netflix-eda

April 5, 2024

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

[2]:
```
url = 'https://d2beiqkhq929f0.cloudfront.net/public_assets/assets/000/000/940/
 ↪original/netflix.csv'
output = 'netflix.csv'

gdown.download(url, output, quiet=False)
```

```
Downloading…
From: https://d2beiqkhq929f0.cloudfront.net/public_assets/assets/000/000/940/ori
ginal/netflix.csv
To: /content/netflix.csv
100%|     | 3.40M/3.40M [00:00<00:00, 144MB/s]
```

[2]:
```
'netflix.csv'
```

Problem Statement:

Given the dataset containing information about movies and TV shows available on Netflix, the objective is to analyze the data and generate insights to assist Netflix in making informed decisions regarding content production and business growth strategies in different countries.

1 Load the dataset

[3]:
```
df = pd.read_csv('netflix.csv')
```

2 Understanding the data

[4]:
```
df
```

[4]:
```
     show_id     type                 title         director  \
0         s1    Movie  Dick Johnson Is Dead  Kirsten Johnson
1         s2  TV Show         Blood & Water              NaN
```

```
2         s3  TV Show              Ganglands  Julien Leclercq
3         s4  TV Show  Jailbirds New Orleans              NaN
4         s5  TV Show           Kota Factory              NaN
…      …      …                    …              …
8802   s8803    Movie                 Zodiac    David Fincher
8803   s8804  TV Show            Zombie Dumb              NaN
8804   s8805    Movie             Zombieland  Ruben Fleischer
8805   s8806    Movie                   Zoom     Peter Hewitt
8806   s8807    Movie                 Zubaan      Mozez Singh

                                                   cast        country  \
0                                                   NaN  United States
1     Ama Qamata, Khosi Ngema, Gail Mabalane, Thaban…   South Africa
2     Sami Bouajila, Tracy Gotoas, Samuel Jouy, Nabi…            NaN
3                                                   NaN            NaN
4     Mayur More, Jitendra Kumar, Ranjan Raj, Alam K…          India
…                                                 …            …
8802  Mark Ruffalo, Jake Gyllenhaal, Robert Downey J…  United States
8803                                                NaN            NaN
8804  Jesse Eisenberg, Woody Harrelson, Emma Stone, …  United States
8805  Tim Allen, Courteney Cox, Chevy Chase, Kate Ma…  United States
8806  Vicky Kaushal, Sarah-Jane Dias, Raaghav Chanan…          India

              date_added  release_year rating   duration  \
0     September 25, 2021          2020  PG-13     90 min
1     September 24, 2021          2021  TV-MA  2 Seasons
2     September 24, 2021          2021  TV-MA   1 Season
3     September 24, 2021          2021  TV-MA   1 Season
4     September 24, 2021          2021  TV-MA  2 Seasons
…                  …           …    …        …
8802   November 20, 2019          2007      R    158 min
8803        July 1, 2019          2018  TV-Y7  2 Seasons
8804    November 1, 2019          2009      R     88 min
8805    January 11, 2020          2006     PG     88 min
8806       March 2, 2019          2015  TV-14    111 min

                                              listed_in  \
0                                         Documentaries
1       International TV Shows, TV Dramas, TV Mysteries
2     Crime TV Shows, International TV Shows, TV Act…
3                                Docuseries, Reality TV
4     International TV Shows, Romantic TV Shows, TV …
…                                                 …
8802                     Cult Movies, Dramas, Thrillers
8803             Kids' TV, Korean TV Shows, TV Comedies
8804                            Comedies, Horror Movies
8805                 Children & Family Movies, Comedies
```

```
8806     Dramas, International Movies, Music & Musicals

                                            description
0     As her father nears the end of his life, filmm…
1     After crossing paths at a party, a Cape Town t…
2     To protect his family from a powerful drug lor…
3     Feuds, flirtations and toilet talk go down amo…
4     In a city of coaching centers known to train I…
…                                                   …
8802  A political cartoonist, a crime reporter and a…
8803  While living alone in a spooky town, a young g…
8804  Looking to survive in a world taken over by zo…
8805  Dragged from civilian life, a former superhero…
8806  A scrappy but poor boy worms his way into a ty…

[8807 rows x 12 columns]
```

- From above representation of data seems like we need to treat cast and listed_in columns.
- Also duration column also has some abnormality as in some rows we are seeing it in mins and seasons.
- There are also many Null values present in the data so we also need to treat those.

[5]:
```
df.shape
```

[5]:
```
(8807, 12)
```

[6]:
```
df.ndim
```

[6]:
```
2
```

[7]:
```
df.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      6173 non-null   object
 4   cast          7982 non-null   object
 5   country       7976 non-null   object
 6   date_added    8797 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
```

[8]:
```python
df['type'].value_counts()
```

[8]:
```
Movie      6131
TV Show    2676
Name: type, dtype: int64
```

The dataset contains around 8807 rows out of 6131 rows belongs to movies and 2676 web-series.

[9]:
```python
df['rating'].value_counts()
```

[9]:
```
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
```

We need to treat ratings as well as it seems there are some abnormal values.

3 Let's start with data pre-processing or data cleaning operations.

[10]:
```python
constraint_listed_in = df['listed_in'].apply(lambda x: str(x).split(', ')).to_list()
df_constraint_listed_in = pd.DataFrame(constraint_listed_in, index = df['title'])
df_constraint_listed_in = df_constraint_listed_in.stack()
df_constraint_listed_in = pd.DataFrame(df_constraint_listed_in.reset_index())
df_constraint_listed_in.rename(columns = {0 : 'Genre'},inplace = True)
df_constraint_listed_in = df_constraint_listed_in.drop('level_1',axis = 1)
df_constraint_listed_in
```

[10]:

```
                      title                     Genre
0      Dick Johnson Is Dead             Documentaries
1             Blood & Water    International TV Shows
2             Blood & Water                 TV Dramas
3             Blood & Water              TV Mysteries
4                 Ganglands            Crime TV Shows
…                     …                       …
19318                  Zoom  Children & Family Movies
19319                  Zoom                  Comedies
19320                Zubaan                    Dramas
19321                Zubaan      International Movies
19322                Zubaan          Music & Musicals

[19323 rows x 2 columns]
```

[11]:

```python
constraint_cast = df['cast'].apply(lambda x: str(x).split(', ')).to_list()
df_constraint_cast = pd.DataFrame(constraint_cast, index = df['title'])
df_constraint_cast = df_constraint_cast.stack()
df_constraint_cast = pd.DataFrame(df_constraint_cast.reset_index())
df_constraint_cast.rename(columns = {0: "cast"}, inplace = True)
df_constraint_cast = df_constraint_cast.drop('level_1', axis = 1)
df_constraint_cast
```

[11]:

```
                      title                   cast
0      Dick Johnson Is Dead                    nan
1             Blood & Water             Ama Qamata
2             Blood & Water            Khosi Ngema
3             Blood & Water          Gail Mabalane
4             Blood & Water         Thabang Molaba
…                     …                    …
64946                Zubaan       Manish Chaudhary
64947                Zubaan           Meghna Malik
64948                Zubaan          Malkeet Rauni
64949                Zubaan         Anita Shabdish
64950                Zubaan  Chittaranjan Tripathy

[64951 rows x 2 columns]
```

[12]:

```python
constraint_country = df['country'].apply(lambda x: str(x).split(', ')).to_list()
df_constraint_country = pd.DataFrame(constraint_country, index = df['title'])
df_constraint_country = df_constraint_country.stack()
df_constraint_country = pd.DataFrame(df_constraint_country.reset_index())
df_constraint_country.rename(columns = {0: "country"}, inplace = True)
df_constraint_country = df_constraint_country.drop('level_1', axis = 1)
df_constraint_country
```

[12]:
```
                        title        country
0         Dick Johnson Is Dead  United States
1                Blood & Water   South Africa
2                    Ganglands            nan
3        Jailbirds New Orleans            nan
4                 Kota Factory          India
…                          …              …
10840                  Zodiac  United States
10841             Zombie Dumb            nan
10842              Zombieland  United States
10843                    Zoom  United States
10844                  Zubaan          India

[10845 rows x 2 columns]
```

[13]:
```
constraint_director = df['director'].apply(lambda x: str(x).split(', ')).
 ↪to_list()
df_constraint_director = pd.DataFrame(constraint_director, index = df['title'])
df_constraint_director = df_constraint_director.stack()
df_constraint_director = pd.DataFrame(df_constraint_director.reset_index())
df_constraint_director.rename(columns = {0: "director"}, inplace = True)
df_constraint_director = df_constraint_director.drop('level_1', axis = 1)
df_constraint_director
```

[13]:
```
                       title          director
0       Dick Johnson Is Dead  Kirsten Johnson
1              Blood & Water              nan
2                  Ganglands  Julien Leclercq
3      Jailbirds New Orleans              nan
4               Kota Factory              nan
…                        …                …
9607                  Zodiac    David Fincher
9608             Zombie Dumb              nan
9609              Zombieland  Ruben Fleischer
9610                    Zoom     Peter Hewitt
9611                  Zubaan      Mozez Singh

[9612 rows x 2 columns]
```

[14]:
```
df_new = df_constraint_cast.merge(df_constraint_director, on = 'title', how =␣
 ↪'inner')
df_new = df_new.merge(df_constraint_listed_in,on = 'title', how = 'inner')
df_new = df_new.merge(df_constraint_country, on = 'title', how = 'inner')
df_new = df_new.merge(df[['title','rating']],on = 'title', how = 'inner')
df_new
```

[14]:
```
                           title                  cast         director  \
0       Dick Johnson Is Dead                   nan  Kirsten Johnson
1              Blood & Water            Ama Qamata              nan
2              Blood & Water            Ama Qamata              nan
3              Blood & Water            Ama Qamata              nan
4              Blood & Water           Khosi Ngema              nan
…                        …                     …                …
201986                Zubaan        Anita Shabdish      Mozez Singh
201987                Zubaan        Anita Shabdish      Mozez Singh
201988                Zubaan  Chittaranjan Tripathy      Mozez Singh
201989                Zubaan  Chittaranjan Tripathy      Mozez Singh
201990                Zubaan  Chittaranjan Tripathy      Mozez Singh

                           Genre         country rating
0                  Documentaries  United States  PG-13
1         International TV Shows   South Africa  TV-MA
2                      TV Dramas   South Africa  TV-MA
3                   TV Mysteries   South Africa  TV-MA
4         International TV Shows   South Africa  TV-MA
…                            …             …     …
201986     International Movies          India  TV-14
201987         Music & Musicals          India  TV-14
201988                   Dramas          India  TV-14
201989     International Movies          India  TV-14
201990         Music & Musicals          India  TV-14

[201991 rows x 6 columns]
```

[15]:
```
df_final = df_new.
 ↪merge(df[['title','show_id','type','date_added','release_year','duration','description']],o
 ↪how='left')
```

[16]:
```
df_final
```

[16]:
```
                           title                  cast         director  \
0       Dick Johnson Is Dead                   nan  Kirsten Johnson
1              Blood & Water            Ama Qamata              nan
2              Blood & Water            Ama Qamata              nan
3              Blood & Water            Ama Qamata              nan
4              Blood & Water           Khosi Ngema              nan
…                        …                     …                …
201986                Zubaan        Anita Shabdish      Mozez Singh
201987                Zubaan        Anita Shabdish      Mozez Singh
201988                Zubaan  Chittaranjan Tripathy      Mozez Singh
201989                Zubaan  Chittaranjan Tripathy      Mozez Singh
201990                Zubaan  Chittaranjan Tripathy      Mozez Singh
```

```
                         Genre        country rating show_id     type  \
0                Documentaries  United States  PG-13      s1    Movie
1       International TV Shows   South Africa  TV-MA      s2  TV Show
2                    TV Dramas   South Africa  TV-MA      s2  TV Show
3                 TV Mysteries   South Africa  TV-MA      s2  TV Show
4       International TV Shows   South Africa  TV-MA      s2  TV Show
…                         …            …    …      …      …
201986    International Movies          India  TV-14   s8807    Movie
201987        Music & Musicals          India  TV-14   s8807    Movie
201988                  Dramas          India  TV-14   s8807    Movie
201989    International Movies          India  TV-14   s8807    Movie
201990        Music & Musicals          India  TV-14   s8807    Movie

                date_added  release_year   duration  \
0       September 25, 2021          2020     90 min
1       September 24, 2021          2021  2 Seasons
2       September 24, 2021          2021  2 Seasons
3       September 24, 2021          2021  2 Seasons
4       September 24, 2021          2021  2 Seasons
…                    …           …         …
201986       March 2, 2019          2015    111 min
201987       March 2, 2019          2015    111 min
201988       March 2, 2019          2015    111 min
201989       March 2, 2019          2015    111 min
201990       March 2, 2019          2015    111 min

                                              description
0       As her father nears the end of his life, filmm…
1       After crossing paths at a party, a Cape Town t…
2       After crossing paths at a party, a Cape Town t…
3       After crossing paths at a party, a Cape Town t…
4       After crossing paths at a party, a Cape Town t…
…                                                   …
201986  A scrappy but poor boy worms his way into a ty…
201987  A scrappy but poor boy worms his way into a ty…
201988  A scrappy but poor boy worms his way into a ty…
201989  A scrappy but poor boy worms his way into a ty…
201990  A scrappy but poor boy worms his way into a ty…

[201991 rows x 12 columns]
```

The columns country, genre, and director seems to be treated. Let's try to see if they have any null values and treat accordingly.

```
[17]: df_final.isnull().sum()
```

[17]:
```
title             0
cast              0
director          0
Genre             0
country           0
rating           67
show_id           0
type              0
date_added      158
release_year      0
duration          3
description       0
dtype: int64
```

[17]:
```

```

The director column has null values but it is showing 0 in the above result because they might have been converted to string values let's convert them back to np.nan and then check no. of null values again.

[18]:
```
df_final['director'] = df_final['director'].apply(lambda x: np.nan if x ==␣
 ↪'nan' else x)
df_final['country'] = df_final['country'].apply(lambda x: np.nan if x == 'nan'␣
 ↪else x)
df_final['Genre'] = df_final['Genre'].apply(lambda x: np.nan if x == 'nan' else␣
 ↪x)
df_final['cast'] = df_final['cast'].apply(lambda x: np.nan if x == 'nan' else x)
```

[19]:
```
df_final.isnull().sum()
```

[19]:
```
title               0
cast             2146
director        50643
Genre               0
country         11897
rating             67
show_id             0
type                0
date_added        158
release_year        0
duration            3
description         0
dtype: int64
```

[20]:
```
df_final['director'].fillna('Unknown Director',inplace = True)
```

[21]:
```
df_final[df_final['type'] == 'TV Show'].isnull().sum()
```

```
[21]: title                0
      cast               818
      director             0
      Genre                0
      country           5698
      rating              58
      show_id              0
      type                 0
      date_added         158
      release_year         0
      duration             0
      description          0
      dtype: int64
```

```
[22]: df_final[df_final['type'] == 'Movie'].isnull().sum()
```

```
[22]: title                0
      cast              1328
      director             0
      Genre                0
      country           6199
      rating               9
      show_id              0
      type                 0
      date_added           0
      release_year         0
      duration             3
      description          0
      dtype: int64
```

From above two outputs we can infer that there is non null value for Tv show types so we only need to take care of Movie types.

```
[23]: movie_list = df_final[df_final['type'] == 'Movie']['duration'].apply(lambda x:␣
       ↪str(x).split(' ')[0]).to_list()
      typecasted = np.vectorize(lambda x: int(0) if x == 'nan' else int(x))
      avg = int(typecasted(movie_list).mean())
      df_final[df_final['duration'].isnull()]
```

```
[23]:                                      title       cast     director   Genre   \
      126537                       Louis C.K. 2017  Louis C.K.  Louis C.K.  Movies
      131603                 Louis C.K.: Hilarious  Louis C.K.  Louis C.K.  Movies
      131737  Louis C.K.: Live at the Comedy Store  Louis C.K.  Louis C.K.  Movies

                    country  rating show_id  type          date_added  \
      126537  United States  74 min   s5542  Movie       April 4, 2017
      131603  United States  84 min   s5795  Movie  September 16, 2016
```

```
131737  United States  66 min   s5814  Movie     August 15, 2016

        release_year duration  \
126537          2017      NaN
131603          2010      NaN
131737          2015      NaN

                                             description
126537  Louis C.K. muses on religion, eternal love, gi…
131603  Emmy-winning comedy writer Louis C.K. brings h…
131737  The comic puts his trademark hilarious/thought…
```

[24]:

```python
df_final['duration'].fillna(f'{avg} min',inplace = True)
```

[25]:

```python
df_final['rating'].fillna('NR', inplace = True)
```

[31]:

```python
df_final['rating'] = df_final['rating'].apply(lambda x: 'NR' if 'min' in x else␣
 ↪x)
```

[32]:

```python
df_final['rating'].value_counts()
```

[32]:

```
TV-MA       73867
TV-14       43931
R           25860
PG-13       16246
TV-PG       14926
PG          10919
TV-Y7        6304
TV-Y         3665
TV-G         2779
NR           1643
G            1530
NC-17         149
TV-Y7-FV       86
UR             86
Name: rating, dtype: int64
```

[33]:

```python
for i in df_final[df_final['date_added'].isnull()]['release_year'].unique():
  imp=df_final[df_final['release_year']==i]['date_added'].mode().values[0]
  df_final.loc[df_final['release_year']==i,'date_added']=df_final.
 ↪loc[df_final['release_year']==i,'date_added'].fillna(imp)
```

[44]:

```python
for i in df_final[df_final['country'].isnull()]['director'].unique():
  if i in df_final[~df_final['country'].isnull()]['director'].unique():
    imp=df_final[df_final['director']==i]['country'].mode().values[0]
    df_final.loc[df_final['director']==i,'country']=df_final.
 ↪loc[df_final['director']==i,'country'].fillna(imp)
```

[50]:

```
for i in df_final[df_final['country'].isnull()]['cast'].unique():
  if i in df_final[~df_final['country'].isnull()]['cast'].unique():
    imp=df_final[df_final['cast']==i]['country'].mode().values[0]
    df_final.loc[df_final['cast']==i,'country']=df_final.
  ↪loc[df_final['cast']==i,'country'].fillna(imp)
```

[53]:

```
df_final['country'].fillna('Unknown Country',inplace=True)
df_final['cast'].fillna('Unknown Cast',inplace=True)
df_final.isnull().sum()
```

[53]:

```
title           0
cast            0
director        0
Genre           0
country         0
rating          0
show_id         0
type            0
date_added      0
release_year    0
duration        0
description     0
dtype: int64
```

4 Let's start with the visualization part to uncover some hidden trends inside data

[76]:

```
df_final['duration_copy']=df_final['duration'].copy()
df_movie = df_final[df_final['type'] == 'Movie']
df_movie['duration_copy'] = df_movie['duration_copy'].apply(lambda x:␣
  ↪int(str(x).split(' ')[0]))
df_movie['duration_copy'].astype(int)
```

```
<ipython-input-76-27711f7c164d>:3: SettingWithCopyWarning:
A value is trying to be set on a copy of a slice from a DataFrame.
Try using .loc[row_indexer,col_indexer] = value instead

See the caveats in the documentation: https://pandas.pydata.org/pandas-
docs/stable/user_guide/indexing.html#returning-a-view-versus-a-copy
  df_movie['duration_copy'] = df_movie['duration_copy'].apply(lambda x:
int(str(x).split(' ')[0]))
```

[76]:

```
0          90
159        91
160        91
161        91
```

```
162        91
         …
201986    111
201987    111
201988    111
201989    111
201990    111
Name: duration_copy, Length: 145843, dtype: int64
```

[77]:

```
bins = [-1,60,90,120,150,180,210,240,270,300,330]
labels =␣
 ↪['<60','60-90','90-120','120-150','150-180','180-210','210-240','240-270','270-300','300-33
df_movie['duration_copy'] = pd.
 ↪cut(df_movie['duration_copy'],bins=bins,labels=labels)
df_movie.head()
```

```
<ipython-input-77-3129129f0be1>:3: SettingWithCopyWarning:
A value is trying to be set on a copy of a slice from a DataFrame.
Try using .loc[row_indexer,col_indexer] = value instead

See the caveats in the documentation: https://pandas.pydata.org/pandas-
docs/stable/user_guide/indexing.html#returning-a-view-versus-a-copy
  df_movie['duration_copy'] =
pd.cut(df_movie['duration_copy'],bins=bins,labels=labels)
```

[77]:

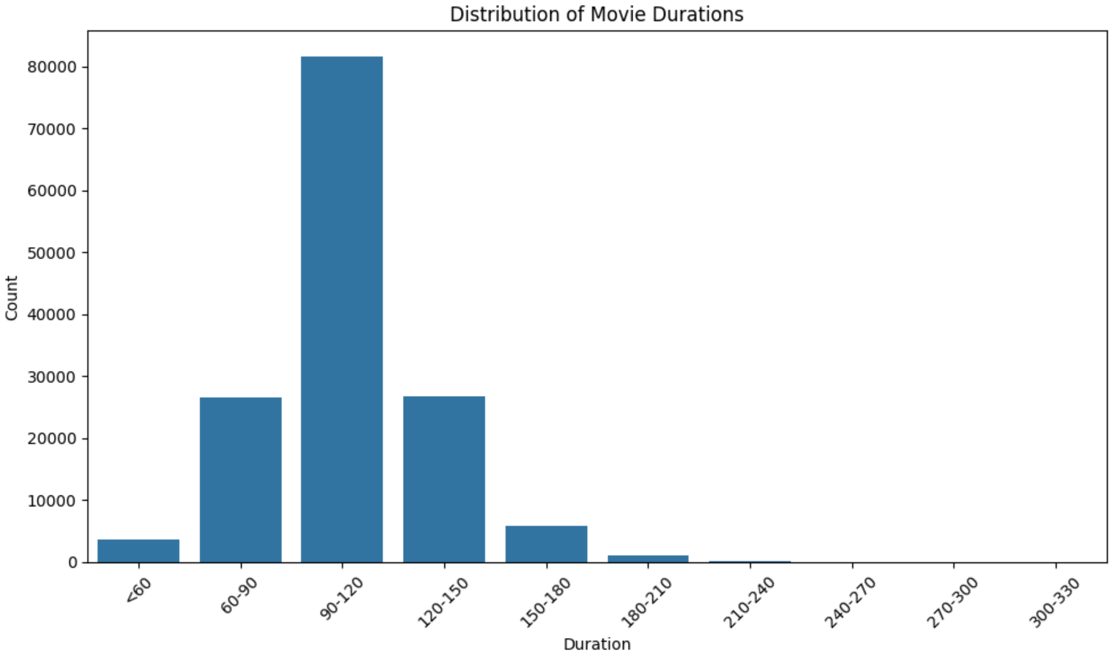
```
                                title             cast          director  \
0                Dick Johnson Is Dead     Unknown Cast  Kirsten Johnson
159  My Little Pony: A New Generation  Vanessa Hudgens    Robert Cullen
160  My Little Pony: A New Generation  Vanessa Hudgens   José Luis Ucha
161  My Little Pony: A New Generation     Kimiko Glenn    Robert Cullen
162  My Little Pony: A New Generation     Kimiko Glenn   José Luis Ucha

                         Genre        country rating show_id   type  \
0                Documentaries  United States  PG-13      s1  Movie
159  Children & Family Movies  United States     PG      s7  Movie
160  Children & Family Movies  United States     PG      s7  Movie
161  Children & Family Movies  United States     PG      s7  Movie
162  Children & Family Movies  United States     PG      s7  Movie

             date_added  release_year duration  \
0    September 25, 2021          2020   90 min
159  September 24, 2021          2021   91 min
160  September 24, 2021          2021   91 min
161  September 24, 2021          2021   91 min
162  September 24, 2021          2021   91 min

                                           description duration_copy
```

```
0    As her father nears the end of his life, filmm…         60-90
159  Equestria's divided. But a bright-eyed hero be…        90-120
160  Equestria's divided. But a bright-eyed hero be…        90-120
161  Equestria's divided. But a bright-eyed hero be…        90-120
162  Equestria's divided. But a bright-eyed hero be…        90-120
```

```
[80]: df_movie['duration_copy'].value_counts()
```

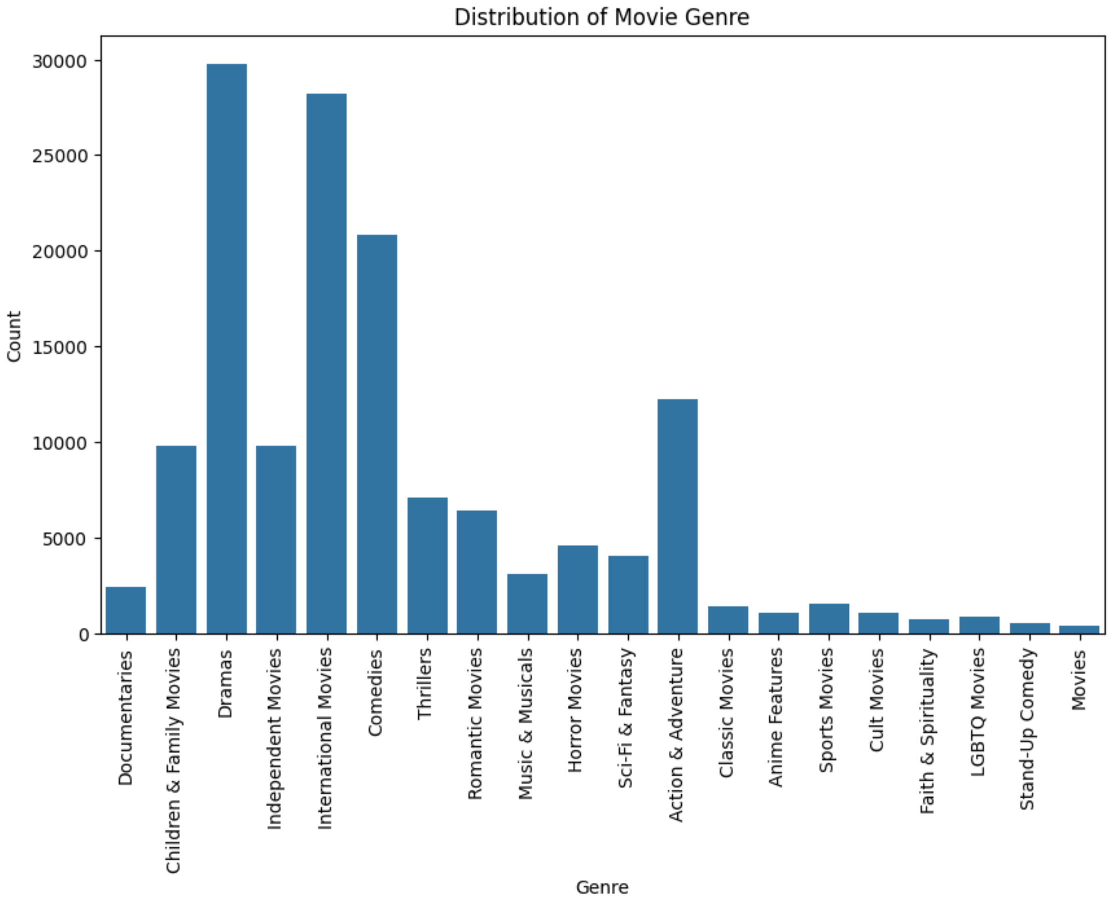
```
[80]: 90-120     81633
      120-150    26691
      60-90      26526
      150-180     5871
      <60         3732
      180-210     1127
      210-240      220
      240-270       21
      300-330       15
      270-300        7
      Name: duration_copy, dtype: int64
```

```
[81]: plt.figure(figsize=(10, 6))
      sns.countplot(data=df_movie, x='duration_copy')
      plt.title('Distribution of Movie Durations')
      plt.xlabel('Duration')
      plt.ylabel('Count')
      plt.xticks(rotation=45)  # Rotate x-axis labels for better readability
      plt.show()
```



Most movies produced are of duration 90-120 which are more than rest.

```
[129]: plt.figure(figsize=(10, 6))
       sns.countplot(data=df_movie, x='Genre')
       plt.title('Distribution of Movie Genre')
       plt.xlabel('Genre')
       plt.ylabel('Count')
       plt.xticks(rotation=90)  # Rotate x-axis labels for better readability
       plt.show()
```



Most movies are produced in Dramas,International Movies,Comedies

```
[131]: df_web = df_final[df_final['type'] == 'TV Show']
       df_web['duration_copy'] = df_web['duration_copy'].apply(lambda x: int(str(x).
        ↪split(' ')[0]))
       df_web['duration_copy'].astype(int)
       df_web
```

```
<ipython-input-131-0f9e65e8ddac>:2: SettingWithCopyWarning:
A value is trying to be set on a copy of a slice from a DataFrame.
Try using .loc[row_indexer,col_indexer] = value instead

See the caveats in the documentation: https://pandas.pydata.org/pandas-
docs/stable/user_guide/indexing.html#returning-a-view-versus-a-copy
  df_web['duration_copy'] = df_web['duration_copy'].apply(lambda x:
int(str(x).split(' ')[0]))
```

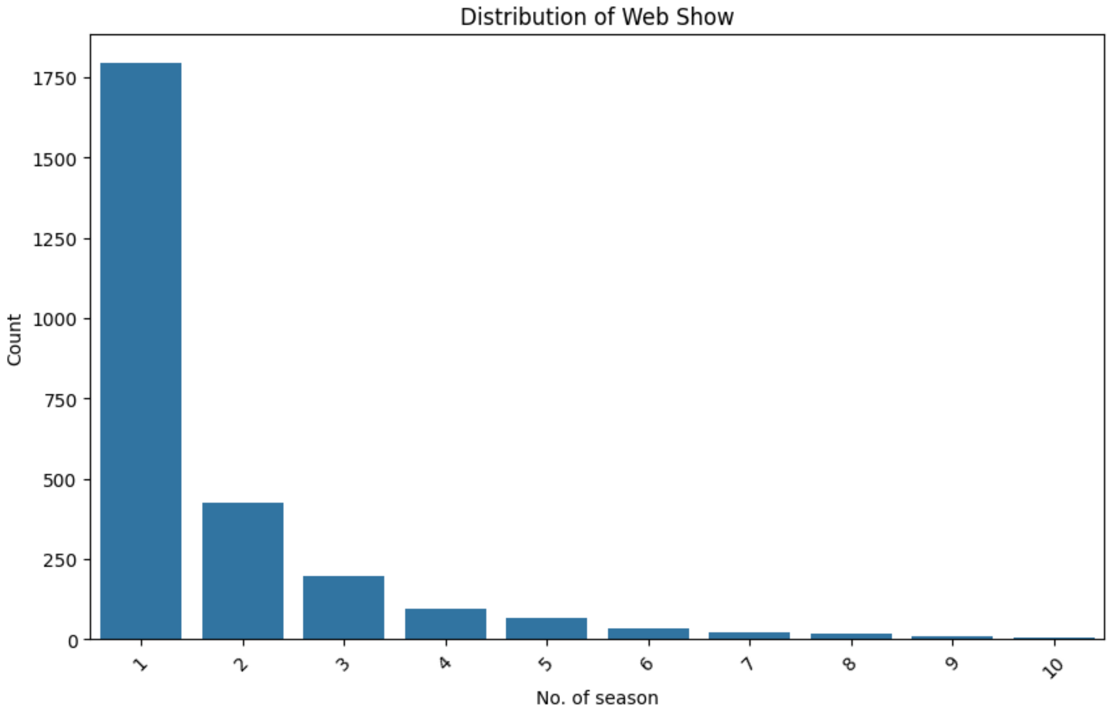
[131]:

```
                     title                cast          director  \
1            Blood & Water          Ama Qamata  Unknown Director
2            Blood & Water          Ama Qamata  Unknown Director
3            Blood & Water          Ama Qamata  Unknown Director
4            Blood & Water         Khosi Ngema  Unknown Director
5            Blood & Water         Khosi Ngema  Unknown Director
…                    …                 …               …
201864  Zindagi Gulzar Hai  Hina Khawaja Bayat  Unknown Director
201865  Zindagi Gulzar Hai  Hina Khawaja Bayat  Unknown Director
201932         Zombie Dumb        Unknown Cast  Unknown Director
201933         Zombie Dumb        Unknown Cast  Unknown Director
201934         Zombie Dumb        Unknown Cast  Unknown Director

                         Genre        country rating show_id     type  \
1       International TV Shows   South Africa  TV-MA      s2  TV Show
2                    TV Dramas   South Africa  TV-MA      s2  TV Show
3                 TV Mysteries   South Africa  TV-MA      s2  TV Show
4       International TV Shows   South Africa  TV-MA      s2  TV Show
5                    TV Dramas   South Africa  TV-MA      s2  TV Show
…                        …            …    …     …      …
201864       Romantic TV Shows       Pakistan  TV-PG   s8801  TV Show
201865               TV Dramas       Pakistan  TV-PG   s8801  TV Show
201932                Kids' TV  United States  TV-Y7   s8804  TV Show
201933         Korean TV Shows  United States  TV-Y7   s8804  TV Show
201934             TV Comedies  United States  TV-Y7   s8804  TV Show

                date_added  release_year   duration  \
1       September 24, 2021          2021  2 Seasons
2       September 24, 2021          2021  2 Seasons
3       September 24, 2021          2021  2 Seasons
4       September 24, 2021          2021  2 Seasons
5       September 24, 2021          2021  2 Seasons
…                    …           …        …
201864   December 15, 2016          2012   1 Season
201865   December 15, 2016          2012   1 Season
201932        July 1, 2019          2018  2 Seasons
201933        July 1, 2019          2018  2 Seasons
201934        July 1, 2019          2018  2 Seasons
```

```
                                              description  duration_copy  \
1       After crossing paths at a party, a Cape Town t…              2
2       After crossing paths at a party, a Cape Town t…              2
3       After crossing paths at a party, a Cape Town t…              2
4       After crossing paths at a party, a Cape Town t…              2
5       After crossing paths at a party, a Cape Town t…              2
…                                                   …            …
201864  Strong-willed, middle-class Kashaf and carefre…              1
201865  Strong-willed, middle-class Kashaf and carefre…              1
201932  While living alone in a spooky town, a young g…              2
201933  While living alone in a spooky town, a young g…              2
201934  While living alone in a spooky town, a young g…              2

       Modified_Added_date  month_added  week_Added  year_added
1               2021-09-24            9          38        2021
2               2021-09-24            9          38        2021
3               2021-09-24            9          38        2021
4               2021-09-24            9          38        2021
5               2021-09-24            9          38        2021
…                    …          …         …         …
201864          2016-12-15           12          50        2016
201865          2016-12-15           12          50        2016
201932          2019-07-01            7          27        2019
201933          2019-07-01            7          27        2019
201934          2019-07-01            7          27        2019

[56148 rows x 17 columns]
```

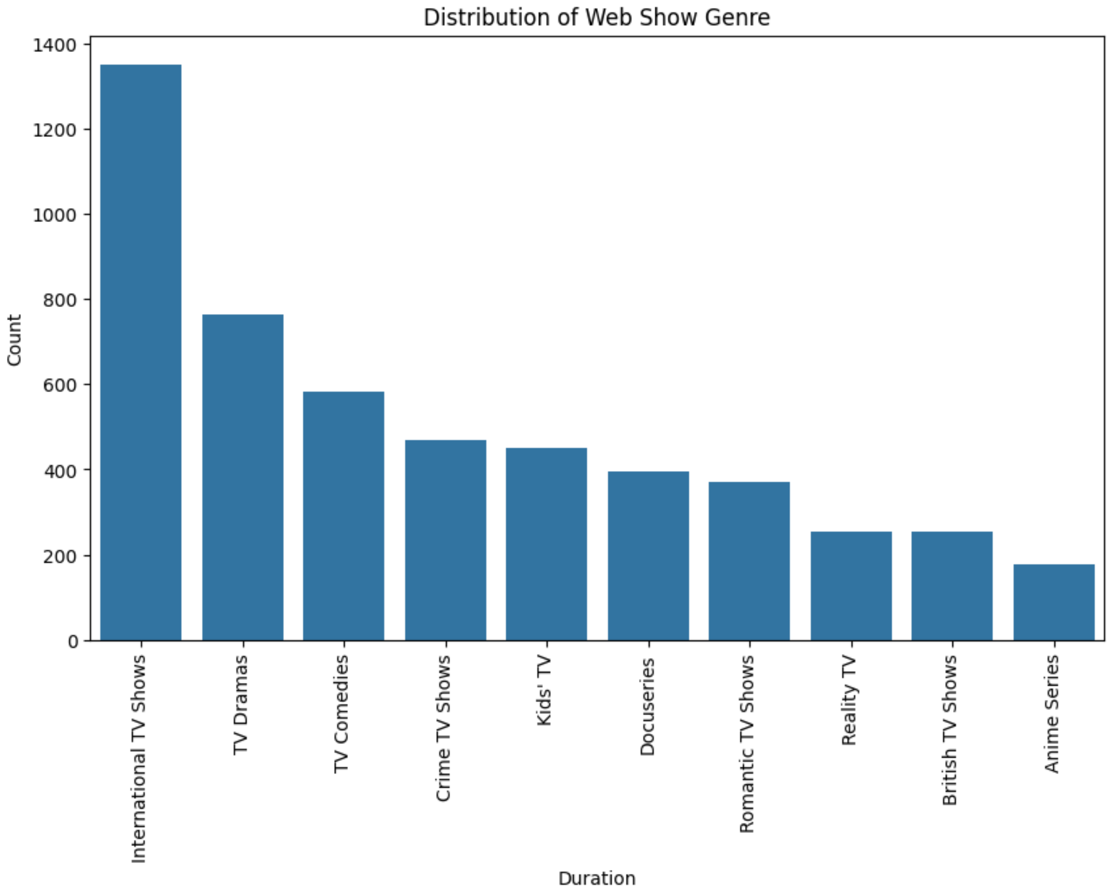
[132]:

```
df_web_show = df_web[['title','country','duration_copy','Genre']].
  ↪groupby(by=['duration_copy']).agg({'title': 'nunique'}).reset_index().
  ↪sort_values(by=['title'], ascending = False)[:10]
# df_country=df_final.groupby(['country']).agg({"title":"nunique"}).
  ↪reset_index().sort_values(by=['title'],ascending=False)[:10]
df_web_show
plt.figure(figsize=(10, 6))
sns.barplot(data=df_web_show, x='duration_copy',y='title')
plt.title('Distribution of Web Show')
plt.xlabel('No. of season')
plt.ylabel('Count')
plt.xticks(rotation=45)  # Rotate x-axis labels for better readability
plt.show()
```



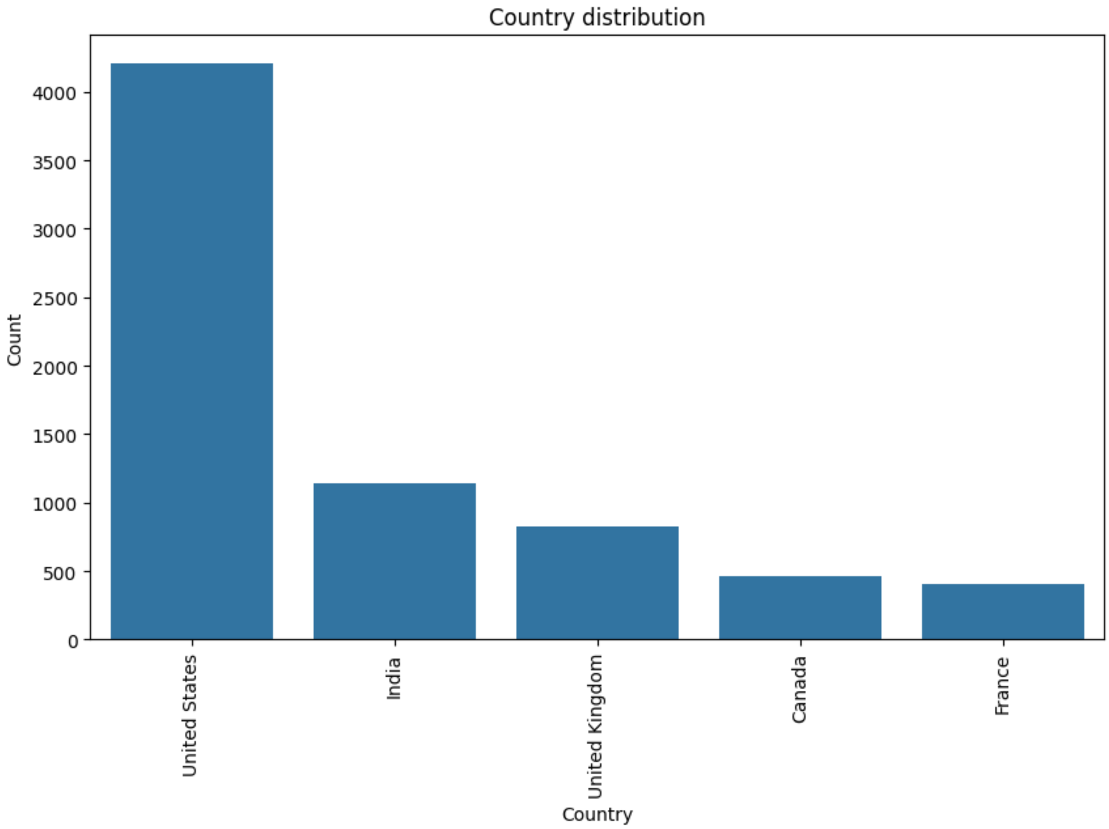
Most TV Shows produced are generally one season.

[136]:
```
df_web_show = df_web.groupby(by=['Genre']).agg({'title': 'nunique'}).
 ↪reset_index().sort_values(by=['title'], ascending = False)[:10]
plt.figure(figsize=(10, 6))
sns.barplot(data=df_web_show, x = 'Genre', y='title')
plt.title('Distribution of Web Show Genre')
plt.xlabel('Duration')
plt.ylabel('Count')
plt.xticks(rotation=90)  # Rotate x-axis labels for better readability
plt.show()
```



[137]:

```
df_country=df_final.groupby(['country']).agg({"title":"nunique"}).reset_index().
 ↪sort_values(by=['title'],ascending=False)[:5]
plt.figure(figsize=(10, 6))
sns.barplot(data=df_country, x='country',y='title')
plt.title('Country distribution')
plt.xlabel('Country')
plt.ylabel('Count')
plt.xticks(rotation=90)  # Rotate x-axis labels for better readability
plt.show()
```



Top 5 country which produces most movies and TV shows.

Let's keep our focus these top countries for further analysis.

[98]:
```
from dateutil.parser import parse
df_final['Modified_Added_date'] = df_final['date_added'].apply(lambda x:␣
↪parse(x).strftime('%Y-%m-%d'))
df_final['Modified_Added_date'] = pd.
↪to_datetime(df_final['Modified_Added_date'])
```

[100]:
```
df_final['month_added']=df_final['Modified_Added_date'].dt.month
df_final['week_Added']=df_final['Modified_Added_date'].dt.week
df_final['year_added']=df_final['Modified_Added_date'].dt.year
```

```
<ipython-input-100-3d1b5119ae76>:2: FutureWarning: Series.dt.weekofyear and
Series.dt.week have been deprecated. Please use Series.dt.isocalendar().week
instead.
  df_final['week_Added']=df_final['Modified_Added_date'].dt.week
```

[101]:
```
df_final
```

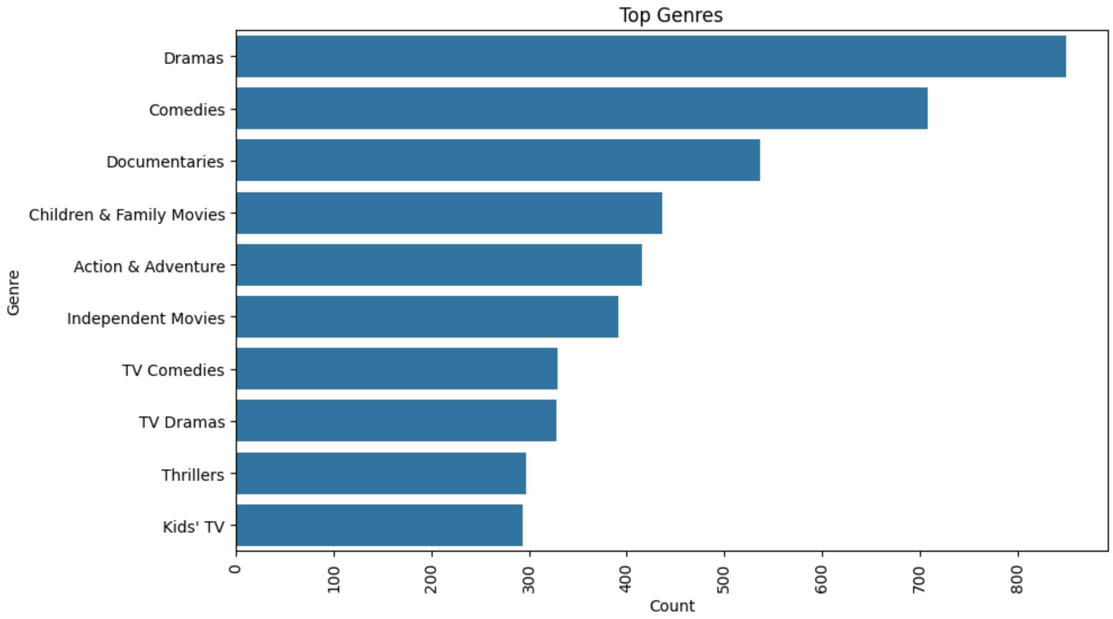
```
[101]:                        title                   cast          director  \
       0       Dick Johnson Is Dead           Unknown Cast   Kirsten Johnson
       1              Blood & Water             Ama Qamata  Unknown Director
       2              Blood & Water             Ama Qamata  Unknown Director
       3              Blood & Water             Ama Qamata  Unknown Director
       4              Blood & Water            Khosi Ngema  Unknown Director
       …                      …                    …               …
       201986                Zubaan         Anita Shabdish       Mozez Singh
       201987                Zubaan         Anita Shabdish       Mozez Singh
       201988                Zubaan  Chittaranjan Tripathy       Mozez Singh
       201989                Zubaan  Chittaranjan Tripathy       Mozez Singh
       201990                Zubaan  Chittaranjan Tripathy       Mozez Singh

                                Genre        country rating show_id     type  \
       0                Documentaries  United States  PG-13      s1    Movie
       1       International TV Shows   South Africa  TV-MA      s2  TV Show
       2                    TV Dramas   South Africa  TV-MA      s2  TV Show
       3                 TV Mysteries   South Africa  TV-MA      s2  TV Show
       4       International TV Shows   South Africa  TV-MA      s2  TV Show
       …                        …            …    …     …      …
       201986    International Movies          India  TV-14   s8807    Movie
       201987        Music & Musicals          India  TV-14   s8807    Movie
       201988                  Dramas          India  TV-14   s8807    Movie
       201989    International Movies          India  TV-14   s8807    Movie
       201990        Music & Musicals          India  TV-14   s8807    Movie

                       date_added  release_year  duration  \
       0       September 25, 2021          2020    90 min
       1       September 24, 2021          2021 2 Seasons
       2       September 24, 2021          2021 2 Seasons
       3       September 24, 2021          2021 2 Seasons
       4       September 24, 2021          2021 2 Seasons
       …                    …           …        …
       201986       March 2, 2019          2015   111 min
       201987       March 2, 2019          2015   111 min
       201988       March 2, 2019          2015   111 min
       201989       March 2, 2019          2015   111 min
       201990       March 2, 2019          2015   111 min

                                                     description duration_copy  \
       0       As her father nears the end of his life, filmm…        90 min
       1       After crossing paths at a party, a Cape Town t…     2 Seasons
       2       After crossing paths at a party, a Cape Town t…     2 Seasons
       3       After crossing paths at a party, a Cape Town t…     2 Seasons
       4       After crossing paths at a party, a Cape Town t…     2 Seasons
       …                                                   …           …
       201986  A scrappy but poor boy worms his way into a ty…       111 min
```

```
201987  A scrappy but poor boy worms his way into a ty…      111 min
201988  A scrappy but poor boy worms his way into a ty…      111 min
201989  A scrappy but poor boy worms his way into a ty…      111 min
201990  A scrappy but poor boy worms his way into a ty…      111 min

       Modified_Added_date  month_added  week_Added  year_added
0               2021-09-25            9          38        2021
1               2021-09-24            9          38        2021
2               2021-09-24            9          38        2021
3               2021-09-24            9          38        2021
4               2021-09-24            9          38        2021
…                    …           …          …          …
201986          2019-03-02            3           9        2019
201987          2019-03-02            3           9        2019
201988          2019-03-02            3           9        2019
201989          2019-03-02            3           9        2019
201990          2019-03-02            3           9        2019

[201991 rows x 17 columns]
```

```
[139]: df_us = df_final[df_final['country'] == 'United States']
       df_fr = df_final[df_final['country'] == 'France']
       df_ind = df_final[df_final['country'] == 'India']
       df_uk = df_final[df_final['country'] == 'United Kingdom']
       df_ca = df_final[df_final['country'] == 'Canada']
```

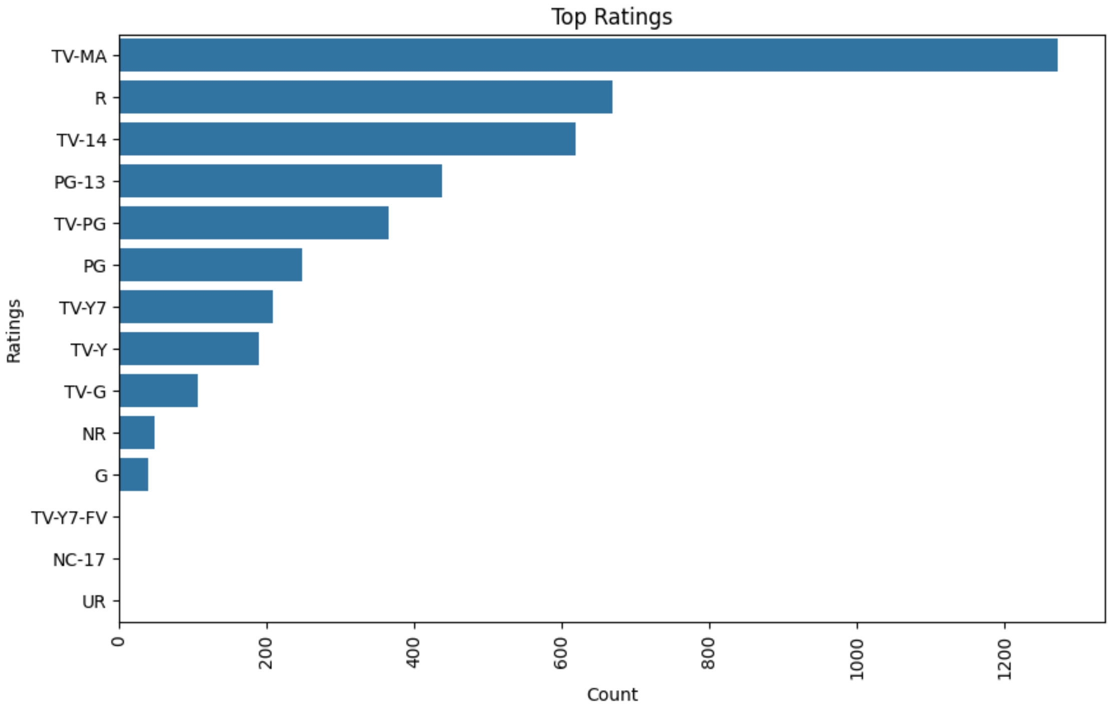
5 US

```
[149]: df_us_genre = df_us.groupby(by=['Genre']).agg({'title':'nunique'}).
         ↪reset_index().sort_values(by=['title'], ascending = False)[:10]
       plt.figure(figsize=(10, 6))
       sns.barplot(data=df_us_genre, x='title', y='Genre')
       plt.title('Top Genres')
       plt.xlabel('Count')
       plt.ylabel('Genre')
       plt.xticks(rotation = 90)
       plt.show()
```



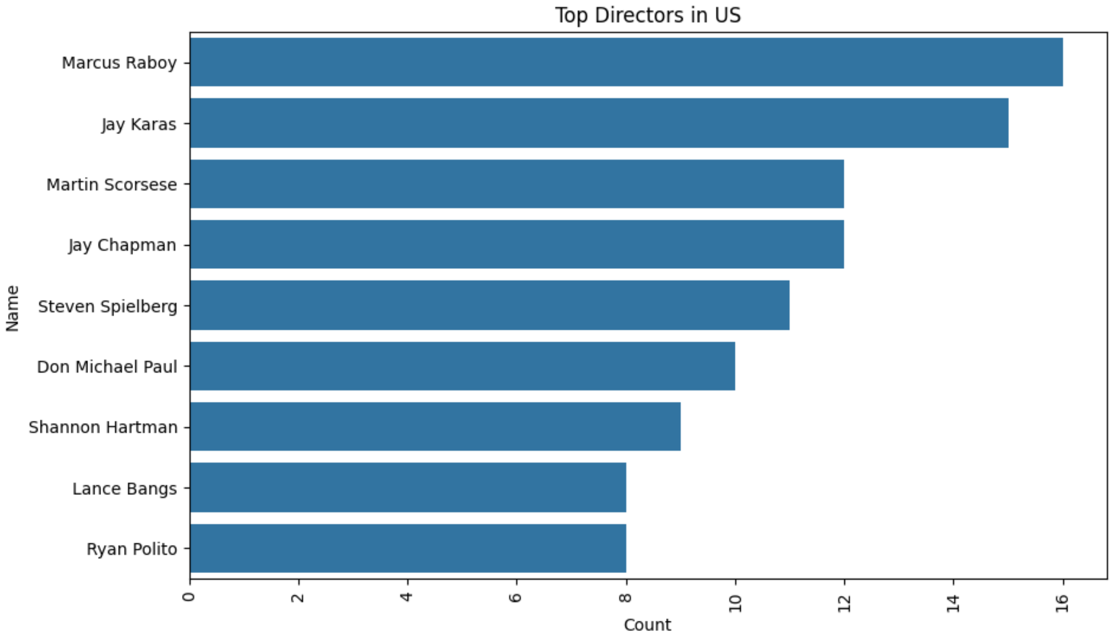
In US Dramas, Comedies, and Documentaries are very popular genre.

[150]:
```
df_us_rating = df_us.groupby(by=['rating']).agg({'title':'nunique'}).
 ↪reset_index().sort_values(by=['title'], ascending = False)
plt.figure(figsize=(10, 6))
sns.barplot(data=df_us_rating, x='title', y='rating')
plt.title('Top Ratings')
plt.xlabel('Count')
plt.ylabel('Ratings')
plt.xticks(rotation = 90)
plt.show()
```



In US TV-MA, R, TV-14 are top ratings in which most of the movies are produced.

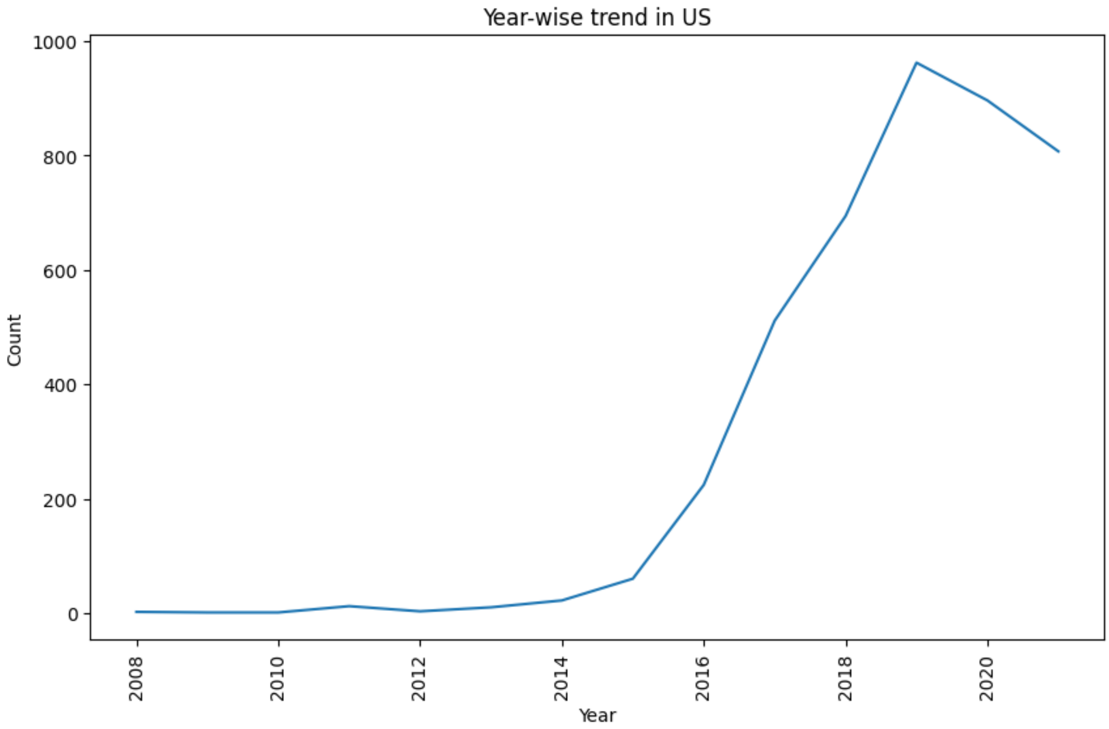
```
[158]: df_us_gen_dir = df_us.groupby(by=['director']).agg({'title':'nunique'}).
        ↪reset_index().sort_values(by=['title'], ascending = False)[:10]
       df_us_gen_dir = df_us_gen_dir[df_us_gen_dir['director'] != 'Unknown Director']
       plt.figure(figsize=(10, 6))
       sns.barplot(data=df_us_gen_dir, x='title', y='director')
       plt.title('Top Directors in US')
       plt.xlabel('Count')
       plt.ylabel('Name')
       plt.xticks(rotation = 90)
       plt.show()
```



Marcus Raboy, jay Karas, Martin Scorsese are three most popular directors in US.

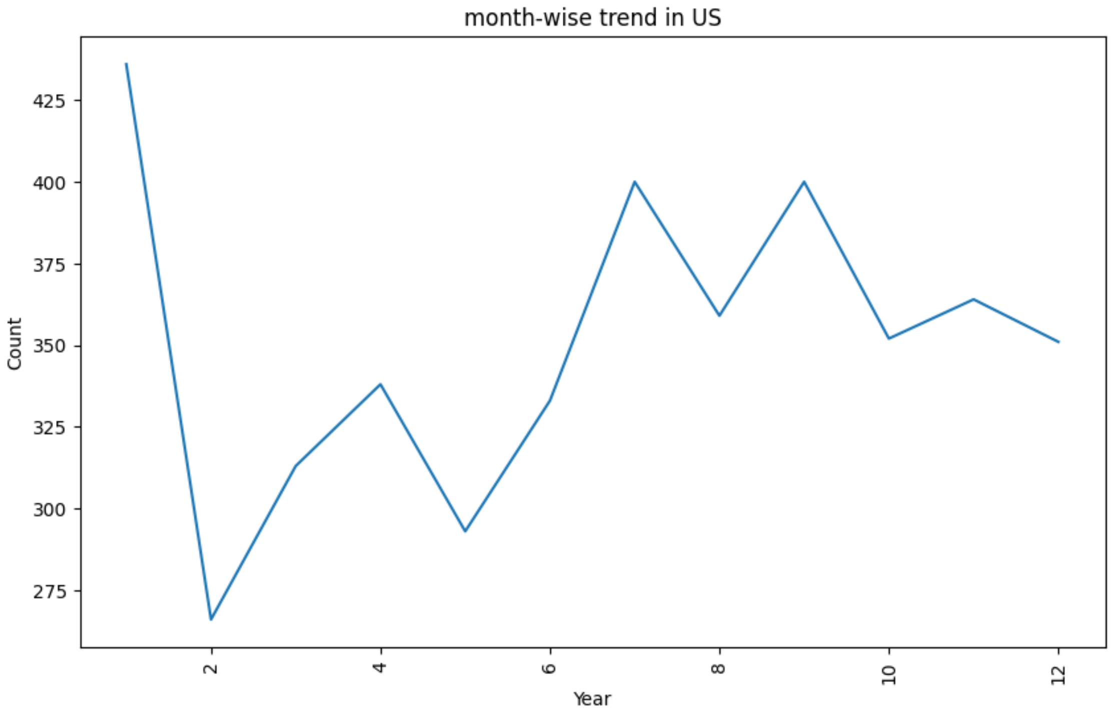
[163]:

```
df_us_year_added = df_us.groupby(by=['year_added']).agg({'title':'nunique'}).
  ↪reset_index().sort_values(by=['title'], ascending = False)
plt.figure(figsize=(10, 6))
sns.lineplot(data=df_us_year_added, y='title', x='year_added')
plt.title('Year-wise trend in US')
plt.ylabel('Count')
plt.xlabel('Year')
plt.xticks(rotation = 90)
plt.show()
```



The no. of movies added in US has tremendously increased after Year 2015.

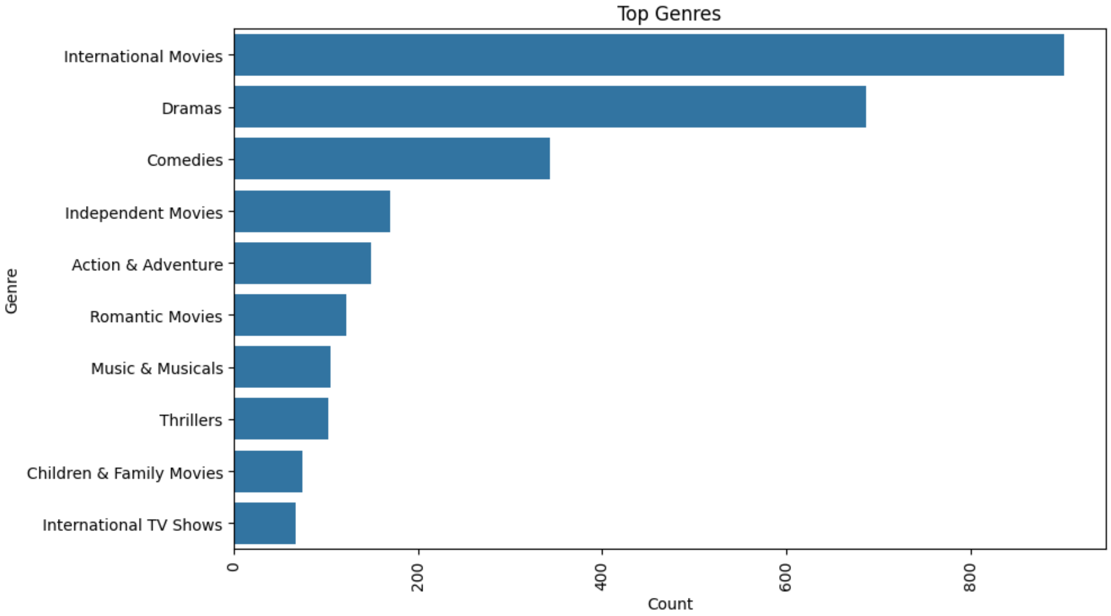
[165]:
```python
df_us_month_added = df_us.groupby(by=['month_added']).agg({'title':'nunique'}).
 ↪reset_index().sort_values(by=['title'], ascending = False)
plt.figure(figsize=(10, 6))
sns.lineplot(data=df_us_month_added, y='title', x='month_added')
plt.title('month-wise trend in US')
plt.ylabel('Count')
plt.xlabel('Month')
plt.xticks(rotation = 90)
plt.show()
```



In US most movies are added in 1st month and mid of year.

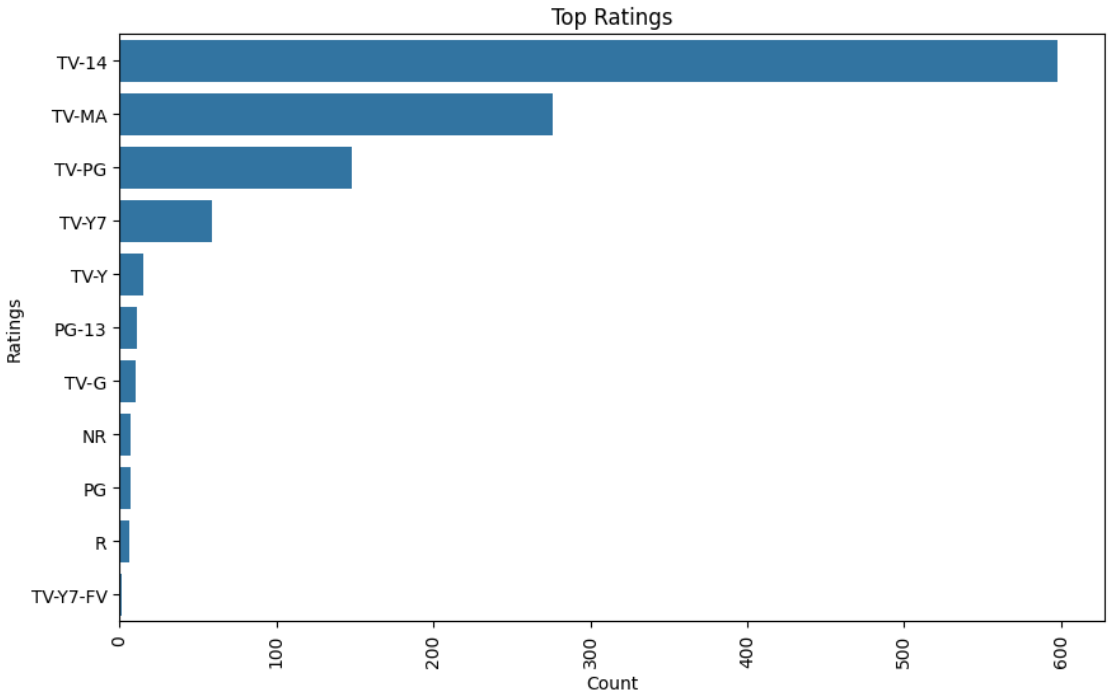
6 India

```
[166]: df_ind_genre = df_ind.groupby(by=['Genre']).agg({'title':'nunique'}).
         ↪reset_index().sort_values(by=['title'], ascending = False)[:10]
       plt.figure(figsize=(10, 6))
       sns.barplot(data=df_ind_genre, x='title', y='Genre')
       plt.title('Top Genres')
       plt.xlabel('Count')
       plt.ylabel('Genre')
       plt.xticks(rotation = 90)
       plt.show()
```



Most Popular genre in India are * Dramas * International Movies * Comedies

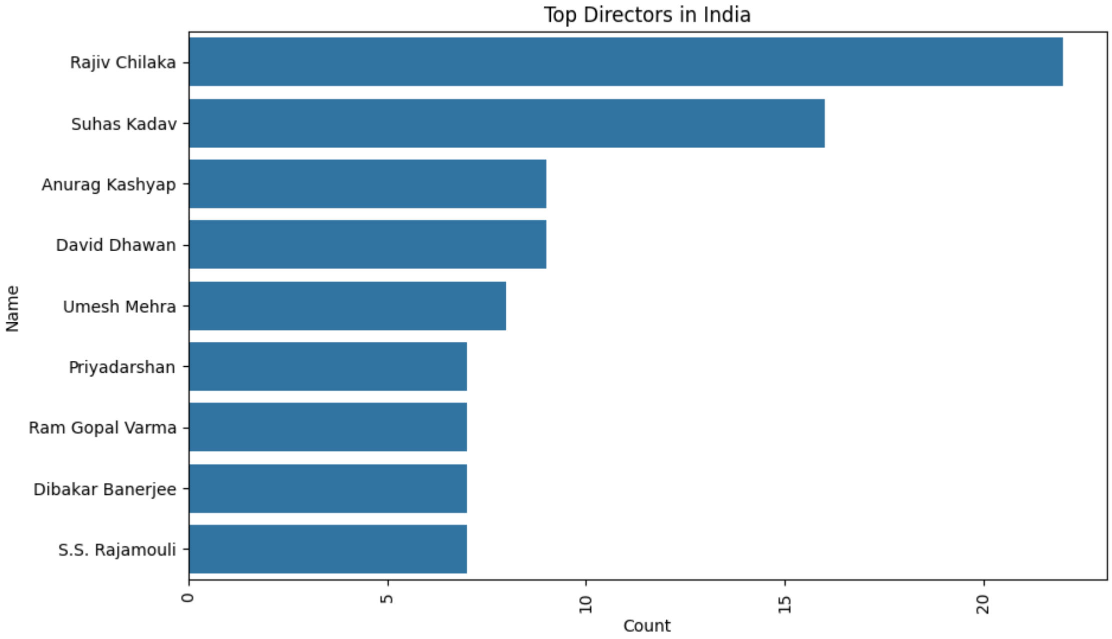
```
[167]: df_ind_rating = df_ind.groupby(by=['rating']).agg({'title':'nunique'}).
        ↪reset_index().sort_values(by=['title'], ascending = False)
       plt.figure(figsize=(10, 6))
       sns.barplot(data=df_ind_rating, x='title', y='rating')
       plt.title('Top Ratings')
       plt.xlabel('Count')
       plt.ylabel('Ratings')
       plt.xticks(rotation = 90)
       plt.show()
```



Most porpular rating in India is TV-14.

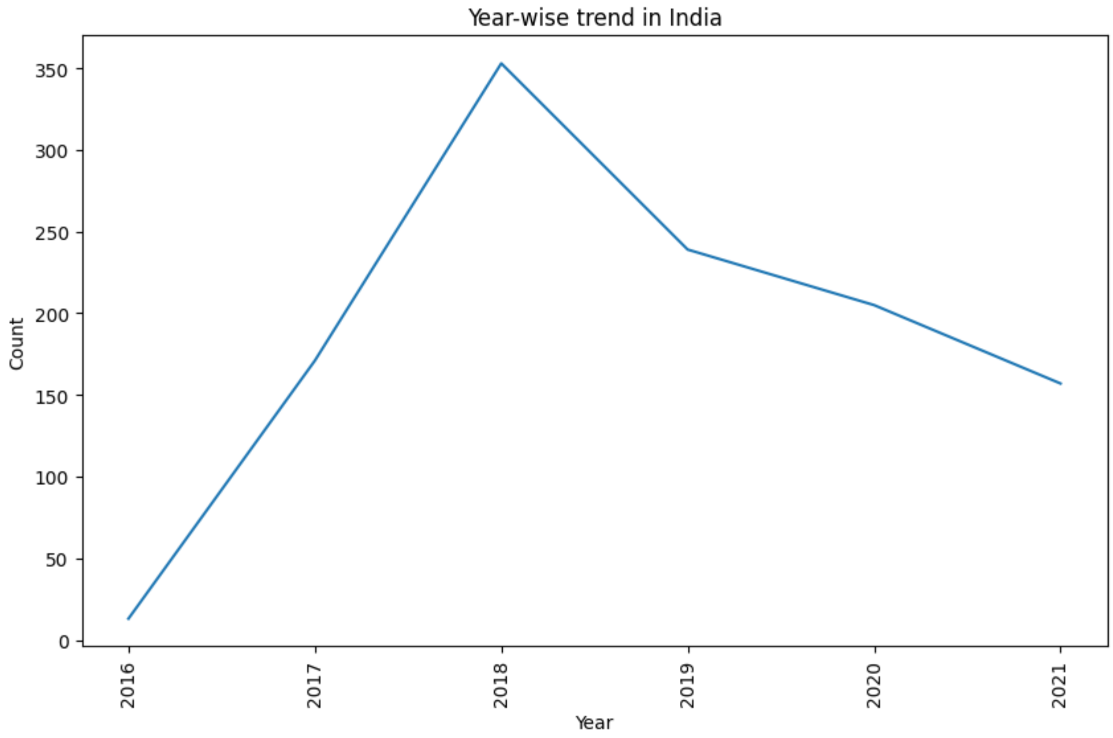
[170]:

```
df_ind_dir = df_ind.groupby(by=['director']).agg({'title':'nunique'}).
  ↪reset_index().sort_values(by=['title'], ascending = False)[:10]
df_ind_dir = df_ind_dir[df_ind_dir['director'] != 'Unknown Director']
plt.figure(figsize=(10, 6))
sns.barplot(data=df_ind_dir, x='title', y='director')
plt.title('Top Directors in India')
plt.xlabel('Count')
plt.ylabel('Name')
plt.xticks(rotation = 90)
plt.show()
```



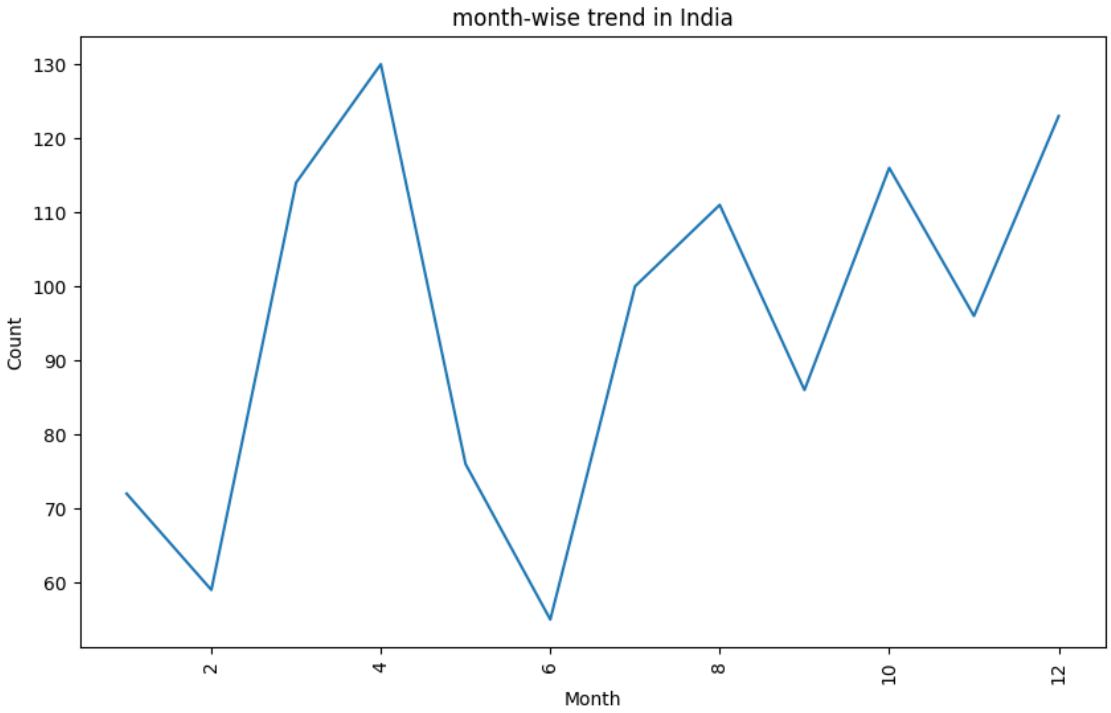
Rajiv chilaka, Suhas Yadav, Anurag Kashyap, David dhawan are popular directors in India.

[171]:
```
df_ind_year_added = df_ind.groupby(by=['year_added']).agg({'title':'nunique'}).
  ↪reset_index().sort_values(by=['title'], ascending = False)
plt.figure(figsize=(10, 6))
sns.lineplot(data=df_ind_year_added, y='title', x='year_added')
plt.title('Year-wise trend in India')
plt.ylabel('Count')
plt.xlabel('Year')
plt.xticks(rotation = 90)
plt.show()
```



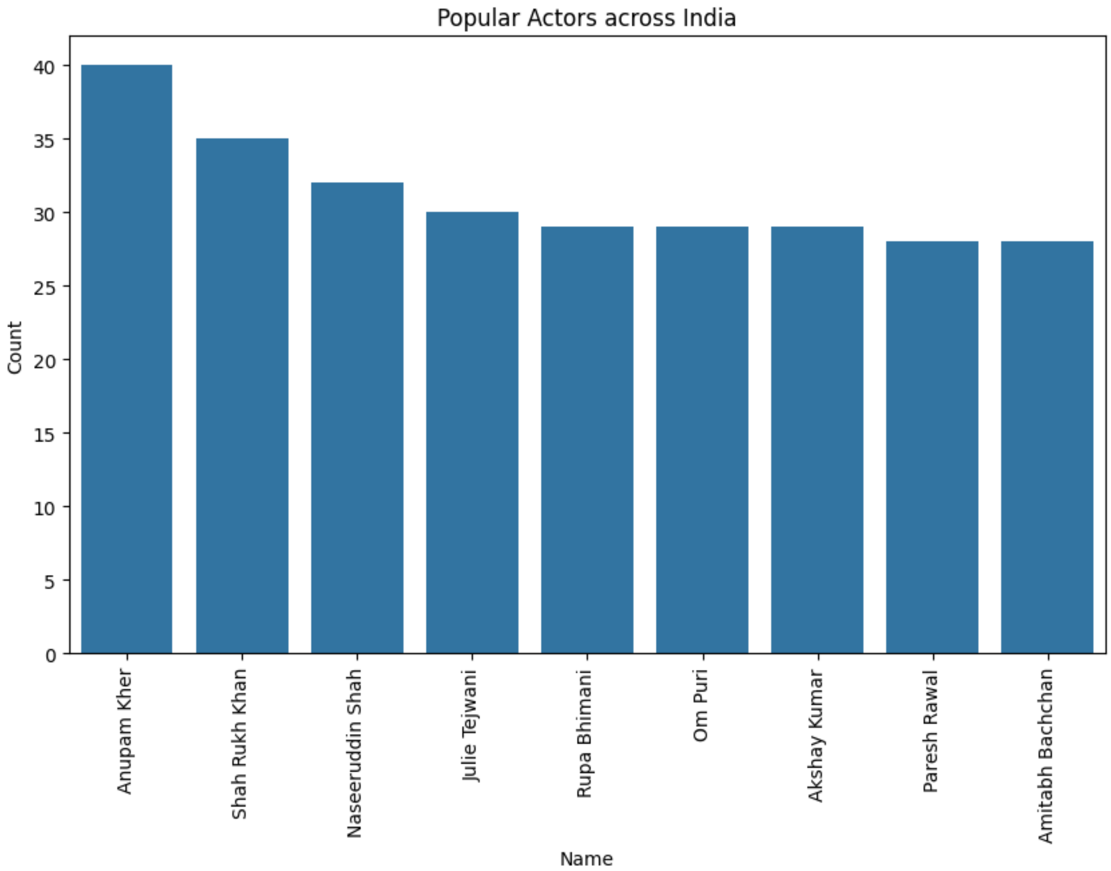
No. of movies added has declined in India after Year 2021.

[172]:
```
df_ind_month_added = df_ind.groupby(by=['month_added']).agg({'title':
 ↪'nunique'}).reset_index().sort_values(by=['title'], ascending = False)
plt.figure(figsize=(10, 6))
sns.lineplot(data=df_ind_month_added, y='title', x='month_added')
plt.title('month-wise trend in India')
plt.ylabel('Count')
plt.xlabel('Month')
plt.xticks(rotation = 90)
plt.show()
```



During the festive month's most of movies are added. As generally movies are added in march-april,August,October and December.

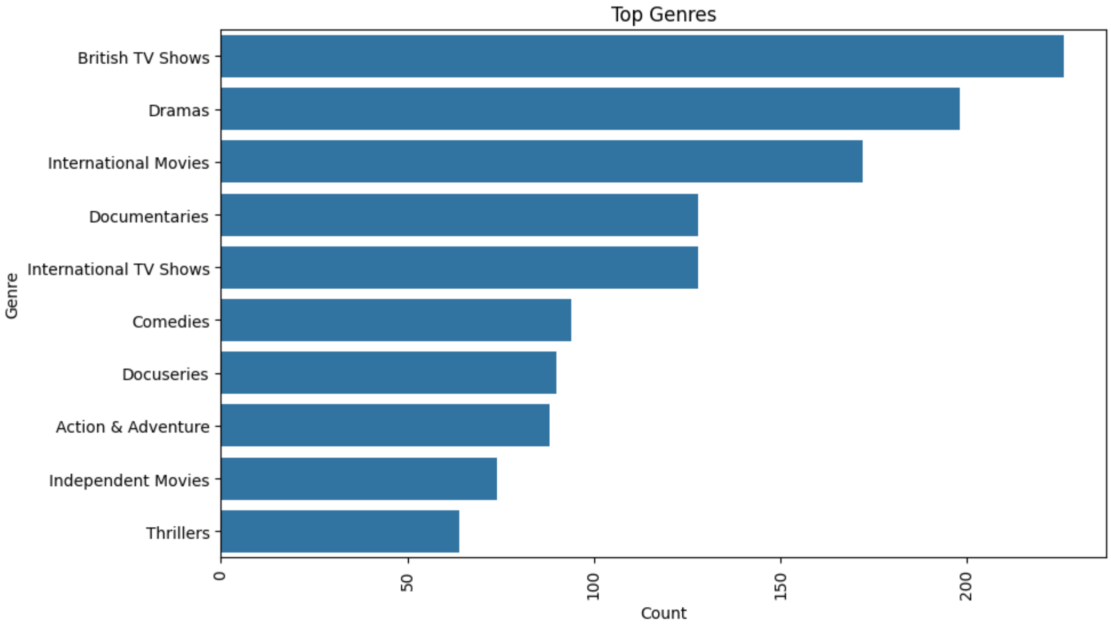
[176]:
```
df_ind_cast = df_ind.groupby(by=['cast']).agg({'title':'nunique'}).
  ↪reset_index().sort_values(by=['title'], ascending = False)[:10]
df_ind_cast = df_ind_cast[df_ind_cast['cast'] != 'Unknown Cast']
plt.figure(figsize=(10, 6))
sns.barplot(data=df_ind_cast, y='title', x='cast')
plt.title('Popular Actors across India')
plt.ylabel('Count')
plt.xlabel('Name')
plt.xticks(rotation = 90)
plt.show()
```



Anupam Kher, Shahrukh Khan, Naseeruddin Shah are popular actors across India which belongs to most of the movies.

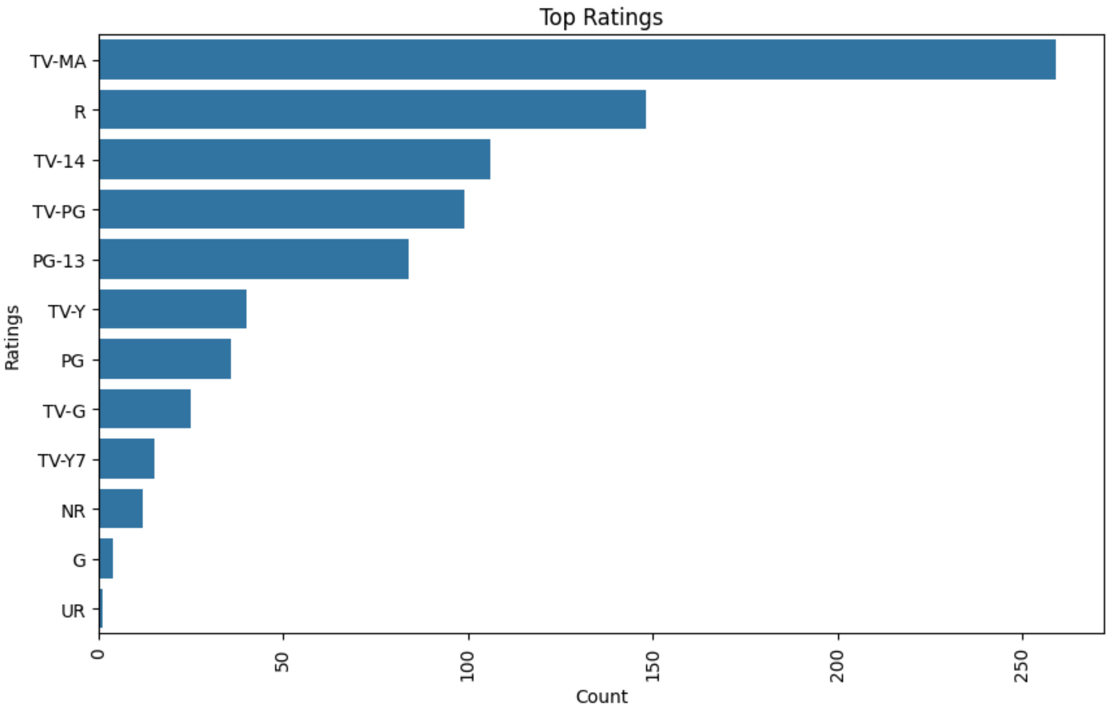
7 UK

[177]:
```
df_uk_genre = df_uk.groupby(by=['Genre']).agg({'title':'nunique'}).
  ↪reset_index().sort_values(by=['title'], ascending = False)[:10]
plt.figure(figsize=(10, 6))
sns.barplot(data=df_uk_genre, x='title', y='Genre')
plt.title('Top Genres')
plt.xlabel('Count')
plt.ylabel('Genre')
plt.xticks(rotation = 90)
plt.show()
```



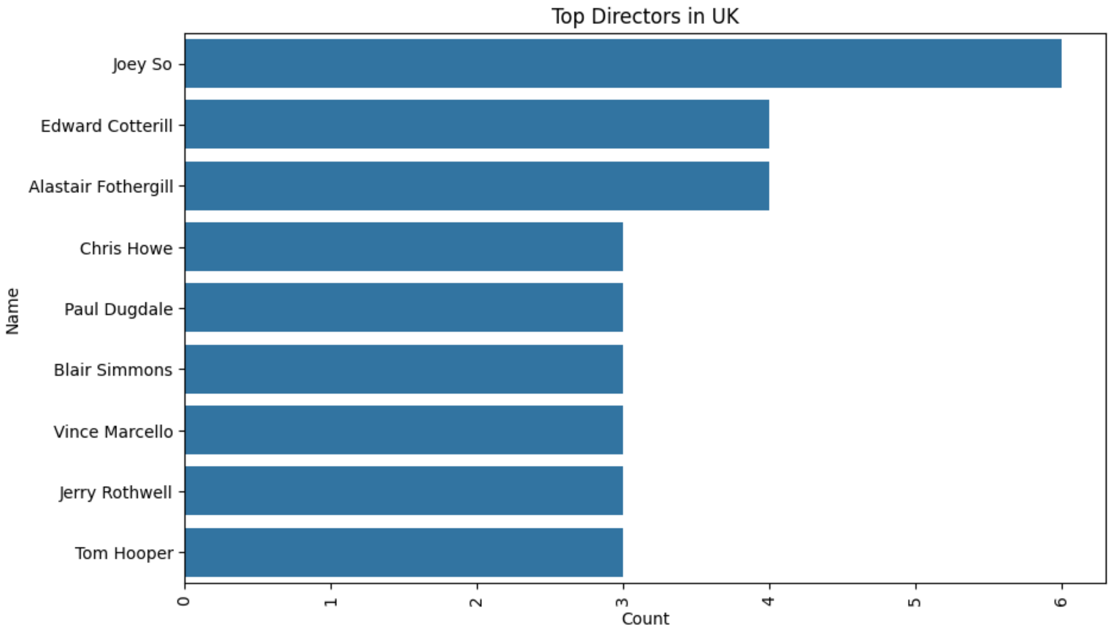
British Tv shows, Dramas are very popular in UK.

[178]:
```
df_uk_rating = df_uk.groupby(by=['rating']).agg({'title':'nunique'}).
  ↪reset_index().sort_values(by=['title'], ascending = False)
plt.figure(figsize=(10, 6))
sns.barplot(data=df_uk_rating, x='title', y='rating')
plt.title('Top Ratings')
plt.xlabel('Count')
plt.ylabel('Ratings')
plt.xticks(rotation = 90)
plt.show()
```



TV-MA, R, TV-14 are very popular ratings across UK.

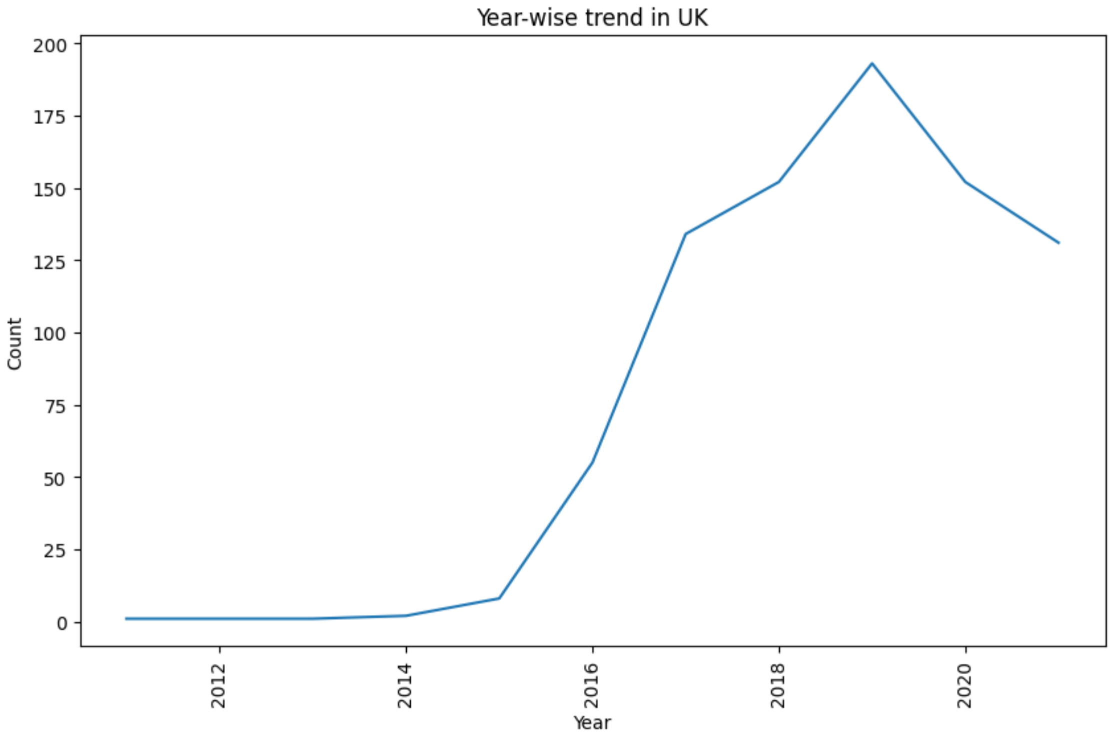
[180]:
```
df_uk_dir = df_uk.groupby(by=['director']).agg({'title':'nunique'}).
 ↪reset_index().sort_values(by=['title'], ascending = False)[:10]
df_uk_dir = df_uk_dir[df_uk_dir['director'] != 'Unknown Director']
plt.figure(figsize=(10, 6))
sns.barplot(data=df_uk_dir, x='title', y='director')
plt.title('Top Directors in UK')
plt.xlabel('Count')
plt.ylabel('Name')
plt.xticks(rotation = 90)
plt.show()
```



Joey So is the most popular director in UK.

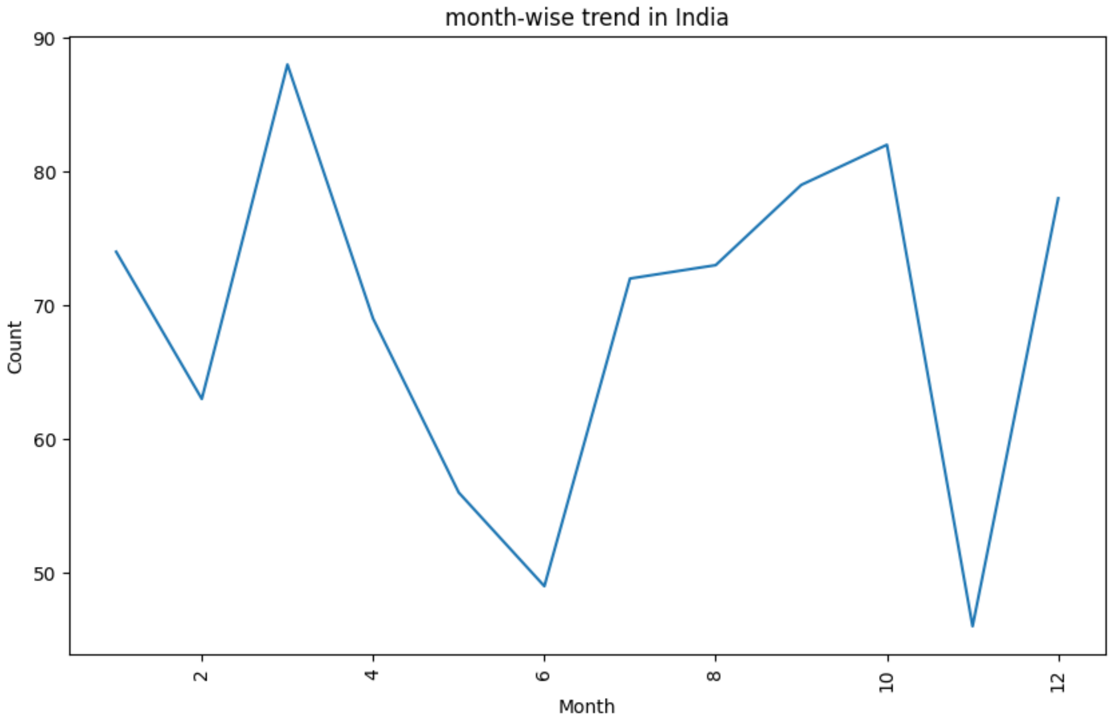
[181]:

```
df_uk_year_added = df_uk.groupby(by=['year_added']).agg({'title':'nunique'}).
 ↪reset_index().sort_values(by=['title'], ascending = False)
plt.figure(figsize=(10, 6))
sns.lineplot(data=df_uk_year_added, y='title', x='year_added')
plt.title('Year-wise trend in UK')
plt.ylabel('Count')
plt.xlabel('Year')
plt.xticks(rotation = 90)
plt.show()
```



No. of movies added increased drastically after year 2016 but started declining after year 2019.

[182]:
```
df_uk_month_added = df_uk.groupby(by=['month_added']).agg({'title':'nunique'}).
  ↪reset_index().sort_values(by=['title'], ascending = False)
plt.figure(figsize=(10, 6))
sns.lineplot(data=df_uk_month_added, y='title', x='month_added')
plt.title('month-wise trend in India')
plt.ylabel('Count')
plt.xlabel('Month')
plt.xticks(rotation = 90)
plt.show()
```



No. of movies added are on Peak in starting of year and ending of Year also goes down mid year.

8 Popular Actors across each genre

[186]:
```
df_final[df_final['cast'] != 'Unknown Cast'].groupby(['Genre']).agg({'cast':␣
 ↪lambda x: x.mode().iloc[0]})
```

[186]:
```
                                            cast
Genre
Action & Adventure                Luci Christian
Anime Features                       Andy McAvin
Anime Series                    Takahiro Sakurai
British TV Shows              David Attenborough
Children & Family Movies          John Krasinski
Classic & Cult TV                   Don S. Davis
Classic Movies                  Burgess Meredith
Comedies                             Tara Strong
Crime TV Shows                       Raúl Méndez
Cult Movies                          Keith David
Documentaries                        Samuel West
Docuseries                    David Attenborough
Dramas                               Liam Neeson
Faith & Spirituality              Abdelilah Wahbi
```

```
Horror Movies                       Lorenza Izzo
Independent Movies                  James Franco
International Movies                 Anupam Kher
International TV Shows          Takahiro Sakurai
Kids' TV                            Vincent Tong
Korean TV Shows                        Bae Doona
LGBTQ Movies                         Allan Paule
Movies                        David Attenborough
Music & Musicals                     Amrish Puri
Reality TV                        Anderson Silva
Romantic Movies                     Akshay Kumar
Romantic TV Shows                    Amanda Chou
Sci-Fi & Fantasy                  Luci Christian
Science & Nature TV           David Attenborough
Spanish-Language TV Shows      Carmen Villalobos
Sports Movies                       Jay Baruchel
Stand-Up Comedy                       Kevin Hart
Stand-Up Comedy & Talk Shows    Fortune Feimster
TV Action & Adventure                Lena Headey
TV Comedies                         John Sparkes
TV Dramas                           Joanna Kulig
TV Horror                        Jon Jon Briones
TV Mysteries                      Billy Campbell
TV Sci-Fi & Fantasy                  Lena Headey
TV Shows                             Aditi Balan
TV Thrillers                        Dara Hanfman
Teen TV Shows                          Ai Kayano
Thrillers                           Nicolas Cage
```

9 Popular Directors across each genre

[188]:

```python
df_final[df_final['director'] != 'Unknown Director'].groupby(['Genre']).agg({'director': lambda x: x.mode().iloc[0]})
```

[188]:

```
                                              director
Genre
Action & Adventure                     Martin Campbell
Anime Features                       Toshiya Shinohara
Anime Series                                 Jay Oliva
British TV Shows                            Noam Murro
Children & Family Movies                  Raja Gosnell
Classic & Cult TV                        Phil Sgriccia
Classic Movies                         Youssef Chahine
Comedies                                  Raja Gosnell
Crime TV Shows                        Alejandro Lozano
Cult Movies                               Edgar Wright
```

```
Documentaries                           Jehane Noujaim
Docuseries                             Juliana Vicente
Dramas                                 Martin Scorsese
Faith & Spirituality                       David Batty
Horror Movies                                James Wan
Independent Movies                      Lars von Trier
International Movies                   Youssef Chahine
International TV Shows                      Noam Murro
Kids' TV                                 Thomas Astruc
Korean TV Shows                          Kim Seong-hun
LGBTQ Movies                                  Jun Lana
Movies                                   Thomas Astruc
Music & Musicals                        Akiva Schaffer
Reality TV                             Andy Devonshire
Romantic Movies                    Cathy Garcia-Molina
Romantic TV Shows                         Carlos Sedes
Sci-Fi & Fantasy                         Peter Jackson
Science & Nature TV                      Everardo Gout
Spanish-Language TV Shows             Alejandro Lozano
Sports Movies                     Juan José Campanella
Stand-Up Comedy                              Jan Suter
Stand-Up Comedy & Talk Shows                Jung-ah Im
TV Action & Adventure                    Thomas Astruc
TV Comedies                             Guy Vasilovich
TV Dramas                                    Alan Poul
TV Horror                                    Jay Oliva
TV Mysteries                           Rob Seidenglanz
TV Sci-Fi & Fantasy                    Rob Seidenglanz
TV Shows                                  Arvind Swamy
TV Thrillers                                  Eli Roth
Teen TV Shows                      Pass Patthanakumjon
Thrillers                     Fernando González Molina
```

10 Top Actors Year-wise

[189]:

```
df_final[df_final['cast'] != 'Unknown Cast'].groupby(['year_added']).agg({'cast': lambda x: x.mode().iloc[0]})
```

[189]:

```
                            cast
year_added
2008                Barbara King
2009        Anders W. Berthelsen
2010               Anthony Kelly
2011                Judith Light
2012             Adrian Martinez
2013              Billy Campbell
```

```
2014                Andrea Libman
2015           David Attenborough
2016           David Attenborough
2017                Alfred Molina
2018                  Anupam Kher
2019          Matthias Schoenaerts
2020              Justin Fletcher
2021          Blossom Chukwujekwu
```

11 Top Directors Year wise

```
[191]: df_final[df_final['director'] != 'Unknown Director'].groupby(['year_added']).
        ↪agg({'director': lambda x: x.mode().iloc[0]})
```

```
[191]:                        director
       year_added
       2008         Sorin Dan Mihalcescu
       2009                Ole Bornedal
       2010                  Jim Monaco
       2011                  Rob LaDuca
       2012                 Tim Johnson
       2013                 Jason Moore
       2014              Jehane Noujaim
       2015                    Eli Roth
       2016                  Wilson Yip
       2017                 Umesh Mehra
       2018              Lars von Trier
       2019               Terry Gilliam
       2020             Youssef Chahine
       2021               Brad Anderson
```

##Recommendations 1. **Focus on Popular Genres**: - Concentrate on genres like Drama, Comedy, and International productions, as they have shown widespread popularity across different countries and in both TV Shows and Movies.

2. **Strategic Release Timing**:
   - Schedule the release of TV Shows and Movies during July, August, and the last week of the year or the first month of the following year to capitalize on peak viewership periods.
3. **Optimal Length for Movies**:
   - For movies, aim for a duration of 90-120 minutes, as this length is found to be optimal for viewer engagement. Additionally, consider producing TV Shows alongside these genres for added appeal.
4. **Target Audience Ratings**:
   - Tailor content for different regions:
     - For the USA and India, target audiences aged 14 and above.
     - For the UK, focus on Mature/R-rated content exclusively.
5. **Regional Content Preferences**:

    - Create content specifically tailored for Indian and UK audiences, particularly movies, as there has been a decline in interest since 2018.

6. **Leverage Popular Personalities**:
    - Take advantage of the popularity of well-known actors and directors within each country. Pay attention to successful director-actor combinations, as they can significantly enhance the appeal of the content.

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