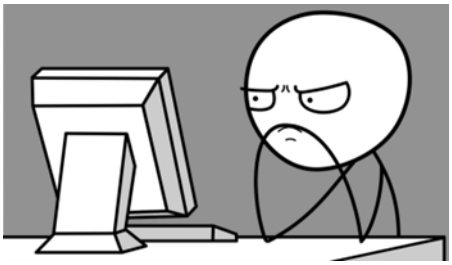
12_Ejercicios_Series

November 28, 2023





0.1 EJERCICIOS: Exploración

Para ejercitarte y afianzar lo aprendido sobre Exploración de DataFrames, completa los siguiente ejercicios. Recuerda que puedes necesitar de algunos datos que están en el directorio data que acompaña al notebook (búscalo en el repositorio de ejercicios)

La solución a los mismos se publicarán en el repo de ejercicios a lo largo del curso.

0.1.1 Ejercicio 0:

Importa pandas "como debe ser" y cualquier otra librería que emplees en el notebook (también "como debe ser" si es necesario)

[103]:
```
import numpy as np
import pandas as pd
```

Ahora ejecuta la celda para crear un `DataFrame` con los datos de la Eurocopa de 2012

[104]:
```
pd.set_option('display.max_columns', None) # con None Quita el límite a la␣
 ↪visualización de columnas por celda
df_euro12 = pd.read_csv('./data/Euro_2012_stats_TEAM.csv')
```

0.1.2 Ejercicio 1

Muestra las primeras 7 filas de df_euro12. Luego las 12 últimas.

[105]:
```
df_euro12.head(7)
```

[105]:

	Team	Goals	Shots on target	Shots off target	Shooting Accuracy	% Goals-to-shots	Total shots (inc. Blocked)	Hit Woodwork	Penalty goals	Penalties not scored	Headed goals	Passes	Passes completed	Passing Accuracy	Touches	Crosses	Dribbles	Corners Taken	Tackles	Clearances	Interceptions	Clearances off line	Clean Sheets	Blocks
0	Croatia	4	13	12	51.9%	16.0%	32	0	0	0	2	1076	828	76.9%	1706	60	42	14	49	83	56	NaN	0	10
1	Czech Republic	4	13	18	41.9%	12.9%	39	0	0	0	0	1565	1223	78.1%	2358	46	68	21	62	98	37	2.0	1	10
2	Denmark	4	10	10	50.0%	20.0%	27	1	0	0	3	1298	1082	83.3%	1873	43	32	16	40	61	59	0.0	1	10
3	England	5	11	18	50.0%	17.2%	40	0	0	0	3	1488	1200	80.6%	2440	58	60	16	86	106	72	1.0	2	29
4	France	3	22	24	37.9%	6.5%	65	1	0	0	0	2066	1803	87.2%	2909	55	76	28	71	76	58	0.0	1	7
5	Germany	10	32	32	47.8%	15.6%	80	2	1	0	2	2774	2427	87.4%	3761	101	60	35	91					
6	Greece	5	8	18	30.7%	19.2%	32	1	1	1	0	1187	911	76.7%	2016	52	53	10	65					

```
5          73             69                  0.0             1      11
6         123             87                  0.0             1      23

   Goals conceded  Saves made Saves-to-shots ratio  Fouls Won  Fouls Conceded  \
0               3          13                81.3%         41              62
1               6           9                60.1%         53              73
2               5          10                66.7%         25              38
3               3          22                88.1%         43              45
4               5           6                54.6%         36              51
5               6          10                62.6%         63              49
6               7          13                65.1%         67              48

   Offsides  Yellow Cards  Red Cards  Subs on  Subs off  Players Used
0         2             9          0        9         9            16
1         8             7          0       11        11            19
2         8             4          0        7         7            15
3         6             5          0       11        11            16
4         5             6          0       11        11            19
5        12             4          0       15        15            17
6        12             9          1       12        12            20
```

[106]:
```
df_euro12.tail(12)
```

[106]:
```
                  Team  Goals  Shots on target  Shots off target  \
4               France      3               22                24
5              Germany     10               32                32
6               Greece      5                8                18
7                Italy      6               34                45
8          Netherlands      2               12                36
9               Poland      2               15                23
10            Portugal      6               22                42
11  Republic of Ireland      1                7                12
12              Russia      5                9                31
13               Spain     12               42                33
14              Sweden      5               17                19
15             Ukraine      2                7                26

   Shooting Accuracy % Goals-to-shots  Total shots (inc. Blocked)  \
4              37.9%             6.5%                          65
5              47.8%            15.6%                          80
6              30.7%            19.2%                          32
7              43.0%             7.5%                         110
8              25.0%             4.1%                          60
9              39.4%             5.2%                          48
10             34.3%             9.3%                          82
11             36.8%             5.2%                          28
12             22.5%            12.5%                          59
```

13	55.9%	16.0%	100	
14	47.2%	13.8%	39	
15	21.2%	6.0%	38	

	Hit Woodwork	Penalty goals	Penalties not scored	Headed goals	Passes	\
4	1	0	0	0	2066	
5	2	1	0	2	2774	
6	1	1	1	0	1187	
7	2	0	0	2	3016	
8	2	0	0	0	1556	
9	0	0	0	1	1059	
10	6	0	0	2	1891	
11	0	0	0	1	851	
12	2	0	0	1	1602	
13	0	1	0	2	4317	
14	3	0	0	1	1192	
15	0	0	0	2	1276	

	Passes completed	Passing Accuracy	Touches	Crosses	Dribbles	\
4	1803	87.2%	2909	55	76	
5	2427	87.4%	3761	101	60	
6	911	76.7%	2016	52	53	
7	2531	83.9%	4363	75	75	
8	1381	88.7%	2163	50	49	
9	852	80.4%	1724	55	39	
10	1461	77.2%	2958	91	64	
11	606	71.2%	1433	43	18	
12	1345	83.9%	2278	40	40	
13	3820	88.4%	5585	69	106	
14	965	80.9%	1806	44	29	
15	1043	81.7%	1894	33	26	

	Corners Taken	Tackles	Clearances	Interceptions	Clearances off line	\
4	28	71	76	58	0.0	
5	35	91	73	69	0.0	
6	10	65	123	87	0.0	
7	30	98	137	136	1.0	
8	22	34	41	41	0.0	
9	14	67	87	62	0.0	
10	41	78	92	86	0.0	
11	8	45	78	43	1.0	
12	21	65	74	58	0.0	
13	44	122	102	79	0.0	
14	7	56	54	45	0.0	
15	18	65	97	29	0.0	

	Clean Sheets	Blocks	Goals conceded	Saves made	Saves-to-shots ratio	\

```
4              1       7              5           6              54.6%
5              1      11              6          10              62.6%
6              1      23              7          13              65.1%
7              2      18              7          20              74.1%
8              0       9              5          12              70.6%
9              0       8              3           6              66.7%
10             2      11              4          10              71.5%
11             0      23              9          17              65.4%
12             0       8              3          10              77.0%
13             5       8              1          15              93.8%
14             1      12              5           8              61.6%
15             0       4              4          13              76.5%

    Fouls Won  Fouls Conceded  Offsides  Yellow Cards  Red Cards  Subs on  \
4          36              51         5             6          0       11
5          63              49        12             4          0       15
6          67              48        12             9          1       12
7         101              89        16            16          0       18
8          35              30         3             5          0        7
9          48              56         3             7          1        7
10         73              90        10            12          0       14
11         43              51        11             6          1       10
12         34              43         4             6          0        7
13        102              83        19            11          0       17
14         35              51         7             7          0        9
15         48              31         4             5          0        9

    Subs off  Players Used
4         11            19
5         15            17
6         12            20
7         18            19
8          7            15
9          7            17
10        14            16
11        10            17
12         7            16
13        17            18
14         9            18
15         9            18
```

[ ]:

0.1.3 Ejercicio 2

Écha un primer vistazo, mostrando las columnas, cuantos valores no nulos tienen y su tipo. Utiliza un sólo comando para todo.

[111]:
```
df_euro12.info()
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 16 entries, 0 to 15
Data columns (total 35 columns):
 #   Column                      Non-Null Count  Dtype
---  ------                      --------------  -----
 0   Team                        16 non-null     object
 1   Goals                       16 non-null     int64
 2   Shots on target             16 non-null     int64
 3   Shots off target            16 non-null     int64
 4   Shooting Accuracy           16 non-null     object
 5   % Goals-to-shots            16 non-null     object
 6   Total shots (inc. Blocked)  16 non-null     int64
 7   Hit Woodwork                16 non-null     int64
 8   Penalty goals               16 non-null     int64
 9   Penalties not scored        16 non-null     int64
 10  Headed goals                16 non-null     int64
 11  Passes                      16 non-null     int64
 12  Passes completed            16 non-null     int64
 13  Passing Accuracy            16 non-null     object
 14  Touches                     16 non-null     int64
 15  Crosses                     16 non-null     int64
 16  Dribbles                    16 non-null     int64
 17  Corners Taken               16 non-null     int64
 18  Tackles                     16 non-null     int64
 19  Clearances                  16 non-null     int64
 20  Interceptions               16 non-null     int64
 21  Clearances off line         15 non-null     float64
 22  Clean Sheets                16 non-null     int64
 23  Blocks                      16 non-null     int64
 24  Goals conceded              16 non-null     int64
 25  Saves made                  16 non-null     int64
 26  Saves-to-shots ratio        16 non-null     object
 27  Fouls Won                   16 non-null     int64
 28  Fouls Conceded              16 non-null     int64
 29  Offsides                    16 non-null     int64
 30  Yellow Cards                16 non-null     int64
 31  Red Cards                   16 non-null     int64
 32  Subs on                     16 non-null     int64
 33  Subs off                    16 non-null     int64
 34  Players Used                16 non-null     int64
dtypes: float64(1), int64(29), object(5)
memory usage: 4.5+ KB
```

0.1.4 Ejercicio 3

Haz un primer análisis de las columnas numéricas, mostrando al menos la media el máximo y el mínimo.

[112]:
```
primerA=round(df_euro12.describe(),2)
primerA
```

[112]:

	Goals	Shots on target	Shots off target	Total shots (inc. Blocked)
count	16.00	16.00	16.00	16.00
mean	4.75	17.12	24.94	54.94
std	2.89	10.58	10.68	26.07
min	1.00	7.00	10.00	27.00
25%	2.75	9.75	18.00	36.50
50%	4.50	13.00	23.50	44.00
75%	5.25	22.00	32.25	68.75
max	12.00	42.00	45.00	110.00

	Hit Woodwork	Penalty goals	Penalties not scored	Headed goals
count	16.00	16.00	16.00	16.00
mean	1.25	0.19	0.06	1.38
std	1.61	0.40	0.25	1.02
min	0.00	0.00	0.00	0.00
25%	0.00	0.00	0.00	0.75
50%	1.00	0.00	0.00	1.50
75%	2.00	0.00	0.00	2.00
max	6.00	1.00	1.00	3.00

	Passes	Passes completed	Touches	Crosses	Dribbles	Corners Taken
count	16.00	16.00	16.00	16.00	16.00	16.00
mean	1763.38	1467.38	2579.19	57.19	52.31	21.56
std	906.18	827.58	1122.16	18.62	22.70	11.24
min	851.00	606.00	1433.00	33.00	18.00	7.00
25%	1190.75	951.50	1856.25	43.75	37.25	14.00
50%	1522.00	1211.50	2220.50	53.50	51.00	19.50
75%	1934.75	1546.50	2921.25	62.25	65.00	28.50
max	4317.00	3820.00	5585.00	101.00	106.00	44.00

	Tackles	Clearances	Interceptions	Clearances off line	Clean Sheets
count	16.00	16.00	16.00	15.00	16.00
mean	68.38	86.38	63.56	0.33	1.06
std	22.82	24.61	25.77	0.62	1.29
min	34.00	41.00	29.00	0.00	0.00
25%	54.25	73.75	44.50	0.00	0.00
50%	65.00	85.00	58.50	0.00	1.00
75%	80.00	99.00	73.75	0.50	1.25
max	122.00	137.00	136.00	2.00	5.00

	Blocks	Goals conceded	Saves made	Fouls Won	Fouls Conceded	\
count	16.00	16.00	16.00	16.00	16.00	
mean	12.56	4.75	12.12	52.94	55.62	
std	6.94	1.98	4.57	22.92	18.97	
min	4.00	1.00	6.00	25.00	30.00	
25%	8.00	3.00	9.75	35.75	44.50	
50%	10.00	5.00	11.00	45.50	51.00	
75%	13.50	6.00	13.50	64.00	64.75	
max	29.00	9.00	22.00	102.00	90.00	

	Offsides	Yellow Cards	Red Cards	Subs on	Subs off	Players Used
count	16.00	16.00	16.00	16.00	16.00	16.00
mean	8.12	7.44	0.19	10.88	10.88	17.25
std	4.91	3.27	0.40	3.54	3.54	1.53
min	2.00	4.00	0.00	7.00	7.00	15.00
25%	4.00	5.00	0.00	8.50	8.50	16.00
50%	7.50	6.50	0.00	10.50	10.50	17.00
75%	11.25	9.00	0.00	12.50	12.50	18.25
max	19.00	16.00	1.00	18.00	18.00	20.00

0.1.5 Ejercicio 4

¿Cuántos equipos participaron en la Euro2012?

[113]:
```
display(len(df_euro12["Team"]))
```

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0.1.6 Ejercicio 5

Muestra por pantalla las selecciones y los goles que marcó cada una

[10]:
```
df_euro12[["Team", "Goals"]]
```

[10]:

	Team	Goals
0	Croatia	4
1	Czech Republic	4
2	Denmark	4
3	England	5
4	France	3
5	Germany	10
6	Greece	5
7	Italy	6
8	Netherlands	2
9	Poland	2
10	Portugal	6
11	Republic of Ireland	1
12	Russia	5

13	Spain	12
14	Sweden	5
15	Ukraine	2

0.1.7 Ejercicio 6

¿Cuál es el número de columnas del conjunto de datos?

[11]:
```
print(len(df_euro12.columns))
```

35

0.1.8 Ejercicio 7

Quédate sólo las columnas Equipo, Tarjetas Amarillas y Tarjetas Rojas y asígnalas a un dataframe de datos llamado discipline

[115]:
```
# Seleccionar las columnas de interés
columnas = df_euro12[['Team', "Yellow Cards", "Red Cards"]]
#print(columnas)
# crear el nuevo DF
df_discipline = pd.DataFrame(columnas)
df_discipline
```

[115]:

	Team	Yellow Cards	Red Cards
0	Croatia	9	0
1	Czech Republic	7	0
2	Denmark	4	0
3	England	5	0
4	France	6	0
5	Germany	4	0
6	Greece	9	1
7	Italy	16	0
8	Netherlands	5	0
9	Poland	7	1
10	Portugal	12	0
11	Republic of Ireland	6	1
12	Russia	6	0
13	Spain	11	0
14	Sweden	7	0
15	Ukraine	5	0

0.1.9 Ejercicio 8

Ordena los equipos por tarjetas rojas y luego por tarjetas amarillas. Recuerda el método sort_values de la práctica final de la unidad anterior.

[116]:
```

```

```
# ordeno en orden ascedente ambas columnas(valor predeterminado de ascending␣
  ↪=True)
x_rojas =df_discipline.sort_values("Red Cards")
display(x_rojas)
print("\n")
x_amarillas = df_discipline.sort_values("Yellow Cards")
display(x_amarillas)
```

	Team	Yellow Cards	Red Cards
0	Croatia	9	0
1	Czech Republic	7	0
2	Denmark	4	0
3	England	5	0
4	France	6	0
5	Germany	4	0
7	Italy	16	0
8	Netherlands	5	0
10	Portugal	12	0
12	Russia	6	0
13	Spain	11	0
14	Sweden	7	0
15	Ukraine	5	0
6	Greece	9	1
9	Poland	7	1
11	Republic of Ireland	6	1

	Team	Yellow Cards	Red Cards
2	Denmark	4	0
5	Germany	4	0
3	England	5	0
8	Netherlands	5	0
15	Ukraine	5	0
4	France	6	0
11	Republic of Ireland	6	1
12	Russia	6	0
1	Czech Republic	7	0
9	Poland	7	1
14	Sweden	7	0
0	Croatia	9	0
6	Greece	9	1
13	Spain	11	0
10	Portugal	12	0
7	Italy	16	0

0.1.10 Ejercicio 9

Investiga como podrías hacer para que ordenase por tarjetas rojas de forma decreciente y creciente por tajetas amarillas.

[118]:
```
#orden decreciente cambiando valor predetermindo de ascending
x_rojas =df_discipline.sort_values(["Red Cards"], ascending = False)
print(x_rojas)
print("\n")
#crecientes que es lo mismo que poner ascending =True
x_amarillas = df_discipline.sort_values("Yellow Cards")
display(x_amarillas)
```

```
                  Team  Yellow Cards  Red Cards
6               Greece             9          1
9               Poland             7          1
11  Republic of Ireland             6          1
0               Croatia             9          0
1        Czech Republic             7          0
2               Denmark             4          0
3               England             5          0
4                France             6          0
5               Germany             4          0
7                 Italy            16          0
8           Netherlands             5          0
10             Portugal            12          0
12               Russia             6          0
13                Spain            11          0
14               Sweden             7          0
15              Ukraine             5          0


                  Team  Yellow Cards  Red Cards
2               Denmark             4          0
5               Germany             4          0
3               England             5          0
8           Netherlands             5          0
15              Ukraine             5          0
4                France             6          0
11  Republic of Ireland             6          1
12               Russia             6          0
1        Czech Republic             7          0
9               Poland             7          1
14               Sweden             7          0
0               Croatia             9          0
6               Greece             9          1
13                Spain            11          0
10             Portugal            12          0
```

```
7                 Italy            16          0
```

0.1.11 Ejercicio 10

Calcular el número medio de tarjetas amarillas por equipo (pista método mean)

[140]:
```
# media por tarjetas amarillas en total
media_a = df_euro12["Yellow Cards"].mean()
print(media_a)
# Creo la nueva columna con la media total de tarjetas amarillas por equipo en %
df_euro12["Y_Cards Mean(%)"] = round((df_euro12["Yellow Cards"]/ media_a)*100,␣
 ↪2)
#print(df_euro12["Y_Cards Mean"])

#muestro equipos con la nueva columna
resultado = df_euro12[["Team", "Yellow Cards", "Y_Cards Mean(%)"]]
display(resultado)
```

```
7.4375
```

	Team	Yellow Cards	Y_Cards Mean(%)
0	Croatia	9	121.01
1	Czech Republic	7	94.12
2	Denmark	4	53.78
3	England	5	67.23
4	France	6	80.67
5	Germany	4	53.78
6	Greece	9	121.01
7	Italy	16	215.13
8	Netherlands	5	67.23
9	Poland	7	94.12
10	Portugal	12	161.34
11	Republic of Ireland	6	80.67
12	Russia	6	80.67
13	Spain	11	147.90
14	Sweden	7	94.12
15	Ukraine	5	67.23

[ ]:
```

```

0.1.12 Ejercicio 11

Muestra el nombre, número de goles y la precisión en el tiro de los equipos que marcaron más de 6 goles

[142]:
```
#precision de tiro en %
df_euro12["Shooting Accuracy(%)"]= round((df_euro12["Shots on target"]/
 ↪df_euro12["Shots off target"])*100, 2)
#print(df_euro12["Shooting Accuracy(%)"])
```

```
#muestro resultado con las columna nueva d ela ppresion por equipo
res =df_euro12[["Team","Shots on target", "Shots off target", "Shooting␣
 ↪Accuracy(%)" ]]
display(res)
```

```
                  Team  Shots on target  Shots off target  \
0              Croatia               13                12
1        Czech Republic               13                18
2              Denmark               10                10
3              England               11                18
4               France               22                24
5              Germany               32                32
6               Greece                8                18
7                Italy               34                45
8          Netherlands               12                36
9               Poland               15                23
10            Portugal               22                42
11  Republic of Ireland                7                12
12              Russia                9                31
13               Spain               42                33
14              Sweden               17                19
15             Ukraine                7                26

    Shooting Accuracy(%)
0                 108.33
1                  72.22
2                 100.00
3                  61.11
4                  91.67
5                 100.00
6                  44.44
7                  75.56
8                  33.33
9                  65.22
10                 52.38
11                 58.33
12                 29.03
13                127.27
14                 89.47
15                 26.92
```

0.1.13 Ejercicio 12

Presenta sólo la Shooting Accuracy de Inglaterra, Italia y España

[82]:
```
# saco el subconjunto total de las dos columnas
Total =df_euro12[["Team","Shooting Accuracy(%)" ]]
#display(Total)
```

```
#hago varible con sus indices
indices = [3,7,13]
#hago una serie panda para que me extraiga los datos con los indices indcados␣
 ↪del subconjunto
Subtotal = Total.loc[indices]
display(Subtotal)
```

```
       Team  Shooting Accuracy(%)
3   England                 61.11
7     Italy                 75.56
13    Spain                127.27
```

0.1.14 Ejercicio 13

Cambia el nombre de las columnas Goal, Yellow Cards, Red Cards por su traducción al castellano.

[ ]:

[100]:
```
df_euro12.rename(columns= {"Goals": "Goles", "Yellow Cards": "Tarjetas␣
 ↪Amarillas", "Red Cards": "Tarjetas Rojas"}, inplace =True)
display(df_euro12)
```

```
                  Team  Goles  Shots on target  Shots off target  \
0              Croatia      4               13                12
1       Czech Republic      4               13                18
2              Denmark      4               10                10
3              England      5               11                18
4               France      3               22                24
5              Germany     10               32                32
6               Greece      5                8                18
7                Italy      6               34                45
8          Netherlands      2               12                36
9               Poland      2               15                23
10            Portugal      6               22                42
11  Republic of Ireland      1                7                12
12              Russia      5                9                31
13               Spain     12               42                33
14              Sweden      5               17                19
15             Ukraine      2                7                26

   Shooting Accuracy % Goals-to-shots  Total shots (inc. Blocked)  \
0                51.9%            16.0%                          32
1                41.9%            12.9%                          39
2                50.0%            20.0%                          27
3                50.0%            17.2%                          40
4                37.9%             6.5%                          65
5                47.8%            15.6%                          80
6                30.7%            19.2%                          32
```

7	43.0%	7.5%	110
8	25.0%	4.1%	60
9	39.4%	5.2%	48
10	34.3%	9.3%	82
11	36.8%	5.2%	28
12	22.5%	12.5%	59
13	55.9%	16.0%	100
14	47.2%	13.8%	39
15	21.2%	6.0%	38

	Hit Woodwork	Penalty goals	Penalties not scored	Headed goals	Passes	\
0	0	0	0	2	1076	
1	0	0	0	0	1565	
2	1	0	0	3	1298	
3	0	0	0	3	1488	
4	1	0	0	0	2066	
5	2	1	0	2	2774	
6	1	1	1	0	1187	
7	2	0	0	2	3016	
8	2	0	0	0	1556	
9	0	0	0	1	1059	
10	6	0	0	2	1891	
11	0	0	0	1	851	
12	2	0	0	1	1602	
13	0	1	0	2	4317	
14	3	0	0	1	1192	
15	0	0	0	2	1276	

	Passes completed	Passing Accuracy	Touches	Crosses	Dribbles	\
0	828	76.9%	1706	60	42	
1	1223	78.1%	2358	46	68	
2	1082	83.3%	1873	43	32	
3	1200	80.6%	2440	58	60	
4	1803	87.2%	2909	55	76	
5	2427	87.4%	3761	101	60	
6	911	76.7%	2016	52	53	
7	2531	83.9%	4363	75	75	
8	1381	88.7%	2163	50	49	
9	852	80.4%	1724	55	39	
10	1461	77.2%	2958	91	64	
11	606	71.2%	1433	43	18	
12	1345	83.9%	2278	40	40	
13	3820	88.4%	5585	69	106	
14	965	80.9%	1806	44	29	
15	1043	81.7%	1894	33	26	

	Corners Taken	Tackles	Clearances	Interceptions	Clearances off line	\
0	14	49	83	56	NaN	

1	21	62	98	37	2.0
2	16	40	61	59	0.0
3	16	86	106	72	1.0
4	28	71	76	58	0.0
5	35	91	73	69	0.0
6	10	65	123	87	0.0
7	30	98	137	136	1.0
8	22	34	41	41	0.0
9	14	67	87	62	0.0
10	41	78	92	86	0.0
11	8	45	78	43	1.0
12	21	65	74	58	0.0
13	44	122	102	79	0.0
14	7	56	54	45	0.0
15	18	65	97	29	0.0

	Clean Sheets	Blocks	Goals conceded	Saves made	Saves-to-shots ratio	\
0	0	10	3	13	81.3%	
1	1	10	6	9	60.1%	
2	1	10	5	10	66.7%	
3	2	29	3	22	88.1%	
4	1	7	5	6	54.6%	
5	1	11	6	10	62.6%	
6	1	23	7	13	65.1%	
7	2	18	7	20	74.1%	
8	0	9	5	12	70.6%	
9	0	8	3	6	66.7%	
10	2	11	4	10	71.5%	
11	0	23	9	17	65.4%	
12	0	8	3	10	77.0%	
13	5	8	1	15	93.8%	
14	1	12	5	8	61.6%	
15	0	4	4	13	76.5%	

	Fouls Won	Fouls Conceded	Offsides	Tarjetas Amarillas	Tarjetas Rojas	\
0	41	62	2	9	0	
1	53	73	8	7	0	
2	25	38	8	4	0	
3	43	45	6	5	0	
4	36	51	5	6	0	
5	63	49	12	4	0	
6	67	48	12	9	1	
7	101	89	16	16	0	
8	35	30	3	5	0	
9	48	56	3	7	1	
10	73	90	10	12	0	
11	43	51	11	6	1	
12	34	43	4	6	0	

```
13        102              83        19                 11              0
14         35              51         7                  7              0
15         48              31         4                  5              0

    Subs on  Subs off  Players Used  Y_Cards Mean(%)  Total Accur. Target(%)  \
0         9         9            16           121.01                  108.33
1        11        11            19            94.12                   72.22
2         7         7            15            53.78                  100.00
3        11        11            16            67.23                   61.11
4        11        11            19            80.67                   91.67
5        15        15            17            53.78                  100.00
6        12        12            20           121.01                   44.44
7        18        18            19           215.13                   75.56
8         7         7            15            67.23                   33.33
9         7         7            17            94.12                   65.22
10       14        14            16           161.34                   52.38
11       10        10            17            80.67                   58.33
12        7         7            16            80.67                   29.03
13       17        17            18           147.90                  127.27
14        9         9            18            94.12                   89.47
15        9         9            18            67.23                   26.92

    Shooting Accuracy(%)
0                 108.33
1                  72.22
2                 100.00
3                  61.11
4                  91.67
5                 100.00
6                  44.44
7                  75.56
8                  33.33
9                  65.22
10                 52.38
11                 58.33
12                 29.03
13                127.27
14                 89.47
15                 26.92
```

0.1.15 Ejercicio 14

¿Cuántos goles se marcaron en la Euro12?

[102]:
```
suma = df_euro12["Goles"].sum()
display(suma)
```

```
76
```

[ ]: