import pandas as pd
import numpy as np
import matplotlib.pyplot as plt
import seaborn as sns

In [2]:

 $df = pd.read\_csv("/Users/mrunmay/desktop/netflix.csv")$ 

In [3]:

df

												Out[3]:	
	show_id	type	title	director	cast	country	date_added	release_year	rating	duration	listed_in	description	
0	s1	Movie	Dick Johnson Is Dead	Kirsten Johnson	NaN	United States	September 25, 2021	2020	PG- 13	90 min	Documentaries	As her father nears the end of his life, filmm	
1	s2	TV Show	Blood & Water	NaN	Ama Qamata, Khosi Ngema, Gail Mabalane, Thaban	South Africa	September 24, 2021	2021	TV- MA	2 Seasons	International TV Shows, TV Dramas, TV Mysteries	After crossing paths at a party, a Cape Town t	
2	s3	TV Show	Ganglands	Julien Leclercq	Sami Bouajila, Tracy Gotoas, Samuel Jouy, Nabi	NaN	September 24, 2021	2021	TV- MA	1 Season	Crime TV Shows, International TV Shows, TV Act	To protect his family from a powerful drug lor	
3	s4	TV Show	Jailbirds New Orleans	NaN	NaN	NaN	September 24, 2021	2021	TV- MA	1 Season	Docuseries, Reality TV	Feuds, flirtations and toilet talk go down amo	
4	s5	TV Show	Kota Factory	NaN	Mayur More, Jitendra Kumar, Ranjan Raj, Alam K	India	September 24, 2021	2021	TV- MA	2 Seasons	International TV Shows, Romantic TV Shows, TV	In a city of coaching centers known to train I	
								•••					
8802	s8803	Movie	Zodiac	David Fincher	Mark Ruffalo, Jake Gyllenhaal, Robert Downey J	United States	November 20, 2019	2007	R	158 min	Cult Movies, Dramas, Thrillers	A political cartoonist, a crime reporter and a	
8803	s8804	TV Show	Zombie Dumb	NaN	NaN	NaN	July 1, 2019	2018	TV- Y7	2 Seasons	Kids' TV, Korean TV Shows, TV Comedies	While living alone in a spooky town, a young g	
8804	s8805	Movie	Zombieland	Ruben Fleischer	Jesse Eisenberg, Woody Harrelson, Emma Stone,	United States	November 1, 2019	2009	R	88 min	Comedies, Horror Movies	Looking to survive in a world taken over by zo	
8805	s8806	Movie	Zoom	Peter Hewitt	Tim Allen, Courteney Cox, Chevy Chase, Kate Ma	United States	January 11, 2020	2006	PG	88 min	Children & Family Movies, Comedies	Dragged from civilian life, a former superhero	
8806	s8807	Movie	Zubaan	Mozez Singh	Vicky Kaushal, Sarah-Jane Dias, Raaghav Chanan	India	March 2, 2019	2015	TV-14	111 min	Dramas, International Movies, Music & Musicals	A scrappy but poor boy worms his way into a ty	

8807 rows × 12 columns

In [4]:

df.shape

Out[4]:

(8807, 12)

In [5]:

df.isnull().sum()

```
0
show_id
type
             0
           0
title
           2634
director
           825
cast
country
             831
date_added
                10
release_year
rating
             4
duration
              3
             0
listed_in
description
               0
dtype: int64
                                                                                                                                              In [6]:
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
   date_added 8797 non-null object
6
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 [7]:
df.describe()
                                                                                                                                              Out[7]:
        release_year
 count
        8807.000000
        2014.180198
 mean
   std
           8.819312
        1925.000000
   min
        2013.000000
  25%
        2017.000000
  50%
  75%
        2019.000000
  max
        2021.000000
                                                                                                                                               In [8]:
 df.nunique()
                                                                                                                                              Out[8]:
show_id
             8807
type
             2
          8807
title
           4528
director
cast
           7692
country
             748
date_added
              1767
release_year
               74
rating
            17
             220
duration
listed_in
            514
             8775
description
dtype: int64
                                                                                                                                               In [9]:
df["type"].value_counts()
```

Out[5]:

Movie 6131 TV Show 2676

Name: type, dtype: int64

In [10]:

Out[9]:

cast = df["cast"].apply(lambda x: str(x).split(", ")).tolist()
castdf = pd.DataFrame(cast,index=df["title"])
castnewdf=castdf.stack()
castnewdf=castnewdf.reset\_index()
castnewdf

Out[10]:

	title	level_1	0
0	Dick Johnson Is Dead	0	nan
1	Blood & Water	0	Ama Qamata
2	Blood & Water	1	Khosi Ngema
3	Blood & Water	2	Gail Mabalane
4	Blood & Water	3	Thabang Molaba
64946	Zubaan	3	Manish Chaudhary
64947	Zubaan	4	Meghna Malik
64948	Zubaan	5	Malkeet Rauni
64949	Zubaan	6	Anita Shabdish
64950	Zubaan	7	Chittaranjan Tripathy

64951 rows × 3 columns

castnewdf.drop(columns="level\_1",inplace = **True**)

titlo

castnewdf

	title	0
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 × 2 columns

castnewdf.columns=["title","cast"]

castnewdf.head()

In [11]:

In [12]:

Out[12]:

In [13]:

In [14]:

title	cast
Dick Johnson Is Dead	nan
Blood & Water	Ama Qamata
Blood & Water	Khosi Ngema
Blood & Water	Gail Mabalane
Blood & Water	Thabang Molaba
wdf.shape	
, 2)	
If ' O O	
ewar.isna().sum()	
0	
nt64	
,	Dick Johnson Is Dead Blood & Water Blood & Water Blood & Water Blood & Water Water Blood & Water Blood & Water  Blood & Water

df\_new = df.merge(castnewdf,on="title",how="left")

df\_new

Out[14]:

In [18]:

													Out[18]:
	show_id	type	title	director	cast_x	country	date_added	release_year	rating	duration	listed_in	description	cast_y
0	s1	Movie	Dick Johnson Is Dead	Kirsten Johnson	NaN	United States	September 25, 2021	2020	PG- 13	90 min	Documentaries	As her father nears the end of his life, filmm	nan
1	s2	TV Show	Blood & Water	NaN	Ama Qamata, Khosi Ngema, Gail Mabalane, Thaban	South Africa	September 24, 2021	2021	TV- MA		International TV Shows, TV Dramas, TV Mysteries	After crossing paths at a party, a Cape Town t	Ama Qamata
2	s2	TV Show	Blood & Water	NaN	Ama Qamata, Khosi Ngema, Gail Mabalane, Thaban	South Africa	September 24, 2021	2021	TV- MA	2 Seasons	International TV Shows, TV Dramas, TV Mysteries	After crossing paths at a party, a Cape Town t	Khosi Ngema
3	s2	TV Show	Blood & Water	NaN	Ama Qamata, Khosi Ngema, Gail Mabalane, Thaban	South Africa	September 24, 2021	2021	TV- MA	2 Seasons	International TV Shows, TV Dramas, TV Mysteries	After crossing paths at a party, a Cape Town t	Gail Mabalane
4	s2	TV Show	Blood & Water	NaN	Ama Qamata, Khosi Ngema, Gail Mabalane, Thaban	South Africa	September 24, 2021	2021	TV- MA	2 Seasons	International TV Shows, TV Dramas, TV Mysteries	After crossing paths at a party, a Cape Town t	Thabang Molaba
64946	s8807	Movie	Zubaan	Mozez Singh	Vicky Kaushal, Sarah-Jane Dias, Raaghav Chanan	India	March 2, 2019	2015	TV-14	111 min	Dramas, International Movies, Music & Musicals	A scrappy but poor boy worms his way into a ty	Manish Chaudhary
64947	s8807	Movie	Zubaan	Mozez Singh	Vicky Kaushal, Sarah-Jane Dias, Raaghav Chanan	India	March 2, 2019	2015	TV-14	111 min	Dramas, International Movies, Music & Musicals	A scrappy but poor boy worms his way into a ty	Meghna Malik
64948	s8807	Movie	Zubaan	Mozez Singh	Vicky Kaushal, Sarah-Jane Dias, Raaghav Chanan	India	March 2, 2019	2015	TV-14	111 min	Dramas, International Movies, Music & Musicals	A scrappy but poor boy worms his way into a ty	Malkeet Rauni
64949	s8807	Movie	Zubaan	Mozez Singh	Vicky Kaushal, Sarah-Jane Dias, Raaghav Chanan	India	March 2, 2019	2015	TV-14	111 min	Dramas, International Movies, Music & Musicals	A scrappy but poor boy worms his way into a ty	Anita Shabdish
64950	s8807	Movie	Zubaan	Mozez Singh	Vicky Kaushal, Sarah-Jane Dias, Raaghav Chanan	India	March 2, 2019	2015	TV-14	111 min	Dramas, International Movies, Music & Musicals	A scrappy but poor boy worms his way into a ty	Chittaranjan Tripathy

64951 rows × 13 columns

In [19]:

df\_new = df.drop(columns=["cast"]).merge(castnewdf,on="title",how="left")

In [20]:

df\_new

												Out[20]:
	show_id	type	title	director	country	date_added	release_year	rating	duration	listed_in	description	cast
0	s1	Movie	Dick Johnson Is Dead	Kirsten Johnson	United States	September 25, 2021	2020	PG- 13	90 min	Documentaries	As her father nears the end of his life, filmm	nan
1	s2	TV Show	Blood & Water	NaN	South Africa	September 24, 2021	2021	TV- MA	2 Seasons	International TV Shows, TV Dramas, TV Mysteries	After crossing paths at a party, a Cape Town t	Ama Qamata
2	s2	TV Show	Blood & Water	NaN	South Africa	September 24, 2021	2021	TV- MA	2 Seasons	International TV Shows, TV Dramas, TV Mysteries	After crossing paths at a party, a Cape Town t	Khosi Ngema
3	s2	TV Show	Blood & Water	NaN	South Africa	September 24, 2021	2021	TV- MA	2 Seasons	International TV Shows, TV Dramas, TV Mysteries	After crossing paths at a party, a Cape Town t	Gail Mabalane
4	s2	TV Show	Blood & Water	NaN	South Africa	September 24, 2021	2021	TV- MA	2 Seasons	International TV Shows, TV Dramas, TV Mysteries	After crossing paths at a party, a Cape Town t	Thabang Molaba
64946	s8807	Movie	Zubaan	Mozez Singh	India	March 2, 2019	2015	TV-14	111 min	Dramas, International Movies, Music & Musicals	A scrappy but poor boy worms his way into a ty	Manish Chaudhary
64947	s8807	Movie	Zubaan	Mozez Singh	India	March 2, 2019	2015	TV-14	111 min	Dramas, International Movies, Music & Musicals	A scrappy but poor boy worms his way into a ty	Meghna Malik
64948	s8807	Movie	Zubaan	Mozez Singh	India	March 2, 2019	2015	TV-14	111 min	Dramas, International Movies, Music & Musicals	A scrappy but poor boy worms his way into a ty	Malkeet Rauni
64949	s8807	Movie	Zubaan	Mozez Singh	India	March 2, 2019	2015	TV-14	111 min	Dramas, International Movies, Music & Musicals	A scrappy but poor boy worms his way into a ty	Anita Shabdish
64950	s8807	Movie	Zubaan	Mozez Singh	India	March 2, 2019	2015	TV-14	111 min	Dramas, International Movies, Music & Musicals	A scrappy but poor boy worms his way into a ty	Chittaranjan Tripathy

64951 rows × 12 columns

df\_new.cast.value\_counts().iloc[:5]

nan 825
Anupam Kher 43
Shah Rukh Khan 35
Julie Tejwani 33
Naseeruddin Shah 32
Name: cast, dtype: int64

In [21]:

Out[21]:

In [ ]:

In [ ]:

In [22]:

 $\label{listeddate} \begin{subarray}{ll} listeddate = df_new["listed_in"].apply(lambda x: str(x).split(", ")).tolist() \\ listeddate_new = pd.DataFrame(listeddate,index=df_new["title"]) \\ listeddate_new=listeddate_new.stack() \\ listeddate_new=listeddate_new.reset_index() \\ listeddate_new \end{subarray}$ 

0	level_1	title	
Documentaries	0	Dick Johnson Is Dead	0
International TV Shows	0	Blood & Water	1
TV Dramas	1	Blood & Water	2
TV Mysteries	2	Blood & Water	3
International TV Shows	0	Blood & Water	4
International Movies	1	Zubaan	149507
Music & Musicals	2	Zubaan	149508
Dramas	0	Zubaan	149509
International Movies	1	Zubaan	149510
Music & Musicals	2	Zubaan	149511

149512 rows × 3 columns

listeddate\_new.drop(columns="level\_1",inplace=True)

listeddate\_new

title 0 Dick Johnson Is 0 Documentaries Dead International TV Blood & Water 1 Shows 2 Blood & Water TV Dramas 3 Blood & Water TV Mysteries International TV Blood & Water 4 Shows 149507 Zubaan International Movies 149508 Music & Musicals Zubaan 149509 Zubaan Dramas 149510 Zubaan International Movies 149511 Zubaan Music & Musicals

149512 rows × 2 columns

listeddate\_new.columns=["title","listed\_in"]

listeddate\_new

In [23]:

Out[22]:

In [24]:

Out[24]:

In [25]:

In [26]:

			title		listed	in							Out[26]:
	0	Dick Jo	hnson Is Dead		Documentar								
	1	Blood	d & Water	ı	International Sho								
	2	Blood	l & Water		TV Dran								
	3		Blood & Water TV Mysteries										
	4	Blood	l & Water	I	International Sho								
14950			Zubaan	Inter	national Mov								
14950	08		Zubaan	M	lusic & Music	als							
14950	09		Zubaan		Dran	nas							
14951	10		Zubaan	Inter	national Mov	vies							
14951	11		Zubaan	M	lusic & Music	cals							
14951	12 rows	× 2 col	lumns										
													In [27]:
df_fir	nal=df_i	new.dro	p(columr	ns=["list	ted_in"]).m	erge(listed	ddate_new,on:	="title",how="l	eft")				
													In [28]:
df_fir	nal.head	d()											
df_fir	nal.head	d()											Out[28]:
	nal.head	d()		title	director	country	date_added	release_year	rating	duration	description	cast	Out[28]: listed_in
			Dick Joh Is		director Kirsten Johnson	country United States	date_added September 25, 2021	release_year	rating PG- 13	duration 90 min	description As her father nears the end of his life, filmm	<b>cast</b> nan	listed_in
sh	now_id	type		nnson Dead	Kirsten	United	September		PG-	90 min	As her father nears the end of	nan Ama	listed_in
sh 0	now_id s1	type Movie	Is	nnson Dead Water	Kirsten Johnson	United States South	September 25, 2021	2020	PG- 13	90 min 2 Seasons 2	As her father nears the end of his life, filmm  After crossing paths at a party,	nan Ama Qamata Ama	listed_in  Documentaries  International
sh 0 1	now_id s1 s2	type Movie TV Show	Is Blood & \	nnson Dead Water Water	Kirsten Johnson NaN	United States South Africa	September 25, 2021 September 24, 2021 September	2020	PG- 13 TV- MA TV- MA TV-	90 min 2 Seasons 2	As her father nears the end of his life, filmm  After crossing paths at a party, a Cape Town t  After crossing paths at a party,	nan Ama Qamata Ama Qamata Ama	listed_in  Documentaries  International TV Shows
sh 0 1 2	now_id s1 s2 s2	type  Movie  TV Show  TV Show  TV	Blood & V	nnson Dead Water Water Water	Kirsten Johnson NaN NaN	United States South Africa South Africa South	September 25, 2021 September 24, 2021 September 24, 2021 September 24, 2021 September	2020 2021 2021	PG- 13 TV- MA TV- MA TV-	90 min 2 Seasons 2 Seasons 2 Seasons	As her father nears the end of his life, filmm  After crossing paths at a party, a Cape Town t  After crossing paths at a party, a Cape Town t  After crossing paths at a party,	nan Ama Qamata Ama Qamata Ama Qamata Ama Qamata	listed_in  Documentaries  International TV Shows  TV Dramas
sh 0 1 2 3	s1 s2 s2 s2	type  Movie  TV Show  TV Show  TV Show  TV TV	Blood & V Blood & V	nnson Dead Water Water Water	Kirsten Johnson NaN NaN NaN	United States South Africa South Africa South Africa South	September 25, 2021 September 24, 2021 September 24, 2021 September 24, 2021 September 24, 2021 September	2020 2021 2021 2021	PG- 13 TV- MA TV- MA TV- MA TV-	90 min 2 Seasons 2 Seasons 2 Seasons	As her father nears the end of his life, filmm  After crossing paths at a party, a Cape Town t  After crossing paths at a party, a Cape Town t  After crossing paths at a party, a Cape Town t  After crossing paths at a party, a Cape Town t	nan Ama Qamata Ama Qamata Ama Qamata Ama Qamata	listed_in  Documentaries  International TV Shows TV Dramas  TV Mysteries International
sh 0 1 2 3 4	s1 s2 s2 s2	type  Movie  TV Show  TV Show  TV Show  TV Show	Blood & V Blood & V	nnson Dead Water Water Water	Kirsten Johnson NaN NaN NaN	United States South Africa South Africa South Africa South	September 25, 2021 September 24, 2021 September 24, 2021 September 24, 2021 September 24, 2021 September	2020 2021 2021 2021	PG- 13 TV- MA TV- MA TV- MA TV-	90 min 2 Seasons 2 Seasons 2 Seasons	As her father nears the end of his life, filmm  After crossing paths at a party, a Cape Town t  After crossing paths at a party, a Cape Town t  After crossing paths at a party, a Cape Town t  After crossing paths at a party, a Cape Town t	nan Ama Qamata Ama Qamata Ama Qamata Ama Qamata	listed_in  Documentaries  International TV Shows  TV Dramas  TV Mysteries  International TV Shows
sh 0 1 2 3 4 df_fir	s1 s2 s2 s2 s2 s2	type  Movie  TV Show  TV Show  TV Show  TV Show  TV Show	Blood & V Blood & V	nnson Dead Water Water Water	Kirsten Johnson NaN NaN NaN	United States South Africa South Africa South Africa South	September 25, 2021 September 24, 2021 September 24, 2021 September 24, 2021 September 24, 2021 September	2020 2021 2021 2021	PG- 13 TV- MA TV- MA TV- MA TV-	90 min 2 Seasons 2 Seasons 2 Seasons	As her father nears the end of his life, filmm  After crossing paths at a party, a Cape Town t  After crossing paths at a party, a Cape Town t  After crossing paths at a party, a Cape Town t  After crossing paths at a party, a Cape Town t	nan Ama Qamata Ama Qamata Ama Qamata Ama Qamata	listed_in  Documentaries  International TV Shows  TV Dramas  TV Mysteries  International TV Shows
sh 0 1 2 3 4 df_fir	s1 s2 s2 s2 s2	type  Movie  TV Show  TV Show  TV Show  TV Show  TV Show	Blood & V Blood & V	nnson Dead Water Water Water	Kirsten Johnson NaN NaN NaN	United States South Africa South Africa South Africa South	September 25, 2021 September 24, 2021 September 24, 2021 September 24, 2021 September 24, 2021 September	2020 2021 2021 2021	PG- 13 TV- MA TV- MA TV- MA TV-	90 min 2 Seasons 2 Seasons 2 Seasons	As her father nears the end of his life, filmm  After crossing paths at a party, a Cape Town t  After crossing paths at a party, a Cape Town t  After crossing paths at a party, a Cape Town t  After crossing paths at a party, a Cape Town t	nan Ama Qamata Ama Qamata Ama Qamata Ama Qamata	listed_in  Documentaries  International TV Shows  TV Dramas  TV Mysteries  International TV Shows  In [29]:  Out[29]:
sh 0 1 2 3 4 df_fir	s1 s2 s2 s2 s2 s2 ral.shap	type  Movie  TV Show  TV Show  TV Show  TV Show  TV Show	Blood & V Blood & V Blood & V	nnson Dead Water Water Water	Kirsten Johnson NaN NaN NaN	United States South Africa South Africa South Africa South	September 25, 2021 September 24, 2021 September 24, 2021 September 24, 2021 September 24, 2021 September	2020 2021 2021 2021	PG- 13 TV- MA TV- MA TV- MA TV-	90 min 2 Seasons 2 Seasons 2 Seasons	As her father nears the end of his life, filmm  After crossing paths at a party, a Cape Town t  After crossing paths at a party, a Cape Town t  After crossing paths at a party, a Cape Town t  After crossing paths at a party, a Cape Town t	nan Ama Qamata Ama Qamata Ama Qamata Ama Qamata	listed_in  Documentaries  International TV Shows  TV Dramas  TV Mysteries  International TV Shows  In [29]:
sh 0 1 2 3 4 df_fir (1559	s1 s2 s2 s2 s2 s2 ral.shap	type  Movie  TV Show  TV Show  TV Show  TV Show  TV Show	Blood & V Blood & V Blood & V	nnson Dead Water Water Water	Kirsten Johnson NaN NaN NaN	United States South Africa South Africa South Africa South	September 25, 2021 September 24, 2021 September 24, 2021 September 24, 2021 September 24, 2021 September	2020 2021 2021 2021	PG- 13 TV- MA TV- MA TV- MA TV-	90 min 2 Seasons 2 Seasons 2 Seasons	As her father nears the end of his life, filmm  After crossing paths at a party, a Cape Town t  After crossing paths at a party, a Cape Town t  After crossing paths at a party, a Cape Town t  After crossing paths at a party, a Cape Town t	nan Ama Qamata Ama Qamata Ama Qamata Ama Qamata	listed_in  Documentaries  International TV Shows  TV Dramas  TV Mysteries  International TV Shows  In [29]:  Out[29]:

date\_added 1604
release\_year 0
rating 1119
duration 3
description 0
cast 0
listed\_in 0
dtype: int64

0

536723 110077

type title director country

df\_final.dropna(inplace=**True**)

In [32]:

In [33]:

df\_final.isnull().sum()

```
Out[33]:
show\_id
             0
           0
type
         0
title
           0
director
country
            0
date_added
release_year
rating
            0
duration
description 0
           0
cast
listed_in
           0
dtype: int64
                                                                                                                                                In [36]:
df_final.shape
                                                                                                                                               Out[36]:
(962719, 12)
                                                                                                                                                In [38]:
df_final.drop_duplicates(inplace=True)
                                                                                                                                                In [31]:
df_final.nunique()
                                                                                                                                               Out[31]:
show_id
             8807
type
             2
          8807
title
director
            4528
country
             748
date_added
              1767
release_year
                74
             17
rating
             220
duration
description
             8775
           36440
cast
              42
listed_in
dtype: int64
                                                                                                                                                In [39]:
df_final.drop_duplicates()
```

												Out[39]:
	show_id	type	title	director	country	date_added	release_year	rating	duration	description	cast	listed_in
0	s1	Movie	Dick Johnson Is Dead	Kirsten Johnson	United States	September 25, 2021	2020	PG- 13	90 min	As her father nears the end of his life, filmm	nan	Documentaries
2389	s8	Movie	Sankofa	Haile Gerima	United States, Ghana, Burkina Faso, United Kin	September 24, 2021	1993	TV- MA	125 min	On a photo shoot in Ghana, an American model s	Kofi Ghanaba	Dramas
2390	s8	Movie	Sankofa	Haile Gerima	United States, Ghana, Burkina Faso, United Kin	September 24, 2021	1993	TV- MA	125 min	On a photo shoot in Ghana, an American model s	Kofi Ghanaba	Independent Movies
2391	s8	Movie	Sankofa	Haile Gerima	United States, Ghana, Burkina Faso, United Kin	September 24, 2021	1993	TV- MA	125 min	On a photo shoot in Ghana, an American model s	Kofi Ghanaba	International Movies
2413	s8	Movie	Sankofa	Haile Gerima	United States, Ghana, Burkina Faso, United Kin	September 24, 2021	1993	TV- MA	125 min	On a photo shoot in Ghana, an American model s	Oyafunmike Ogunlano	Dramas
1559743	s8807	Movie	Zubaan	Mozez Singh	India	March 2, 2019	2015	TV-14	111 min	A scrappy but poor boy worms his way into a ty	Anita Shabdish	International Movies
1559744	s8807	Movie	Zubaan	Mozez Singh	India	March 2, 2019	2015	TV-14	111 min	A scrappy but poor boy worms his way into a ty	Anita Shabdish	Music & Musicals
1559766	s8807	Movie	Zubaan	Mozez Singh	India	March 2, 2019	2015	TV-14	111 min	A scrappy but poor boy worms his way into a ty	Chittaranjan Tripathy	Dramas
1559767	s8807	Movie	Zubaan	Mozez Singh	India	March 2, 2019	2015	TV-14	111 min	A scrappy but poor boy worms his way into a ty	Chittaranjan Tripathy	International Movies
1559768	s8807	Movie	Zubaan	Mozez Singh	India	March 2, 2019	2015	TV-14	111 min	A scrappy but poor boy worms his way into a ty	Chittaranjan Tripathy	Music & Musicals
98660 rov	ws × 12 co	olumns										
												In [40]:
df_final.s	shape											
(98660, 1	2)											Out[40]:
(00000, 1												In [ ]:
												In [ ]:
												In [ ]:
												In [41]:
df_final["	country"].	value_c	ounts()									Out[41]:
United St India	ates		28 <sup>-</sup> 18844	713								
United Ki	ngdom		:	2385								
Japan Nigeria			2309 2124									
	atas III											
United St United St Germany	ates, Ven	ezuela	weden	1 1 1								

country - df final["country"] apply(lambda v: str(v) split(" ")) tolist()

United States, Brazil, Japan, Spain, India Name: country, Length: 658, dtype: int64

United States, Denmark

NA 1 P 10

In [42]:

Country = di_iniai[ country ].appry(lambda x. str(x).spirt( , /).tonst()
country_new = pd.DataFrame(country,index=df_final["title"])
country_new=country_new.stack()
country_new=country_new.reset_index()
country_new
· · · · ·

	title	level_1	0
0	Dick Johnson Is Dead	0	United States
1	Sankofa	0	United States
2	Sankofa	1	Ghana
3	Sankofa	2	Burkina Faso
4	Sankofa	3	United Kingdom
129442	Zubaan	0	India
129443	Zubaan	0	India
129444	Zubaan	0	India
129445	Zubaan	0	India
129446	Zubaan	0	India

129447 rows × 3 columns

 $country\_new.drop(columns="level\_1",inplace=\pmb{True})$ 

country\_new.head()

title	0
Dick Johnson Is Dead	United States
Sankofa	United States
Sankofa	Ghana
Sankofa	Burkina Faso
Sankofa	United Kingdom
	Dick Johnson Is Dead Sankofa Sankofa Sankofa

country\_new.columns=["title","country"]

country\_new

	title	country
0	Dick Johnson Is Dead	United States
1	Sankofa	United States
2	Sankofa	Ghana
3	Sankofa	Burkina Faso
4	Sankofa	United Kingdom
129442	Zubaan	India
129443	Zubaan	India
129444	Zubaan	India
129445	Zubaan	India
129446	Zubaan	India

129447 rows × 2 columns

Out[42]:

In [43]:

In [44]:

Out[44]:

In [45]:

In [46]:

. .

Out[46]:

```
country_new.shape
                                                                                                                                                             Out[47]:
(129447, 2)
                                                                                                                                                                 In []:
                                                                                                                                                                 In []:
                                                                                                                                                                 In []:
                                                                                                                                                                 In []:
                                                                                                                                                              In [48]:
 final_data=df_final.drop(columns=["country"]).merge(country_new,on="title",how="left")
                                                                                                                                                              In [50]:
 final_data.head()
                                                                                                                                                             Out[50]:
    show_id
                               title
                                       director
                                                   date_added release_year rating
                                                                                                                  description
                                                                                                                                                          country
                                                                                      duration
                                                                                                                                   cast
                                                                                                                                               listed_in
               type
                       Dick Johnson
                                         Kirsten
                                                    September
                                                                                                  As her father nears the end of
                                                                                                                                                            United
                                                                        2020
                                                                                         90 min
                                                                                                                                          Documentaries
              Movie
                                                                                                                                    nan
                            Is Dead
                                        Johnson
                                                      25, 2021
                                                                                  13
                                                                                                                his life, filmm...
                                                                                                                                                            States
                                                                                 TV-
                                                                                                 On a photo shoot in Ghana, an
                                                                                                                                                            United
                                          Haile
                                                    September
                                                                                                                                    Kofi
          s8
              Movie
                            Sankofa
                                                                        1993
                                                                                        125 min
                                                                                                                                                Dramas
                                                      24, 2021
                                        Gerima
                                                                                 MA
                                                                                                                               Ghanaba
                                                                                                                                                            States
                                                                                                           American model s...
                                          Haile
                                                    September
                                                                                                 On a photo shoot in Ghana, an
                                                                                                                                    Kofi
                                                                                        125 min
                           Sankofa
                                                                        1993
                                                                                                                                                           Ghana
          s8
              Movie
                                                                                                                                                Dramas
                                         Gerima
                                                      24, 2021
                                                                                  MA
                                                                                                                               Ghanaba
                                                                                                           American model s...
                                          Haile
                                                    September
                                                                                 TV-
                                                                                                 On a photo shoot in Ghana, an
                                                                                                                                    Kofi
                                                                                                                                                          Burkina
          s8
              Movie
                            Sankofa
                                                                         1993
                                                                                                                                                Dramas
                                        Gerima
                                                      24, 2021
                                                                                 MA
                                                                                                           American model s...
                                                                                                                               Ghanaba
                                                                                                                                                             Faso
                                          Haile
                                                    September
                                                                                                                                    Kofi
                                                                                                                                                            United
                                                                                                 On a photo shoot in Ghana, an
                                                                                        125 min
          s8
                            Sankofa
                                                                        1993
             Movie
                                                                                                                                                Dramas
                                         Gerima
                                                      24, 2021
                                                                                  MA
                                                                                                           American model s...
                                                                                                                               Ghanaba
                                                                                                                                                         Kingdom
                                                                                                                                                              In [51]:
final_data.shape
                                                                                                                                                             Out[51]:
(3161293, 12)
                                                                                                                                                              In [52]:
final_data.isnull().sum()
                                                                                                                                                             Out[52]:
show_id
              0
            0
           0
             0
```

In [53]:

type title director date\_added 0 release\_year rating 0 duration 0

0

0

0

0

description

dtype: int64

cast

listed\_in

country

final data.head()

													Out[53]:
	show_id	ty	ре	title	director	date_added	release_year	rating	duration	description	cast	listed_in	country
0	s1	Mov	vie	Dick Johnson Is Dead	Kirsten Johnson	September 25, 2021	2020	PG- 13	90 min	As her father nears the end of his life, filmm	nan	Documentaries	United States
1	s8	Mov	vie	Sankofa	Haile Gerima	September 24, 2021	1993	TV- MA	125 min	On a photo shoot in Ghana, an American model s	Kofi Ghanaba	Dramas	United States
2	s8	Mov	vie	Sankofa	Haile Gerima	September 24, 2021	1993	TV- MA	125 min	On a photo shoot in Ghana, an American model s	Kofi Ghanaba	Dramas	Ghana
3	s8	Mov	vie	Sankofa	Haile Gerima	September 24, 2021	1993	TV- MA	125 min	On a photo shoot in Ghana, an American model s	Kofi Ghanaba	Dramas	Burkina Faso
4	s8	Mov	vie	Sankofa	Haile Gerima	September 24, 2021	1993	TV- MA	125 min	On a photo shoot in Ghana, an American model s	Kofi Ghanaba	Dramas	United Kingdom

In [54]:

final\_data["type"].value\_counts()

Out[54]:

Movie 3015506 TV Show 145787 Name: type, dtype: int64

In [56]:

final\_data.nunique()

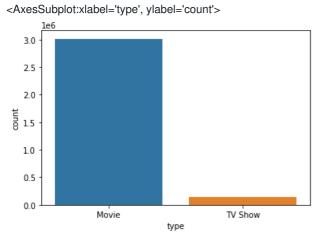
Out[56]:

5747 show\_id 2 type title 5747 director 4285 1516 date\_added release\_year 73 rating 204 duration description 5736 25459 cast listed\_in 42 122 country dtype: int64

In [57]:

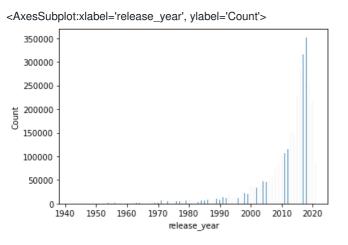
sns.countplot(x="type",data=final\_data)

Out[57]:

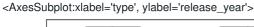


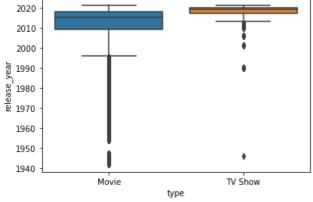
In [58]:

sns.histplot(data=final\_data["release\_year"])



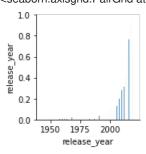
 $sns.boxplot(x="type",y="release\_year",data=final\_data)\\$ 





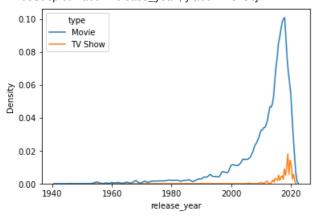
 $sns.pairplot(data=final\_data)$ 

<seaborn.axisgrid.PairGrid at 0x7fc8a87a88e0>



sns.kdeplot(x="release\_year",hue="type",data=final\_data)

## <AxesSubplot:xlabel='release\_year', ylabel='Density'>



sns.boxplot(x="rating", y="release\_year", data=final\_data)
plt.xticks(rotation=90)

In [59]:

Out[58]:

Out[59]:

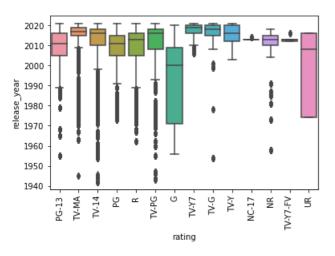
In [68]:

Out[68]:

In [63]:

Out[63]:

## plt.show()



In [ ]: