

Netflix Data Exploration

```
In [371... import pandas as pd  
import numpy as np
```

```
In [373... netflix = pd.read_csv(r"C:\Users\thier\OneDrive\Desktop\Data\netflix_titles.csv")
```

```
In [375... netflix
```

Out[375...

	show_id	type	title	director	cast	country	date_added	release_year	rating	duration	listed_in	de
0	s1	Movie	Dick Johnson Is Dead	Kirsten Johnson	NaN	United States	September 25, 2021	2020	PG-13	90 min	Documentaries	fa t
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	C
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...	-
3	s4	TV Show	Jailbirds New Orleans	NaN	NaN	NaN	September 24, 2021	2021	TV-MA	1 Season	Docuseries, Reality TV	
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 ...	I
...	
8802	s8803	Movie	Zodiac	David Fincher	Mark Ruffalo,	United States	November 20, 2019	2007	R	158 min	Cult Movies, Dramas,	c

show_id		type	title	director	cast	country	date_added	release_year	rating	duration	listed_in	de
					Jake Gyllenhaal, Robert Downey J...						Thrillers	
8803	s8804	TV Show	Zombie Dumb	NaN	NaN	NaN	July 1, 2019	2018	TV-Y7	2 Seasons	Kids' TV, Korean TV Shows, TV Comedies	W
8804	s8805	Movie	Zombieland	Ruben Fleischer	Jesse Eisenberg, Woody Harrelson, Emma Stone, ...	United States	November 1, 2019	2009	R	88 min	Comedies, Horror Movies	L st wo ov
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	c su
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	b hi:

8807 rows × 12 columns

Dataset Information

In [378...

```
netflix.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

```

Dataset Summary

In [381... netflix.describe()

Out[381... **release_year**

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

Checking for null values.

```
In [384... netflix.isnull().sum()
```

```
Out[384... show_id      0
            type      0
            title     0
            director  2634
            cast      825
            country   831
            date_added 10
            release_year 0
            rating     4
            duration   3
            listed_in  0
            description 0
            dtype: int64
```

```
In [386... # Drop all null values
netflix = netflix.dropna()
```

```
In [388... # Update verification
netflix.isnull().sum()
```

```
Out[388... show_id      0
            type      0
            title     0
            director   0
            cast       0
            country    0
            date_added 0
            release_year 0
            rating     0
            duration   0
            listed_in  0
            description 0
            dtype: int64
```

```
In [390... # Display first 10 rows
netflix.head(10)
```

Out[390...

	show_id	type	title	director	cast	country	date_added	release_year	rating	duration	listed_in	des
7	s8	Movie	Sankofa	Haile Gerima	Kofi Ghanaba, Oyafunmike Ogunlano, Alexandra D...	United States, Ghana, Burkina Faso, United Kin...	September 24, 2021	1993	TV-MA	125 min	Dramas, Independent Movies, International Movies	On G A n
8	s9	TV Show	The Great British Baking Show	Andy Devonshire	Mel Giedroyc, Sue Perkins, Mary Berry, Paul Ho...	United Kingdom	September 24, 2021	2021	TV-14	9 Seasons	British TV Shows, Reality TV	A bal
9	s10	Movie	The Starling	Theodore Melfi	Melissa McCarthy, Chris O'Dowd, Kevin Kline, T...	United States	September 24, 2021	2021	PG-13	104 min	Comedies, Dramas	A adj lif ci
12	s13	Movie	Je Suis Karl	Christian Schwochow	Luna Wedler, Jannis Niewöhner, Milan Peschel, ...	Germany, Czech Republic	September 23, 2021	2021	TV-MA	127 min	Dramas, International Movies	After her mur
24	s25	Movie	Jeans	S. Shankar	Prashanth, Aishwarya Rai Bachchan, Sri Lakshmi...	India	September 21, 2021	1998	TV-14	166 min	Comedies, International Movies, Romantic Movies	W fath lov

	show_id	type	title	director	cast	country	date_added	release_year	rating	duration	listed_in	des
27	s28	Movie	Grown Ups	Dennis Dugan	Adam Sandler, Kevin James, Chris Rock, David S...	United States	September 20, 2021	2010	PG-13	103 min	Comedies	M th their junio
28	s29	Movie	Dark Skies	Scott Stewart	Keri Russell, Josh Hamilton, J.K. Simmons, Dak...	United States	September 19, 2021	2013	PG-13	97 min	Horror Movies, Sci-Fi & Fantasy	A subu
29	s30	Movie	Paranoia	Robert Luketic	Liam Hemsworth, Gary Oldman, Amber Heard, Harr...	United States, India, France	September 19, 2021	2013	PG-13	106 min	Thrillers	Blac co CEC
38	s39	Movie	Birth of the Dragon	George Nolfi	Billy Magnussen, Ron Yuan, Qu Jingjing, Terry ...	China, Canada, United States	September 16, 2021	2017	PG-13	96 min	Action & Adventure, Dramas	B ang tradit
41	s42	Movie	Jaws	Steven Spielberg	Roy Scheider, Robert Shaw, Richard Dreyfuss, L...	United States	September 16, 2021	1975	PG	124 min	Action & Adventure, Classic Movies, Dramas	V ir gre te

We notice that some content took place in different locations, so let find split those locations into each content.

```
In [393... # Create an array of list of countries
netflix['country'] = netflix['country'].str.split(",")
```

C:\Users\thier\AppData\Local\Temp\ipykernel_26772\4180386996.py: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

```
netflix['country'] = netflix['country'].str.split(",")
```

```
In [395... netflix.head(5)
```


Out[395...

	show_id	type	title	director	cast	country	date_added	release_year	rating	duration	listed_in	desc
7	s8	Movie	Sankofa	Haile Gerima	Kofi Ghanaba, Oyafunmike Ogunlano, Alexandra D...	[United States, Ghana, Burkina Faso, United...	September 24, 2021	1993	TV-MA	125 min	Dramas, Independent Movies, International Movies	On a s Gh Ar mo
8	s9	TV Show	The Great British Baking Show	Andy Devonshire	Mel Giedroyc, Sue Perkins, Mary Berry, Paul Ho...	[United Kingdom]	September 24, 2021	2021	TV-14	9 Seasons	British TV Shows, Reality TV	A ta b a bake
9	s10	Movie	The Starling	Theodore Melfi	Melissa McCarthy, Chris O'Dowd, Kevin Kline, T...	[United States]	September 24, 2021	2021	PG-13	104 min	Comedies, Dramas	A adju life co
12	s13	Movie	Je Suis Karl	Christian Schwochow	Luna Wedler, Jannis Niewöhner, Milan Peschel, ...	[Germany, Czech Republic]	September 23, 2021	2021	TV-MA	127 min	Dramas, International Movies	Afte f mu in
24	s25	Movie	Jeans	S. Shankar	Prashanth, Aishwarya Rai Bachchan, Sri Lakshmi...	[India]	September 21, 2021	1998	TV-14	166 min	Comedies, International Movies, Romantic Movies	Wh fa tl sh in



In [397...

```
# Unnest each country by content title
netflix = netflix.explode(['country'])
```

In [399...

```
# Display Content,  
netflix
```

Out[399...

	show_id	type	title	director	cast	country	date_added	release_year	rating	duration	listed_in	de	
	7	s8	Movie	Sankofa	Haile Gerima	Kofi Ghanaba, Oyafunmike Ogunlano, Alexandra D...	United States	September 24, 2021	1993	TV-MA	125 min	Dramas, Independent Movies, International Movies	On
	7	s8	Movie	Sankofa	Haile Gerima	Kofi Ghanaba, Oyafunmike Ogunlano, Alexandra D...	Ghana	September 24, 2021	1993	TV-MA	125 min	Dramas, Independent Movies, International Movies	On
	7	s8	Movie	Sankofa	Haile Gerima	Kofi Ghanaba, Oyafunmike Ogunlano, Alexandra D...	Burkina Faso	September 24, 2021	1993	TV-MA	125 min	Dramas, Independent Movies, International Movies	On
	7	s8	Movie	Sankofa	Haile Gerima	Kofi Ghanaba, Oyafunmike Ogunlano, Alexandra D...	United Kingdom	September 24, 2021	1993	TV-MA	125 min	Dramas, Independent Movies, International Movies	On
	7	s8	Movie	Sankofa	Haile Gerima	Kofi Ghanaba, Oyafunmike Ogunlano, Alexandra D...	Germany	September 24, 2021	1993	TV-MA	125 min	Dramas, Independent Movies, International Movies	On
		
8801	s8802	Movie	Zinzana	Majid Al Ansari	Ali Suliman, Saleh Bakri, Yasa, Ali Al-Jabri, ...	Jordan	March 9, 2016	2015	TV-MA	96 min	Dramas, International Movies, Thrillers	Re Ta	

	show_id	type	title	director	cast	country	date_added	release_year	rating	duration	listed_in	de
												u
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	/ c
8804	s8805	Movie	Zombieland	Ruben Fleischer	Jesse Eisenberg, Woody Harrelson, Emma Stone, ...	United States	November 1, 2019	2009	R	88 min	Comedies, Horror Movies	L su wc ov
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	ci su
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	, b his

6882 rows × 12 columns

```
In [401... # Create an array of List of Genre
netflix['listed_in'] = netflix['listed_in'].str.split(",")
```

```
In [403... # Unnest each genre by content
netflix = netflix.explode(['listed_in'])
```

In [405...

netflix

Out[405...

	show_id	type	title	director	cast	country	date_added	release_year	rating	duration	listed_in	description	
	7	s8	Movie	Sankofa	Haile Gerima	Kofi Ghanaba, Oyafunmike Ogunlano, Alexandra D...	United States	September 24, 2021	1993	TV-MA	125 min	Dramas	On a platform showing Ghanaian American movies
	7	s8	Movie	Sankofa	Haile Gerima	Kofi Ghanaba, Oyafunmike Ogunlano, Alexandra D...	United States	September 24, 2021	1993	TV-MA	125 min	Independent Movies	On a platform showing Ghanaian American movies
	7	s8	Movie	Sankofa	Haile Gerima	Kofi Ghanaba, Oyafunmike Ogunlano, Alexandra D...	United States	September 24, 2021	1993	TV-MA	125 min	International Movies	On a platform showing Ghanaian American movies
	7	s8	Movie	Sankofa	Haile Gerima	Kofi Ghanaba, Oyafunmike Ogunlano, Alexandra D...	Ghana	September 24, 2021	1993	TV-MA	125 min	Dramas	On a platform showing Ghanaian American movies
	7	s8	Movie	Sankofa	Haile Gerima	Kofi Ghanaba, Oyafunmike Ogunlano, Alexandra D...	Ghana	September 24, 2021	1993	TV-MA	125 min	Independent Movies	On a platform showing Ghanaian American movies
	
8805	s8806	Movie	Zoom	Peter Hewitt	Tim Allen, Courteney Cox, Chevy Chase	United States	January 11, 2020	2006	PG	88 min	Children & Family Movies	Drag the civilian	

	show_id	type	title	director	cast	country	date_added	release_year	rating	duration	listed_in	descrip
					Chase, Kate Ma...							a fo superh
8805	s8806	Movie	Zoom	Peter Hewitt	Tim Allen, Courteney Cox, Chevy Chase, Kate Ma...	United States	January 11, 2020	2006	PG	88 min	Comedies	Drag civilian a fo superh
8806	s8807	Movie	Zubaan	Mozez Singh	Vicky Kaushal, Sarah-Jane Dias, Raaghav Chanan...	India	March 2, 2019	2015	TV-14	111 min	Dramas	A scre but j boy we his way a
8806	s8807	Movie	Zubaan	Mozez Singh	Vicky Kaushal, Sarah-Jane Dias, Raaghav Chanan...	India	March 2, 2019	2015	TV-14	111 min	International Movies	A scre but j boy we his way a
8806	s8807	Movie	Zubaan	Mozez Singh	Vicky Kaushal, Sarah-Jane Dias, Raaghav Chanan...	India	March 2, 2019	2015	TV-14	111 min	Music & Musicals	A scre but j boy we his way a

15326 rows × 12 columns

In [407...

```
# Setting show id as index
netflix = netflix.set_index('show_id')
```

In [409...

```
netflix
```

show_id												
	type	title	director	cast	country	date_added	release_year	rating	duration	listed_in	description	
s8	Movie	Sankofa	Haile Gerima	Kofi Ghanaba, Oyafunmike Ogunlano, Alexandra D...	United States	September 24, 2021	1993	TV-MA	125 min	Dramas	On a photo shoot in Ghana, an American model s...	
s8	Movie	Sankofa	Haile Gerima	Kofi Ghanaba, Oyafunmike Ogunlano, Alexandra D...	United States	September 24, 2021	1993	TV-MA	125 min	Independent Movies	On a photo shoot in Ghana, an American model s...	
s8	Movie	Sankofa	Haile Gerima	Kofi Ghanaba, Oyafunmike Ogunlano, Alexandra D...	United States	September 24, 2021	1993	TV-MA	125 min	International Movies	On a photo shoot in Ghana, an American model s...	
s8	Movie	Sankofa	Haile Gerima	Kofi Ghanaba, Oyafunmike Ogunlano, Alexandra D...	Ghana	September 24, 2021	1993	TV-MA	125 min	Dramas	On a photo shoot in Ghana, an American model s...	
s8	Movie	Sankofa	Haile Gerima	Kofi Ghanaba, Oyafunmike Ogunlano, Alexandra D...	Ghana	September 24, 2021	1993	TV-MA	125 min	Independent Movies	On a photo shoot in Ghana, an American model s...	
...	
s8806	Movie	Zoom	Peter Hewitt	Tim Allen, Courteney	United States	January 11, 2020	2006	PG	88 min	Children & Family	Dragged from	

	type	title	director	cast	country	date_added	release_year	rating	duration	listed_in	description
show_id											
				Cox, Chevy Chase, Kate Ma...						Movies	civilian life, a former superhero...
s8806	Movie	Zoom	Peter Hewitt	Tim Allen, Courteney Cox, Chevy Chase, Kate Ma...	United States	January 11, 2020	2006	PG	88 min	Comedies	Dragged from civilian life, a former superhero...
s8807	Movie	Zubaan	Mozez Singh	Vicky Kaushal, Sarah-Jane Dias, Raaghav Chanan...	India	March 2, 2019	2015	TV-14	111 min	Dramas	A scrappy but poor boy worms his way into a ty...
s8807	Movie	Zubaan	Mozez Singh	Vicky Kaushal, Sarah-Jane Dias, Raaghav Chanan...	India	March 2, 2019	2015	TV-14	111 min	International Movies	A scrappy but poor boy worms his way into a ty...
s8807	Movie	Zubaan	Mozez Singh	Vicky Kaushal, Sarah-Jane Dias, Raaghav Chanan...	India	March 2, 2019	2015	TV-14	111 min	Music & Musicals	A scrappy but poor boy worms his way into a ty...

15326 rows × 11 columns

```
In [411... # Checking for null values
netflix.isnull().sum()
```

```
Out[411... type          0
          title          0
          director       0
          cast           0
          country        0
          date_added     0
          release_year   0
          rating          0
          duration       0
          listed_in      0
          description     0
          dtype: int64
```

Data seems reasonable and ready for further analysis.

```
In [418... # Importing the data in csv format
netflix.to_csv('Netflix_Cleaned_Data.csv')
```

Next: I will use Power BI for data visualization

```
In [ ]:
```