

In [1]:

```
1 import pandas as pd
2 import numpy as np
3 import matplotlib.pyplot as plt
4 %matplotlib inline
5 import seaborn as sns
6 from IPython import get_ipython
7 import warnings
8 warnings.filterwarnings("ignore")
```

In [2]:

```
1 data = pd.read_csv('netflix_titles.csv')
```

In [3]:

```
1 data.head()
```

Out[3]:

	show_id	type		title	director	cast	country	date_added	release_year	rating	
0	s1	Movie		Dick Johnson Is Dead	Kirsten Johnson	NaN	United States	September 25, 2021	2020	PG-13	
1	s2	TV Show		Blood & Water	NaN	Ama Qamata, Khosi Ngema, Gail Mabalane, Thaban...	South Africa	September 24, 2021	2021	TV-MA	S
2	s3	TV Show		Ganglands	Julien Leclercq	Sami Bouajila, Tracy Gotoas, Samuel Jouy, Nabi...	NaN	September 24, 2021	2021	TV-MA	
3	s4	TV Show		Jailbirds New Orleans	NaN	NaN	NaN	September 24, 2021	2021	TV-MA	
4	s5	TV Show		Kota Factory	NaN	Mayur More, Jitendra Kumar, Ranjan Raj, Alam K...	India	September 24, 2021	2021	TV-MA	S

In [4]:

```
1 data.tail()
```

Out[4]:

	show_id	type	title	director	cast	country	date_added	release_year	rating
8802	s8803	Movie	Zodiac	David Fincher	Mark Ruffalo, Jake Gyllenhaal, Robert Downey J...	United States	November 20, 2019	2007	
8803	s8804	TV Show	Zombie Dumb	NaN	NaN	NaN	July 1, 2019	2018	TV
8804	s8805	Movie	Zombieland	Ruben Fleischer	Jesse Eisenberg, Woody Harrelson, Emma Stone, ...	United States	November 1, 2019	2009	
8805	s8806	Movie	Zoom	Peter Hewitt	Tim Allen, Courteney Cox, Chevy Chase, Kate Ma...	United States	January 11, 2020	2006	I
8806	s8807	Movie	Zubaan	Mozez Singh	Vicky Kaushal, Sarah-Jane Dias, Raaghav Chanan...	India	March 2, 2019	2015	TV

In [5]:

```
1 data.shape
```

Out[5]:

(8807, 12)

In [6]:



```
1 data.columns
```

Out[6]:

```
Index(['show_id', 'type', 'title', 'director', 'cast', 'country', 'date_ad  
ded',  
      'release_year', 'rating', 'duration', 'listed_in', 'description'],  
      dtype='object')
```

In [7]:



```
1 data.duplicated().sum()
```

Out[7]:

```
0
```

In [8]:



```
1 data.isnull().sum()
```

Out[8]:

```
show_id      0  
type         0  
title        0  
director    2634  
cast         825  
country     831  
date_added   10  
release_year  0  
rating       4  
duration     3  
listed_in    0  
description  0  
dtype: int64
```

In [9]:



```
1 data.director.fillna(value="NA",inplace=True)
```

In [10]:



```
1 data.cast.fillna(value="NA",inplace=True)
```

In [11]:



```
1 data.country.fillna(value="NA",inplace=True)
```

In [12]:



```
1 data.date_added.fillna(value="NA",inplace=True)
```

In [13]:



```
1 data.info()
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 8807 entries, 0 to 8806
Data columns (total 12 columns):
#   Column          Non-Null Count  Dtype
---  -
0   show_id         8807 non-null   object
1   type            8807 non-null   object
2   title           8807 non-null   object
3   director        8807 non-null   object
4   cast            8807 non-null   object
5   country         8807 non-null   object
6   date_added      8807 non-null   object
7   release_year    8807 non-null   int64
8   rating          8803 non-null   object
9   duration        8804 non-null   object
10  listed_in       8807 non-null   object
11  description      8807 non-null   object
dtypes: int64(1), object(11)
memory usage: 825.8+ KB
```

In [14]:



```
1 data.describe()
```

Out[14]:

release_year	
count	8807.000000
mean	2014.180198
std	8.819312
min	1925.000000
25%	2013.000000
50%	2017.000000
75%	2019.000000
max	2021.000000

In [15]:



```
1 data.nunique()
```

Out[15]:

```
show_id      8807
type          2
title        8804
director     4529
cast         7693
country       749
date_added   1768
release_year   74
rating        17
duration     220
listed_in     514
description   8775
dtype: int64
```

In [16]:



```
1 data.type.unique()
```

Out[16]:

```
array(['Movie', 'TV Show'], dtype=object)
```

In [17]:



```
1 data.type.value_counts()
```

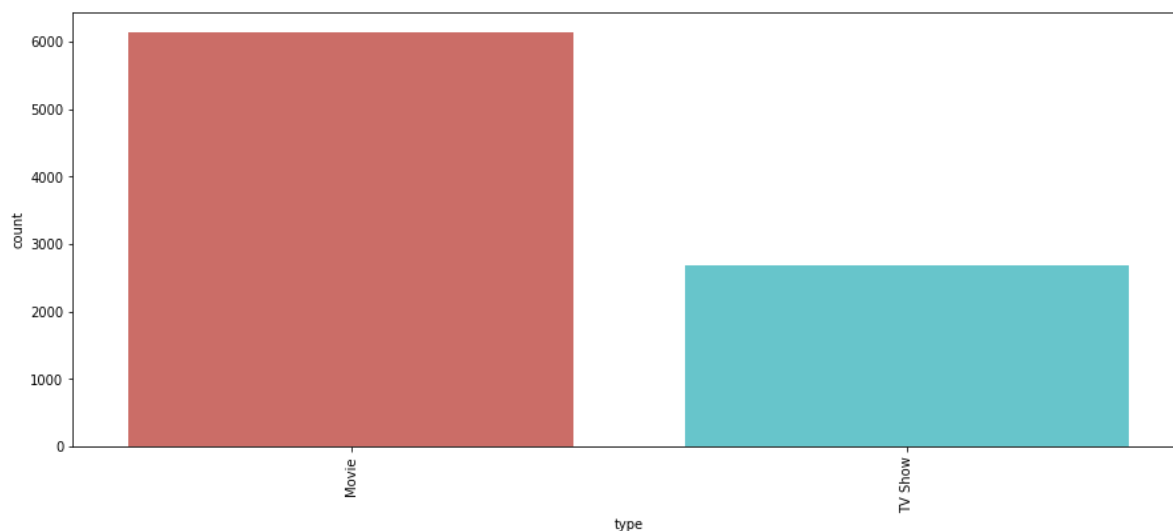
Out[17]:

```
Movie      6131
TV Show    2676
Name: type, dtype: int64
```

In [18]:



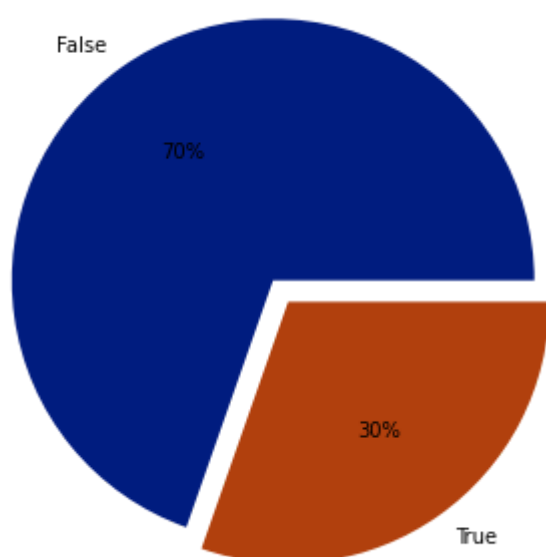
```
1 plt.figure(figsize=(15,6))
2 sns.countplot('type', data = data, palette = 'hls')
3 plt.xticks(rotation = 90)
4 plt.show()
```



In [19]:



```
1 plt.figure(figsize=(15,6))
2 palette_color = sns.color_palette('dark')
3 explode = [0, 0.1]
4 plt.pie(data['type'].value_counts(), labels= ['False', 'True'],
5         colors=palette_color, explode=explode,
6         autopct='%.0f%')
7 plt.show()
```



In [20]:

```
1 last_years = data[["type", "release_year"]]
```

In [21]:

```
1 last_years=last_years[last_years["release_year"] >= 2010]
```

In [22]:

```
1 last_years.release_year.value_counts().sort_index()
```

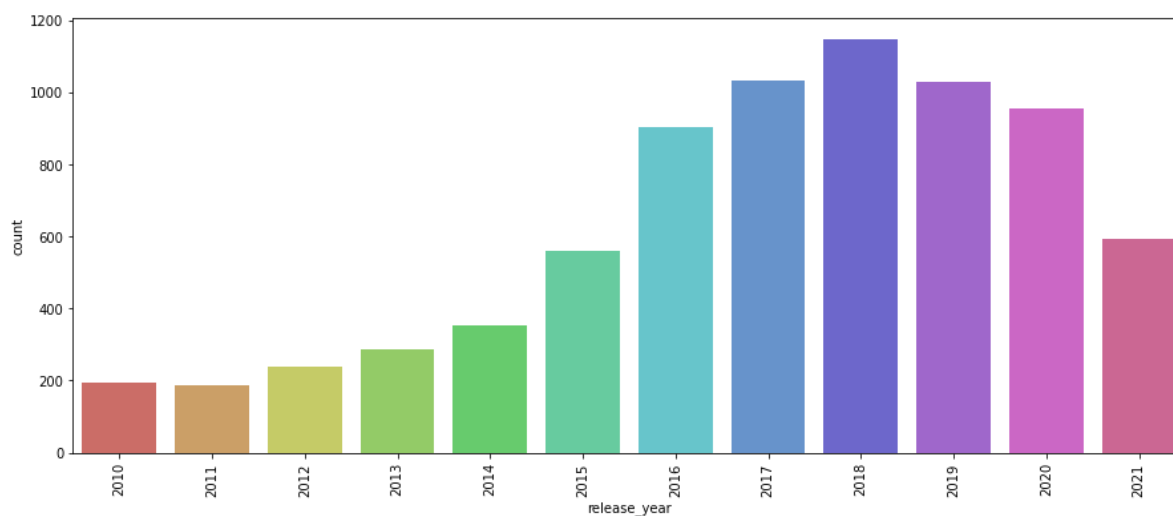
Out[22]:

2010	194
2011	185
2012	237
2013	288
2014	352
2015	560
2016	902
2017	1032
2018	1147
2019	1030
2020	953
2021	592

Name: release\_year, dtype: int64

In [23]:

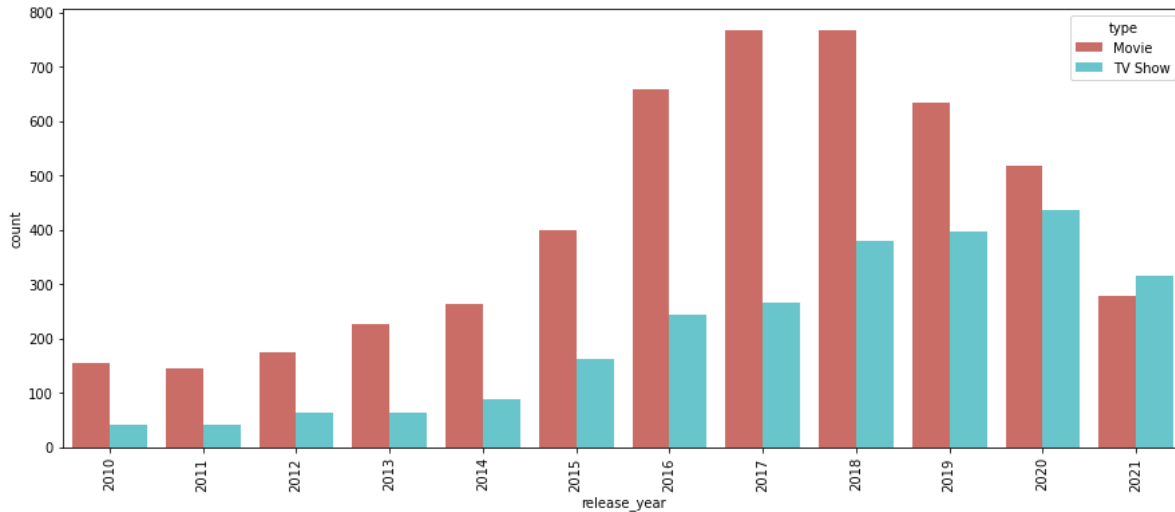
```
1 plt.figure(figsize=(15,6))
2 sns.countplot('release_year', data = last_years,
3               palette = 'hls')
4 plt.xticks(rotation = 90)
5 plt.show()
```



In [24]:



```
1 plt.figure(figsize=(15,6))
2 sns.countplot('release_year', data = last_years,
3               hue = 'type' , palette = 'hls')
4 plt.xticks(rotation = 90)
5 plt.show()
```



In [25]:



```
1 data.rating.unique()
```

Out[25]:

```
array(['PG-13', 'TV-MA', 'PG', 'TV-14', 'TV-PG', 'TV-Y', 'TV-Y7', 'R',
      'TV-G', 'G', 'NC-17', '74 min', '84 min', '66 min', 'NR', nan,
      'TV-Y7-FV', 'UR'], dtype=object)
```



In [26]:

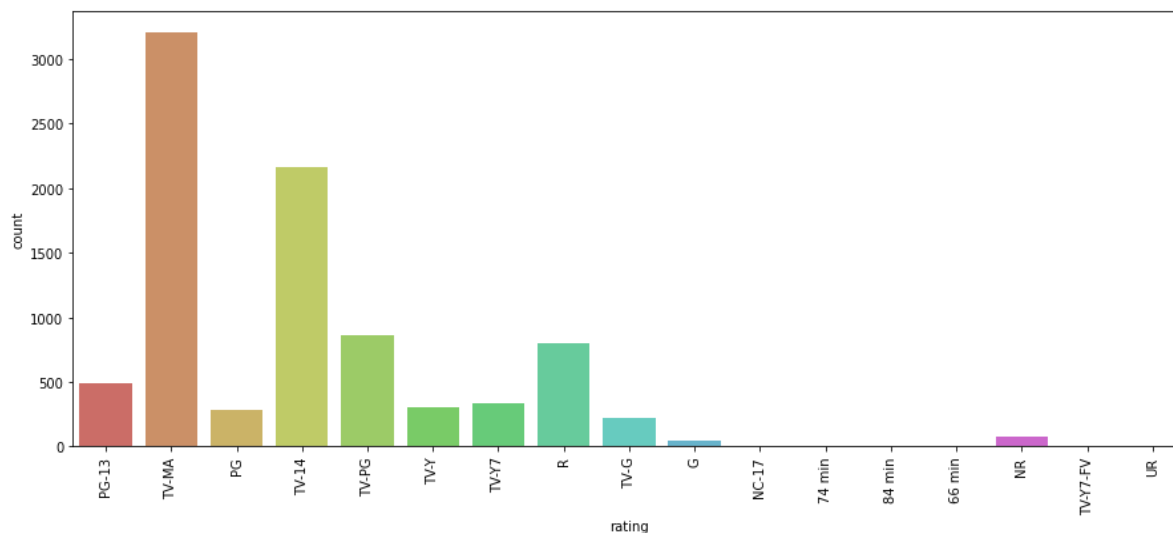
```
1 data.rating.value_counts()
```

Out[26]:

```
TV-MA      3207
TV-14      2160
TV-PG       863
R           799
PG-13       490
TV-Y7       334
TV-Y        307
PG          287
TV-G        220
NR           80
G           41
TV-Y7-FV     6
NC-17        3
UR           3
74 min        1
84 min        1
66 min        1
Name: rating, dtype: int64
```

In [27]:

```
1 plt.figure(figsize=(15,6))
2 sns.countplot('rating', data = data, palette = 'hls')
3 plt.xticks(rotation = 90)
4 plt.show()
```



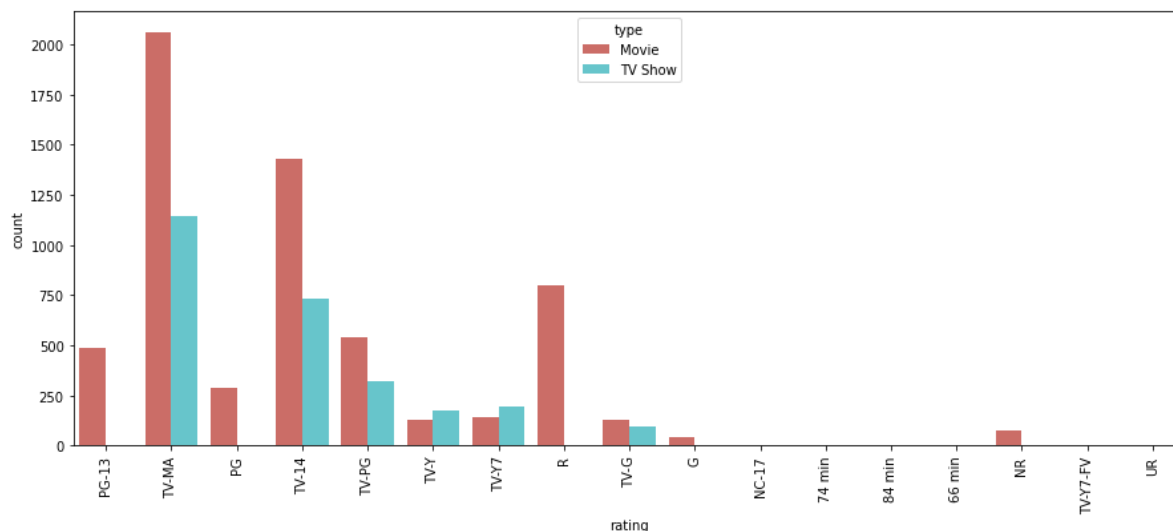
In [28]:



```

1 plt.figure(figsize=(15,6))
2 sns.countplot('rating', data = data, hue = 'type' ,
3               palette = 'hls')
4 plt.xticks(rotation = 90)
5 plt.show()

```



In [29]:



```

1 new_categories = {
2     'TV-PG': 'Parental Guidance',
3     'TV-MA': 'Mature Audience',
4     'TV-Y7-FV': 'Teens',
5     'TV-Y7': 'Teens',
6     'TV-14': 'Teens',
7     'R': 'Mature Audience',
8     'TV-Y': 'General Audience',
9     'NR': 'Mature Audience',
10    'PG-13': 'Teens',
11    'TV-G': 'General Audience',
12    'PG': 'Teens',
13    'G': 'General Audience',
14    'UR': 'Mature Audience',
15    'NC-17': 'Mature Audience'
16 }
17 data["rating"] = data['rating'].replace(new_categories)

```

In [30]:



```
1 data.head()
```

Out[30]:

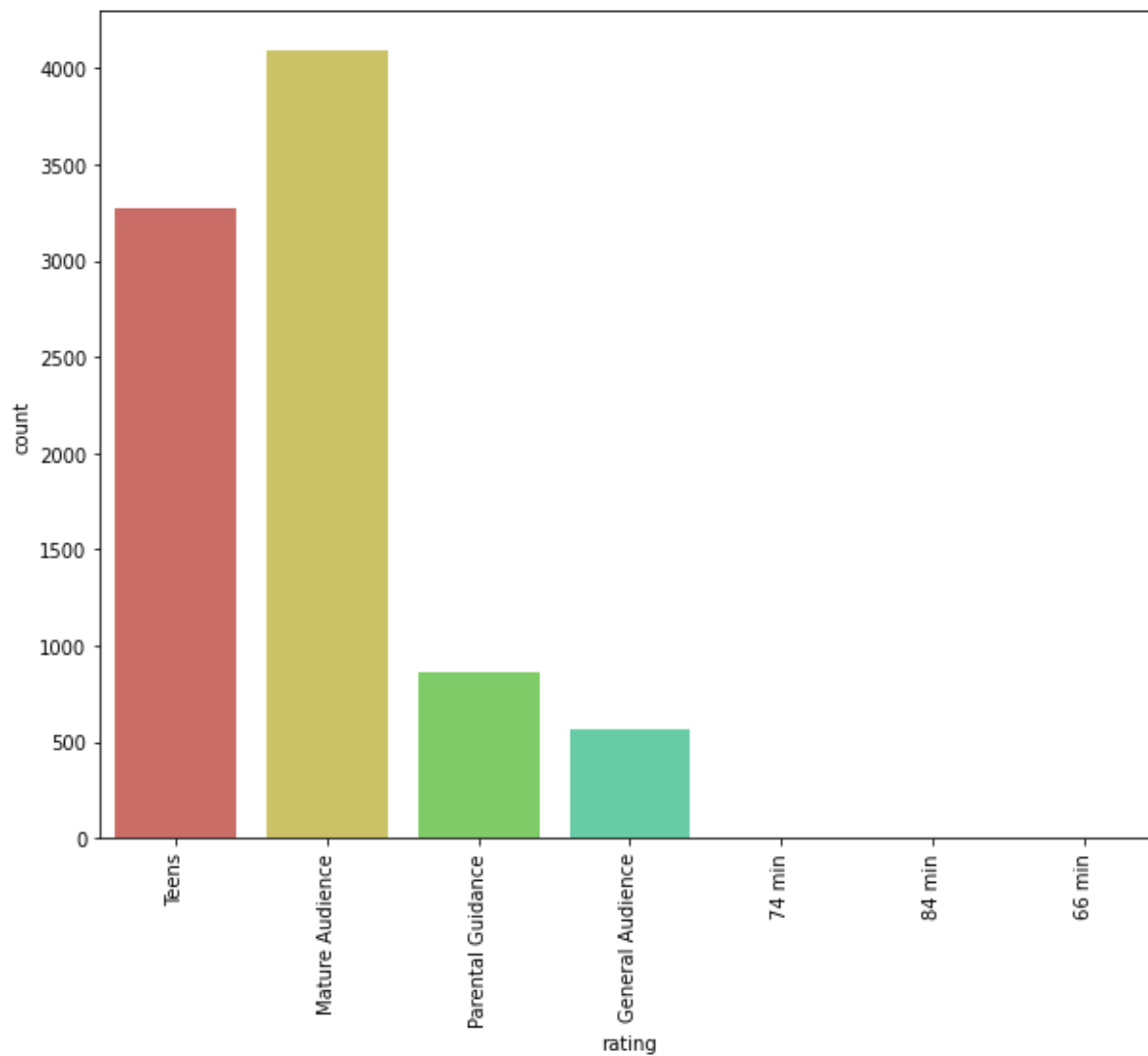
	show_id	type	title	director	cast	country	date_added	release_year	rating
0	s1	Movie	Dick Johnson Is Dead	Kirsten Johnson	NA	United States	September 25, 2021	2020	Teens
1	s2	TV Show	Blood & Water	NA	Ama Qamata, Khosi Ngema, Gail Mabalane, Thaban...	South Africa	September 24, 2021	2021	Mature Audience
2	s3	TV Show	Ganglands	Julien Leclercq	Sami Bouajila, Tracy Gotoas, Samuel Jouy, Nabi...	NA	September 24, 2021	2021	Mature Audience
3	s4	TV Show	Jailbirds New Orleans	NA	NA	NA	September 24, 2021	2021	Mature Audience
4	s5	TV Show	Kota Factory	NA	Mayur More, Jitendra Kumar, Ranjan Raj, Alam K...	India	September 24, 2021	2021	Mature Audience



In [31]:



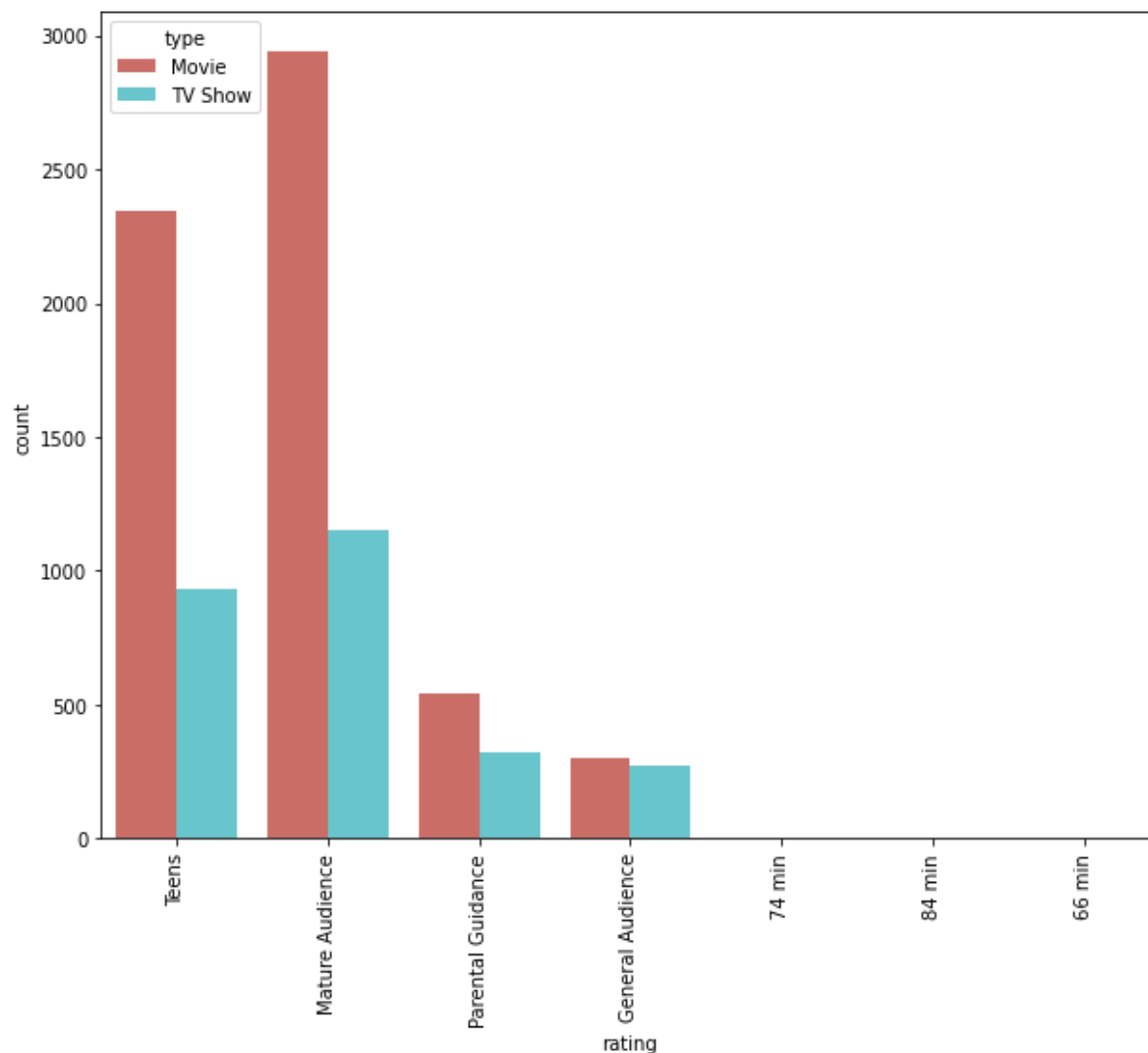
```
1 plt.figure(figsize=(10,8))
2 sns.countplot("rating", data=data, palette="hls")
3 plt.xticks(rotation = 90)
4 plt.show()
```



In [32]:



```
1 plt.figure(figsize=(10,8))
2 sns.countplot("rating", data=data, hue = 'type' ,
3               palette="hls")
4 plt.xticks(rotation = 90)
5 plt.show()
```



In [33]:

```
1 data.country.unique()
```

Out[33]:

```
array(['United States', 'South Africa', 'NA', 'India',
      'United States, Ghana, Burkina Faso, United Kingdom, Germany, Ethiopia',
      'United Kingdom', 'Germany, Czech Republic', 'Mexico', 'Turkey',
      'Australia', 'United States, India, France', 'Finland',
      'China, Canada, United States',
      'South Africa, United States, Japan', 'Nigeria', 'Japan',
      'Spain, United States', 'France', 'Belgium',
      'United Kingdom, United States', 'United States, United Kingdom',
      'France, United States', 'South Korea', 'Spain',
      'United States, Singapore', 'United Kingdom, Australia, France',
      'United Kingdom, Australia, France, United States',
      'United States, Canada', 'Germany, United States',
      'South Africa, United States', 'United States, Mexico',
      'United States, Italy, France, Japan',
      'United States, Italy, Romania, United Kingdom',
      'Australia, United States', 'Argentina, Venezuela',
```

In [34]:

```
1 data.country.value_counts()
```

Out[34]:

United States	2818
India	972
NA	831
United Kingdom	419
Japan	245
...	
Romania, Bulgaria, Hungary	1
Uruguay, Guatemala	1
France, Senegal, Belgium	1
Mexico, United States, Spain, Colombia	1
United Arab Emirates, Jordan	1

Name: country, Length: 749, dtype: int64

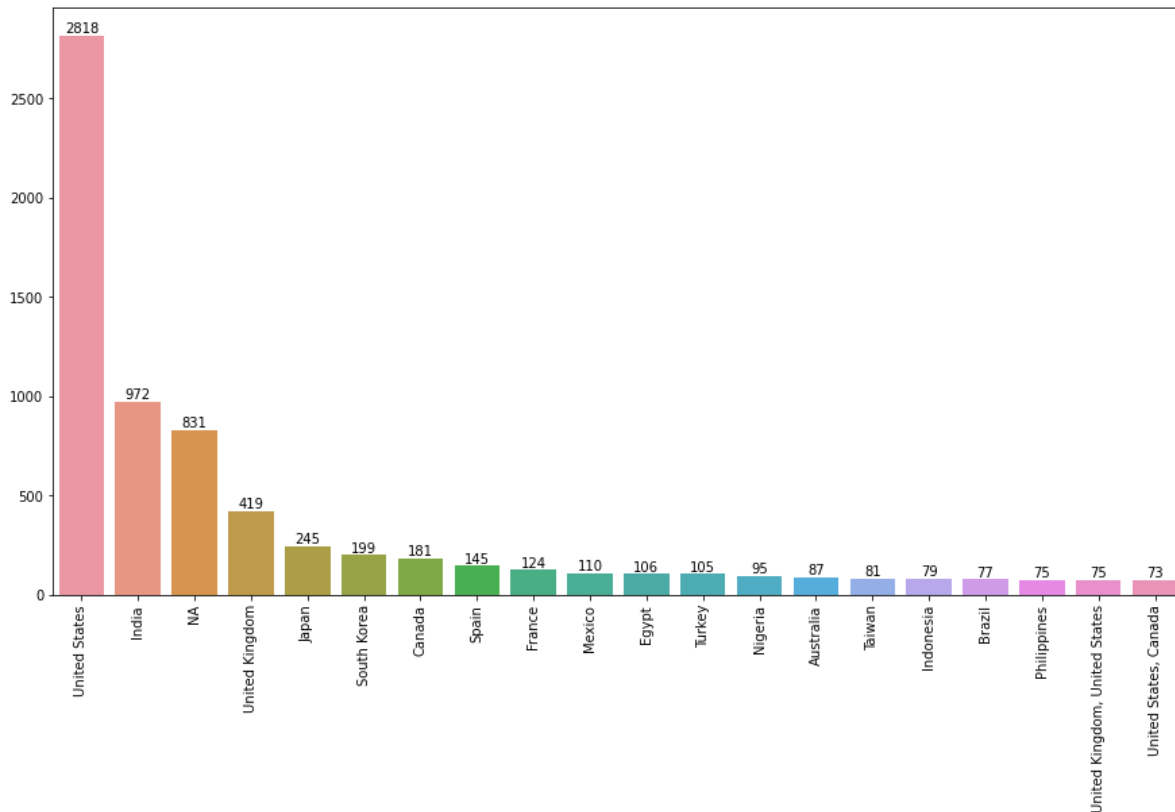
In [35]:



```

1 plt.figure(figsize=(15,8))
2
3 ax = sns.barplot(x=data.country.value_counts()[ :20].index ,
4                 y=data.country.value_counts()[ :20].values )
5
6 ax.set_xticklabels(data.country.value_counts()[ :20].index,
7                   rotation=90)
8
9 for i in ax.containers:
10     ax.bar_label(i);

```



In [37]:



```

1 plt.figure(figsize=(10,8))
2 sns.countplot("country", data=data.head(100), hue = 'type' ,
3               palette="hls")
4 plt.xticks(rotation = 90)
5 plt.show()

```

