# Project 3: Netflix TV shows and Movies

# 1. Load the file

```
[ ] import numpy as np
  import pandas as pd
  import matplotlib.pyplot as plt
  import seaborn as sns
  dataset=pd.read_csv("/content/archive(5).zip")
```

### 2. Print first 5 rows of data

0	data	aset.head	()										
<b>₹</b>		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 tollet 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

#### 3. Print last 5 rows of data

0	datase	et.tail()											
₹		show_id	type	title	director	cast	country	date_added	release_year	rating	duration	listed_in	description
	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

4. Cleaning the data for missing values, null values etc...

# dataset.isnull()

	show_id	type	title	director	cast	country	date_added	release_year	rating	duration	listed_in	description
0	False	False	False	False	False	False	False	False	False	False	False	False
1	False	False	False	False	False	False	False	False	False	False	False	False
2	False	False	False	False	False	False	False	False	False	False	False	False
3	False	False	False	False	False	False	False	False	False	False	False	False
4	False	False	False	False	False	False	False	False	False	False	False	False
8802	False	False	False	False	False	False	False	False	False	False	False	False
8803	False	False	False	False	False	False	False	False	False	False	False	False
8804	False	False	False	False	False	False	False	False	False	False	False	False
8805	False	False	False	False	False	False	False	False	False	False	False	False
8806	False	False	False	False	False	False	False	False	False	False	False	False

8807 rows × 12 columns



₹

0 show\_id type 0 title 0 director 0 cast 0 country 0 date\_added 0 release\_year 0 rating 0 duration 0 listed\_in 0

dtype: int64

description

0

	set.dropna(	()										
	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	0	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	0	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	0	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	0	0	0	September 24, 2021	2021	TV-MA	1 Season	Docuseries, Reality TV	Feuds, flirtations and tollet talk go down amo
4	s5	TV Show	Kota Factory	0	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
	144				866	- 100	***				***	566
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	0	0	0	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
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datas	et.fillna(	*Unknow	1')									
	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	0	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			0 Ama Qamata, Khosi Ngema, Gail Mabalane, Thaban			2020 2021	PG-13	90 min 2 Seasons	Documentaries International TV Shows, TV Dramas, TV Mysteries	
2	s2 s3	TV	Dead	Johnson	Ama Qamata, Khosi Ngema,	States	2021 September 24,			2	International TV Shows, TV	of his life, filmm After crossing paths at a
.000		TV Show	Dead Blood & Water	Johnson 0 Julien	Ama Qamata, Khosi Ngema, Gail Mabalane, Thaban Sami Bouajila, Tracy Gotoas,	States South Africa	2021 September 24, 2021 September 24,	2021	TV-MA	2 Seasons	International TV Shows, TV Dramas, TV Mysteries Crime TV Shows, International TV Shows, TV	of his life, filmm  After crossing paths at a party, a Cape Town t  To protect his family from a
2	s3	TV Show TV Show	Dead Blood & Water Ganglands Jallbirds New	Johnson 0 Julien Leclercq	Ama Qamata, Khosi Ngema, Gali Mabalane, Thaban Sami Bouajila, Tracy Gotoas, Samuel Jouy, Nabi	States South Africa	2021 September 24, 2021 September 24, 2021 September 24,	2021	TV-MA	2 Seasons 1 Season	International TV Shows, TV Dramas, TV Mysteries Crime TV Shows, International TV Shows, TV Act	of his life, filmm  After crossing paths at a party, a Cape Town t  To protect his family from a powerful drug lor  Feuds, filirtations and toilet
2	s3 s4	TV Show TV Show TV Show	Dead Blood & Water Ganglands Jailbirds New Orleans	Johnson 0 Julien Leclercq 0	Ama Qamata, Khosi Ngema, Gall Mabalane, Thaban Sami Bouajila, Tracy Gotoas, Samuel Jouy, Nabl 0 Mayur More, Jitendra Kumar,	States South Africa 0	September 24, 2021 September 24, 2021 September 24, 2021 September 24, 2021	2021 2021 2021	TV-MA TV-MA TV-MA	2 Seasons 1 Season 1 Season 2	International TV Shows, TV Dramas, TV Mysteries Crime TV Shows, International TV Shows, TV Act Docuseries, Reality TV International TV Shows,	of his life, filmm  After crossing paths at a party, a Cape Town t  To protect his family from a powerful drug lor  Feuds, flirtations and toilettials go down amo  In a city of coaching centers
2	s3 s4 s5 	TV Show TV Show TV Show TV Show	Dead Blood & Water Ganglands Jailbirds New Orleans	Johnson  0  Julien Leclercq  0	Ama Qamata, Khosi Ngema, Gali Mabalane, Thaban Sami Bouajila, Tracy Gotoas, Samuel Jouy, Nabi 0 Mayur More, Jitendra Kumar, Ranjan Raj, Alam K	States South Africa 0 India	September 24, 2021	2021 2021 2021	TV-MA TV-MA TV-MA	2 Seasons 1 Season 1 Season 2	International TV Shows, TV Dramas, TV Mysteries Crime TV Shows, International TV Shows, TV Act Docuseries, Reality TV International TV Shows,	of his life, filmm  After crossing paths at a party, a Cape Town t  To protect his family from a powerful drug lor  Feuds, flirtations and toilettials go down amo  In a city of coaching centers
3 4	s3 s4 s5 	TV Show TV Show TV Show TV Show	Dead Blood & Water  Ganglands  Jailbirds New Orleans  Kota Factory	Johnson  0  Julien Leclercq  0   David	Ama Qamata, Khosi Ngema, Gali Mabalane, Thaban Sami Bouajila, Tracy Gotoas, Samuel Jouy, Nabl  0 Mayur More, Jitendra Kumar, Ranjan Raj, Alam K Mark Ruffalo, Jake Gyllenhaal, Robert Downey	States South Africa 0 India United	September 24, 2021 November 20,	2021 2021 2021 2021	TV-MA TV-MA TV-MA TV-MA	Seasons  1 Season  1 Season  2 Seasons	International TV Shows, TV Dramas, TV Mysteries Crime TV Shows, International TV Shows, TV Act Docuseries, Reality TV International TV Shows, Romantic TV Shows, TV	of his life, filmm After crossing paths at a party, a Cape Town t To protect his family from a powerful drug lor Feuds, filirtations and tollet talk go down amo In a city of coaching centers known to train I A political cartoonist, a
2 3 4 	\$3 \$4 \$5  \$8803	TV Show  TV Show  TV Show  TV Show   Movie	Dead Blood & Water Ganglands Jalibirds New Orleans Kota Factory Zodiac	Johnson  O  Julien Lectercq  O  David Fincher	Ama Qamata, Khosi Ngema, Gali Mabalane, Thaban Sami Bouajila, Tracy Gotoas, Samuel Jouy, Nabi 0 Mayur More, Jitendra Kumar, Ranjan Raj, Alam K Mark Ruffalo, Jake Gyllenhaal, Robert Downey J	States South Africa  0  0  India United States	2021 September 24, 2021 September 24, 2021 September 24, 2021 September 24, 2021 November 20, 2019	2021 2021 2021 2021  2007	TV-MA TV-MA TV-MA TV-MA R	2 Seasons 1 Season 1 Season 2 Seasons 158 mln	International TV Shows, TV Dramas, TV Mysteries Crime TV Shows, International TV Shows, International TV Shows, Rott Docuseries, Realilit TV International TV Shows, Romantic TV Shows, TV Cult Movies, Dramas, Thrillers Kids' TV, Korean TV Shows,	of his life, filmm After crossing paths at a party, a Cape Town t To protect his family from a powerful drug lor. Feuds, flirtations and tollet talk go down amo In a city of coaching centers known to train i  A political cartoonist, a crime reporter and a While living alone in a

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Ŧ		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	0	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	0	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	0	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	0	0	0	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	0	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
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	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	0	0	0	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
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[] da	ataset	.bfill()											
□ da		.bfill()	type	title	director	cast	country	date_added	release_year	rating	duration	listed_in	description
-			type Movie	title Dick Johnson Is Dead	director Kirsten Johnson	cast 0	country United States	date_added September 25, 2021	release_year	rating PG-13	duration 90 min	listed_in  Documentaries	description As her father nears the end of his life, filmm
-	4	show_id		Dick Johnson Is	Kirsten		United	September 25,					As her father nears the end
-	0	show_id	Movie	Dick Johnson Is Dead	Kirsten Johnson	0 Ama Qamata, Khosi Ngema,	United States South	September 25, 2021 September 24,	2020	PG-13	90 min	Documentaries International TV Shows, TV	As her father nears the end of his life, filmm  After crossing paths at a
-	0	show_id s1 s2	Movie TV Show	Dick Johnson Is Dead Blood & Water	Kirsten Johnson 0 Julien	0 Ama Qamata, Khosi Ngema, Gail Mabalane, Thaban Sami Bouajila, Tracy Gotoas,	United States South Africa	September 25, 2021 September 24, 2021 September 24,	2020	PG-13 TV-MA	90 min 2 Seasons	Documentaries  International TV Shows, TV Dramas, TV Mysteries Crime TV Shows, International TV Shows, TV	As her father nears the end of his life, filmm After crossing paths at a party, a Cape Town t To protect his family from a
-	0 1 2	show_id s1 s2	Movie TV Show TV Show TV	Dick Johnson Is Dead Blood & Water Ganglands Jailbirds New	Kirsten Johnson 0 Julien Leclercq	Ama Qamata, Khosi Ngema, Gali Mabalane, Thaban Sami Bouajila, Tracy Gotoas, Samuel Jouy, Nabi	United States South Africa	September 25, 2021 September 24, 2021 September 24, 2021 September 24,	2020 2021 2021	PG-13 TV-MA TV-MA	90 min 2 Seasons 1 Season	Documentaries International TV Shows, TV Dramas, TV Mysteries Crime TV Shows, International TV Shows, TV Act Docuseries, Reality TV	As her father nears the end of his life, filmm  After crossing paths at a party, a Cape Town t  To protect his family from a powerful drug lor  Feuds, filitations and tollet
-	0 1 2 3	show_id s1 s2 s3	Movie TV Show TV Show TV Show TV	Dick Johnson Is Dead Blood & Water Ganglands Jailbirds New Orleans	Kirsten Johnson 0 Julien Leclercq	0 Ama Qamata, Khosi Ngema, Gall Mabalane, Thaban Sami Bouajila, Tracy Gotoas, Samuel Jouy, Nabi  0 Mayur More, Jitendra Kumar,	United States South Africa	September 25, 2021 September 24, 2021	2020 2021 2021 2021	PG-13 TV-MA TV-MA TV-MA	90 min 2 Seasons 1 Season 1 Season 2	Documentaries International TV Shows, TV Dramas, TV Mysteries Crime TV Shows, International TV Shows, TV Act Docuseries, Reality TV International TV Shows,	As her father nears the end of his life, filmm  After crossing paths at a party, a Cape Town t  To protect his family from a powerful drug lor  Feuds, filirtations and tollet talk go down amo  In a city of coaching centers
<del></del>	0 1 2 3 4	show_id s1 s2 s3	Movie TV Show TV Show TV Show TV Show	Dick Johnson Is Dead Blood & Water Ganglands Jailbirds New Orleans Kota Factory	Kirsten Johnson 0 Julien Leclercq 0	O Ama Qamata, Khosi Ngema, Gail Mabalane, Thaban Sami Bouajila, Tracy Gotoas, Samuel Jouy, Nabi  O Mayur More, Jitendra Kumar, Ranjan Raj, Alam K	United States South Africa 0	September 25, 2021 September 24, 2021	2020 2021 2021 2021 2021	PG-13 TV-MA TV-MA TV-MA	90 min  2 Seasons  1 Season  1 Season  2 Seasons	Documentaries International TV Shows, TV Dramas, TV Mysteries Crime TV Shows, International TV Shows, TV Act Docuseries, Reality TV International TV Shows,	As her father nears the end of his life, filmm  After crossing paths at a party, a Cape Town t  To protect his family from a powerful drug lor  Feuds, filirtations and tollet talk go down amo  In a city of coaching centers
<b>→</b>	0 1 2 3 4	show_id     s1     s2     s3     s4     s5	Movie TV Show TV Show TV Show TV Show TV Show	Dick Johnson Is Dead Blood & Water Ganglands Jailbirds New Orleans Kota Factory	Kirsten Johnson 0 Julien Leclercq 0 0	Ama Qamata, Khosi Ngema, Gail Mabalane, Thaban Sami Bouajila, Tracy Gotoas, Samuel Jouy, Nabi  0 Mayur More, Jitendra Kumar, Ranjan Raj, Alam K Mark Ruffalo, Jake Gyllenhaal, Robert Downey	United States South Africa  0  India United	September 25, 2021 September 24, 2021 September 22, 2021 September 24, 2021 September 24, 2021 November 20,	2020 2021 2021 2021 2021 	PG-13 TV-MA TV-MA TV-MA TV-MA	90 min  2 Seasons  1 Season  1 Season  2 Seasons	Documentaries International TV Shows, TV Dramas, TV Mysteries Crime TV Shows, International TV Shows, TV Act Docuseries, Reality TV International TV Shows, Romantic TV Shows, TV	As her father nears the end of his life, filmm  After crossing paths at a party, a Cape Town t  To protect his family from a powerful drug lor  Feuds, filirtations and tollet talk go down amo In a city of co
<b>→</b>	3 4	show_id     s1     s2     s3     s4     s5  s8803	Movie TV Show TV Show TV Show TV Show TV Show TV TV Show	Dick Johnson Is Dead  Blood & Water  Ganglands  Jalibirds New Orleans  Kota Factory  Zodiac	Kirsten Johnson  0  Julien Leciercq  0   David Fincher	Ama Qamata, Khosi Ngema, Gail Mabalane, Thaban Sami Bouajila, Tracy Gotoas, Samuel Jouy, Nabi  0 Mayur More, Jitendra Kumar, Ranjan Raj, Alam K Mark Ruffalo, Jake Gyllenhaal, Robert Downey J	United States South Africa  0  India United States	September 25, 2021 September 24, 2021 September 24, 2021 September 24, 2021 September 24, 2021 November 20, 2019	2020 2021 2021 2021 2021  2007	PG-13 TV-MA TV-MA TV-MA TV-MA TV-MA R	90 min  2 Seasons 1 Season 1 Season 2 Seasons 158 min	Documentaries International TV Shows, TV Dramas, TV Mysteries Crime TV Shows, International TV Shows, TV Act Docuseries, Reality TV International TV Shows, Romantic TV Shows, TV Cult Movies, Dramas, Thrillers Kids' TV, Korean TV Shows,	As her father nears the end of his life, filmm  After crossing paths at a party, a Cape Town t  To protect his family from a powerful drug lor  Feuds, filirations and tollet tails go down amo  In a city of coaching centers known to train I  A political cartoonist, a crime reporter and a  While living alone in a

# dataset.interpolate()

cipython-input-60-c2bdif699515>:1: FutureWarning: DataFrame.interpolate with object dtype is deprecated and will raise in a future version. Call obj.infer\_objects(copy=False) before in dataset.interpolate()

	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	0	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	0	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	0	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	0	0	0	September 24, 2021	2021	TV-MA	1 Season	Docuseries, Reality TV	Feuds, flirtations and toilet talk go down amo
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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	0	0	0	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	98806	Movie	700m	Peter Hewitt	Tim Allen, Courteney Cox,	United	January 11,	2006	PG	88 min	Children & Family Movies,	Dragged from civilian life, a

6. Print info on the dataset

```
dataset.info()
<<class 'pandas.core.frame.DataFrame'>
      RangeIndex: 8807 entries, 0 to 8806
Data columns (total 12 columns):
       # Column
                                Non-Null Count Dtype
                                8807 non-null
8807 non-null
                                                       object
       0
             show_id
            type
title
                                                       object
       1
                                8807 non-null
                                                       object
            director
                                6173 non-null
                                                       object
                                7982 non-null
7976 non-null
            cast
                                                       object
            country
date_added
                                                       object
                                8797 non-null
                                                       object
                                8807 non-null
8803 non-null
             release_year
                                                       int64
       8 rating
9 duration
                                                      object
object
                                8804 non-null
      10 listed_in 8807 non-null 11 description 8807 non-null dtypes: int64(1), object(11) memory usage: 825.8+ KB
```

7. Get some description of the data- ONLY release\_year is NUMBERS VALUES

object object

```
0
    dataset['release_year'].describe()
```

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

dtype: float64

 $\overline{\mathbf{T}}$ 

8. Columns in the dataset

```
[]
  print(dataset.columns)
9. Shape of the data frame
  dataset.shape
```

**⋺** (8807, 12)

10. How many years of the Data (1966-2021) (release\_year)

12. Check for null values in all columns of dataset

```
[ ]
     print(dataset.isnull().sum())

→ show_id

                     0
    type
                     0
     title
                     0
    director
    cast
    country 0
date_added 0
release_year 0
rating
     rating
                 0
     duration
                     0
     listed_in
                    0
     description
                     0
     dtype: int64
13. Replace NAN values with TV-MA
```

)												
datase	et.fillna(	'TV-MA'	)									
+	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	0	United States	September 25, 2021	2020	PG-13	90 min	Documentaries	As her father nears the end of his life, filmm
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3	s4	TV Show	Jailbirds New Orleans	0	0	0	September 24, 2021	2021	TV-MA	1 Season	Docuseries, Reality TV	Feuds, flirtations and toile talk go down amo.
4	s5	TV Show	Kota Factory	0	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	United States	November 20, 2019	2007	R	158 min	Cult Movies, Dramas, Thrillers	A political cartoonist, a crime reporter and a

#### dataset.fillna('United States') show\_id type title director cast country date\_added release\_year rating duration listed\_in description Documentaries As her father nears the end of his life, filmm... s1 Movie Dick Johnson Is Dead September 25, 2021 2020 PG-13 s2 TV Show International TV Shows, TV Dramas, TV Mysteries Ama Qamata, Khosi Ngema, Gail Mabalane, Thaban... South Africa September 24, 2021 2021 TV-MA Seasons After crossing paths at a party, a Cape Town t... Blood & Water Crime TV Shows TV Show Julien Sami Bouajila, Tracy Gotoas, Leclercq Samuel Jouy, Nabi... September 24, 2021 To protect his family from a powerful drug lor... International TV Shows, TV Act... s3 Ganglands 2021 TV-MA 1 Season TV Jailbirds New 2021 TV-MA 1 Season Docuseries, Reality TV Mayur More, Jitendra Kumar, Ranjan Raj, Alam K... International TV Shows, In a city of coaching centers Romantic TV Shows, TV ... known to train I... September 24, 2021 Kota Factory 8802 s8803 Movie Zodiac R 158 min Cult Movies, Dramas, Thrillers Kids' TV, Korean TV Shows, TV Comedies TV Show Zombie Dumb July 1, 2019 Ruben Jesse Eisenberg, Woody November 1, Looking to survive in a 8804 s8805 Movie Zombieland 2009 R 88 min Comedies, Horror Movies

15. Rename the Column "listed\_in" to "genre"

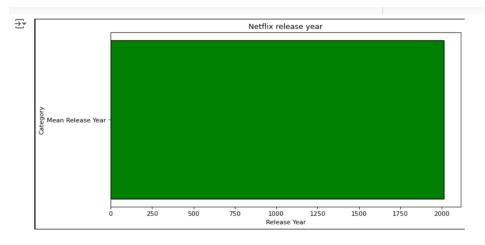
```
dataset = dataset.rename(columns=("listed_in": "genre"))
print(dataset.columns)
dataset.head()
```

									)	object	arype-	
description	genre	duration	rating	release_year	date_added	country	cast	director	title	type	show_id	
As her father nears the end of his life, filmm	Documentaries	90 min	PG-13	2020	September 25, 2021	United States	0	Kirsten Johnson	Dick Johnson Is Dead	Movie	s1	0
After crossing paths at a party, a Cape Town t	International TV Shows, TV Dramas, TV Mysteries	2 Seasons	TV-MA	2021	September 24, 2021	South Africa	Ama Qamata, Khosi Ngema, Gail Mabalane, Thaban	0	Blood & Water	TV Show	s2	1
To protect his family from a powerful drug lor	Crime TV Shows, International TV Shows, TV Act	1 Season	TV-MA	2021	September 24, 2021	0	Sami Bouajila, Tracy Gotoas, Samuel Jouy, Nabi	Julien Leclercq	Ganglands	TV Show	s3	2
Feuds, flirtations and toilet talk go down amo	Docuseries, Reality TV	1 Season	TV-MA	2021	September 24, 2021	0	0	0	Jailbirds New Orleans	TV Show	s4	3
In a city of coaching centers known to train I	International TV Shows, Romantic TV Shows, TV	2 Seasons	TV-MA	2021	September 24, 2021	India	Mayur More, Jitendra Kumar, Ranjan Raj, Alam K	0	Kota Factory	TV Show	s5	4

## VISUALIZATION

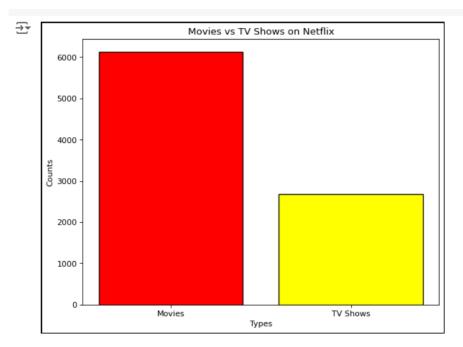
1. Calculate mean of release\_year and show it using barh plot

```
import matplotlib.pyplot as plt
mean_release_year = dataset['release_year'].mean()
plt.figure(figsize=(10, 5), dpi=80, facecolor='w', edgecolor='k', frameon=True, linewidth=1.2)
plt.barh(['Mean Release Year'], [mean_release_year], color='green', edgecolor='black', linewidth=1.2)
plt.title('Netflix release year')
plt.ylabel('Category')
plt.xlabel('Release Year')
plt.show()
```



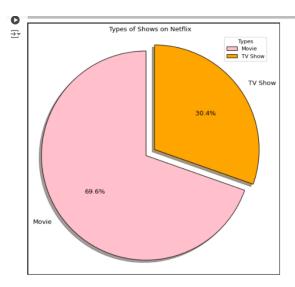
2. TV shows vs Movies on netflix using bar chart

```
movie_count = dataset['type'].value_counts()['Movie']
tv_show_count = dataset['type'].value_counts()['TV show']
plt.figure(figsize=(8, 6), dpi=80, facecolor='w', edgecolor='k', frameon=True,linewidth=1.2)
plt.bar(['Movies', 'TV Shows'], [movie_count, tv_show_count], color=['red', 'yellow'],edgecolor='black',linewidth=1.2)
plt.xlabel('Types')
plt.ylabel('Counts')
plt.title('Movies vs TV Shows on Netflix')
plt.show()
```



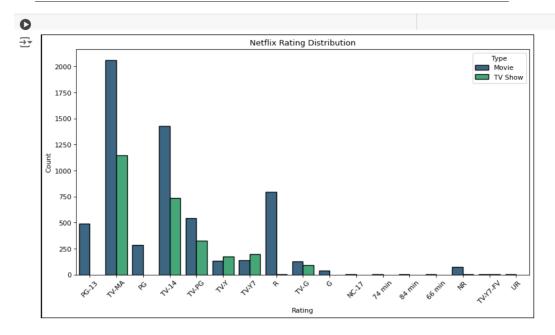
3. Types of shows percentage on netflex using piechart

```
type_counts = dataset['type'].value_counts()
type_percentages = type_counts / len(dataset) * 100
plt.figure(figsize=(8, 8), dpi=80, facecolor='w', edgecolor='k', frameon=True,linewidth=1.2)
plt.pie(type_percentages, labels=type_percentages.index, autopct='%1.1f%%', startangle=90, colors=['pink', 'orange'], textprops=('fontsize': 12), explode=(0.1, 0), shadow=True,wedgepr
plt.axis('equal')
plt.tigend(title='types', loc='best')
plt.show()
```



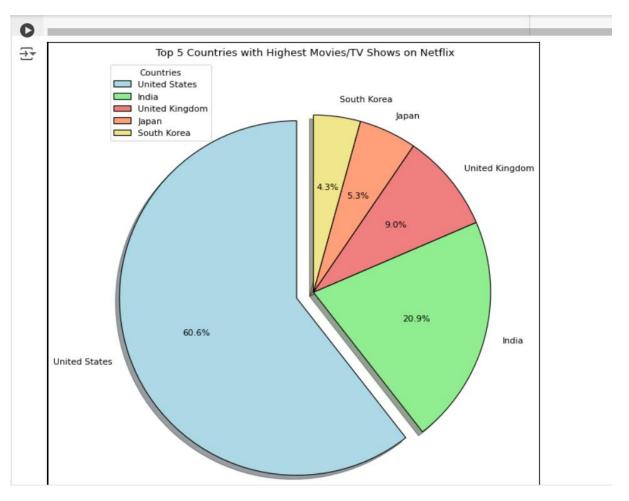
4. Show Netflix rating distribution , visualized by a count plot

```
plt.figure(figsize=(12, 6), dpi=80, facecolor='w', edgecolor='k', frameon=True,linewidth=1.2)
sns.countplot(x='rating', data=dataset, edgecolor='black', linewidth=1.2,hue='type', dodge=True, hue_order=['Movie', 'TV Show'],
plt.title('Netflix Rating Distribution')
plt.xlabel('Rating')
plt.ylabel('Count')
plt.ylabel('Count')
plt.xticks(rotation=45)
plt.legend(title='Type', loc='upper right')
plt.show()
```



5. Show the Top 5 countries with Highest Movies/TV Shows, visualised by a PIE CHART

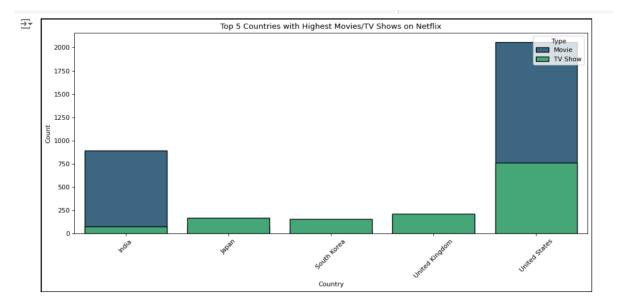
```
top_countries = dataset['country'].value_counts().head(5)
plt.figure(figsize=(8, 8), dpi=80, facecolor='k', edgecolor='k', frameon=True,linewidth=1.2, layout='tight')
plt.pie(top_countries, labels=top_countries.index, autopct='%1.1f%', startangle=90, colors=['lightblue', 'lightgreen', 'lightcoral', 'lightsalmon', 'khaki'], textprops=('fontsize': 1
plt.axis('equal')
plt.title('Top 5 Countries with Highest Movies/TV Shows on Netflix')
plt.legend(title='Countries', loc='best')
plt.show()
```



6. Shows the Top 5 Netflix Country distribution separated by type of release (i.e movies, tv shows), visualizing via Bar graph

```
country_type_counts = dataset.groupby(['country', 'type'])['title'].count().reset_index(name='count')
top_countries = country_type_counts.groupby('country')['count'].sum().nlargest(5).index
top_country_data = country_type_counts[country_type_counts['country'].isin(top_countries)]

plt.figure(figsize=(12, 6), dpi=80, facecolor='w', edgecolor='k', frameon=True,linewidth=1.2, layout='tight')
sns.barplot(x='country', y='count', hue='type', data=top_country_data, edgecolor='black', linewidth=1.2, palette='viridis',
plt.title('Top 5 Countries with Highest Movies/TV Shows on Netflix')
plt.xlabel('country')
plt.ylabel('country')
plt.ylabel('count')
plt.xticks(rotation=45)
plt.legend(title='Type', loc='upper right')
plt.show()
```



7. Show the Top 10 genres of movies and also tv shows

```
genre_type_counts = dataset.groupby(['listed_in', 'type'])['title'].count().reset_index(name='count')

top_genres_movies = genre_type_counts[genre_type_counts['type'] == 'Movie'].sort_values(by='count', ascending=False).head(10)

top_genres_tv_shows = genre_type_counts[genre_type_counts['type'] == 'TV Show'].sort_values(by='count', ascending=False).head(10)

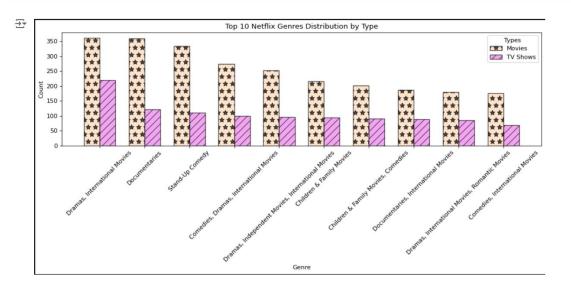
plt.figure(figsize=(12, 6), dpi=80, facecolor='w', edgecolor='k', frameon=True, linewidth=1.1, layout='tight')

width = 0.35

x_movies = np.arange(len(top_genres_movies['listed_in']))
plt.bar(x_movies, top_genres_movies['count'], width, label='Movies', color='peachpuff', edgecolor='black', linewidth=1.2, alpha=0.7, hatch='*', align='center')

x_tv_shows = [x + width for x in x_movies]
plt.bar(x_tv_shows, top_genres_tv_shows['count'], width, label='TV Shows', color='violet', edgecolor='black', linewidth=1.2, alpha=0.7, hatch='//', align='center')

plt.xlabel('Genre')
plt.xlabel('Genre')
plt.xlabel('Genre')
plt.xlabel('Genre')
plt.xlabel('Top 10 Netflix Genres Distribution by Type')
```



( . ---- ) ( . ---- )

8. When is the Best itme to release a Movie/TV Shows? show it using heatmap

```
dataset['date_added'] = pd.to_datetime(dataset['date_added'], format='%8 %d, %Y', errors='coerce') #The code error='coerce' is used for error handling

dataset['month'] = dataset['date_added'].dt.month
    dataset['year'] = dataset['date_added'].dt.year

release_counts = dataset.groupby(['month', 'year'])['title'].count().reset_index(name='count')

heatmap_data = release_counts.pivot(index='month', columns='year', values='count')

plt.figure(figsize=(15, 8), dpi=80, facecolor='w', edgecolor='k', frameon=True, linewidth=1.2)
sns.heatmap(heatmap_data, cmap='viridis', annot=false, fmt=".0f", linewidths=.5, cbar_kws={'label': 'Number of Releases'})
plt.title('Netflix Release Trend Over Time')
plt.xlabel('Year')
plt.ylabel('Month')
plt.xticks(rotation=45)
plt.tight_layout()
plt.tight_layout()
plt.show()
```

