

Netflix Data Analytics

In this project, I had learned how to work on a real world project of Data Analysis with Python.

I had used multiple commands to solve a problem in different ways.

The commands that I used in this project :

- head() - It shows the first N rows in the data (by default, N=5).
- tail () - It shows the last N rows in the data (by default, N=5).
- shape - It shows the total no. of rows and no. of columns of the dataframe.
- size - To show No. of total values(elements) in the dataset.
- columns - To show each Column Name.
- dtypes - To show the data-type of each column.
- info() - To show indexes, columns, data-types of each column, memory at once.
- value_counts - In a column, it shows all the unique values with their count. It can be applied on a single column only.
- unique() - It shows the all unique values of the series.
- nunique() - It shows the total no. of unique values in the series.
- duplicated() - To check row wise and detect the Duplicate rows.
- isnull() - To show where Null value is present.
- dropna() - It drops the rows that contains all missing values.
- isin() - To show all records including particular elements.
- str.contains() - To get all records that contains a given string.
- str.split() - It splits a column's string into different columns.
- to_datetime() - Converts the data-type of Date-Time Column into datetime[ns] datatype.
- dt.year.value_counts() - It counts the occurrence of all individual years in Time column.
- groupby() - Groupby is used to split the data into groups based on some criteria.
- sns.countplot(dff['Col_name']) - To show the count of all unique values of any column in the form of bar graph.
- max(), min() - It shows the maximum/minimum value of the series.
- mean() - It shows the mean value of the series.

I learned these things also:

Creating New Columns & Dataframe,

Filtering (Single Column & Multiple Columns),

Filtering with And and OR,

Seaborn Library - Bar Graphs

Questions are given in the project and then solved with the help of Python.

Task. 1) Is there any Duplicate Record in this dataset ? If yes, then remove the duplicate records.

Task. 2) Is there any Null Value present in any column ? Show with Heat-map.

Q 1) For 'House of Cards', what is the Show Id and Who is the Director of this show ?

Q 2) In which year the highest number of the TV Shows & Movies were released ? Show with Bar Graph.

Q 3) How many Movies & TV Shows are in the dataset ? Show with Bar Graph.

Q 4) Show all the Movies that were released in year 2000 and 2020.

Q 5) Show only the Titles of all TV Shows that were released in India only.

Q 6) Show Top 10 Directors, who gave the highest number of TV Shows & Movies to Netflix ?

Q 7) Show all the Records, where "Category is Movie and Type is Comedies" or "Country is United Kingdom".

Q 8) In how many movies/shows, Tom Cruise was cast ?

Q 9) What are the different Ratings defined by Netflix ?

Q 9.1) How many Movies got the 'TV-14' rating, in Canada ?

Q 9.2) How many TV Shows got the 'R' rating, after year 2018 ?

Q 10) What is the maximum duration of a Movie>Show on Netflix ?

Q 11) Which individual country has the Highest No. of TV Shows ?

Q 12) How can we sort the dataset by Year ?

Q 13) Find all the instances where: Category is 'Movie' and Type is 'Dramas' or Category is 'TV Show' & Type is 'Kids' TV'.

NOTE : This Netflix Dataset has information about the TV shows and movies available on Netflix till 2021.

```
In [1]: import pandas as pd  
import matplotlib.pyplot as plt  
import seaborn as sns
```

```
In [2]: ntflix = pd.read_csv(r"C:\Users\PAIDI\Desktop\PAIDIKALA YESUKRISHNA\Netflix_Data_Analytics\Netflix_Dataset.csv")
ntflix
```

Out[2]:

	Show_Id	Category	Title	Director	Cast	Country	Release_Date	Rating	Duration	Type	Description
0	s1	TV Show	3%	NaN	João Miguel, Bianca Comparato, Michel Gomes, R...	Brazil	August 14, 2020	TV-MA	4 Seasons	International TV Shows, TV Dramas, TV Sci-Fi &...	In a future where the elite inhabit an island ...
1	s2	Movie	07:19	Jorge Michel Grau	Demián Bichir, Héctor Bonilla, Oscar Serrano, ...	Mexico	December 23, 2016	TV-MA	93 min	Dramas, International Movies	After a devastating earthquake hits Mexico City...
2	s3	Movie	23:59	Gilbert Chan	Tedd Chan, Stella Chung, Henley Hii, Lawrence ...	Singapore	December 20, 2018	R	78 min	Horror Movies, International Movies	When an army recruit is found dead, his fellow...
3	s4	Movie	9	Shane Acker	Elijah Wood, John C. Reilly, Jennifer Connely...	United States	November 16, 2017	PG-13	80 min	Action & Adventure, Independent Movies, Sci-Fi...	In a postapocalyptic world, rag-doll robots hi...
4	s5	Movie	21	Robert Luketic	Jim Sturgess, Kevin Spacey, Kate Bosworth, Aar...	United States	January 1, 2020	PG-13	123 min	Dramas	A brilliant group of students become card-coun...
...
7784	s7783	Movie	Zozo	Josef Fares	Imad Creidi, Antoinette Turk, Elias Gergi, Car...	Sweden, Czech Republic, United Kingdom, Denmark...	October 19, 2020	TV-MA	99 min	Dramas, International Movies	When Lebanon's Civil War deprives Zozo of his ...
7785	s7784	Movie	Zubaan	Mozez Singh	Vicky Kaushal, Sarah-Jane Dias, Raaghav Chanan...	India	March 2, 2019	TV-14	111 min	Dramas, International Movies, Music & Musicals	A scrappy but poor boy worms his way into a ty...

	Show_Id	Category	Title	Director	Cast	Country	Release_Date	Rating	Duration	Type	Description
7786	s7785	Movie	Zulu Man in Japan	NaN	Nasty C	NaN	September 25, 2020	TV-MA	44 min	Documentaries, International Movies, Music & M...	In this documentary, South African rapper Nast...
7787	s7786	TV Show	Zumbo's Just Desserts	NaN	Adriano Zumbo, Rachel Khoo	Australia	October 31, 2020	TV-PG	1 Season	International TV Shows, Reality TV	Dessert wizard Adriano Zumbo looks for the nex...
7788	s7787	Movie	ZZ TOP: THAT LITTLE OL' BAND FROM TEXAS	Sam Dunn	NaN	United Kingdom, Canada, United States	March 1, 2020	TV-MA	90 min	Documentaries, Music & Musicals	This documentary delves into the mystique behi...

7789 rows × 11 columns

In [3]: `ntflx.head(4)`

Out[3]:

	Show_Id	Category	Title	Director	Cast	Country	Release_Date	Rating	Duration	Type	Description
0	s1	TV Show	3%	NaN	João Miguel, Bianca Comparato, Michel Gomes, R...	Brazil	August 14, 2020	TV-MA	4 Seasons	International TV Shows, TV Dramas, TV Sci-Fi &...	In a future where the elite inhabit an island ...
1	s2	Movie	07:19	Jorge Michel Grau	Demián Bichir, Héctor Bonilla, Oscar Serrano, ...	Mexico	December 23, 2016	TV-MA	93 min	Dramas, International Movies	After a devastating earthquake hits Mexico Cit...
2	s3	Movie	23:59	Gilbert Chan	Tedd Chan, Stella Chung, Henley Hii, Lawrence ...	Singapore	December 20, 2018	R	78 min	Horror Movies, International Movies	When an army recruit is found dead, his fellow...
3	s4	Movie	9	Shane Acker	Elijah Wood, John C. Reilly, Jennifer Connelly...	United States	November 16, 2017	PG-13	80 min	Action & Adventure, Independent Movies, Sci-Fi...	In a postapocalyptic world, rag-doll robots hi...

In [4]: `ntflx.tail(3)`

Out[4]:

	Show_Id	Category	Title	Director	Cast	Country	Release_Date	Rating	Duration	Type	Description
7786	s7785	Movie	Zulu Man in Japan	NaN	Nasty C	NaN	September 25, 2020	TV-MA	44 min	Documentaries, International Movies, Music & M...	In this documentary, South African rapper Nast...
7787	s7786	TV Show	Zumbo's Just Desserts	NaN	Adriano Zumbo, Rachel Khoo	Australia	October 31, 2020	TV-PG	1 Season	International TV Shows, Reality TV	Dessert wizard Adriano Zumbo looks for the nex...
7788	s7787	Movie	ZZ TOP: THAT LITTLE OL' BAND FROM TEXAS	Sam Dunn	NaN	United Kingdom, Canada, United States	March 1, 2020	TV-MA	90 min	Documentaries, Music & Musicals	This documentary delves into the mystique behi...

In [5]: `ntflx.shape`

Out[5]: (7789, 11)

In [6]: `ntflx.size`

Out[6]: 85679

In [7]: `ntflx.columns`

Out[7]: Index(['Show_Id', 'Category', 'Title', 'Director', 'Cast', 'Country', 'Release_Date', 'Rating', 'Duration', 'Type', 'Description'], dtype='object')

In [8]: `ntflx.dtypes`

Out[8]:

Show_Id	object
Category	object
Title	object
Director	object
Cast	object
Country	object
Release_Date	object
Rating	object
Duration	object
Type	object
Description	object
dtype:	object

In [9]: `type(ntflx)`

Out[9]: `pandas.core.frame.DataFrame`

In [10]: `ntflx.count()`

Out[10]:

Show_Id	7789
Category	7789
Title	7789
Director	5401
Cast	7071
Country	7282
Release_Date	7779
Rating	7782
Duration	7789
Type	7789
Description	7789
dtype:	int64

In [11]: `ntflx.info()`

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 7789 entries, 0 to 7788
Data columns (total 11 columns):
 #   Column      Non-Null Count  Dtype  
--- 
 0   Show_Id     7789 non-null   object  
 1   Category    7789 non-null   object  
 2   Title       7789 non-null   object  
 3   Director    5401 non-null   object  
 4   Cast        7071 non-null   object  
 5   Country     7282 non-null   object  
 6   Release_Date 7779 non-null   object  
 7   Rating      7782 non-null   object  
 8   Duration    7789 non-null   object  
 9   Type        7789 non-null   object  
 10  Description 7789 non-null   object  
dtypes: object(11)
memory usage: 669.5+ KB
```

In [12]: `ntflx.isnull()`

Out[12]:

	Show_Id	Category	Title	Director	Cast	Country	Release_Date	Rating	Duration	Type	Description
0	False	False	False	True	False	False	False	False	False	False	False
1	False	False	False	False	False	False	False	False	False	False	False
2	False	False	False	False	False	False	False	False	False	False	False
3	False	False	False	False	False	False	False	False	False	False	False
4	False	False	False	False	False	False	False	False	False	False	False
...
7784	False	False	False	False	False	False	False	False	False	False	False
7785	False	False	False	False	False	False	False	False	False	False	False
7786	False	False	False	True	False	True	False	False	False	False	False
7787	False	False	False	True	False	False	False	False	False	False	False
7788	False	False	False	False	True	False	False	False	False	False	False

7789 rows × 11 columns

In [13]: `ntflx.isnull().sum()`

Out[13]:

Show_Id	0
Category	0
Title	0
Director	2388
Cast	718
Country	507
Release_Date	10
Rating	7
Duration	0
Type	0
Description	0
<code>dtype: int64</code>	

Task. 1) Is there any Duplicate Record in this dataset ? If yes, then remove the duplicate records.

In [14]: `ntflx.head(2)`

Out[14]:

	Show_Id	Category	Title	Director	Cast	Country	Release_Date	Rating	Duration	Type	Description
0	s1	TV Show	3%	NaN	João Miguel, Bianca Comparato, Michel Gomes, R...	Brazil	August 14, 2020	TV-MA	4 Seasons	International TV Shows, TV Dramas, TV Sci- Fi &...	In a future where the elite inhabit an island ...
1	s2	Movie	07:19	Jorge Michel Grau	Demián Bichir, Héctor Bonilla, Oscar Serrano,	Mexico	December 23, 2016	TV-MA	93 min	Dramas, International Movies	After a devastating earthquake hits Mexico Cit...

In [15]: `ntflx.duplicated()`

Out[15]:

0	False
1	False
2	False
3	False
4	False
...	
7784	False
7785	False
7786	False
7787	False
7788	False

Length: 7789, dtype: bool

In [16]: `ntflx[ntflx.duplicated()]`

Out[16]:

	Show_Id	Category	Title	Director	Cast	Country	Release_Date	Rating	Duration	Type	Description
6300	s684	Movie	Backfire	Dave Patten	Black Deniro, Byron "Squally" Vinson, Dominic ...	United States	April 5, 2019	TV-MA	97 min	Dramas, Independent Movies, Thrillers	When two would-be robbers accidentally kill a ...
6622	s6621	Movie	The Lost Okoroshi	Abba T. Makama	Seun Ajayi, Judith Audu, Tope Tedela, Ifu Ennada...	Nigeria	September 4, 2020	TV-MA	94 min	Comedies, Dramas, Independent Movies	A disillusioned security guard transforms into...

In [17]: `ntflx[ntflx.Director.isin(['Dave Patten'])]`

Out[17]:

	Show_Id	Category	Title	Director	Cast	Country	Release_Date	Rating	Duration	Type	Description
683	s684	Movie	Backfire	Dave Patten	Black Deniro, Byron "Squally" Vinson, Dominic ...	United States	April 5, 2019	TV-MA	97 min	Dramas, Independent Movies, Thrillers	When two would-be robbers accidentally kill a ...
6300	s684	Movie	Backfire	Dave Patten	Black Deniro, Byron "Squally" Vinson, Dominic ...	United States	April 5, 2019	TV-MA	97 min	Dramas, Independent Movies, Thrillers	When two would-be robbers accidentally kill a ...

index 683 and 6300 have same data. so we should remove one duplicate record i.e. 6300

In [18]: `ntflx[ntflx['Title'].str.contains('The Lost Okorosh')]`

Out[18]:

	Show_Id	Category	Title	Director	Cast	Country	Release_Date	Rating	Duration	Type	Description
4839	s6621	Movie	The Lost Okoroshi	Abba T. Makama	Seun Ajayi, Judith Adu, Tope Tedela, Ifu Enna...	Nigeria	September 4, 2020	TV-MA	94 min	Comedies, Dramas, Independent Movies	A disillusioned security guard transforms into...
6622	s6621	Movie	The Lost Okoroshi	Abba T. Makama	Seun Ajayi, Judith Adu, Tope Tedela, Ifu Enna...	Nigeria	September 4, 2020	TV-MA	94 min	Comedies, Dramas, Independent Movies	A disillusioned security guard transforms into...

index 4839 and 6622 have same data. so we should remove one duplicate record i.e. 6622

In [19]: `ntflx[ntflx.duplicated()]`

Out[19]:

	Show_Id	Category	Title	Director	Cast	Country	Release_Date	Rating	Duration	Type	Description
6300	s684	Movie	Backfire	Dave Patten	Black Deniro, Byron "Squally" Vinson, Dominic ...	United States	April 5, 2019	TV-MA	97 min	Dramas, Independent Movies, Thrillers	When two would-be robbers accidentally kill a ...
6622	s6621	Movie	The Lost Okoroshi	Abba T. Makama	Seun Ajayi, Judith Adu, Tope Tedela, Ifu Enna...	Nigeria	September 4, 2020	TV-MA	94 min	Comedies, Dramas, Independent Movies	A disillusioned security guard transforms into...

In [20]: `ntflx.drop_duplicates(inplace=True)`

In [21]: ntflix

Out[21]:

	Show_Id	Category	Title	Director	Cast	Country	Release_Date	Rating	Duration	Type	Description
0	s1	TV Show	3%	NaN	João Miguel, Bianca Comparato, Michel Gomes, R...	Brazil	August 14, 2020	TV-MA	4 Seasons	International TV Shows, TV Dramas, TV Sci-Fi &...	In a future where the elite inhabit an island ...
1	s2	Movie	07:19	Jorge Michel Grau	Demián Bichir, Héctor Bonilla, Oscar Serrano, ...	Mexico	December 23, 2016	TV-MA	93 min	Dramas, International Movies	After a devastating earthquake hits Mexico City...
2	s3	Movie	23:59	Gilbert Chan	Tedd Chan, Stella Chung, Henley Hii, Lawrence ...	Singapore	December 20, 2018	R	78 min	Horror Movies, International Movies	When an army recruit is found dead, his fellow...
3	s4	Movie	9	Shane Acker	Elijah Wood, John C. Reilly, Jennifer Connely...	United States	November 16, 2017	PG-13	80 min	Action & Adventure, Independent Movies, Sci-Fi...	In a postapocalyptic world, rag-doll robots hi...
4	s5	Movie	21	Robert Luketic	Jim Sturgess, Kevin Spacey, Kate Bosworth, Aar...	United States	January 1, 2020	PG-13	123 min	Dramas	A brilliant group of students become card-coun...
...
7784	s7783	Movie	Zozo	Josef Fares	Imad Creidi, Antoinette Turk, Elias Gergi, Car...	Sweden, Czech Republic, United Kingdom, Denmark...	October 19, 2020	TV-MA	99 min	Dramas, International Movies	When Lebanon's Civil War deprives Zozo of his ...
7785	s7784	Movie	Zubaan	Mozez Singh	Vicky Kaushal, Sarah-Jane Dias, Raaghav Chanan...	India	March 2, 2019	TV-14	111 min	Dramas, International Movies, Music & Musicals	A scrappy but poor boy worms his way into a ty...

	Show_Id	Category	Title	Director	Cast	Country	Release_Date	Rating	Duration	Type	Description
7786	s7785	Movie	Zulu Man in Japan	NaN	Nasty C	NaN	September 25, 2020	TV-MA	44 min	Documentaries, International Movies, Music & M...	In this documentary, South African rapper Nast...
7787	s7786	TV Show	Zumbo's Just Desserts	NaN	Adriano Zumbo, Rachel Khoo	Australia	October 31, 2020	TV-PG	1 Season	International TV Shows, Reality TV	Dessert wizard Adriano Zumbo looks for the nex...
7788	s7787	Movie	ZZ TOP: THAT LITTLE OL' BAND FROM TEXAS	Sam Dunn	NaN	United Kingdom, Canada, United States	March 1, 2020	TV-MA	90 min	Documentaries, Music & Musicals	This documentary delves into the mystique behi...

7787 rows × 11 columns

In [22]: `ntflx[ntflx.duplicated()]`

Out[22]:

Show_Id	Category	Title	Director	Cast	Country	Release_Date	Rating	Duration	Type	Description
---------	----------	-------	----------	------	---------	--------------	--------	----------	------	-------------

Task. 2) Is there any Null Value present in any column ? Show with Heatmap.

In [23]: `ntflx.isnull()`

Out[23]:

	Show_Id	Category	Title	Director	Cast	Country	Release_Date	Rating	Duration	Type	Description
0	False	False	False	True	False	False	False	False	False	False	False
1	False	False	False	False	False	False	False	False	False	False	False
2	False	False	False	False	False	False	False	False	False	False	False
3	False	False	False	False	False	False	False	False	False	False	False
4	False	False	False	False	False	False	False	False	False	False	False
...
7784	False	False	False	False	False	False	False	False	False	False	False
7785	False	False	False	False	False	False	False	False	False	False	False
7786	False	False	False	True	False	True	False	False	False	False	False
7787	False	False	False	True	False	False	False	False	False	False	False
7788	False	False	False	False	True	False	False	False	False	False	False

7787 rows × 11 columns

In [24]: `ntflx.isnull().sum()`

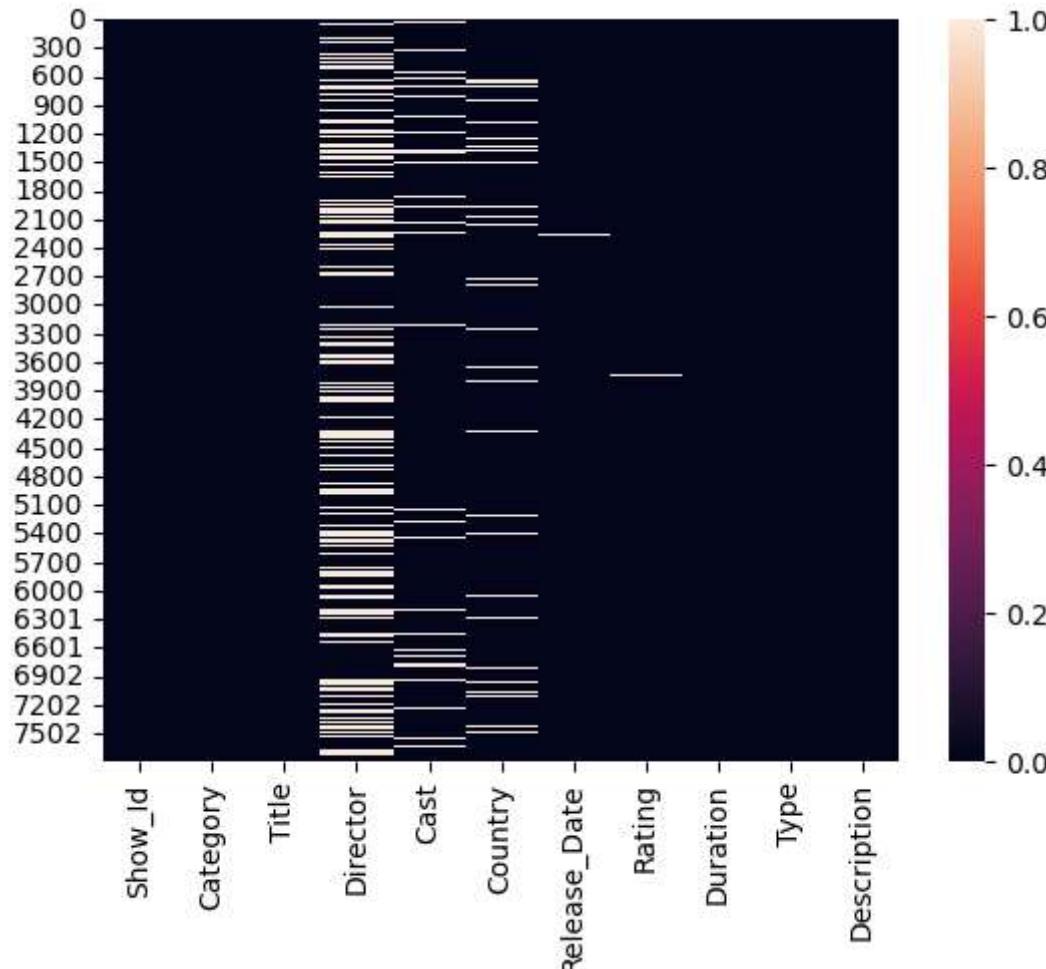
Out[24]:

Show_Id	0
Category	0
Title	0
Director	2388
Cast	718
Country	507
Release_Date	10
Rating	7
Duration	0
Type	0
Description	0
dtype:	int64

Using Seaborn Library for Heat-map

In [25]: `sns.heatmap(ntflx.isnull())`

Out[25]: <Axes: >



Q 1) For 'House of Cards', what is the Show Id and Who is the Director of this show ?

In [26]: `ntflx.head(3)`

Out[26]:

	Show_Id	Category	Title	Director	Cast	Country	Release_Date	Rating	Duration	Type	Description
0	s1	TV Show	3%	NaN	João Miguel, Bianca Comparato, Michel Gomes, R...	Brazil	August 14, 2020	TV-MA	4 Seasons	International TV Shows, TV Dramas, TV Sci-Fi &...	In a future where the elite inhabit an island ...
1	s2	Movie	07:19	Jorge Michel Grau	Demián Bichir, Héctor Bonilla, Oscar Serrano, ...	Mexico	December 23, 2016	TV-MA	93 min	Dramas, International Movies	After a devastating earthquake hits Mexico Cit...
2	s3	Movie	23:59	Gilbert Chan	Tedd Chan, Stella Chung, Henley Hii, Lawrence ...	Singapore	December 20, 2018	R	78 min	Horror Movies, International Movies	When an army recruit is found dead, his fellow...

In [27]: `ntflx[ntflx['Title'].str.contains("House of Cards")]`

Out[27]:

	Show_Id	Category	Title	Director	Cast	Country	Release_Date	Rating	Duration	Type	Description
2832	s2833	TV Show	House of Cards	Robin Wright, David Fincher, Gerald McRaney, J...	Kevin Spacey, Robin Wright, Kate Mara, Corey S...	United States	November 2, 2018	TV-MA	6 Seasons	TV Dramas, TV Thrillers	A ruthless politician will stop at nothing to ...

In [28]: `ntflx[ntflx.Title.isin(['House of Cards'])]`

Out[28]:

	Show_Id	Category	Title	Director	Cast	Country	Release_Date	Rating	Duration	Type	Description
2832	s2833	TV Show	House of Cards	Robin Wright, David Fincher, Gerald McRaney, J...	Kevin Spacey, Robin Wright, Kate Mara, Corey S...	United States	November 2, 2018	TV-MA	6 Seasons	TV Dramas, TV Thrillers	A ruthless politician will stop at nothing to ...

In [29]: `ntflx[ntflx.Title.isin(['House of Cards'])][['Title', 'Show_Id', 'Director']]`

Out[29]:

Title	Show_Id	Director
2832 House of Cards	s2833	Robin Wright, David Fincher, Gerald McRaney, J...

In [30]: `ntflx[['Title', 'Show_Id', 'Director']][ntflx.Title.isin(['House of Cards'])]`

Out[30]:

Title	Show_Id	Director
2832 House of Cards	s2833	Robin Wright, David Fincher, Gerald McRaney, J...

In [31]: `ntflx.Show_Id[ntflx.Title.isin(['House of Cards'])]`

Out[31]: 2832 s2833

Name: Show_Id, dtype: object

In [32]: `ntflx.Director[ntflx.Title.isin(['House of Cards'])]`

Out[32]: 2832 Robin Wright, David Fincher, Gerald McRaney, J...

Name: Director, dtype: object

In [33]: `ntflx[ntflx.Title.isin(['House of Cards'])].Director`

Out[33]: 2832 Robin Wright, David Fincher, Gerald McRaney, J...

Name: Director, dtype: object

Show Id : 's2833'

Directors : 'Robin Wright, David Fincher, Gerald McRaney, J...'

Q 2) In which year the highest number of the TV Shows & Movies were released ? Show with Bar Graph.

In [34]: `ntflx.tail(2)`

Out[34]:

	Show_Id	Category	Title	Director	Cast	Country	Release_Date	Rating	Duration	Type	Description
7787	s7786	TV Show	Zumbo's Just Desserts	NaN	Adriano Zumbo, Rachel Khoo	Australia	October 31, 2020	TV-PG	1 Season	International TV Shows, Reality TV	Dessert wizard Adriano Zumbo looks for the nex...
7788	s7787	Movie	ZZ TOP: THAT LITTLE OL' BAND FROM TEXAS	Sam Dunn	NaN	United Kingdom, Canada, United States	March 1, 2020	TV-MA	90 min	Documentaries, Music & Musicals	This documentary delves into the mystique behi...

In [35]: `ntflx['New_Date']=pd.to_datetime(ntflx.Release_Date)`

In [36]: ntflix

Out[36]:

	Show_Id	Category	Title	Director	Cast	Country	Release_Date	Rating	Duration	Type	Description	New
0	s1	TV Show	3%	NaN	João Miguel, Bianca Comparato, Michel Gomes, R...	Brazil	August 14, 2020	TV-MA	4 Seasons	International TV Shows, TV Dramas, TV Sci-Fi &...	In a future where the elite inhabit an island ...	20
1	s2	Movie	07:19	Jorge Michel Grau	Demián Bichir, Héctor Bonilla, Oscar Serrano, ...	Mexico	December 23, 2016	TV-MA	93 min	Dramas, International Movies	After a devastating earthquake hits Mexico Cit...	20
2	s3	Movie	23:59	Gilbert Chan	Tedd Chan, Stella Chung, Henley Hii, Lawrence ...	Singapore	December 20, 2018	R	78 min	Horror Movies, International Movies	When an army recruit is found dead, his fellow...	20
3	s4	Movie	9	Shane Acker	Elijah Wood, John C. Reilly, Jennifer Connelly...	United States	November 16, 2017	PG-13	80 min	Action & Adventure, Independent Movies, Sci-Fi...	In a postapocalyptic world, rag-doll robots hi...	21
4	s5	Movie	21	Robert Luketic	Jim Sturgess, Kevin Spacey, Kate Bosworth, Aar...	United States	January 1, 2020	PG-13	123 min	Dramas	A brilliant group of students become card-coun...	20
...
7784	s7783	Movie	Zozo	Josef Fares	Imad Creidi, Antoinette Turk, Elias Gergi, Car...	Sweden, Czech Republic, United Kingdom, Denmar...	October 19, 2020	TV-MA	99 min	Dramas, International Movies	When Lebanon's Civil War deprives Zozo of his ...	20

Show_Id	Category	Title	Director	Cast	Country	Release_Date	Rating	Duration	Type	Description	New
7785	s7784	Movie	Zubaan	Mozez Singh	Vicky Kaushal, Sarah-Jane Dias, Raaghav Chanana...	India	March 2, 2019	TV-14	111 min	Dramas, International Movies, Music & Musicals	A scrappy but poor boy worms his way into a ty...
7786	s7785	Movie	Zulu Man in Japan	NaN	Nasty C	NaN	September 25, 2020	TV-MA	44 min	Documentaries, International Movies, Music & M...	In this documentary, South African rapper Nast...
7787	s7786	TV Show	Zumbo's Just Desserts	NaN	Adriano Zumbo, Rachel Khoo	Australia	October 31, 2020	TV-PG	1 Season	International TV Shows, Reality TV	Dessert wizard Adriano Zumbo looks for the nex...
7788	s7787	Movie	ZZ TOP: THAT LITTLE OL' BAND FROM TEXAS	Sam Dunn	United Kingdom, Canada, United States	March 1, 2020	TV-MA	90 min	Documentaries, Music & Musicals	This documentary delves into the mystique behi...	

7787 rows × 12 columns

In [37]: `ntflx.dtypes`

```
Out[37]: Show_Id          object
Category         object
Title            object
Director        object
Cast             object
Country          object
Release_Date    object
Rating           object
Duration         object
Type             object
Description      object
New_Date        datetime64[ns]
dtype: object
```

```
In [38]: ntflx["New_Date"].dt.year
```

```
Out[38]: 0      2020.0
1      2016.0
2      2018.0
3      2017.0
4      2020.0
...
7784    2020.0
7785    2019.0
7786    2020.0
7787    2020.0
7788    2020.0
Name: New_Date, Length: 7787, dtype: float64
```

```
In [39]: ntflx['New_Date'].dt.year.value_counts()
```

```
Out[39]: 2019.0    2153
2020.0    2009
2018.0    1685
2017.0    1225
2016.0     443
2021.0     117
2015.0      88
2014.0      25
2011.0      13
2013.0      11
2012.0       3
2008.0       2
2009.0       2
2010.0       1
Name: New_Date, dtype: int64
```

```
In [40]: ntflx['Category'].unique()
```

```
Out[40]: array(['TV Show', 'Movie'], dtype=object)
```

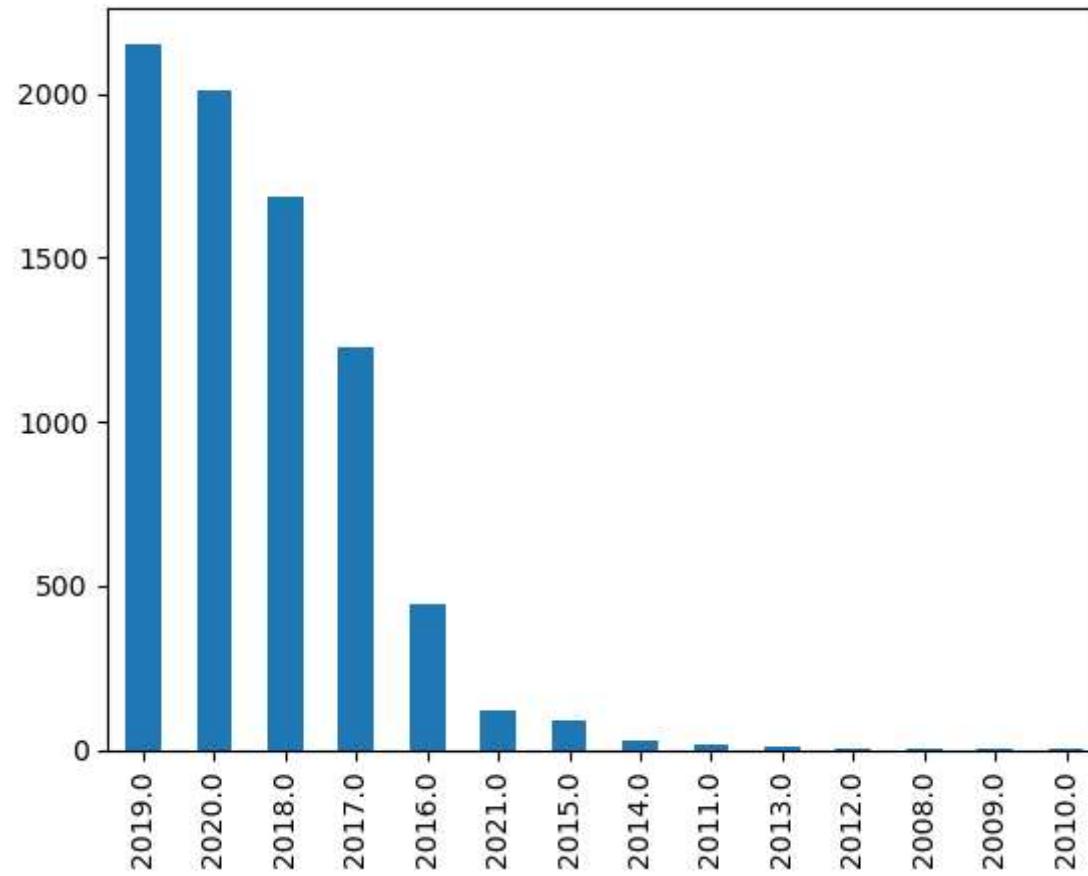
In 2019, Highest number (2153) of the TV Shows & Movies were released

Bar Graph

using .plot() function in pandas library

```
In [41]: ntflx['New_Date'].dt.year.value_counts().plot(kind="bar")
```

```
Out[41]: <Axes: >
```



Q 3) How many Movies & TV Shows are in the dataset ? Show with Bar Graph.

In [42]: `ntflx.head(2)`

Out[42]:

	Show_Id	Category	Title	Director	Cast	Country	Release_Date	Rating	Duration	Type	Description	New_Date
0	s1	TV Show	3%	NaN	João Miguel, Bianca Comparato, Michel Gomes, R...	Brazil	August 14, 2020	TV-MA	4 Seasons	International TV Shows, TV Dramas, TV Sci-Fi &...	In a future where the elite inhabit an island ...	2020-08-14
1	s2	Movie	07:19	Jorge Michel Grau	Demián Bichir, Héctor Bonilla, Oscar Serrano, ...	Mexico	December 23, 2016	TV-MA	93 min	Dramas, International Movies	After a devastating earthquake hits Mexico City...	2016-12-23

In [43]: `ntflx.groupby('Category').Category.count()`

Out[43]: Category

Movie 5377

TV Show 2410

Name: Category, dtype: int64

In [44]: `ntflx.Category.value_counts()`

Out[44]: Movie 5377

TV Show 2410

Name: Category, dtype: int64

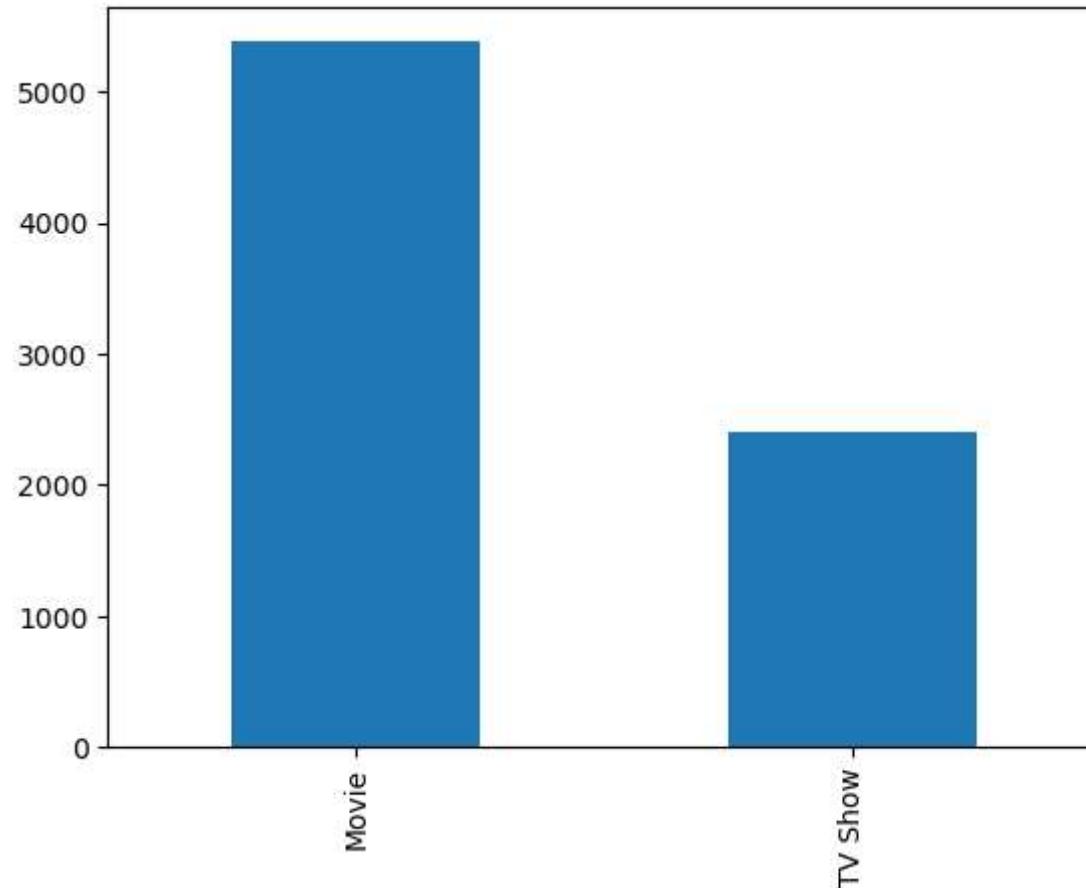
There are 5377 Movies & 2410 TV Shows in the dataset

Bar Graph

of ntflx Dataframe using .plot() function in pandas library

In [45]: `ntflx.Category.value_counts().plot(kind="bar")`

Out[45]: <Axes: >

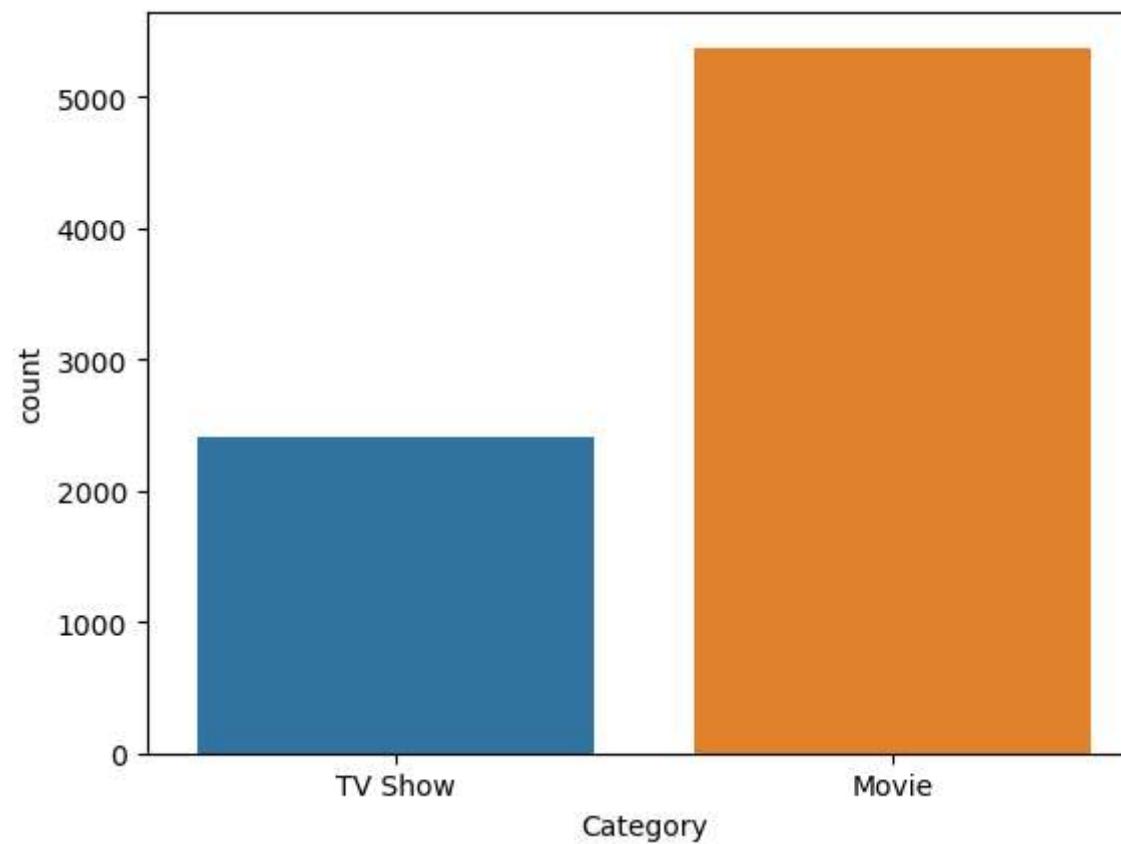


Bar Graph

using countplot() function in seaborn library

```
In [46]: sns.countplot(data=ntflx, x = "Category")
```

```
Out[46]: <Axes: xlabel='Category', ylabel='count'>
```



Q 4) Show all the Movies that were released in year 2000 and 2020.

In [47]: `ntflx.tail(2)`

Out[47]:

Show_Id	Category	Title	Director	Cast	Country	Release_Date	Rating	Duration	Type	Description	New_Date
7787	s7786	TV Show	Zumbo's Just Desserts	NaN	Adriano Zumbo, Rachel Khoo	Australia	October 31, 2020	TV-PG	1 Season	International TV Shows, Reality TV	Dessert wizard Adriano Zumbo looks for the nex...
7788	s7787	Movie	ZZ TOP: THAT LITTLE OL' BAND FROM TEXAS	Sam Dunn	NaN	United Kingdom, Canada, United States	March 1, 2020	TV-MA	90 min	Documentaries, Music & Musicals	This documentary delves into the mystique behi...



In [48]: `ntflx['New_Date'].dt.year.value_counts()`

Out[48]:

2019.0	2153
2020.0	2009
2018.0	1685
2017.0	1225
2016.0	443
2021.0	117
2015.0	88
2014.0	25
2011.0	13
2013.0	11
2012.0	3
2008.0	2
2009.0	2
2010.0	1

Name: New_Date, dtype: int64

In 2000, nothing is released

In 2020, '2009' items are there in Category column (Movies & TV Shows).

```
In [49]: #ntflx["New_Year"] = ntflx["New_Date"].dt.year
ntflx["New_Year"] = pd.to_datetime(ntflx['Release_Date']).dt.year
```

```
In [50]: ntflx.head(2)
```

Out[50]:

	Show_Id	Category	Title	Director	Cast	Country	Release_Date	Rating	Duration	Type	Description	New_Date	New_
0	s1	TV Show	3%	NaN	João Miguel, Bianca Comparato, Michel Gomes, R...	Brazil	August 14, 2020	TV-MA	4 Seasons	International TV Shows, TV Dramas, TV Sci-Fi &...	In a future where the elite inhabit an island ...	2020-08- 14	20
1	s2	Movie	07:19	Jorge Michel Grau	Demián Bichir, Héctor Bonilla, Oscar Serrano, ...	Mexico	December 23, 2016	TV-MA	93 min	Dramas, International Movies	After a devastating earthquake hits Mexico Cit...	2016-12- 23	20

```
In [51]: ntflx[(ntflx["New_Year"]==2000) & (ntflx["Category"]=="Movie")]
```

Out[51]:

Show_Id	Category	Title	Director	Cast	Country	Release_Date	Rating	Duration	Type	Description	New_Date	New_Year
---------	----------	-------	----------	------	---------	--------------	--------	----------	------	-------------	----------	----------

In 2000, no Movie is released¶

```
In [52]: ntflix[(ntflix['New_Year']==2020) & (ntflix["Category"]=="Movie")]
```

Out[52]:

	Show_Id	Category	Title	Director	Cast	Country	Release_Date	Rating	Duration	Type	Description	New
4	s5	Movie	21	Robert Luketic	Jim Sturgess, Kevin Spacey, Kate Bosworth, Aar...	United States	January 1, 2020	PG-13	123 min	Dramas	A brilliant group of students become card-coun...	20
6	s7	Movie	122	Yasir Al Yasiri	Amina Khalil, Ahmed Dawood, Tarek Lotfy, Ahmed...	Egypt	June 1, 2020	TV-MA	95 min	Horror Movies, International Movies	After an awful accident, a couple admitted to ...	20
14	s15	Movie	3022	John Suits	Omar Epps, Kate Walsh, Miranda Cosgrove, Angus...	United States	March 19, 2020	R	91 min	Independent Movies, Sci-Fi & Fantasy, Thrillers	Stranded when the Earth is suddenly destroyed ...	20
27	s28	Movie	#Alive	Cho Il	Yoo Ah-in, Park Shin-hye	South Korea	September 8, 2020	TV-MA	99 min	Horror Movies, International Movies, Thrillers	As a grisly virus rampages a city, a lone man ...	20
28	s29	Movie	#AnneFrank - Parallel Stories	Sabina Fedeli, Anna Migotto	Helen Mirren, Gengher Gatti	Italy	July 1, 2020	TV-14	95 min	Documentaries, International Movies	Through her diary, Anne Frank's story is retold...	20
...
7762	s7761	Movie	Zaki Chan	Wael Ihsan	Ahmed Helmy, Yasmin Abdulaziz, Hassan Hosny, H...	Egypt	May 19, 2020	TV-PG	109 min	Comedies, International Movies, Romantic Movies	An unqualified young man has his work cut out ...	20

Show_Id	Category	Title	Director	Cast	Country	Release_Date	Rating	Duration	Type	Description	New	
7783	s7782	Movie	Zoom	Peter Hewitt	Tim Allen, Courteney Cox, Chevy Chase, Kate Ma...	United States	January 11, 2020	PG	88 min	Children & Family Movies, Comedies	Dragged from civilian life, a former superhero...	20
7784	s7783	Movie	Zozo	Josef Fares	Imad Creidi, Antoinette Turk, Elias Gergi, Car...	Sweden, Czech Republic, United Kingdom, Denmar...	October 19, 2020	TV-MA	99 min	Dramas, International Movies	When Lebanon's Civil War deprives Zozo of his ...	20
7786	s7785	Movie	Zulu Man in Japan	NaN	Nasty C	NaN	September 25, 2020	TV-MA	44 min	Documentaries, International Movies, Music & M...	In this documentary, South African rapper Nast...	20
7788	s7787	Movie	ZZ TOP: THAT LITTLE OL' BAND FROM TEXAS	Sam Dunn	NaN	United Kingdom, Canada, United States	March 1, 2020	TV-MA	90 min	Documentaries, Music & Musicals	This documentary delves into the mystique behi...	20

1312 rows × 13 columns

In 2020, '1312' Movies were released**Q 5) Show only the Titles of all TV Shows that were released in India only.**

In [53]: `ntflx.head(2)`

Out[53]:

	Show_Id	Category	Title	Director	Cast	Country	Release_Date	Rating	Duration	Type	Description	New_Date	New_
0	s1	TV Show	3%	NaN	João Miguel, Bianca Comparato, Michel Gomes, R...	Brazil	August 14, 2020	TV-MA	4 Seasons	International TV Shows, TV Dramas, TV Sci-Fi &...	In a future where the elite inhabit an island ...	2020-08-14	20
1	s2	Movie	07:19	Jorge Michel Grau	Demián Bichir, Héctor Bonilla, Oscar Serrano, ...	Mexico	December 23, 2016	TV-MA	93 min	Dramas, International Movies	After a devastating earthquake hits Mexico City...	2016-12-23	20

```
In [54]: ntflix[(ntflix['Category']=='TV Show') & (ntflix['Country'] =='India')][["Country","Category","Title"]]
```

Out[54]:

	Country	Category	Title
86	India	TV Show	21 Sarfarosh: Saragarhi 1897
132	India	TV Show	7 (Seven)
340	India	TV Show	Agent Raghav
364	India	TV Show	Akbar Birbal
533	India	TV Show	Anjaan: Rural Myths
...
6249	India	TV Show	The Creative Indians
6400	India	TV Show	The Golden Years with Javed Akhtar
6469	India	TV Show	The House That Made Me
7294	India	TV Show	Typewriter
7705	India	TV Show	Yeh Meri Family

71 rows × 3 columns

There are 71 Titles in total in which all are TV Shows that were released in India only.

```
In [55]: ntflx[(ntflx['Category']=='TV Show') & (ntflx['Country'] == 'India')]["Title"].unique()
```

```
Out[55]: array(['21 Sarfarosh: Saragarhi 1897', '7 (Seven)', 'Agent Raghav',
   'Akbar\xa0Birbal', 'Anjaan: Rural Myths',
   'Anjaan: Special Crimes Unit', 'Bad Boy Billionaires: India',
   'Badalte Rishton Ki Dastaan', 'Bard of Blood', 'Betaal',
   'Bh Se Bhade', 'Bhaag Beanie Bhaag', 'Bhaage Re Mann',
   'Chhota Bheem', 'ChuChu TV Nursery Rhymes & Kids Songs (Hindi)',
   'Classic Legends', 'College Romance',
   'Cricket Fever: Mumbai Indians', 'Darr Sabko Lagta Hai',
   'Delhi Crime', 'Devlok with Devdutt Pattanaik', 'Dharmakshetra',
   'Engineering Girls', 'Fabulous Lives of Bollywood Wives',
   'Fear Files... Har Mod Pe Darr', 'Gabru: Hip Hop Revolution',
   'Gangs of Hassepur', 'GHOUL', 'Girls Hostel', 'Hasmukh', 'Inmates',
   'Jamtara - Sabka Number Ayega', 'Jhansi Ki Rani',
   'Khan: No. 1 Crime Hunter', 'Khelti Hai Zindagi Aankh Micholi',
   'Khoteey Sikkey', 'Ladies Up', 'Leila', 'Little Singham',
   'Little Things', 'Maharakshak Devi', 'Maharakshak: Aryan',
   'Mahi Way', 'Masaba Masaba',
   'Midnight Misadventures With Mallika Dua',
   'Mighty Little Bheem: Diwali',
   'Mighty Little Bheem: Festival of Colors',
   'Mighty Little Bheem: Kite Festival', 'Mismatched',
   'Paava Kadhaigal', 'Powder', 'Pyaar Tune Kya Kiya',
   'Raja Rasoi Aur Anya Kahanian', 'Ramayan', 'Razia Sultan',
   'Regiment Diaries', 'Rishta.com', 'Sab Jholmaal Hai',
   'Selection Day', 'She', 'Stories by Rabindranath Tagore',
   'Super Bheem', 'Taj Mahal 1989',
   'Th Eena Meena Deeka Chase Comedy Show', 'Thackeray',
   'The Calling', 'The Creative Indians',
   'The Golden Years with Javed Akhtar', 'The House That Made Me',
   'Typewriter', 'Yeh Meri Family'], dtype=object)
```

Q 6) Show Top 10 Directors, who gave the highest number of TV Shows & Movies to Netflix ?

In [56]: `ntflx.tail(2)`

Out[56]:

	Show_Id	Category	Title	Director	Cast	Country	Release_Date	Rating	Duration	Type	Description	New_Date
7787	s7786	TV Show	Zumbo's Just Desserts	NaN	Adriano Zumbo, Rachel Khoo	Australia	October 31, 2020	TV-PG	1 Season	International TV Shows, Reality TV	Dessert wizard Adriano Zumbo looks for the nex...	2020-10-31
7788	s7787	Movie	ZZ TOP: THAT LITTLE OL' BAND FROM TEXAS	Sam Dunn	NaN	United Kingdom, Canada, United States	March 1, 2020	TV-MA	90 min	Documentaries, Music & Musicals	This documentary delves into the mystique behi...	2020-03-01



In [57]: `ntflx['Director'].value_counts().head(10)`

Out[57]:

Raúl Campos, Jan Suter	18
Marcus Raboy	16
Jay Karas	14
Cathy Garcia-Molina	13
Jay Chapman	12
Youssef Chahine	12
Martin Scorsese	12
Steven Spielberg	10
David Dhawan	9
Hakan Algül	8

Name: Director, dtype: int64

Top 10 Directors, who gave the highest number of TV Shows & Movies to Netflix

Q 7) Show all the Records, where "Category is Movie and Type is Comedies" or "Country is United Kingdom".

```
In [58]: #ntflx[ntflx.Type.isin(["Comedies"])]      =====>Gives Exactly Same values  
#ntflx[ntflx.Type.str.contains('Comedies')]    =====>Gives Fully&Partially Matched values  
ntflx[ntflx.Type=='Comedies']
```

Out[58]:

	Show_Id	Category	Title	Director	Cast	Country	Release_Date	Rating	Duration	Type	Description	New_Date
33	s34	Movie	#realityhigh	Fernando Lebrija	Nesta Cooper, Kate Walsh, John Michael Higgins...	United States	September 8, 2017	TV-14	99 min	Comedies	When nerdy high schooler Dani finally attracts...	2017-09-08
72	s73	Movie	17 Again	Burr Steers	Zac Efron, Leslie Mann, Matthew Perry, Thomas...	United States	January 1, 2021	PG-13	102 min	Comedies	Nearing a midlife crisis, thirty-something Mik...	2021-01-01
84	s85	Movie	21 & Over	Jon Lucas, Scott Moore	Miles Teller, Skylar Astin, Justin Chon, Sarah...	United States	April 16, 2019	R	93 min	Comedies	Jeff's straight-and-narrow life changes abruptly...	2019-04-16
148	s149	Movie	A Bad Moms Christmas	Jon Lucas, Scott Moore	Mila Kunis, Kristen Bell, Kathryn Hahn, Susan...	United States, China	February 14, 2020	R	104 min	Comedies	Stressed-out moms Amy, Carla and Kiki are back...	2020-02-14
174	s175	Movie	A Futile and Stupid Gesture	David Wain	Will Forte, Domhnall Gleeson, Martin Mull, Joe...	United States	January 26, 2018	TV-MA	102 min	Comedies	In a brief life full of triumph and failure, "	2018-01-26
...
7341	s7340	Movie	Undercover Brother 2	Leslie Small	Michael Jai White, Vince Swann, Barry Bostwick...	United States	November 5, 2019	R	85 min	Comedies	When a beloved secret agent falls deep into a	2019-11-05

	Show_Id	Category	Title	Director	Cast	Country	Release_Date	Rating	Duration	Type	Description	New_Date
7590	s7589	Movie	Where's the Money	Scott Zabielski	Andrew Bachelor, Kat Graham, Mike Epps, Terry ...	United States	January 22, 2018	R	86 min	Comedies	Hunting for a stash of stolen money, a sharp-w...	2018-01-22
7623	s7622	Movie	Wild Oats	Andy Tennant	Shirley MacLaine, Jessica Lange, Billy Connoll...	Germany, United States	May 13, 2017	PG-13	86 min	Comedies	When insurance accidentally pays her millions,...	2017-05-13
7634	s7633	Movie	Wine Country	Amy Poehler	Amy Poehler, Maya Rudolph, Ana Gasteyer, Rache...	United States	May 10, 2019	R	104 min	Comedies	When longtime friends meet up for a wine-soake...	2019-05-10
7664	s7663	Movie	Work It	Laura Terruso	Sabrina Carpenter, Jordan Fisher, Liza Koshy, ...	United States	August 7, 2020	TV-14	94 min	Comedies	A brilliant but clumsy high school senior vows...	2020-08-07

97 rows × 13 columns

```
In [59]: ntflix[(ntflix.Category=='Movie') & (ntflix.Type=='Comedies') | (ntflix.Country=='United Kingdom')]
```

Out[59]:

	Show_Id	Category	Title	Director	Cast	Country	Release_Date	Rating	Duration	Type	Description	Ne
19	s20	Movie	'89	NaN	Lee Dixon, Ian Wright, Paul Merson	United Kingdom	May 16, 2018	TV-PG	87 min	Sports Movies	Mixing old footage with interviews, this is th...	2
33	s34	Movie	#realityhigh	Fernando Lebrija	Nesta Cooper, Kate Walsh, John Michael Higgins...	United States	September 8, 2017	TV-14	99 min	Comedies	When nerdy high schooler Dani finally attracts...	2
58	s59	TV Show	100% Hotter	NaN	Daniel Palmer, Melissa Sophia, Karen Williams,...	United Kingdom	November 1, 2019	TV-14	1 Season	British TV Shows, International TV Shows, Real...	A stylist, a hair designer and a makeup artist...	2
72	s73	Movie	17 Again	Burr Steers	Zac Efron, Leslie Mann, Matthew Perry, Thomas ...	United States	January 1, 2021	PG-13	102 min	Comedies	Nearing a midlife crisis, thirty-something Mik...	2
82	s83	Movie	2036 Origin Unknown	Hasraf Dulull	Katee Sackhoff, Ray Fearon, Julie Cox, Steven ...	United Kingdom	December 20, 2018	TV-14	95 min	Sci-Fi & Fantasy	Working with an artificial intelligence to inv...	2
...
7670	s7669	TV Show	World War II in Colour	NaN	Robert Powell	United Kingdom	August 1, 2017	TV-MA	1 Season	British TV Shows, Docuseries, International TV...	Footage of the most dramatic moments from Worl...	2
7671	s7670	TV Show	World's Busiest Cities	NaN	Anita Rani, Ade Adepitan, Dan Snow	United Kingdom	February 1, 2019	TV-PG	1 Season	British TV Shows, Docuseries	From Moscow to Mexico City, three BBC journali...	2

	Show_Id	Category	Title	Director	Cast	Country	Release_Date	Rating	Duration	Type	Description	Ne
7688	s7687	Movie	XV: Beyond the Tryline	Pierre Deschamps	Nan	United Kingdom	March 18, 2020	TV-14	91 min	Documentaries, Sports Movies	Set against the 2015 Rugby World Cup, this doc...	2
7725	s7724	Movie	You Can Tutu	James Brown	Lily O'Regan, Jeannett Sy Enriquez Borges, Joel...	United Kingdom	December 31, 2017	TV-G	87 min	Children & Family Movies	A gifted young ballet dancer struggles to find...	2
7740	s7739	TV Show	Young Wallander	Nan	Adam Pålsson, Richard Dillane, Leanne Best, El...	United Kingdom	September 3, 2020	TV-MA	1 Season	Crime TV Shows, International TV Shows, TV Dramas	An incendiary hate crime stirs civil unrest, f...	2

485 rows × 13 columns

There are 485 Records, where "Category is Movie and Type is Comedies" or "Country is United Kingdom".

Q 8) In how many movies/shows, Tom Cruise was cast ?

In [60]: `ntflx.tail(2)`

Out[60]:

	Show_Id	Category	Title	Director	Cast	Country	Release_Date	Rating	Duration	Type	Description	New_Date
7787	s7786	TV Show	Zumbo's Just Desserts	NaN	Adriano Zumbo, Rachel Khoo	Australia	October 31, 2020	TV-PG	1 Season	International TV Shows, Reality TV	Dessert wizard Adriano Zumbo looks for the nex...	2020-10-31
7788	s7787	Movie	ZZ TOP: THAT LITTLE OL' BAND FROM TEXAS	Sam Dunn	NaN	United Kingdom, Canada, United States	March 1, 2020	TV-MA	90 min	Documentaries, Music & Musicals	This documentary delves into the mystique behi...	2020-03-01



```
In [61]: #ntflx[ntflx["Cast"]=="Tom Cruise"]
#ntflx[ntflx["Cast"].isin(["Tom Cruise"])]
#ntflx[ntflx["Cast"].str.contains("Tom Cruise")]
#ntflx["Cast"].isnull().sum()
ntflx[ntflx["Cast"].isnull()]
```

Out[61]:

	Show_Id	Category	Title	Director	Cast	Country	Release_Date	Rating	Duration	Type	Description
12	s13	TV Show	1994	Diego Enrique Osorno	NaN	Mexico	May 17, 2019	TV-MA	1 Season	Crime TV Shows, Docuseries, International TV S...	Archival video and new interviews examine Mexi..
25	s26	Movie	(T)ERROR	Lyric R. Cabral, David Felix Sutcliffe	NaN	United States	June 30, 2016	NR	84 min	Documentaries	This real-life look at FB counterterrorism op..
26	s27	TV Show	(Un)Well	NaN	NaN	United States	August 12, 2020	TV-MA	1 Season	Reality TV	This docuseries takes a deep dive into the luc..
30	s31	Movie	#cats_the_mewvie	Michael Margolis	NaN	Canada	February 5, 2020	TV-14	90 min	Documentaries, International Movies	This pawesome documentary explores how our fel..
35	s36	Movie	#Rucker50	Robert McCullough Jr.	NaN	United States	December 1, 2016	TV-PG	56 min	Documentaries, Sports Movies	This documentary celebrates the 50th anniversa..
...
7681	s7680	Movie	WWII: Report from the Aleutians	John Huston	NaN	United States	March 31, 2017	TV-PG	45 min	Documentaries	Filmmaker John Huston narrates this Oscar nomi..
7688	s7687	Movie	XV: Beyond the Tryline	Pierre Deschamps	NaN	United Kingdom	March 18, 2020	TV-14	91 min	Documentaries, Sports Movies	Set against the 2015 Rugby World Cup, this doc..
7768	s7767	TV Show	Zig & Sharko	NaN	NaN	France	December 1, 2017	TV-Y7	1 Season	Kids' TV, TV Comedies	Zig, an island-bound hyena will do anything t..
7779	s7778	TV Show	Zombie Dumb	NaN	NaN	NaN	July 1, 2019	TV-Y7	2 Seasons	Kids' TV, Korean TV Shows, TV Comedies	While living alone in a spooky town, a young g..

Show_Id	Category	Title	Director	Cast	Country	Release_Date	Rating	Duration	Type	Description
7788	s7787	Movie ZZ TOP: THAT LITTLE OL' BAND FROM TEXAS	Sam Dunn	NaN	United Kingdom, Canada, United States	March 1, 2020	TV-MA	90 min	Documentaries, Music & Musicals	This documentary delves into the mystique beh..

718 rows × 13 columns

Method 1

```
In [62]: #ntflx["Cast"].fillna("Unknown", inplace=True) =====>inplace = True <----> permanently fills null values  
ntflx.fillna("Unknown")
```

Out[62]:

	Show_Id	Category	Title	Director	Cast	Country	Release_Date	Rating	Duration	Type	Description	Ne
0	s1	TV Show	3%	Unknown	João Miguel, Bianca Comparato, Michel Gomes, R...	Brazil	August 14, 2020	TV-MA	4 Seasons	International TV Shows, TV Dramas, TV Sci-Fi &...	In a future where the elite inhabit an island ...	2 C
1	s2	Movie	07:19	Jorge Michel Grau	Demián Bichir, Héctor Bonilla, Oscar Serrano, ...	Mexico	December 23, 2016	TV-MA	93 min	Dramas, International Movies	After a devastating earthquake hits Mexico City...	2 C
2	s3	Movie	23:59	Gilbert Chan	Tedd Chan, Stella Chung, Henley Hii, Lawrence ...	Singapore	December 20, 2018	R	78 min	Horror Movies, International Movies	When an army recruit is found dead, his fellow...	2 C
3	s4	Movie	9	Shane Acker	Elijah Wood, John C. Reilly, Jennifer Connnelly...	United States	November 16, 2017	PG-13	80 min	Action & Adventure, Independent Movies, Sci-Fi...	In a postapocalyptic world, rag-doll robots hi...	2 C
4	s5	Movie	21	Robert Luketic	Jim Sturgess, Kevin Spacey, Kate Bosworth, Aar...	United States	January 1, 2020	PG-13	123 min	Dramas	A brilliant group of students become card-cou...	2 C
...
7784	s7783	Movie	Zozo	Josef Fares	Imad Creidi, Antoinette Turk, Elias Gergi, Car...	Sweden, Czech Republic, United Kingdom, Denmark...	October 19, 2020	TV-MA	99 min	Dramas, International Movies	When Lebanon's Civil War deprives Zozo of his ...	2 C

Show_Id	Category	Title	Director	Cast	Country	Release_Date	Rating	Duration	Type	Description	Ne	
7785	s7784	Movie	Zubaan	Mozez Singh	Vicky Kaushal, Sarah-Jane Dias, Raaghav Chanan...	India	March 2, 2019	TV-14	111 min	Dramas, International Movies, Music & Musicals	A scrappy but poor boy worms his way into a ty...	2
7786	s7785	Movie	Zulu Man in Japan	Unknown	Nasty C	Unknown	September 25, 2020	TV-MA	44 min	Documentaries, International Movies, Music & M...	In this documentary, South African rapper Nast...	2
7787	s7786	TV Show	Zumbo's Just Desserts	Unknown	Adriano Zumbo, Rachel Khoo	Australia	October 31, 2020	TV-PG	1 Season	International TV Shows, Reality TV	Dessert wizard Adriano Zumbo looks for the nex...	2
7788	s7787	Movie	ZZ TOP: THAT LITTLE OL' BAND FROM TEXAS	Sam Dunn	Unknown	United Kingdom, Canada, United States	March 1, 2020	TV-MA	90 min	Documentaries, Music & Musicals	This documentary delves into the mystique behi...	2

7787 rows × 13 columns

In [63]: `ntflx[ntflx["Cast"].fillna("Unknown").str.contains("Tom Cruise")]`

Out[63]:

	Show_Id	Category	Title	Director	Cast	Country	Release_Date	Rating	Duration	Type	Description	New_Date
3860	s3861	Movie	Magnolia	Paul Thomas Anderson	Jeremy Blackman, Tom Cruise, Melinda Dillon, A...	United States	January 1, 2020	R	189 min	Dramas, Independent Movies	Through chance, human action, past history and...	2020-01-01
5071	s5071	Movie	Rain Man	Barry Levinson	Dustin Hoffman, Tom Cruise, Valeria Golino, Ge...	United States	July 1, 2019	R	134 min	Classic Movies, Dramas	A fast-talking yuppie is forced to slow down w...	2019-07-01

Method 2

In [64]: `ntflx.tail(4)`

Out[64]:

	Show_Id	Category	Title	Director	Cast	Country	Release_Date	Rating	Duration	Type	Description	New_Da
7785	s7784	Movie	Zubaan	Mozez Singh	Vicky Kaushal, Sarah-Jane Dias, Raaghav Chanana...	India	March 2, 2019	TV-14	111 min	Dramas, International Movies, Music & Musicals	A scrappy but poor boy worms his way into a ty...	2019-C
7786	s7785	Movie	Zulu Man in Japan	NaN	Nasty C	NaN	September 25, 2020	TV-MA	44 min	Documentaries, International Movies, Music & M...	In this documentary, South African rapper Nast...	2020-C
7787	s7786	TV Show	Zumbo's Just Desserts	NaN	Adriano Zumbo, Rachel Khoo	Australia	October 31, 2020	TV-PG	1 Season	International TV Shows, Reality TV	Dessert wizard Adriano Zumbo looks for the nex...	2020-1
7788	s7787	Movie	ZZ TOP: THAT LITTLE OL' BAND FROM TEXAS	Sam Dunn	NaN	United Kingdom, Canada, United States	March 1, 2020	TV-MA	90 min	Documentaries, Music & Musicals	This documentary delves into the mystique behi...	2020-C

Creating New Data Frame

In [65]: `new_ntflx=ntflx.dropna()`

In [66]: new_ntflx

Out[66]:

	Show_Id	Category	Title	Director	Cast	Country	Release_Date	Rating	Duration	Type	Description	Ne...
1	s2	Movie	07:19	Jorge Michel Grau	Demián Bichir, Héctor Bonilla, Oscar Serrano, ...	Mexico	December 23, 2016	TV-MA	93 min	Dramas, International Movies	After a devastating earthquake hits Mexico City...	2
2	s3	Movie	23:59	Gilbert Chan	Teddy Chan, Stella Chung, Henley Hii, Lawrence ...	Singapore	December 20, 2018	R	78 min	Horror Movies, International Movies	When an army recruit is found dead, his fellow...	2
3	s4	Movie	9	Shane Acker	Elijah Wood, John C. Reilly, Jennifer Connely...	United States	November 16, 2017	PG-13	80 min	Action & Adventure, Independent Movies, Sci-Fi...	In a postapocalyptic world, rag-doll robots hi...	2
4	s5	Movie	21	Robert Luketic	Jim Sturgess, Kevin Spacey, Kate Bosworth, Aar...	United States	January 1, 2020	PG-13	123 min	Dramas	A brilliant group of students become card-coun...	2
5	s6	TV Show	46	Serdar Akar	Erdal Beşikçioğlu, Yasemin Allen, Melis Birkan...	Turkey	July 1, 2017	TV-MA	1 Season	International TV Shows, TV Dramas, TV Mysteries	A genetics professor experiments with a treatm...	2
...
7780	s7779	Movie	Zombieland	Ruben Fleischer	Jesse Eisenberg, Woody Harrelson, Emma Stone, ...	United States	November 1, 2019	R	88 min	Comedies, Horror Movies	Looking to survive in a world taken over by zo...	2
7782	s7781	Movie	Zoo	Shlok Sharma	Shashank Arora, Shweta Tripathi, Rahul Kumar, ...	India	July 1, 2018	TV-MA	94 min	Dramas, Independent Movies, International Movies	A drug dealer starts having doubts about his t...	2

Show_Id	Category	Title	Director	Cast	Country	Release_Date	Rating	Duration	Type	Description	New	
7783	s7782	Movie	Zoom	Peter Hewitt	Tim Allen, Courteney Cox, Chevy Chase, Kate Ma...	United States	January 11, 2020	PG	88 min	Children & Family Movies, Comedies	Dragged from civilian life, a former superhero...	2
7784	s7783	Movie	Zozo	Josef Fares	Imad Creidi, Antoinette Turk, Elias Gergi, Car...	Sweden, Czech Republic, United Kingdom, Denmar...	October 19, 2020	TV-MA	99 min	Dramas, International Movies	When Lebanon's Civil War deprives Zozo of his ...	2
7785	s7784	Movie	Zubaan	Mozez Singh	Vicky Kaushal, Sarah-Jane Dias, Raaghav Chan...	India	March 2, 2019	TV-14	111 min	Dramas, International Movies, Music & Musicals	A scrappy but poor boy worms his way into a ty...	2

4809 rows × 13 columns

In [67]: `new_ntflx[new_ntflx["Cast"].str.contains("Tom Cruise")]`

Out[67]:

Show_Id	Category	Title	Director	Cast	Country	Release_Date	Rating	Duration	Type	Description	New_Date	
3860	s3861	Movie	Magnolia	Paul Thomas Anderson	Jeremy Blackman, Tom Cruise, Melinda Dillon, A...	United States	January 1, 2020	R	189 min	Dramas, Independent Movies	Through chance, human action, past history and...	2020-01-01
5071	s5071	Movie	Rain Man	Barry Levinson	Dustin Hoffman, Tom Cruise, Valeria Golino, Ge...	United States	July 1, 2019	R	134 min	Classic Movies, Dramas	A fast-talking yuppie is forced to slow down w...	2019-07-01

In only Two movies, Tom Cruise was cast.

Q 9) What are the different Ratings defined by Netflix ?

In [68]: ntflix

Out[68]:

	Show_Id	Category	Title	Director	Cast	Country	Release_Date	Rating	Duration	Type	Description	New
0	s1	TV Show	3%	NaN	João Miguel, Bianca Comparato, Michel Gomes, R...	Brazil	August 14, 2020	TV-MA	4 Seasons	International TV Shows, TV Dramas, TV Sci-Fi &...	In a future where the elite inhabit an island ...	20
1	s2	Movie	07:19	Jorge Michel Grau	Demián Bichir, Héctor Bonilla, Oscar Serrano, ...	Mexico	December 23, 2016	TV-MA	93 min	Dramas, International Movies	After a devastating earthquake hits Mexico City...	20
2	s3	Movie	23:59	Gilbert Chan	Tedd Chan, Stella Chung, Henley Hii, Lawrence ...	Singapore	December 20, 2018	R	78 min	Horror Movies, International Movies	When an army recruit is found dead, his fellow...	20
3	s4	Movie	9	Shane Acker	Elijah Wood, John C. Reilly, Jennifer Connelly...	United States	November 16, 2017	PG-13	80 min	Action & Adventure, Independent Movies, Sci-Fi...	In a postapocalyptic world, rag-doll robots hi...	21
4	s5	Movie	21	Robert Luketic	Jim Sturgess, Kevin Spacey, Kate Bosworth, Aar...	United States	January 1, 2020	PG-13	123 min	Dramas	A brilliant group of students become card-coun...	20
...
7784	s7783	Movie	Zozo	Josef Fares	Imad Creidi, Antoinette Turk, Elias Gergi, Car...	Sweden, Czech Republic, United Kingdom, Denmark...	October 19, 2020	TV-MA	99 min	Dramas, International Movies	When Lebanon's Civil War deprives Zozo of his ...	20

Show_Id	Category	Title	Director	Cast	Country	Release_Date	Rating	Duration	Type	Description	New	
7785	s7784	Movie	Zubaan	Mozez Singh	Vicky Kaushal, Sarah-Jane Dias, Raaghav Chanana...	India	March 2, 2019	TV-14	111 min	Dramas, International Movies, Music & Musicals	A scrappy but poor boy worms his way into a ty...	20
7786	s7785	Movie	Zulu Man in Japan	NaN	Nasty C	NaN	September 25, 2020	TV-MA	44 min	Documentaries, International Movies, Music & M...	In this documentary, South African rapper Nast...	20
7787	s7786	TV Show	Zumbo's Just Desserts	NaN	Adriano Zumbo, Rachel Khoo	Australia	October 31, 2020	TV-PG	1 Season	International TV Shows, Reality TV	Dessert wizard Adriano Zumbo looks for the nex...	20
7788	s7787	Movie	ZZ TOP: THAT LITTLE OL' BAND FROM TEXAS	Sam Dunn	United Kingdom, Canada, United States	March 1, 2020	TV-MA	90 min	Documentaries, Music & Musicals	This documentary delves into the mystique behi...	20	

7787 rows × 13 columns

In [69]: `ntflx["Rating"].nunique()`

Out[69]: 14

In [70]: `ntflx["Rating"].unique()`Out[70]: `array(['TV-MA', 'R', 'PG-13', 'TV-14', 'TV-PG', 'NR', 'TV-G', 'TV-Y', nan, 'TV-Y7', 'PG', 'G', 'NC-17', 'TV-Y7-FV', 'UR'], dtype=object)`

List of Ratings :

`['TV-MA', 'R', 'PG-13', 'TV-14', 'TV-PG', 'NR', 'TV-G', 'TV-Y', nan, 'TV-Y7', 'PG', 'G', 'NC-17', 'TV-Y7-FV', 'UR']`

Q 9.1) How many Movies got the 'TV-14' rating, in Canada ?

In [71]: `ntflx.head(2)`

Out[71]:

	Show_Id	Category	Title	Director	Cast	Country	Release_Date	Rating	Duration	Type	Description	New_Date	New_
0	s1	TV Show	3%	NaN	João Miguel, Bianca Comparato, Michel Gomes, R...	Brazil	August 14, 2020	TV-MA	4 Seasons	International TV Shows, TV Dramas, TV Sci-Fi &...	In a future where the elite inhabit an island ...	2020-08- 14	20
1	s2	Movie	07:19	Jorge Michel Grau	Demián Bichir, Héctor Bonilla, Oscar Serrano, ...	Mexico	December 23, 2016	TV-MA	93 min	Dramas, International Movies	After a devastating earthquake hits Mexico Cit...	2016-12- 23	20

```
In [72]: ntflx[(ntflx["Rating"]=="TV-14") & (ntflx["Country"]=="Canada") & (ntflx["Category"]=="Movie")]
```

Out[72]:

	Show_Id	Category	Title	Director	Cast	Country	Release_Date	Rating	Duration	Type	Description
30	s31	Movie	#cats_the_mewvie	Michael Margolis	NaN	Canada	February 5, 2020	TV-14	90 min	Documentaries, International Movies	T pawes or documenta explore how our fe
34	s35	Movie	#Roxy	Michael Kennedy	Jake Short, Sarah Fisher, Booboo Stewart, Dann...	Canada	April 10, 2019	TV-14	105 min	Comedies, Romantic Movies	A teen hacker w a huge nc helps coc
608	s609	Movie	At First Light	Jason Stone	Stefanie Scott, Theodore Pellerin, Percy Hynes...	Canada	December 27, 2018	TV-14	91 min	Dramas, Sci-Fi & Fantasy	Af mistic lights imb her w extrao
1506	s1507	Movie	Counterfeiting in Suburbia	Jason Bourque	Sarah Butler, Larissa Albuquerque, Kayla Walla...	Canada	July 1, 2018	TV-14	88 min	Dramas, Thrillers	T teenag pr counterl money thei
3713	s3714	Movie	Long Time Running	Jennifer Baichwal, Nicholas de Pencier	Gord Downie, Paul Langlois, Gord Sinclair, Rob...	Canada	November 12, 2017	TV-14	96 min	Documentaries, International Movies, Music & M...	T documenta follows t 2016 tour belo
3956	s3957	Movie	Martin Matte: La vie, la mort...eh la la..!	Jean-François Blais	Martin Matte	Canada	October 14, 2019	TV-14	62 min	Stand-Up Comedy	Quebec comedy s Martin Ma serves
5336	s5336	Movie	Sadie's Last Days on Earth	Michael Seater	Morgan Taylor Campbell, Clark Backo, Ricardo H...	Canada	August 22, 2017	TV-14	94 min	Comedies, Sci-Fi & Fantasy	Hi schoo Sad Mitch believes t wor

Show_Id	Category	Title	Director	Cast	Country	Release_Date	Rating	Duration	Type	Description
5393	s5393	Movie	Sardaar ji	Rohit Jugraj Diljit Dosanjh, Neeru Bajwa, Mandy Takhar, Jas...	Canada	December 1, 2017	TV-14	140 min	Comedies, International Movies, Music & Musicals	Where palatial wedding venue turned out to be
6062	s6062	Movie	The Accountant of Auschwitz	Matthew Shoychet	NaN	Canada	July 1, 2019	TV-14	78 min	Documentaries, International Movies
7025	s7024	Movie	The Wrong Babysitter	George Mendeluk	Daphne Zuniga, Seann Gallagher, Lisa Marie Carr...	Canada	June 18, 2019	TV-14	89 min	Thrillers
7041	s7040	Movie	There's Something in the Water	Ellen Page, Ian Daniel	Ellen Page	Canada	March 27, 2020	TV-14	72 min	Documentaries, International Movies

```
In [73]: ntflix.loc[(ntflix["Rating"]=="TV-14") & (ntflix["Country"]=="Canada") & (ntflix["Category"]=="Movie"), ["Category"]]
```

Out[73]:

	Category	Country	Rating
30	Movie	Canada	TV-14
34	Movie	Canada	TV-14
608	Movie	Canada	TV-14
1506	Movie	Canada	TV-14
3713	Movie	Canada	TV-14
3956	Movie	Canada	TV-14
5336	Movie	Canada	TV-14
5393	Movie	Canada	TV-14
6062	Movie	Canada	TV-14
7025	Movie	Canada	TV-14
7041	Movie	Canada	TV-14

```
In [74]: ntflix[(ntflix["Rating"]=="TV-14") & (ntflix["Country"]=="Canada") & (ntflix["Category"]=="Movie")] ["Category"].
```

Out[74]: (11,)

11 Movies got the 'TV-14' rating in Canada

Q 9.2) How many TV Shows got the 'R' rating, after year 2018 ?

In [75]: ntflix

Out[75]:

	Show_Id	Category	Title	Director	Cast	Country	Release_Date	Rating	Duration	Type	Description	New
0	s1	TV Show	3%	NaN	João Miguel, Bianca Comparato, Michel Gomes, R...	Brazil	August 14, 2020	TV-MA	4 Seasons	International TV Shows, TV Dramas, TV Sci-Fi &...	In a future where the elite inhabit an island ...	20
1	s2	Movie	07:19	Jorge Michel Grau	Demián Bichir, Héctor Bonilla, Oscar Serrano, ...	Mexico	December 23, 2016	TV-MA	93 min	Dramas, International Movies	After a devastating earthquake hits Mexico City...	20
2	s3	Movie	23:59	Gilbert Chan	Tedd Chan, Stella Chung, Henley Hii, Lawrence ...	Singapore	December 20, 2018	R	78 min	Horror Movies, International Movies	When an army recruit is found dead, his fellow...	20
3	s4	Movie	9	Shane Acker	Elijah Wood, John C. Reilly, Jennifer Connelly...	United States	November 16, 2017	PG-13	80 min	Action & Adventure, Independent Movies, Sci-Fi...	In a postapocalyptic world, rag-doll robots hi...	21
4	s5	Movie	21	Robert Luketic	Jim Sturgess, Kevin Spacey, Kate Bosworth, Aar...	United States	January 1, 2020	PG-13	123 min	Dramas	A brilliant group of students become card-coun...	20
...
7784	s7783	Movie	Zozo	Josef Fares	Imad Creidi, Antoinette Turk, Elias Gergi, Car...	Sweden, Czech Republic, United Kingdom, Denmark...	October 19, 2020	TV-MA	99 min	Dramas, International Movies	When Lebanon's Civil War deprives Zozo of his ...	20

	Show_Id	Category	Title	Director	Cast	Country	Release_Date	Rating	Duration	Type	Description	New
7785	s7784	Movie	Zubaan	Mozez Singh	Vicky Kaushal, Sarah-Jane Dias, Raaghav Chanan...	India	March 2, 2019	TV-14	111 min	Dramas, International Movies, Music & Musicals	A scrappy but poor boy worms his way into a ty...	20
7786	s7785	Movie	Zulu Man in Japan	NaN	Nasty C	NaN	September 25, 2020	TV-MA	44 min	Documentaries, International Movies, Music & M...	In this documentary, South African rapper Nast...	20
7787	s7786	TV Show	Zumbo's Just Desserts	NaN	Adriano Zumbo, Rachel Khoo	Australia	October 31, 2020	TV-PG	1 Season	International TV Shows, Reality TV	Dessert wizard Adriano Zumbo looks for the nex...	20
7788	s7787	Movie	ZZ TOP: THAT LITTLE OL' BAND FROM TEXAS	Sam Dunn	NaN	United Kingdom, Canada, United States	March 1, 2020	TV-MA	90 min	Documentaries, Music & Musicals	This documentary delves into the mystique behi...	20

7787 rows × 13 columns

In [76]: `ntflx.loc[(ntflx["Rating"]=="R") & (ntflx["Category"]=="TV Show")]`

Out[76]:

	Show_Id	Category	Title	Director	Cast	Country	Release_Date	Rating	Duration	Type	Description	New_Date
4497	s4498	TV Show	Nobel	NaN	Aksel Hennie, Tuva Novotny, Anders Danielsen L...	Norway	December 10, 2016	R	1 Season	International TV Shows, TV Dramas, TV Thrillers	A series of incidents in Afghanistan set compl...	2016-12-10
6437	s6436	TV Show	The Hateful Eight: Extended Version	Quentin Tarantino	Samuel L. Jackson, Kurt Russell, Jennifer Jason...	NaN	April 25, 2019	R	1 Season	TV Shows	Trapped at a stagecoach stop as a storm rages ...	2019-04-25

In [77]: `ntflx.loc[(ntflx["Rating"]=="R") & (ntflx["New_Year"]>2018) & (ntflx["Category"]=="TV Show"), ["Category", "Ra`

Out[77]:

	Category	Rating	Release_Date	New_Year
6437	TV Show	R	April 25, 2019	2019.0

Only 1 TV Show got 'R' rating after 2018

Q 10) What is the maximum duration of a Movie/Show on Netflix ?

In [78]: `ntflx.head(2)`

Out[78]:

	Show_Id	Category	Title	Director	Cast	Country	Release_Date	Rating	Duration	Type	Description	New_Date	New_
0	s1	TV Show	3%	NaN	João Miguel, Bianca Comparato, Michel Gomes, R...	Brazil	August 14, 2020	TV-MA	4 Seasons	International TV Shows, TV Dramas, TV Sci-Fi &...	In a future where the elite inhabit an island ...	2020-08-14	20
1	s2	Movie	07:19	Jorge Michel Grau	Demián Bichir, Héctor Bonilla, Oscar Serrano, ...	Mexico	December 23, 2016	TV-MA	93 min	Dramas, International Movies	After a devastating earthquake hits Mexico City...	2016-12-23	20

In [79]: `ntflx["Duration"].unique()`

Out[79]: `array(['4 Seasons', '93 min', '78 min', '80 min', '123 min', '1 Season', '95 min', '119 min', '118 min', '143 min', '103 min', '89 min', '91 min', '149 min', '144 min', '124 min', '87 min', '110 min', '128 min', '117 min', '100 min', '2 Seasons', '84 min', '99 min', '90 min', '102 min', '104 min', '105 min', '56 min', '125 min', '81 min', '97 min', '106 min', '107 min', '109 min', '44 min', '75 min', '101 min', '3 Seasons', '37 min', '113 min', '114 min', '130 min', '94 min', '140 min', '135 min', '82 min', '70 min', '121 min', '92 min', '164 min', '53 min', '83 min', '116 min', '86 min', '120 min', '96 min', '126 min', '129 min', '77 min', '137 min', '148 min', '28 min', '122 min', '176 min', '85 min', '22 min', '68 min', '111 min', '29 min', '142 min', '168 min', '21 min', '59 min', '20 min', '98 min', '108 min', '76 min', '26 min', '156 min', '30 min', '57 min', '150 min', '133 min', '115 min', '154 min', '127 min', '146 min', '136 min', '88 min', '131 min', '24 min', '112 min', '74 min', '63 min', '38 min', '25 min', '174 min', '60 min', '153 min', '158 min', '151 min', '162 min', '54 min', '51 min', '69 min', '64 min', '147 min', '42 min', '79 min', '5 Seasons', '40 min', '45 min', '172 min', '10 min', '163 min', '9 Seasons', '55 min', '72 min', '61 min', '71 min', '160 min', '171 min', '48 min', '139 min', '157 min', '15 min', '65 min', '134 min', '161 min', '62 min', '8 Seasons', '186 min', '49 min', '73 min', '58 min', '165 min', '166 min', '138 min', '159 min', '141 min', '132 min', '52 min', '67 min', '34 min', '66 min', '312 min', '180 min', '47 min', '6 Seasons', '155 min', '14 min', '177 min', '11 min', '9 min', '46 min', '145 min', '11 Seasons', '7 Seasons', '13 Seasons', '8 min', '12 min', '12 Seasons', '10 Seasons', '43 min', '50 min', '23 min', '185 min', '200 min', '169 min', '27 min', '170 min', '196 min', '33 min', '181 min', '204 min', '32 min', '35 min', '167 min', '16 Seasons', '179 min', '193 min', '13 min', '214 min', '17 min', '173 min', '192 min', '209 min', '187 min', '41 min', '182 min', '224 min', '233 min', '189 min', '152 min', '19 min', '15 Seasons', '208 min', '237 min', '31 min', '178 min', '230 min', '194 min', '228 min', '195 min', '3 min', '16 min', '5 min', '18 min', '205 min', '190 min', '36 min', '201 min', '253 min', '203 min', '191 min'], dtype=object)`

In [80]: `ntflx["Duration"].dtypes`

Out[80]: `dtype('O')`

.str.split(' ', expand = True)

In [81]: `ntflx[["Numbers", "Units"]] = ntflx["Duration"].str.split(' ', expand=True)`

In [82]: `ntflx.tail(2)`

Out[82]:

	Show_Id	Category	Title	Director	Cast	Country	Release_Date	Rating	Duration	Type	Description	New_Date
7787	s7786	TV Show	Zumbo's Just Desserts	NaN	Adriano Zumbo, Rachel Khoo	Australia	October 31, 2020	TV-PG	1 Season	International TV Shows, Reality TV	Dessert wizard Adriano Zumbo looks for the nex...	2020-10-31
7788	s7787	Movie	ZZ TOP: THAT LITTLE OL' BAND FROM TEXAS	Sam Dunn	NaN	United Kingdom, Canada, United States	March 1, 2020	TV-MA	90 min	Documentaries, Music & Musicals	This documentary delves into the mystique behi...	2020-03-01

In [83]: `ntflx["Units"].unique()`

Out[83]: `array(['Seasons', 'min', 'Season'], dtype=object)`

```
In [84]: ntflix[ntfllx["Units"]=="min"]
```

Out[84]:

	Show_Id	Category	Title	Director	Cast	Country	Release_Date	Rating	Duration	Type	Description	New_
1	s2	Movie	07:19	Jorge Michel Grau	Demián Bichir, Héctor Bonilla, Oscar Serrano, ...	Mexico	December 23, 2016	TV-MA	93 min	Dramas, International Movies	After a devastating earthquake hits Mexico City...	2016
2	s3	Movie	23:59	Gilbert Chan	Tedd Chan, Stella Chung, Henley Hii, Lawrence ...	Singapore	December 20, 2018	R	78 min	Horror Movies, International Movies	When an army recruit is found dead, his fellow...	2018
3	s4	Movie	9	Shane Acker	Elijah Wood, John C. Reilly, Jennifer Connelly...	United States	November 16, 2017	PG-13	80 min	Action & Adventure, Independent Movies, Sci-Fi...	In a postapocalyptic world, rag-doll robots hi...	2017
4	s5	Movie	21	Robert Luketic	Jim Sturgess, Kevin Spacey, Kate Bosworth, Aar...	United States	January 1, 2020	PG-13	123 min	Dramas	A brilliant group of students become card-coun...	2020
6	s7	Movie	122	Yasir Al Yasiri	Amina Khalil, Ahmed Dawood, Tarek Lotfy, Ahmed...	Egypt	June 1, 2020	TV-MA	95 min	Horror Movies, International Movies	After an awful accident, a couple admitted to ...	2020
...
7783	s7782	Movie	Zoom	Peter Hewitt	Tim Allen, Courteney Cox, Chevy Chase, Kate Ma...	United States	January 11, 2020	PG	88 min	Children & Family Movies, Comedies	Dragged from civilian life, a former superhero...	2020

	Show_Id	Category	Title	Director	Cast	Country	Release_Date	Rating	Duration	Type	Description	New_
7784	s7783	Movie	Zozo	Josef Fares	Imad Creidi, Antoinette Turk, Elias Gergi, Car...	Sweden, Czech Republic, United Kingdom, Denmark...	October 19, 2020	TV-MA	99 min	Dramas, International Movies	When Lebanon's Civil War deprives Zozo of his ...	2020
7785	s7784	Movie	Zubaan	Mozez Singh	Vicky Kaushal, Sarah-Jane Dias, Raaghav Chanan...	India	March 2, 2019	TV-14	111 min	Dramas, International Movies, Music & Musicals	A scrappy but poor boy worms his way into a ty...	2019
7786	s7785	Movie	Zulu Man in Japan	NaN	Nasty C	NaN	September 25, 2020	TV-MA	44 min	Documentaries, International Movies, Music & M...	In this documentary, South African rapper Nast...	2020
7788	s7787	Movie	ZZ TOP: THAT LITTLE OL' BAND FROM TEXAS	Sam Dunn	NaN	United Kingdom, Canada, United States	March 1, 2020	TV-MA	90 min	Documentaries, Music & Musicals	This documentary delves into the mystique behi...	2020

5377 rows × 15 columns

```
In [85]: ntflx[ntflx["Units"]== "min"].Numbers.unique()
```

```
Out[85]: array(['93', '78', '80', '123', '95', '119', '118', '143', '103', '89',
   '91', '149', '144', '124', '87', '110', '128', '117', '100', '84',
   '99', '90', '102', '104', '105', '56', '125', '81', '97', '106',
   '107', '109', '44', '75', '101', '37', '113', '114', '130', '94',
   '140', '135', '82', '70', '121', '92', '164', '53', '83', '116',
   '86', '120', '96', '126', '129', '77', '137', '148', '28', '122',
   '176', '85', '22', '68', '111', '29', '142', '168', '21', '59',
   '20', '98', '108', '76', '26', '156', '30', '57', '150', '133',
   '115', '154', '127', '146', '136', '88', '131', '24', '112', '74',
   '63', '38', '25', '174', '60', '153', '158', '151', '162', '54',
   '51', '69', '64', '147', '42', '79', '40', '45', '172', '10',
   '163', '55', '72', '61', '71', '160', '171', '48', '139', '157',
   '15', '65', '134', '161', '62', '186', '49', '73', '58', '165',
   '166', '138', '159', '141', '132', '52', '67', '34', '66', '312',
   '180', '47', '155', '14', '177', '11', '9', '46', '145', '8', '12',
   '43', '50', '23', '185', '200', '169', '27', '170', '196', '33',
   '181', '204', '32', '35', '167', '179', '193', '13', '214', '17',
   '173', '192', '209', '187', '41', '182', '224', '233', '189',
   '152', '19', '208', '237', '31', '178', '230', '194', '228', '195',
   '3', '16', '5', '18', '205', '190', '36', '201', '253', '203',
   '191'], dtype=object)
```

```
In [86]: ntflix.dtypes
```

```
Out[86]: Show_Id          object
Category         object
Title            object
Director         object
Cast             object
Country          object
Release_Date    object
Rating           object
Duration         object
Type             object
Description      object
New_Date        datetime64[ns]
New_Year         float64
Numbers          object
Units            object
dtype: object
```

```
In [87]: ntflix["Numbers"].dtypes
```

```
Out[87]: dtype('O')
```

```
In [88]: ntflix[ntflix["Units"]=="min"].Numbers.max() # gives error because Numbers column is in object dtype
```

```
Out[88]: '99'
```

Convert Numbers column dtype to int

Because min() and max() functions will give wrong values for object dtype.

```
ntflx.astype({"Numbers" : float , "New_Year" : int})
```

```
In [89]: cnvrted_ntflx=ntflx.astype({"Numbers": float})
```

```
In [90]: cnvrted_ntflx.info()
```

```
<class 'pandas.core.frame.DataFrame'>
Int64Index: 7787 entries, 0 to 7788
Data columns (total 15 columns):
 #   Column           Non-Null Count  Dtype  
--- 
 0   Show_Id          7787 non-null    object 
 1   Category         7787 non-null    object 
 2   Title            7787 non-null    object 
 3   Director         5399 non-null    object 
 4   Cast             7069 non-null    object 
 5   Country          7280 non-null    object 
 6   Release_Date     7777 non-null    object 
 7   Rating           7780 non-null    object 
 8   Duration         7787 non-null    object 
 9   Type              7787 non-null    object 
 10  Description       7787 non-null    object 
 11  New_Date          7777 non-null    datetime64[ns]
 12  New_Year          7777 non-null    float64
 13  Numbers           7787 non-null    float64
 14  Units             7787 non-null    object 
dtypes: datetime64[ns](1), float64(2), object(12)
memory usage: 973.4+ KB
```

In [91]: `cnvrted_ntflx.tail(2)`

Out[91]:

	Show_Id	Category	Title	Director	Cast	Country	Release_Date	Rating	Duration	Type	Description	New_Date
7787	s7786	TV Show	Zumbo's Just Desserts	NaN	Adriano Zumbo, Rachel Khoo	Australia	October 31, 2020	TV-PG	1 Season	International TV Shows, Reality TV	Dessert wizard Adriano Zumbo looks for the nex...	2020-10-31
7788	s7787	Movie	ZZ TOP: THAT LITTLE OL' BAND FROM TEXAS	Sam Dunn	NaN	United Kingdom, Canada, United States	March 1, 2020	TV-MA	90 min	Documentaries, Music & Musicals	This documentary delves into the mystique behi...	2020-03-01



```
In [92]: cnvrtd_ntflx[cnvrtd_ntflx["Units"]=="min"]
```

Out[92]:

	Show_Id	Category	Title	Director	Cast	Country	Release_Date	Rating	Duration	Type	Description	New_
1	s2	Movie	07:19	Jorge Michel Grau	Demián Bichir, Héctor Bonilla, Oscar Serrano, ...	Mexico	December 23, 2016	TV-MA	93 min	Dramas, International Movies	After a devastating earthquake hits Mexico City...	2016
2	s3	Movie	23:59	Gilbert Chan	Tedd Chan, Stella Chung, Henley Hii, Lawrence ...	Singapore	December 20, 2018	R	78 min	Horror Movies, International Movies	When an army recruit is found dead, his fellow...	2018
3	s4	Movie	9	Shane Acker	Elijah Wood, John C. Reilly, Jennifer Connelly...	United States	November 16, 2017	PG-13	80 min	Action & Adventure, Independent Movies, Sci-Fi...	In a postapocalyptic world, rag-doll robots hi...	2017
4	s5	Movie	21	Robert Luketic	Jim Sturgess, Kevin Spacey, Kate Bosworth, Aar...	United States	January 1, 2020	PG-13	123 min	Dramas	A brilliant group of students become card-coun...	2020
6	s7	Movie	122	Yasir Al Yasiri	Amina Khalil, Ahmed Dawood, Tarek Lotfy, Ahmed...	Egypt	June 1, 2020	TV-MA	95 min	Horror Movies, International Movies	After an awful accident, a couple admitted to ...	2020
...
7783	s7782	Movie	Zoom	Peter Hewitt	Tim Allen, Courteney Cox, Chevy Chase, Kate Ma...	United States	January 11, 2020	PG	88 min	Children & Family Movies, Comedies	Dragged from civilian life, a former superhero...	2020

	Show_Id	Category	Title	Director	Cast	Country	Release_Date	Rating	Duration	Type	Description	New_
7784	s7783	Movie	Zozo	Josef Fares	Imad Creidi, Antoinette Turk, Elias Gergi, Car...	Sweden, Czech Republic, United Kingdom, Denmark...	October 19, 2020	TV-MA	99 min	Dramas, International Movies	When Lebanon's Civil War deprives Zozo of his ...	2020
7785	s7784	Movie	Zubaan	Mozez Singh	Vicky Kaushal, Sarah-Jane Dias, Raaghav Chanan...	India	March 2, 2019	TV-14	111 min	Dramas, International Movies, Music & Musicals	A scrappy but poor boy worms his way into a ty...	2019
7786	s7785	Movie	Zulu Man in Japan	NaN	Nasty C	NaN	September 25, 2020	TV-MA	44 min	Documentaries, International Movies, Music & M...	In this documentary, South African rapper Nast...	2020
7788	s7787	Movie	ZZ TOP: THAT LITTLE OL' BAND FROM TEXAS	Sam Dunn	NaN	United Kingdom, Canada, United States	March 1, 2020	TV-MA	90 min	Documentaries, Music & Musicals	This documentary delves into the mystique behi...	2020

5377 rows × 15 columns

```
In [93]: cnvrtd_ntflx[cnvrtd_ntflx["Units"]=="min"].Numbers.unique()
```

```
Out[93]: array([ 93.,  78.,  80., 123.,  95., 119., 118., 143., 103.,  89.,
   91., 149., 144., 124.,  87., 110., 128., 117., 100.,  84.,  99.,  90.,
   102., 104., 105.,  56., 125.,  81.,  97., 106., 107., 109.,  44.,
   75., 101.,  37., 113., 114., 130.,  94., 140., 135.,  82.,  70.,
  121.,  92., 164.,  53.,  83., 116.,  86., 120.,  96., 126., 129.,
   77., 137., 148.,  28., 122., 176.,  85.,  22.,  68., 111.,  29.,
  142., 168.,  21.,  59.,  20.,  98., 108.,  76.,  26., 156.,  30.,
   57., 150., 133., 115., 154., 127., 146., 136.,  88., 131.,  24.,
  112.,  74.,  63.,  38.,  25., 174.,  60., 153., 158., 151., 162.,
   54.,  51.,  69.,  64., 147.,  42.,  79.,  40.,  45., 172.,  10.,
  163.,  55.,  72.,  61.,  71., 160., 171.,  48., 139., 157.,  15.,
   65., 134., 161.,  62., 186.,  49.,  73.,  58., 165., 166., 138.,
  159., 141., 132.,  52.,  67.,  34.,  66., 312., 180.,  47., 155.,
   14., 177.,  11.,   9.,  46., 145.,   8.,  12.,  43.,  50.,  23.,
  185., 200., 169.,  27., 170., 196.,  33., 181., 204.,  32.,  35.,
  167., 179., 193.,  13., 214.,  17., 173., 192., 209., 187.,  41.,
  182., 224., 233., 189., 152.,  19., 208., 237.,  31., 178., 230.,
  194., 228., 195.,   3.,  16.,   5.,  18., 205., 190.,  36., 201.,
  253., 203., 191.])
```

```
In [94]: cnvrtd_ntflx.Numbers.dtypes
```

```
Out[94]: dtype('float64')
```

```
In [95]: cnvrtd_ntflx[cnvrtd_ntflx["Units"]=="min"].Numbers.min()
```

```
Out[95]: 3.0
```

```
In [96]: cnvrtd_ntflx[cnvrtd_ntflx["Units"]=="min"].Numbers.mean()
```

```
#cnvrtd_ntflx[cnvrtd_ntflx["Units"]=="min"].Numbers.median()
#cnvrtd_ntflx[cnvrtd_ntflx["Units"]=="min"].Numbers.mode()
#cnvrtd_ntflx[cnvrtd_ntflx["Units"]=="min"].Numbers.mad()
#cnvrtd_ntflx[cnvrtd_ntflx["Units"]=="min"].Numbers.var()
#cnvrtd_ntflx[cnvrtd_ntflx["Units"]=="min"].Numbers.std()
```

```
Out[96]: 99.30797842663195
```

```
In [97]: cnvrtd_ntflx[cnvrtd_ntflx["Units"]=="min"].Numbers.unique().mean()
```

```
Out[97]: 108.8457711442786
```

```
In [98]: cnvrtd_ntflx[cnvrtd_ntflx["Units"]=="min"].Numbers.max()
```

```
Out[98]: 312.0
```

312 min is the maximum duration of the Movies

```
In [99]: cnvrted_ntflx.loc[cnvrted_ntflx.Units=="Seasons"]
```

Out[99]:

	Show_Id	Category	Title	Director	Cast	Country	Release_Date	Rating	Duration	Type	Description	New_Dat
0	s1	TV Show	3%	NaN	João Miguel, Bianca Comparato, Michel Gomes, R...	Brazil	August 14, 2020	TV-MA	4 Seasons	International TV Shows, TV Dramas, TV Sci-Fi &...	In a future where the elite inhabit an island ...	2020-08 1
24	s25	TV Show	SAINT SEIYA: Knights of the Zodiac	NaN	Bryson Baugus, Emily Neves, Blake Shepard, Pat...	Japan	January 23, 2020	TV-14	2 Seasons	Anime Series, International TV Shows	Seiya and the Knights of the Zodiac rise again...	2020-01 2
63	s64	TV Show	13 Reasons Why	NaN	Dylan Minnette, Katherine Langford, Kate Walsh...	United States	June 5, 2020	TV-MA	4 Seasons	Crime TV Shows, TV Dramas, TV Mysteries	After a teenage girl's perplexing suicide, a c...	2020-06 0
64	s65	TV Show	13 Reasons Why: Beyond the Reasons	NaN	Dylan Minnette, Katherine Langford, Kate Walsh...	United States	August 23, 2019	TV-MA	3 Seasons	Crime TV Shows, Docuseries	Cast members, writers, producers and mental he...	2019-08 2
108	s109	TV Show	3Below: Tales of Arcadia	NaN	Tatiana Maslany, Diego Luna, Nick Offerman, Ni...	United States	July 12, 2019	TV-Y7	2 Seasons	Kids' TV, TV Action & Adventure, TV Sci-Fi & F...	After crash-landing on Earth, two royal teen a...	2019-07 1
...
7755	s7754	TV Show	Yunus Emre	NaN	Gökhan Atalay, Payidar Tüfekçioğlu, Baran Akbu...	Turkey	January 17, 2017	TV-PG	2 Seasons	International TV Shows, TV Dramas	During the Mongol invasions, Yunus Emre leaves...	2017-01 1

	Show_Id	Category	Title	Director	Cast	Country	Release_Date	Rating	Duration	Type	Description	New_Dat
7757	s7756	TV Show	Z Nation	NaN	Nat Zang, Russell Hodgkinson, Michael Welch, A...	United States	January 27, 2019	TV-MA	5 Seasons	TV Action & Adventure, TV Comedies, TV Horror	A team embarks on a perilous cross-country mis...	2019-01 2
7758	s7757	TV Show	Z4	NaN	Apollo Costa, Gabriel Santana, Matheus Lustosa...	Brazil	February 22, 2019	TV-PG	2 Seasons	Kids' TV	Fading music biz veteran Zé realizes he has ju...	2019-02 2
7761	s7760	TV Show	Zak Storm	NaN	Michael Johnston, Jessica Gee-George, Christin...	United States, France, South Korea, Indonesia	September 13, 2018	TV-Y7	3 Seasons	Kids' TV	Teen surfer Zak Storm is mysteriously transpor...	2018-09 1
7779	s7778	TV Show	Zombie Dumb	NaN	NaN	NaN	July 1, 2019	TV-Y7	2 Seasons	Kids' TV, Korean TV Shows, TV Comedies	While living alone in a spooky town, a young g...	2019-07 0

802 rows × 15 columns

In [100]: `cnvrted_ntflx.loc[cnvrted_ntflx.Units=="Seasons"]["Numbers"].unique()`

Out[100]: `array([4., 2., 3., 5., 9., 8., 6., 11., 7., 13., 12., 10., 16., 15.])`

In [101]: `cnvrted_ntflx.loc[cnvrted_ntflx.Units=="Seasons"]["Numbers"].max()`

Out[101]: `16.0`

16 Seasons is the maximum duration of the TV shows

Q 11) Which individual country has the Highest No. of TV Shows ?

In [102]: `ntflx.head(2)`

Out[102]:

	Show_Id	Category	Title	Director	Cast	Country	Release_Date	Rating	Duration	Type	Description	New_Date	New_
0	s1	TV Show	3%	NaN	João Miguel, Bianca Comparato, Michel Gomes, R...	Brazil	August 14, 2020	TV-MA	4 Seasons	International TV Shows, TV Dramas, TV Sci-Fi &...	In a future where the elite inhabit an island ...	2020-08-14	20
1	s2	Movie	07:19	Jorge Michel Grau	Demián Bichir, Héctor Bonilla, Oscar Serrano, ...	Mexico	December 23, 2016	TV-MA	93 min	Dramas, International Movies	After a devastating earthquake hits Mexico City...	2016-12-23	20

In [103]: `ntflx.Country.info()`

```
<class 'pandas.core.series.Series'>
Int64Index: 7787 entries, 0 to 7788
Series name: Country
Non-Null Count   Dtype
-----
7280 non-null    object
dtypes: object(1)
memory usage: 121.7+ KB
```

```
In [104]: ntflix[ntfllx.Country.isnull()]
```

Out[104]:

	Show_Id	Category	Title	Director	Cast	Country	Release_Date	Rating	Duration	Type	Description
16	s17	TV Show	Feb-09	NaN	Shahd El Yaseen, Shaila Sabt, Hala, Hanadi Al...	NaN	March 20, 2019	TV-14	1 Season	International TV Shows, TV Dramas	As a psychology professor faces Alzheimer's, h...
38	s39	TV Show	แผนร้ายนายเจ้าเลห์	NaN	Chutavuth Pattarakampol, Sheranut Yusananda, N...	NaN	March 30, 2019	TV-14	1 Season	International TV Shows, Romantic TV Shows, TV ...	When two brothers fall for two sisters, they q...
67	s68	Movie	13TH: A Conversation with Oprah Winfrey & Ava ...	NaN	Oprah Winfrey, Ava DuVernay	NaN	January 26, 2017	NaN	37 min	Movies	Oprah Winfrey sits down with director Ava DuVe...
97	s98	Movie	3 Deewarein	Nagesh Kukunoor	Naseeruddin Shah, Jackie Shroff, Juhi Chawla, ...	NaN	December 31, 2019	TV-MA	121 min	Dramas, International Movies, Thrillers	A reporter interviews three convicts on death ...
117	s118	Movie	5 Cowok Jagoan	Anggy Umbara	Ario Bayu, Arifin Putra, Dwi Sasono, Muhamadly ...	NaN	January 5, 2019	TV-MA	106 min	Action & Adventure, Comedies, International Mo...	Yanto asks his friends to help save a girlfrie...
...
7741	s7740	Movie	Your Excellency	Funke Akindele	Akin Lewis, Funke Akindele, Kemi Lala Akindoju...	NaN	July 10, 2020	TV-G	120 min	Comedies, International Movies	Bumbling through politics, a billionaire busin...
7748	s7747	TV Show	دفعـةـالقـاهـرـة	NaN	Bashar al-Shatti, Fatima Al Safi, Maram Baloch...	NaN	April 25, 2020	TV-14	1 Season	International TV Shows, TV Dramas	A group of women leaves Kuwait to attend unive...

	Show_Id	Category	Title	Director	Cast	Country	Release_Date	Rating	Duration	Type	Description
7767	s7766	Movie	Zero Hour	Robert O. Peters	Richard Mofe-Damijo, Alex Ekubo, Ali Nuhu, Rah...	NaN	December 13, 2019	TV-MA	89 min	International Movies, Thrillers	After his father passes, the heir to a retail ...
7779	s7778	TV Show	Zombie Dumb	NaN	NaN	NaN	July 1, 2019	TV-Y7	2 Seasons	Kids' TV, Korean TV Shows, TV Comedies	While living alone in a spooky town, a young g...
7786	s7785	Movie	Zulu Man in Japan	NaN	Nasty C	NaN	September 25, 2020	TV-MA	44 min	Documentaries, International Movies, Music & M...	In this documentary, South African rapper Nast...

507 rows × 15 columns

In [105]: `cntry_ntflx=ntflx.fillna("Unknown")`

In [106]: cntry_ntflx

Out[106]:

	Show_Id	Category	Title	Director	Cast	Country	Release_Date	Rating	Duration	Type	Description	Ne
0	s1	TV Show	3%	Unknown	João Miguel, Bianca Comparato, Michel Gomes, R...	Brazil	August 14, 2020	TV-MA	4 Seasons	International TV Shows, TV Dramas, TV Sci-Fi &...	In a future where the elite inhabit an island ...	2 C
1	s2	Movie	07:19	Jorge Michel Grau	Demián Bichir, Héctor Bonilla, Oscar Serrano, ...	Mexico	December 23, 2016	TV-MA	93 min	Dramas, International Movies	After a devastating earthquake hits Mexico City...	2 C
2	s3	Movie	23:59	Gilbert Chan	Tedd Chan, Stella Chung, Henley Hii, Lawrence ...	Singapore	December 20, 2018	R	78 min	Horror Movies, International Movies	When an army recruit is found dead, his fellow...	2 C
3	s4	Movie	9	Shane Acker	Elijah Wood, John C. Reilly, Jennifer Connnelly...	United States	November 16, 2017	PG-13	80 min	Action & Adventure, Independent Movies, Sci-Fi...	In a postapocalyptic world, rag-doll robots hi...	2 C
4	s5	Movie	21	Robert Luketic	Jim Sturgess, Kevin Spacey, Kate Bosworth, Aar...	United States	January 1, 2020	PG-13	123 min	Dramas	A brilliant group of students become card-cou...	2 C
...
7784	s7783	Movie	Zozo	Josef Fares	Imad Creidi, Antoinette Turk, Elias Gergi, Car...	Sweden, Czech Republic, United Kingdom, Denmark...	October 19, 2020	TV-MA	99 min	Dramas, International Movies	When Lebanon's Civil War deprives Zozo of his ...	2 C

Show_Id	Category	Title	Director	Cast	Country	Release_Date	Rating	Duration	Type	Description	Ne	
7785	s7784	Movie	Zubaan	Mozez Singh	Vicky Kaushal, Sarah-Jane Dias, Raaghav Chanan...	India	March 2, 2019	TV-14	111 min	Dramas, International Movies, Music & Musicals	A scrappy but poor boy worms his way into a ty...	2
7786	s7785	Movie	Zulu Man in Japan	Unknown	Nasty C	Unknown	September 25, 2020	TV-MA	44 min	Documentaries, International Movies, Music & M...	In this documentary, South African rapper Nast...	2
7787	s7786	TV Show	Zumbo's Just Desserts	Unknown	Adriano Zumbo, Rachel Khoo	Australia	October 31, 2020	TV-PG	1 Season	International TV Shows, Reality TV	Dessert wizard Adriano Zumbo looks for the nex...	2
7788	s7787	Movie	ZZ TOP: THAT LITTLE OL' BAND FROM TEXAS	Sam Dunn	Unknown	United Kingdom, Canada, United States	March 1, 2020	TV-MA	90 min	Documentaries, Music & Musicals	This documentary delves into the mystique behi...	2

7787 rows × 15 columns

In [107]: `cntry_ntflx.info()`

```
<class 'pandas.core.frame.DataFrame'>
Int64Index: 7787 entries, 0 to 7788
Data columns (total 15 columns):
 #   Column           Non-Null Count  Dtype  
--- 
 0   Show_Id          7787 non-null    object  
 1   Category         7787 non-null    object  
 2   Title            7787 non-null    object  
 3   Director         7787 non-null    object  
 4   Cast             7787 non-null    object  
 5   Country          7787 non-null    object  
 6   Release_Date     7787 non-null    object  
 7   Rating           7787 non-null    object  
 8   Duration         7787 non-null    object  
 9   Type             7787 non-null    object  
 10  Description       7787 non-null    object  
 11  New_Date         7787 non-null    object  
 12  New_Year         7787 non-null    object  
 13  Numbers          7787 non-null    object  
 14  Units            7787 non-null    object  
dtypes: object(15)
memory usage: 973.4+ KB
```

In [108]: `cntry_ntflx[cntry_ntflx.Director.isnull()]`

Out[108]:

Show_Id	Category	Title	Director	Cast	Country	Release_Date	Rating	Duration	Type	Description	New_Date	New_Year	Numbers

In [109]: `TV_Show_ntflx=cntry_ntflx[cntry_ntflx.Category=="TV Show"]`

In [110]: TV_Show_ntflx

Out[110]:

	Show_Id	Category	Title	Director	Cast	Country	Release_Date	Rating	Duration	Type	Description	New_Dat
0	s1	TV Show	3%	Unknown	João Miguel, Bianca Comparato, Michel Gomes, R...	Brazil	August 14, 2020	TV-MA	4 Seasons	International TV Shows, TV Dramas, TV Sci-Fi &...	In a future where the elite inhabit an island ...	2020-01-00:00:00
5	s6	TV Show	46	Serdar Akar	Erdal Beşikcioğlu, Yasemin Allen, Melis Birkan...	Turkey	July 1, 2017	TV-MA	1 Season	International TV Shows, TV Dramas, TV Mysteries	A genetics professor experiments with a treatm...	2017-01-00:00:00
11	s12	TV Show	1983	Unknown	Robert Więckiewicz, Maciej Musiał, Michałina O...	Poland, United States	November 30, 2018	TV-MA	1 Season	Crime TV Shows, International TV Shows, TV Dramas	In this dark alt-history thriller, a naïve law...	2018-11-00:00:00
12	s13	TV Show	1994	Diego Enrique Osorno	Unknown	Mexico	May 17, 2019	TV-MA	1 Season	Crime TV Shows, Docuseries, International TV S...	Archival video and new interviews examine Mexi...	2019-01-00:00:00
16	s17	TV Show	Feb-09	Unknown	Shahd El Yaseen, Shaila Sabt, Hala, Hanadi Al-...	Unknown	March 20, 2019	TV-14	1 Season	International TV Shows, TV Dramas	As a psychology professor faces Alzheimer's, h...	2019-02-00:00:00
...
7769	s7768	TV Show	Zindagi Gulzar Hai	Unknown	Sanam Saeed, Fawad Khan, Ayesha Omer, Mehreen ...	Pakistan	December 15, 2016	TV-PG	1 Season	International TV Shows, Romantic TV Shows, TV ...	Strong-willed, middle-class Kashaf and carefre...	2016-12-00:00:00
7777	s7776	TV Show	Zoids Wild	Unknown	Kensho Ono, Takahiro Sakurai, Mikako Komatsu, ...	Japan	August 14, 2020	TV-Y7	1 Season	Anime Series, Kids' TV	A quest for freedom and legendary treasure beg...	2020-08-00:00:00

Show_Id	Category	Title	Director	Cast	Country	Release_Date	Rating	Duration	Type	Description	New_Dai	
7779	s7778	TV Show	Zombie Dumb	Unknown	Unknown	Unknown	July 1, 2019	TV-Y7	2 Seasons	Kids' TV, Korean TV Shows, TV Comedies	While living alone in a spooky town, a young g...	2019-07-01 00:00:00
7781	s7780	TV Show	Zona Rosa	Unknown	Manu NNa, Ana Julia Yeyé, Ray Contreras, Pablo...	Mexico	November 26, 2019	TV-MA	1 Season	International TV Shows, Spanish-Language TV Sh...	An assortment of talent takes the stage for a ...	2019-11-26 00:00:00
7787	s7786	TV Show	Zumbo's Just Desserts	Unknown	Adriano Zumbo, Rachel Khoo	Australia	October 31, 2020	TV-PG	1 Season	International TV Shows, Reality TV	Dessert wizard Adriano Zumbo looks for the nex...	2020-10-31 00:00:00

2410 rows × 15 columns

```
In [111]: TV_Show_ntflx.Country.value_counts().head(30)
```

```
Out[111]: United States      705
Unknown          277
United Kingdom   204
Japan            157
South Korea     147
India             71
Taiwan           68
Canada           59
Australia        46
France           46
Spain             45
China             36
Mexico            35
Turkey            27
Brazil            26
United States, Canada  22
Thailand          22
Colombia          20
Germany          19
Singapore         17
Argentina         16
Russia            15
Canada, United States 13
Egypt              12
United Kingdom, United States 12
Italy              12
United States, Japan    9
Nigeria            8
Denmark            8
United States, United Kingdom 7
Name: Country, dtype: int64
```

United States has the Highest (705) No. of TV Shows. (individual country i.e. US only)

Q 12) How can we sort the dataset by Year ?

In [112]: `ntflx.head(2)`

Out[112]:

	Show_Id	Category	Title	Director	Cast	Country	Release_Date	Rating	Duration	Type	Description	New_Date	New_
0	s1	TV Show	3%	NaN	João Miguel, Bianca Comparato, Michel Gomes, R...	Brazil	August 14, 2020	TV-MA	4 Seasons	International TV Shows, TV Dramas, TV Sci-Fi &...	In a future where the elite inhabit an island ...	2020-08-14	20
1	s2	Movie	07:19	Jorge Michel Grau	Demián Bichir, Héctor Bonilla, Oscar Serrano, ...	Mexico	December 23, 2016	TV-MA	93 min	Dramas, International Movies	After a devastating earthquake hits Mexico City...	2016-12-23	20

Sorting in Ascending Order

```
In [113]: ntflx.sort_values(by = "New_Date") # ascending = True
```

Out[113]:

	Show_Id	Category	Title	Director	Cast	Country	Release_Date	Rating	Duration	Type	Description	New_
7115	s7114	Movie	To and From New York	Sorin Dan Mihalcescu	Barbara King, Shaana Diya, John Krisiukenas, Y...	United States	January 1, 2008	TV-MA	81 min	Dramas, Independent Movies, Thrillers	While covering a story in New York City, a Sea...	200
1765	s1766	TV Show	Dinner for Five	NaN	NaN	United States	February 4, 2008	TV-MA	1 Season	Stand-Up Comedy & Talk Shows	In each episode, four celebrities join host Jo...	200
3248	s3249	Movie	Just Another Love Story	Ole Bornedal	Anders W. Berthelsen, Rebecka Hemse, Nikolaj L...	Denmark	May 5, 2009	TV-MA	104 min	Dramas, International Movies	When he causes a car accident that leaves a yo...	200
5766	s5766	Movie	Splatter	Joe Dante	Corey Feldman, Tony Todd, Tara Leigh, Erin Way...	United States	November 18, 2009	TV-MA	29 min	Horror Movies	After committing suicide, a washed-up rocker r...	200
3840	s3841	Movie	Mad Ron's Previews from Hell	Jim Monaco	Nick Pawlow, Jordu Schell, Jay Kushwara, Micha...	United States	November 1, 2010	NR	84 min	Cult Movies, Horror Movies	This collection cherry-picks trailers, forgott...	201
...
3374	s3375	TV Show	Kikoriki	NaN	Igor Dmitriev	NaN	NaN	TV-Y	2 Seasons	Kids' TV	A wacky rabbit and his gang of animal pals hav...	
3492	s3493	TV Show	La Familia P. Luche	NaN	Eugenio Derbez, Consuelo Duval, Luis Manuel Áv...	United States	NaN	TV-14	3 Seasons	International TV Shows, Spanish-Language TV Sh...	This irreverent sitcom features Ludovico, Feder...	

	Show_Id	Category	Title	Director	Cast	Country	Release_Date	Rating	Duration	Type	Description	New_
3946	s3947	TV Show	Maron	NaN	Marc Maron, Judd Hirsch, Josh Brener, Nora Zeh...	United States	NaN	TV-MA	4 Seasons	TV Comedies	Marc Maron stars as Marc Maron, who interviews...	
5138	s5138	TV Show	Red vs. Blue	NaN	Burnie Burns, Jason Saldaña, Gustavo Sorola, G...	United States	NaN	NR	13 Seasons	TV Action & Adventure, TV Comedies, TV Sci-Fi ...	This parody of first-person shooter games, mil...	
6066	s6066	TV Show	The Adventures of Figaro Pho	NaN	Luke Jurevicius, Craig Behenna, Charlotte Haml...	Australia	NaN	TV-Y7	2 Seasons	Kids' TV, TV Comedies	Imagine your worst fears, then multiply them: ...	

7787 rows × 15 columns

Sorting in descending Order

```
In [114]: ntflix.sort_values(by="New_Date", ascending=False) # ascending = False
```

Out[114]:

	Show_Id	Category	Title	Director	Cast	Country	Release_Date	Rating	Duration	Type	Description	New_
1673	s1674	Movie	Death of Me	Darren Lynn Bousman	Maggie Q, Luke Hemsworth, Alex Essoe, Ingkarat...	United States, Thailand	January 16, 2021	R	94 min	Horror Movies	With no memory of the previous night, a vacati...	202
5060	s5060	Movie	Radium Girls	Lydia Dean Pilcher, Ginny Mohler	Joey King, Abby Quinn, Cara Seymour, Scott She...	United States	January 16, 2021	TV-14	103 min	Dramas, Independent Movies	When the women at a radium factory begin to fa...	202
205	s206	Movie	A Monster Calls	J.A. Bayona	Lewis MacDougall, Sigourney Weaver, Felicity J...	United Kingdom, Spain, United States	January 16, 2021	PG-13	108 min	Dramas, Sci-Fi & Fantasy	Overwhelmed by his mother's illness, a young b...	202
1832	s1833	Movie	Double Dad	Cris D'Amato	Maisa Silva, Eduardo Moscovis, Marcelo Médici,...	Brazil	January 15, 2021	TV-G	105 min	Children & Family Movies, Comedies, Dramas	While her mom is away, a teen sneaks out of th...	202
4710	s4711	Movie	Outside the Wire	Mikael Håfström	Anthony Mackie, Damson Idris, Emily Beecham, M...	NaN	January 15, 2021	R	116 min	Action & Adventure	In the near future, a drone pilot sent into a ...	202
...
3374	s3375	TV Show	Kikoriki	NaN	Igor Dmitriev	NaN	NaN	TV-Y	2 Seasons	Kids' TV	A wacky rabbit and his gang of animal pals hav...	
3492	s3493	TV Show	La Familia P. Luche	NaN	Eugenio Derbez, Consuelo Duval, Luis Manuel Áv...	United States	NaN	TV-14	3 Seasons	International TV Shows, Spanish-Language TV Sh...	This irreverent sitcom features Ludovico, Feder...	

	Show_Id	Category	Title	Director	Cast	Country	Release_Date	Rating	Duration	Type	Description	New_
3946	s3947	TV Show	Maron	NaN	Marc Maron, Judd Hirsch, Josh Brener, Nora Zeh...	United States	NaN	TV-MA	4 Seasons	TV Comedies	Marc Maron stars as Marc Maron, who interviews...	
5138	s5138	TV Show	Red vs. Blue	NaN	Burnie Burns, Jason Saldaña, Gustavo Sorola, G...	United States	NaN	NR	13 Seasons	TV Action & Adventure, TV Comedies, TV Sci-Fi ...	This parody of first-person shooter games, mil...	
6066	s6066	TV Show	The Adventures of Figaro Pho	NaN	Luke Jurevicius, Craig Behenna, Charlotte Haml...	Australia	NaN	TV-Y7	2 Seasons	Kids' TV, TV Comedies	Imagine your worst fears, then multiply them: ...	

7787 rows × 15 columns

Q 13) Find all the instances where: Category is 'Movie' and Type is 'Dramas' or Category is 'TV Show' & Type is 'Kids' TV'.

In [115]: `ntflx.tail(2)`

Out[115]:

	Show_Id	Category	Title	Director	Cast	Country	Release_Date	Rating	Duration	Type	Description	New_Date
7787	s7786	TV Show	Zumbo's Just Desserts	NaN	Adriano Zumbo, Rachel Khoo	Australia	October 31, 2020	TV-PG	1 Season	International TV Shows, Reality TV	Dessert wizard Adriano Zumbo looks for the nex...	2020-10-31
7788	s7787	Movie	ZZ TOP: THAT LITTLE OL' BAND FROM TEXAS	Sam Dunn	NaN	United Kingdom, Canada, United States	March 1, 2020	TV-MA	90 min	Documentaries, Music & Musicals	This documentary delves into the mystique behi...	2020-03-01



```
In [116]: ntflx[(ntflx.Category=="Movie") & (ntflx.Type=="Dramas")]
```

Out[116]:

	Show_Id	Category	Title	Director	Cast	Country	Release_Date	Rating	Duration	Type	Description	New_Date	N
4	s5	Movie	21	Robert Luketic	Jim Sturgess, Kevin Spacey, Kate Bosworth, Aar...	United States	January 1, 2020	PG-13	123 min	Dramas	A brilliant group of students become card-coun...	2020-01-01	1
7	s8	Movie	187	Kevin Reynolds	Samuel L. Jackson, John Heard, Kelly Rowan, Cl...	United States	November 1, 2019	R	119 min	Dramas	After one of his high school students attacks ...	2019-11-01	1
170	s171	Movie	A Family Man	Mark Williams	Gerard Butler, Gretchen Mol, Alison Brie, Will...	Canada, United States	December 15, 2019	R	110 min	Dramas	A ruthless corporate headhunter battles his ri...	2019-12-15	1
232	s233	Movie	A Stoning in Fulham County	Larry Elikann	Ken Olin, Jill Eikenberry, Maureen Mueller, Gr...	United States	October 1, 2011	TV-14	95 min	Dramas	After reckless teens kill an Amish child, a pr...	2011-10-01	1
295	s296	Movie	Across Grace Alley	Ralph Macchio	Ben Hyland, Marsha Mason, Karina Smirnoff, Col...	United States	December 1, 2016	TV-PG	24 min	Dramas	A young boy, upset by his parents' divorce, be...	2016-12-01	1
...	1
7417	s7416	Movie	Victor	Brandon Dickerson	Patrick Davis, Lisa Vidal, Josh Pence, José Zú...	United States	July 24, 2017	PG-13	110 min	Dramas	In 1962 Brooklyn, a Puerto Rican teen who join...	2017-07-24	1

Show_Id	Category	Title	Director	Cast	Country	Release_Date	Rating	Duration	Type	Description	New_Date	N
7422	s7421	Movie	Villain	Philip Barantini	Craig Fairbrass, George Russo, Robert Glenister...	United Kingdom	September 5, 2020	R	97 min	Dramas	Fresh out of prison, an ex-con tries to save h...	2020-09-05
7449	s7448	Movie	VS.	Ed Lilly	Connor Swindells, Fola Evans-Akingbola, Nichol...	United Kingdom	June 19, 2019	TV-MA	99 min	Dramas	A young man in foster care finds his voice in ...	2019-06-19
7465	s7464	Movie	Wakefield	Robin Swicord	Bryan Cranston, Jennifer Garner, Jason O'Mara,...	United States	March 2, 2019	R	109 min	Dramas	An unhappy father and lawyer quits his suburb...	2019-03-02
7480	s7479	Movie	War Horse	Steven Spielberg	Emily Watson, David Thewlis, Peter Mullan, Nie...	United States, India	May 6, 2019	PG-13	147 min	Dramas	During World War I, the bond between a young E...	2019-05-06

117 rows × 15 columns

```
In [117]: ntflix[(ntflix.Category=="TV Show") & (ntflix.Type=="Kids' TV")]
```

Out[117]:

	Show_Id	Category	Title	Director	Cast	Country	Release_Date	Rating	Duration	Type	Description	New_Date
111	s112	TV Show	44 Cats	NaN	Sarah Natochenny, Suzy Myers, Simona Berman, E...	Italy	October 1, 2020	TV-Y7	2 Seasons	Kids' TV	Paw-esome tales abound when singing furry fri...	2020-10-01
276	s277	TV Show	Abby Hatcher	Kyran Kelly	Macy Drouin, Wyatt White, Paul Sun-Hyung Lee, ...	United States, Canada	July 1, 2020	TV-Y	1 Season	Kids' TV	A big-hearted girl helps her Fuzzy friends wh...	2020-07-01
434	s435	TV Show	Alphablocks	NaN	Teresa Gallagher, David Holt, Lizzie Waterworth	United Kingdom	May 25, 2020	TV-Y	5 Seasons	Kids' TV	The letters of the alphabet come to life in Al...	2020-05-25
598	s599	TV Show	Ask the StoryBots	NaN	Judy Greer, Erin Fitzgerald, Fred Tatasciore, ...	United States	August 2, 2019	TV-Y	3 Seasons	Kids' TV	Five curious little creatures track down the a...	2019-08-02
706	s707	TV Show	Bal Ganesh	Vijay S. Bhanushali	Meghna Erande Joshi, Parminder Ghuman	NaN	March 31, 2020	TV-Y7	1 Season	Kids' TV	Watch Ganesh destroy demons, disarm invaders a...	2020-03-31
...
7668	s7667	TV Show	World of Winx	Iginio Straffi	Haven Paschall, Alysha Deslorieux, Jessica Paq...	Italy, United States	June 16, 2017	TV-Y7	2 Seasons	Kids' TV	The reality show "WOW!" engages the Winx in th...	2017-06-16
7717	s7716	TV Show	Yoko	NaN	Eileen Stevens, Alyson Leigh Rosenfeld, Sarah ...	NaN	June 23, 2018	TV-Y	1 Season	Kids' TV	Friends Mai, Oto and Vik's games at the park b...	2018-06-23

Show_Id	Category	Title	Director	Cast	Country	Release_Date	Rating	Duration	Type	Description	New_Date	
7719	s7718	TV Show	YOM	NaN	Sairaj, Devyani Dagaonkar, Ketan Singh, Mayur ...	NaN	June 7, 2018	TV-Y7	1 Season	Kids' TV	With the mind of a human being, and the body o...	2018-06-07
7758	s7757	TV Show	Z4	NaN	Apollo Costa, Gabriel Santana, Matheus Lustosa...	Brazil	February 22, 2019	TV-PG	2 Seasons	Kids' TV	Fading music biz veteran Zé realizes he has ju...	2019-02-22
7761	s7760	TV Show	Zak Storm	NaN	Michael Johnston, Jessica Gee-George, Christin...	United States, France, South Korea, Indonesia	September 13, 2018	TV-Y7	3 Seasons	Kids' TV	Teen surfer Zak Storm is mysteriously transpor...	2018-09-13

205 rows × 15 columns

```
In [118]: ntflx[(ntflx.Category=="Movie") & (ntflx.Type=="Dramas") | (ntflx.Category=="TV Show") & (ntflx.Type=="Kids'")]
```

Out[118]:

	Show_Id	Category	Title	Director	Cast	Country	Release_Date	Rating	Duration	Type	Description	New_Date	N
4	s5	Movie	21	Robert Luketic	Jim Sturgess, Kevin Spacey, Kate Bosworth, Aar...	United States	January 1, 2020	PG-13	123 min	Dramas	A brilliant group of students become card-coun...	2020-01-01	
7	s8	Movie	187	Kevin Reynolds	Samuel L. Jackson, John Heard, Kelly Rowan, Cl...	United States	November 1, 2019	R	119 min	Dramas	After one of his high school students attacks ...	2019-11-01	
111	s112	TV Show	44 Cats	NaN	Sarah Natochenny, Suzy Myers, Simona Berman, E...	Italy	October 1, 2020	TV-Y7	2 Seasons	Kids' TV	Paw-esome tales abound when singing furry fri...	2020-10-01	
170	s171	Movie	A Family Man	Mark Williams	Gerard Butler, Gretchen Mol, Alison Brie, Will...	Canada, United States	December 15, 2019	R	110 min	Dramas	A ruthless corporate headhunter battles his ri...	2019-12-15	
232	s233	Movie	A Stoning in Fulham County	Larry Elikann	Ken Olin, Jill Eikenberry, Maureen Mueller, Gr...	United States	October 1, 2011	TV-14	95 min	Dramas	After reckless teens kill an Amish child, a pr...	2011-10-01	
...
7668	s7667	TV Show	World of Winx	Iginio Straffi	Haven Paschall, Alysha Deslorieux, Jessica Paq...	Italy, United States	June 16, 2017	TV-Y7	2 Seasons	Kids' TV	The reality show "WOW!" engages the Winx in th...	2017-06-16	
7717	s7716	TV Show	Yoko	NaN	Eileen Stevens, Alyson Leigh Rosenfeld, Sarah ...	NaN	June 23, 2018	TV-Y	1 Season	Kids' TV	Friends Mai, Oto and Vik's games at the park b...	2018-06-23	

Show_Id	Category	Title	Director	Cast	Country	Release_Date	Rating	Duration	Type	Description	New_Date	N
7719	s7718	TV Show	YOM	NaN	Sairaj, Devyani Dagaonkar, Ketan Singh, Mayur ...	NaN	June 7, 2018	TV-Y7	1 Season	Kids' TV	With the mind of a human being, and the body o...	2018-06-07
7758	s7757	TV Show	Z4	NaN	Apollo Costa, Gabriel Santana, Matheus Lustosa...	Brazil	February 22, 2019	TV-PG	2 Seasons	Kids' TV	Fading music biz veteran Zé realizes he has ju...	2019-02-22
7761	s7760	TV Show	Zak Storm	NaN	Michael Johnston, Jessica Gee-George, Christin...	United States, France, South Korea, Indonesia	September 13, 2018	TV-Y7	3 Seasons	Kids' TV	Teen surfer Zak Storm is mysteriously transpor...	2018-09-13

322 rows × 15 columns

----- * -----

By - P. Yesu Krishna (Data Analyst)