In [1]:
```
import pandas as pd
import numpy as mp
import seaborn as sns
import matplotlib.pyplot as plt
```

In [2]:
```
df = pd.read_csv("Olympics 2024.csv")
df.sample(10)
```

Out[2]:

	Competitions	Rank	NOC	Gold	Silver	Bronze	Total
67	Basketball	5	Spain	0	1	0	1
190	Golf	5	China	0	0	1	1
265	Rowing	16	Switzerland	0	0	1	1
316	Sport climbing	2	Great Britain	1	0	0	1
336	Swimming	10	Germany	1	1	1	3
342	Swimming	16	Japan	0	1	0	1
311	Skateboarding	2	Australia	2	0	0	2
446	Wrestling	19	North Korea	0	0	2	2
105	Breaking	3	France*	0	1	0	1
132	Cycling	5	Great Britain	2	5	4	11

In [3]:
```
df.info()
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 454 entries, 0 to 453
Data columns (total 7 columns):
 #   Column        Non-Null Count  Dtype 
---  ------        --------------  ----- 
 0   Competitions  454 non-null    object
 1   Rank          454 non-null    object
 2   NOC           454 non-null    object
 3   Gold          454 non-null    int64 
 4   Silver        454 non-null    int64 
 5   Bronze        454 non-null    int64 
 6   Total         454 non-null    int64 
dtypes: int64(4), object(3)
memory usage: 25.0+ KB
```

In [4]:
```
1 df.isna().sum()
```

Out[4]:
```
Competitions    0
Rank            0
NOC             0
Gold            0
Silver          0
Bronze          0
Total           0
dtype: int64
```

In [5]:
```
1 df.describe()
```

Out[5]:

	Gold	Silver	Bronze	Total
count	454.000000	454.000000	454.000000	454.000000
mean	0.724670	0.726872	0.848018	2.299559
std	1.329396	1.228912	1.110370	2.900582
min	0.000000	0.000000	0.000000	1.000000
25%	0.000000	0.000000	0.000000	1.000000
50%	0.000000	0.000000	1.000000	1.000000
75%	1.000000	1.000000	1.000000	2.000000
max	14.000000	13.000000	9.000000	34.000000

In [6]:
```
1 df.rename(columns={"NOC":"Country"}, inplace=True)
```

In [7]:
```
1 df['Competitions'].nunique()
```

Out[7]:
```
35
```

In [8]:
```
1 df['Country'].nunique()
```

Out[8]:
```
93
```

In [9]:
```
1 df[df['Total'] == 0]
```

Out[9]:

Competitions	Rank	Country	Gold	Silver	Bronze	Total

#every country has won the Medal in Olympics

In [10]:
```
single_medal = df[df['Total'] == 1]
single_medal
```

Out[10]:

	Competitions	Rank	Country	Gold	Silver	Bronze	Total
3	Archery	4	China	0	1	0	1
4	Archery	5	Germany	0	1	0	1
5	Archery	6	Mexico	0	0	1	1
6	Archery	7	Turkey	0	0	1	1
8	Artistic swimming	2	Great Britain	0	1	0	1
...	...	...	...	...	...	...	...
449	Wrestling	22	Denmark	0	0	1	1
450	Wrestling	23	Greece	0	0	1	1
451	Wrestling	24	India	0	0	1	1
452	Wrestling	25	Norway	0	0	1	1
453	Wrestling	26	Puerto Rico	0	0	1	1

257 rows × 7 columns

In [11]:
```
len(single_medal)
```

Out[11]: 257

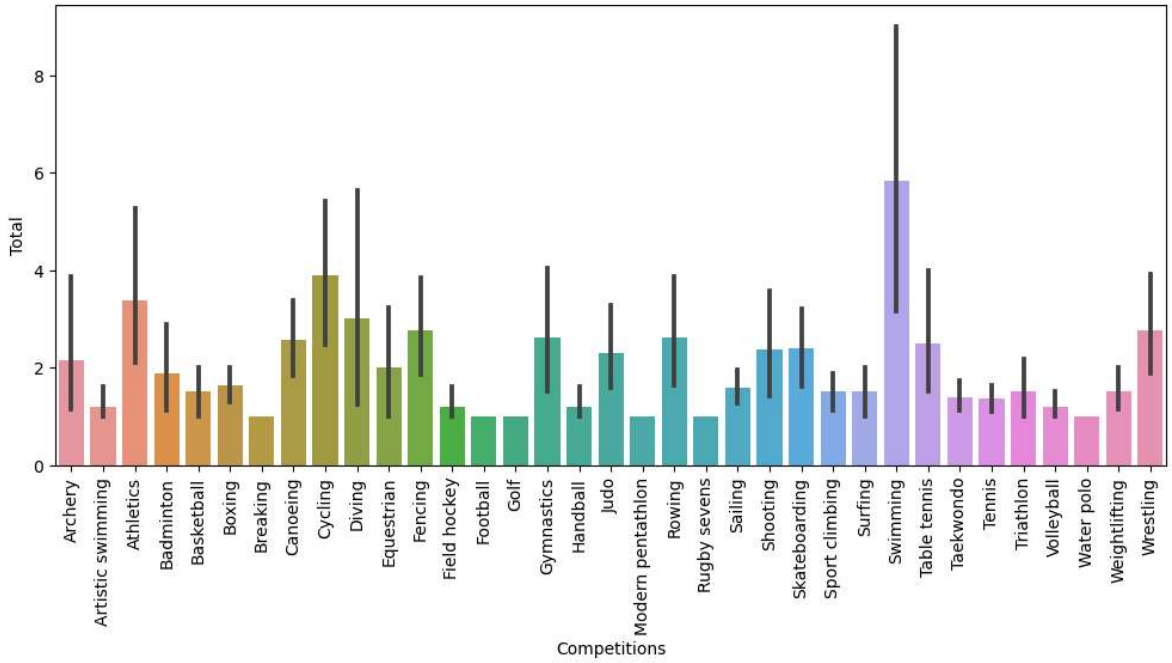
In [12]:
```
single_medal['Country'].nunique()
```

Out[12]: 78

In [13]:
```
# There are 78 country who has won only 1 medal in Entire game in Olympic
```

In [14]:

```
plt.figure(figsize=(12,5))
sns.barplot(data=df, x="Competitions", y="Total")
plt.xticks(rotation=90)
plt.show()
```



Here we can see the Most of the Medals are commning From the Swimming side of the Competition followed bu the, Cyccling so we can assume that these are the 2 Games where Players are more generative than other games

In [15]:
```
swimming = df[df['Competitions'] == "Swimming"]
swimming
```

Out[15]:

	Competitions	Rank	Country	Gold	Silver	Bronze	Total
327	Swimming	1	United States	8	13	7	28
328	Swimming	2	Australia	7	9	3	19
329	Swimming	3	France*	4	1	2	7
330	Swimming	4	Canada	3	2	3	8
331	Swimming	5	Hungary	3	1	1	5
332	Swimming	6	China	2	3	7	12
333	Swimming	7	Italy	2	1	3	6
334	Swimming	8	Sweden	2	0	0	2
335	Swimming	9	Great Britain	1	4	0	5
336	Swimming	10	Germany	1	1	1	3
337	Swimming	11	South Africa	1	1	0	2
338	Swimming	12	Ireland	1	0	2	3
339	Swimming	13	Netherlands	1	0	2	3
340	Swimming	14	Romania	1	0	1	2
341	Swimming	15	Greece	0	1	0	1
342	Swimming	16	Japan	0	1	0	1
343	Swimming	17	Hong Kong	0	0	2	2
344	Swimming	18	South Korea	0	0	1	1
345	Swimming	19	Switzerland	0	0	1	1

In [16]:
```
swimming['Total'].max()
```

Out[16]: 28

In [17]:
```
swimming[swimming['Total'] == 28]
```

Out[17]:

	Competitions	Rank	Country	Gold	Silver	Bronze	Total
327	Swimming	1	United States	8	13	7	28

TheSwimming is the competition where the maximum number of medals is been Acheived from the US

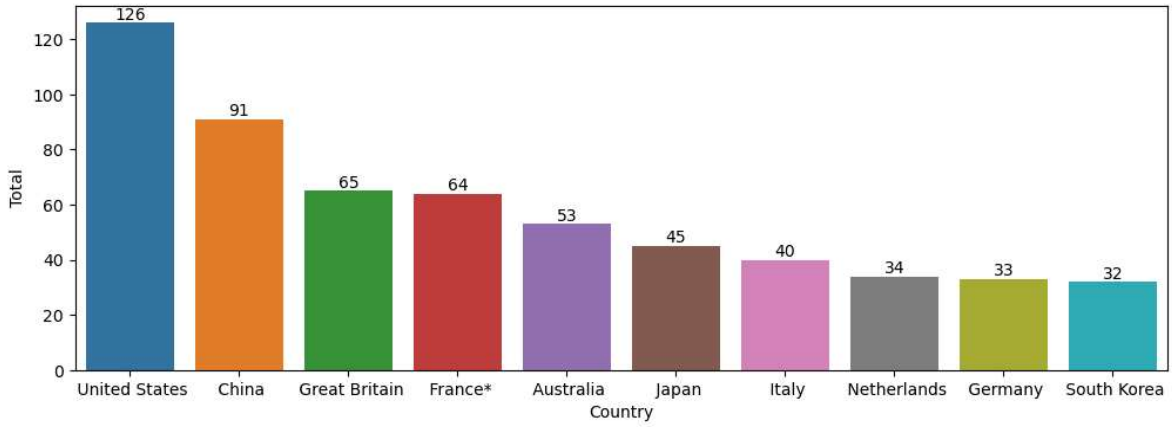
In [18]:
```
country = df.groupby("Country")['Total'].sum().reset_index()
country = country.sort_values(by="Total", ascending=False)
country
```

Out[18]:

	Country	Total
90	United States	126
15	China	91
32	Great Britain	65
29	France*	64
4	Australia	53
...	...	...
28	Fiji	1
23	Dominica	1
20	Cyprus	1
13	Cape Verde	1
92	Zambia	1

93 rows × 2 columns

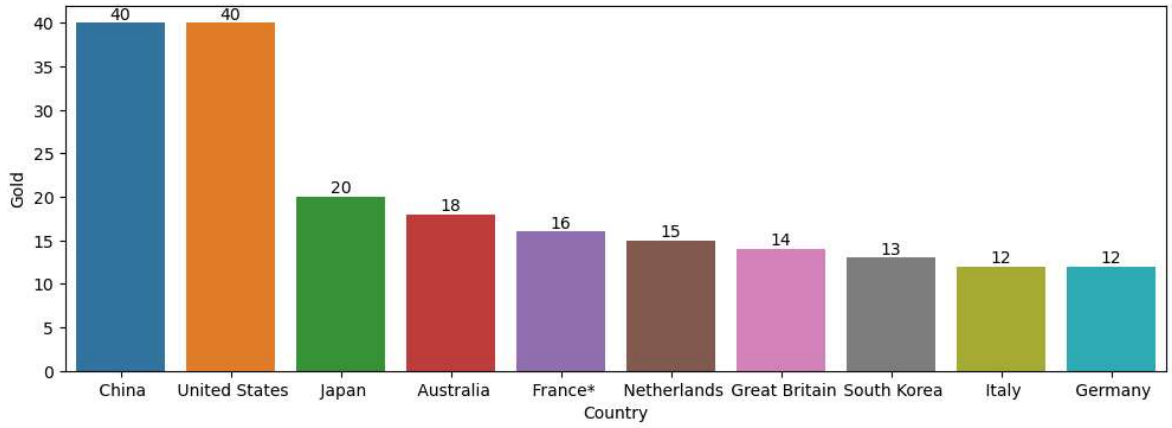
In [19]:
```
plt.figure(figsize=(12,4))
ax = sns.barplot(data=country[:10], x="Country", y="Total")
ax.bar_label(ax.containers[0])
plt.show()
```



These the top 10 countries which have the Most medals for their Country

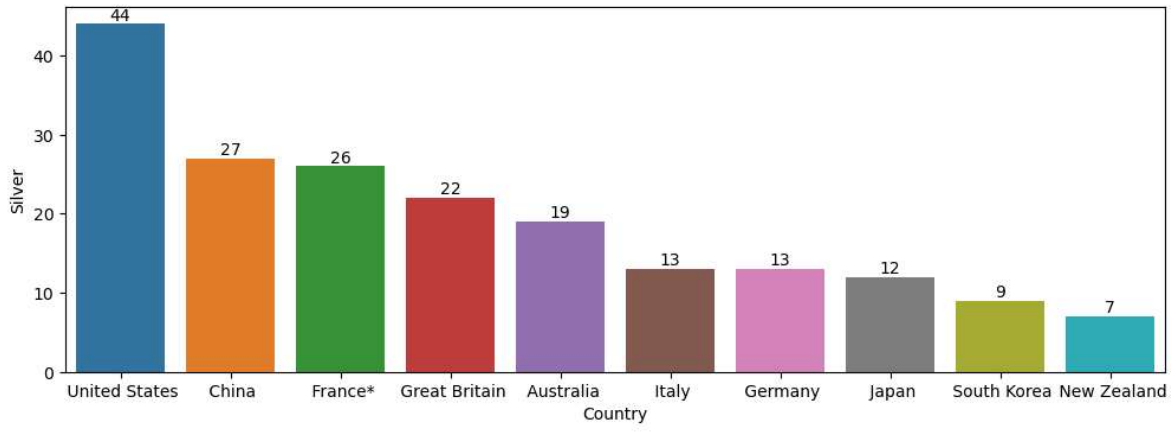
top 10 gold Medalist Country

In [20]:
```
Gold = df.groupby("Country")['Gold'].sum().reset_index()
Gold = Gold.sort_values(by="Gold", ascending=False)
plt.figure(figsize=(12,4))
ax = sns.barplot(data=Gold[:10], x="Country", y="Gold")
ax.bar_label(ax.containers[0])
plt.show()
```



top 10 Silver Medalist Country

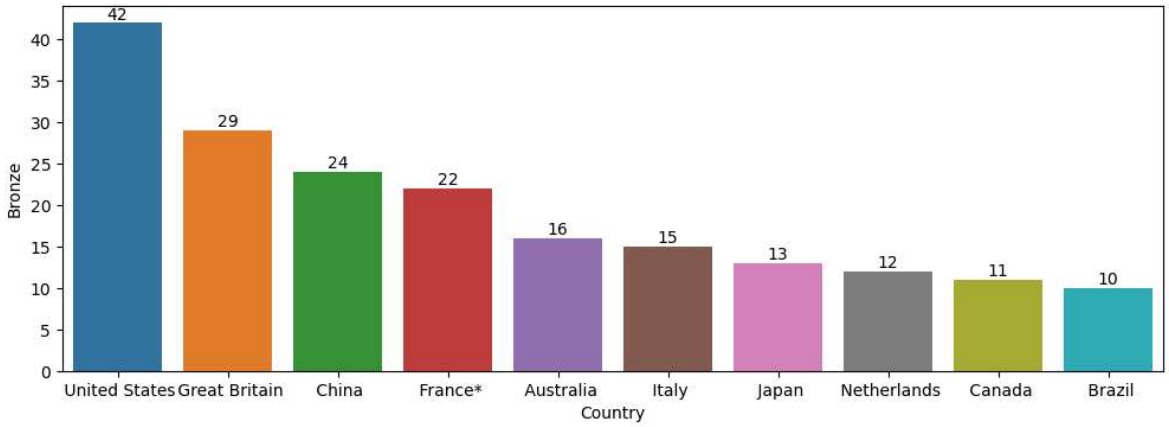
In [21]:
```
Silver = df.groupby("Country")['Silver'].sum().reset_index()
Silver = Silver.sort_values(by="Silver", ascending=False)
plt.figure(figsize=(12,4))
ax = sns.barplot(data=Silver[:10], x="Country", y="Silver")
ax.bar_label(ax.containers[0])
plt.show()
```



top 10 Bronze Medalist Country

In [22]:

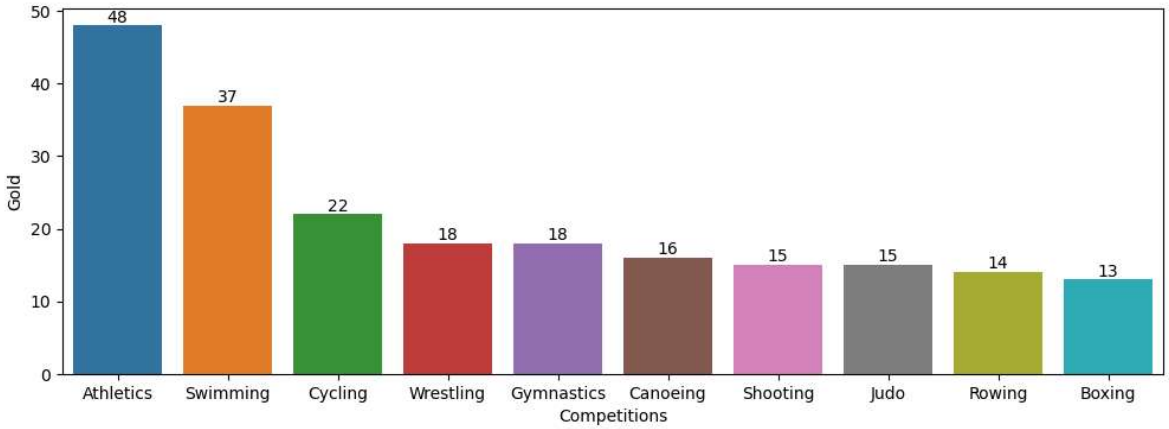
```
Bronze = df.groupby("Country")['Bronze'].sum().reset_index()
Bronze = Bronze.sort_values(by="Bronze", ascending=False)
plt.figure(figsize=(12,4))
ax = sns.barplot(data=Bronze[:10], x="Country", y="Bronze")
ax.bar_label(ax.containers[0])
plt.show()
```



Top Competitions in Gold Category

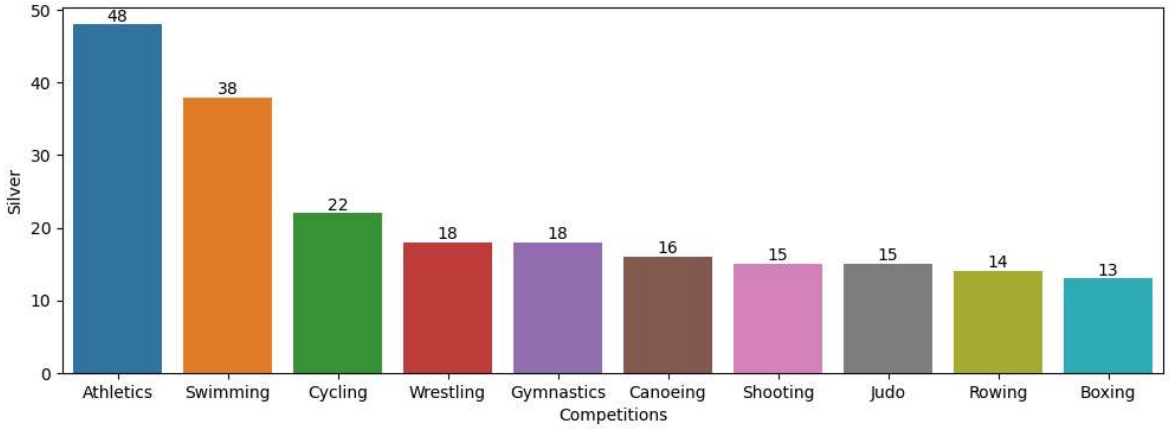
In [23]:

```
Gold = df.groupby("Competitions")['Gold'].sum().reset_index()
Gold = Gold.sort_values(by="Gold", ascending=False)
plt.figure(figsize=(12,4))
ax = sns.barplot(data=Gold[:10], x="Competitions", y="Gold")
ax.bar_label(ax.containers[0])
plt.show()
```



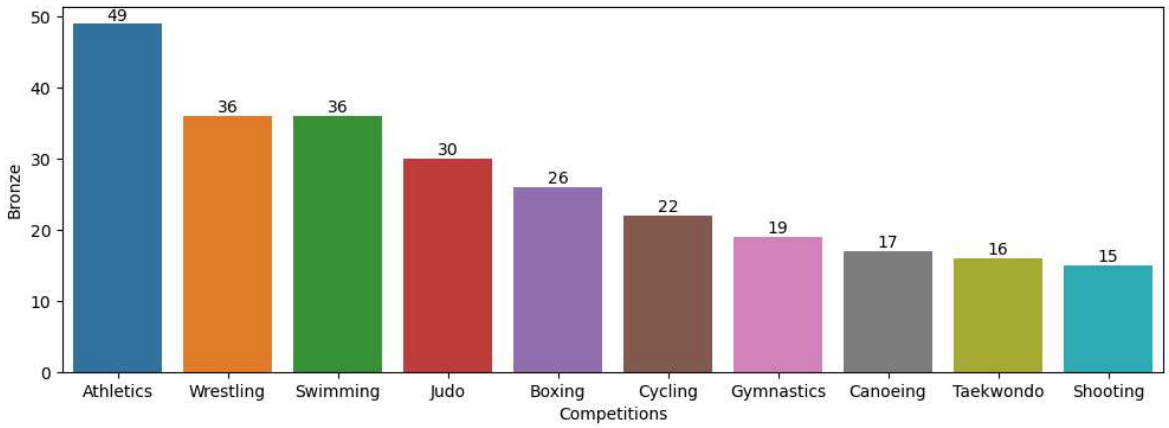
Top Competitions in Silver Category

In [24]:
```
Silver = df.groupby("Competitions")['Silver'].sum().reset_index()
Silver = Silver.sort_values(by="Silver", ascending=False)
plt.figure(figsize=(12,4))
ax = sns.barplot(data=Silver[:10], x="Competitions", y="Silver")
ax.bar_label(ax.containers[0])
plt.show()
```



Top Competitions in Silver Category

In [25]:
```
Bronze = df.groupby("Competitions")['Bronze'].sum().reset_index()
Bronze = Bronze.sort_values(by="Bronze", ascending=False)
plt.figure(figsize=(12,4))
ax = sns.barplot(data=Bronze[:10], x="Competitions", y="Bronze")
ax.bar_label(ax.containers[0])
plt.show()
```



In [ ]:
```
1
```

Rankwise Competition Country

In [26]:
```
1 df[df['Competitions'] == "Archery"]
```

Out[26]:

	Competitions	Rank	Country	Gold	Silver	Bronze	Total
0	Archery	1	South Korea	5	1	1	7
1	Archery	2	France*	0	1	1	2
2	Archery	3	United States	0	1	1	2
3	Archery	4	China	0	1	0	1
4	Archery	5	Germany	0	1	0	1
5	Archery	6	Mexico	0	0	1	1
6	Archery	7	Turkey	0	0	1	1

Rankwise Competition Country

In [27]:
```
1 df[df['Competitions'] == "Wrestling"]
```

Out[27]:

	Competitions	Rank	Country	Gold	Silver	Bronze	Total
428	Wrestling	1	Japan	8	1	2	11
429	Wrestling	2	Iran	2	4	2	8
430	Wrestling	3	United States	2	2	3	7
431	Wrestling	4	Bulgaria	2	0	0	2
432	Wrestling	5	Cuba	1	1	3	5
433	Wrestling	6	Georgia	1	1	0	2
434	Wrestling	7	Uzbekistan	1	0	1	2
435	Wrestling	8	Bahrain	1	0	0	1
436	Wrestling	9	Ukraine	0	2	1	3
437	Wrestling	10	China	0	1	4	5
438	Wrestling	11	Kyrgyzstan	0	1	4	5
439	Wrestling	12	Armenia	0	1	1	2
440	Wrestling	13	Chile	0	1	0	1
441	Wrestling	14	Ecuador	0	1	0	1
442	Wrestling	15	Kazakhstan	0	1	0	1
443	Wrestling	16	Moldova	0	1	0	1
444	Wrestling	17	Azerbaijan	0	0	3	3
445	Wrestling	18	Albania	0	0	2	2
446	Wrestling	19	North Korea	0	0	2	2
447	Wrestling	20	Turkey	0	0	2	2
448	Wrestling	21	Colombia	0	0	1	1
449	Wrestling	22	Denmark	0	0	1	1
450	Wrestling	23	Greece	0	0	1	1
451	Wrestling	24	India	0	0	1	1
452	Wrestling	25	Norway	0	0	1	1
453	Wrestling	26	Puerto Rico	0	0	1	1

In [28]:
```
1 df[df['Competitions'] == "Tennis"]
```

Out[28]:

	Competitions	Rank	Country	Gold	Silver	Bronze	Total
375	Tennis	1	China	1	1	0	2
376	Tennis	2	Italy	1	0	1	2
377	Tennis	3	Australia	1	0	0	1
378	Tennis	4	Czech Republic	1	0	0	1
379	Tennis	5	Serbia	1	0	0	1
380	Tennis	6	Spain	0	1	1	2
381	Tennis	7	United States	0	1	1	2
382	Tennis	8	Croatia	0	1	0	1
383	Tennis	9	Individual Neutral Athletes	0	1	0	1
384	Tennis	10	Canada	0	0	1	1
385	Tennis	11	Poland	0	0	1	1

In [29]:
```
1 df[df['Competitions'] == "Judo"]
```

Out[29]:

	Competitions	Rank	Country	Gold	Silver	Bronze	Total
218	Judo	1	Japan	3	2	3	8
219	Judo	2	France*	2	2	6	10
220	Judo	3	Azerbaijan	2	0	0	2
221	Judo	4	Georgia	1	2	0	3
222	Judo	5	Brazil	1	1	2	4
223	Judo	6	Uzbekistan	1	0	2	3
224	Judo	7	Kazakhstan	1	0	1	2
225	Judo	8	Canada	1	0	0	1
226	Judo	9	Croatia	1	0	0	1
227	Judo	10	Italy	1	0	0	1
228	Judo	11	Slovenia	1	0	0	1
229	Judo	12	South Korea	0	2	3	5
230	Judo	13	Israel	0	2	1	3
231	Judo	14	Kosovo	0	1	1	2
232	Judo	15	Germany	0	1	0	1
233	Judo	16	Mexico	0	1	0	1
234	Judo	17	Mongolia	0	1	0	1
235	Judo	18	Moldova	0	0	2	2
236	Judo	19	Tajikistan	0	0	2	2
237	Judo	20	Austria	0	0	1	1
238	Judo	21	Belgium	0	0	1	1
239	Judo	22	China	0	0	1	1
240	Judo	23	Greece	0	0	1	1
241	Judo	24	Portugal	0	0	1	1
242	Judo	25	Spain	0	0	1	1
243	Judo	26	Sweden	0	0	1	1