

Netflix Dataset

Big-Data Analysis with Python

NETFLIX

This Netflix Dataset has information about the TV Shows and Movies available on Netflix till 2021.

This dataset is collected from Flixable which is a third-party Netflix search engine, and available on Kaggle website for free.

```
# Importing the dataset
```

```
import pandas as pd
```

```
data = pd.read_csv(r"C:\Users\mande\Desktop\Netflix - Project\Netflix  
Dataset.csv") # to import pandas library
```

```
data
```

	Show_Id	Category	Title \
0	s1	TV Show	3%
1	s2	Movie	07:19
2	s3	Movie	23:59
3	s4	Movie	9
4	s5	Movie	21
...
7784	s7783	Movie	Zozo
7785	s7784	Movie	Zubaan
7786	s7785	Movie	Zulu Man in Japan
7787	s7786	TV Show	Zumbo's Just Desserts
7788	s7787	Movie	ZZ TOP: THAT LITTLE OL' BAND FROM TEXAS

	Director	Cast
0	NaN	João Miguel, Bianca Comparato, Michel Gomes, R...
1	Jorge Michel Grau	Demián Bichir, Héctor Bonilla, Oscar Serrano, ...
2	Gilbert Chan	Tedd Chan, Stella Chung, Henley Hii, Lawrence ...
3	Shane Acker	Elijah Wood, John C. Reilly, Jennifer Connelly...
4	Robert Luketic	Jim Sturgess, Kevin Spacey, Kate Bosworth, Aar...
...
7784	Josef Fares	Imad Creidi, Antoinette Turk, Elias Gergi, Car...
7785	Mozes Singh	Vicky Kaushal, Sarah-Jane Dias, Raaghav Chanan...
7786	NaN	Nasty C
7787	NaN	Adriano Zumbo, Rachel Khoo
7788	Sam Dunn	NaN

	Country	Release_Date
0	Brazil	August 14, 2020
1	Mexico	December 23, 2016
2	Singapore	December 20, 2018
3	United States	November 16, 2017
4	United States	January 1, 2020
...
7784	Sweden, Czech Republic, United Kingdom, Denmar...	October 19, 2020
7785	India	March 2, 2019
7786	NaN	September 25, 2020
7787	Australia	October 31, 2020
7788	United Kingdom, Canada, United States	March 1, 2020

	Rating	Duration	Type
0	TV-MA	4 Seasons	International TV Shows, TV Dramas, TV Sci-Fi &...
1	TV-MA	93 min	Dramas, International Movies
2	R	78 min	Horror Movies, International Movies
3	PG-13	80 min	Action & Adventure, Independent Movies, Sci-Fi...
4	PG-13	123 min	Dramas
...
7784	TV-MA	99 min	Dramas, International Movies
7785	TV-14	111 min	Dramas, International Movies, Music & Musicals
7786	TV-MA	44 min	Documentaries, International Movies, Music & M...
7787	TV-PG	1 Season	International TV Shows, Reality TV
7788	TV-MA	90 min	Documentaries, Music & Musicals

	Description
0	In a future where the elite inhabit an island ...
1	After a devastating earthquake hits Mexico Cit...
2	When an army recruit is found dead, his fellow...
3	In a postapocalyptic world, rag-doll robots hi...
4	A brilliant group of students become card-coun...
...	...
7784	When Lebanon's Civil War deprives Zozo of his ...

```

7785 A scrappy but poor boy worms his way into a ty...
7786 In this documentary, South African rapper Nast...
7787 Dessert wizard Adriano Zumbo looks for the nex...
7788 This documentary delves into the mystique behi...

```

```
[7789 rows x 11 columns]
```

Getting some basic information about the dataset

1. head()

```
data.head() # to show top-5 records of the dataset
```

	Show_Id	Category	Title	Director	\
0	s1	TV Show	3%	NaN	
1	s2	Movie	07:19	Jorge Michel Grau	
2	s3	Movie	23:59	Gilbert Chan	
3	s4	Movie	9	Shane Acker	
4	s5	Movie	21	Robert Luketic	

	Cast	Country	\
0	João Miguel, Bianca Comparato, Michel Gomes, R...	Brazil	
1	Demián Bichir, Héctor Bonilla, Oscar Serrano, ...	Mexico	
2	Tedd Chan, Stella Chung, Henley Hii, Lawrence ...	Singapore	
3	Elijah Wood, John C. Reilly, Jennifer Connelly...	United States	
4	Jim Sturgess, Kevin Spacey, Kate Bosworth, Aar...	United States	

	Release_Date	Rating	Duration	\
0	August 14, 2020	TV-MA	4 Seasons	
1	December 23, 2016	TV-MA	93 min	
2	December 20, 2018	R	78 min	
3	November 16, 2017	PG-13	80 min	
4	January 1, 2020	PG-13	123 min	

	Type	\
0	International TV Shows, TV Dramas, TV Sci-Fi &...	
1	Dramas, International Movies	
2	Horror Movies, International Movies	
3	Action & Adventure, Independent Movies, Sci-Fi...	
4	Dramas	

	Description
0	In a future where the elite inhabit an island ...
1	After a devastating earthquake hits Mexico Cit...
2	When an army recruit is found dead, his fellow...
3	In a postapocalyptic world, rag-doll robots hi...
4	A brilliant group of students become card-coun...

2. tail()

data.tail()
of dataset

to show bottom-5 records

	Show_Id	Category	Title	Director
\				
7784	s7783	Movie	Zozo	Josef Fares
7785	s7784	Movie	Zubaan	Mozez Singh
7786	s7785	Movie	Zulu Man in Japan	NaN
7787	s7786	TV Show	Zumbo's Just Desserts	NaN
7788	s7787	Movie	ZZ TOP: THAT LITTLE OL' BAND FROM TEXAS	Sam Dunn

	Cast	\
7784	Imad Creidi, Antoinette Turk, Elias Gergi, Car...	
7785	Vicky Kaushal, Sarah-Jane Dias, Raaghav Chanan...	
7786	Nasty C	
7787	Adriano Zumbo, Rachel Khoo	
7788	NaN	

	Country	Release_Date
\		
7784	Sweden, Czech Republic, United Kingdom, Denmar...	October 19, 2020
7785	India	March 2, 2019
7786	NaN	September 25, 2020
7787	Australia	October 31, 2020
7788	United Kingdom, Canada, United States	March 1, 2020

	Rating	Duration	Type	\
7784	TV-MA	99 min	Dramas, International Movies	
7785	TV-14	111 min	Dramas, International Movies, Music & Musicals	
7786	TV-MA	44 min	Documentaries, International Movies, Music & M...	
7787	TV-PG	1 Season	International TV Shows, Reality TV	
7788	TV-MA	90 min	Documentaries, Music & Musicals	

	Description
7784	When Lebanon's Civil War deprives Zozo of his ...
7785	A scrappy but poor boy worms his way into a ty...
7786	In this documentary, South African rapper Nast...
7787	Dessert wizard Adriano Zumbo looks for the nex...
7788	This documentary delves into the mystique behi...

3. shape

data.shape
Columns

to show the No. of Rows and

(7789, 11)

4. size

data.size
values(elements) in the dataset

to show No. of total

85679

5. columns

`data.columns` *# to show each Column Name*

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

7. dtypes

`data.dtypes` *# to show the data-type of each column*

```
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
```

8. info()

`data.info()` *# To show indexes, columns, data-types of each column, memory at once*

```
<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
```

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

duplicate()

data.head()

	Show_Id	Category	Title	Director	\
0	s1	TV Show	3%	NaN	
1	s2	Movie	07:19	Jorge Michel Grau	
2	s3	Movie	23:59	Gilbert Chan	
3	s4	Movie	9	Shane Acker	
4	s5	Movie	21	Robert Luketic	

	Cast	Country	\
0	João Miguel, Bianca Comparato, Michel Gomes, R...	Brazil	
1	Demián Bichir, Héctor Bonilla, Oscar Serrano, ...	Mexico	
2	Tedd Chan, Stella Chung, Henley Hii, Lawrence ...	Singapore	
3	Elijah Wood, John C. Reilly, Jennifer Connelly...	United States	
4	Jim Sturgess, Kevin Spacey, Kate Bosworth, Aar...	United States	

	Release_Date	Rating	Duration	\
0	August 14, 2020	TV-MA	4 Seasons	
1	December 23, 2016	TV-MA	93 min	
2	December 20, 2018	R	78 min	
3	November 16, 2017	PG-13	80 min	
4	January 1, 2020	PG-13	123 min	

	Type	\
0	International TV Shows, TV Dramas, TV Sci-Fi &...	
1	Dramas, International Movies	
2	Horror Movies, International Movies	
3	Action & Adventure, Independent Movies, Sci-Fi...	
4	Dramas	

	Description
0	In a future where the elite inhabit an island ...
1	After a devastating earthquake hits Mexico Cit...
2	When an army recruit is found dead, his fellow...
3	In a postapocalyptic world, rag-doll robots hi...
4	A brilliant group of students become card-coun...

data.shape

(7789, 11)

data[data.duplicated()]

To check

row wise and detect the Duplicate rows

	Show_Id	Category	Title	Director	\
6300	s684	Movie	Backfire	Dave Patten	

```

6622    s6621    Movie    The Lost Okoroshi    Abba T. Makama

                                     Cast          Country \
6300    Black Deniro, Byron "Squally" Vinson, Dominic ...    United States
6622    Seun Ajayi, Judith Audu, Tope Tedela, Ifu Enna...    Nigeria

      Release_Date Rating Duration \
6300      April 5, 2019    TV-MA    97 min
6622    September 4, 2020    TV-MA    94 min

                                     Type \
6300    Dramas, Independent Movies, Thrillers
6622    Comedies, Dramas, Independent Movies

                                     Description
6300    When two would-be robbers accidentally kill a ...
6622    A disillusioned security guard transforms into...

data.drop_duplicates(inplace = True) # To
Remove the Duplicate rows permanently

data[data.duplicated()]

Empty DataFrame
Columns: [Show_Id, Category, Title, Director, Cast, Country, Release_Date,
Rating, Duration, Type, Description]
Index: []

data.shape

(7787, 11)

```

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

isnull()

data.head()

```

      Show_Id Category  Title          Director \
0         s1   TV Show    3%              NaN
1         s2    Movie  07:19    Jorge Michel Grau
2         s3    Movie  23:59      Gilbert Chan
3         s4    Movie     9      Shane Acker
4         s5    Movie    21    Robert Luketic

                                     Cast          Country \
0    João Miguel, Bianca Comparato, Michel Gomes, R...    Brazil
1    Demián Bichir, Héctor Bonilla, Oscar Serrano, ...    Mexico
2    Tedd Chan, Stella Chung, Henley Hii, Lawrence ...    Singapore
3    Elijah Wood, John C. Reilly, Jennifer Connelly...    United States

```

4 Jim Sturgess, Kevin Spacey, Kate Bosworth, Aar... United States

	Release_Date	Rating	Duration	\
0	August 14, 2020	TV-MA	4 Seasons	
1	December 23, 2016	TV-MA	93 min	
2	December 20, 2018	R	78 min	
3	November 16, 2017	PG-13	80 min	
4	January 1, 2020	PG-13	123 min	

	Type	\
0	International TV Shows, TV Dramas, TV Sci-Fi &...	
1	Dramas, International Movies	
2	Horror Movies, International Movies	
3	Action & Adventure, Independent Movies, Sci-Fi...	
4	Dramas	

	Description
0	In a future where the elite inhabit an island ...
1	After a devastating earthquake hits Mexico Cit...
2	When an army recruit is found dead, his fellow...
3	In a postapocalyptic world, rag-doll robots hi...
4	A brilliant group of students become card-coun...

data.isnull() *# To show where*
Null value is present

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

	Rating	Duration	Type	Description
0	False	False	False	False
1	False	False	False	False
2	False	False	False	False
3	False	False	False	False
4	False	False	False	False
...
7784	False	False	False	False
7785	False	False	False	False
7786	False	False	False	False
7787	False	False	False	False


```
7788    False    False    False    False
```

```
[7787 rows x 11 columns]
```

```
data.isnull().sum()                                     # To show  
the count of Null values in each column
```

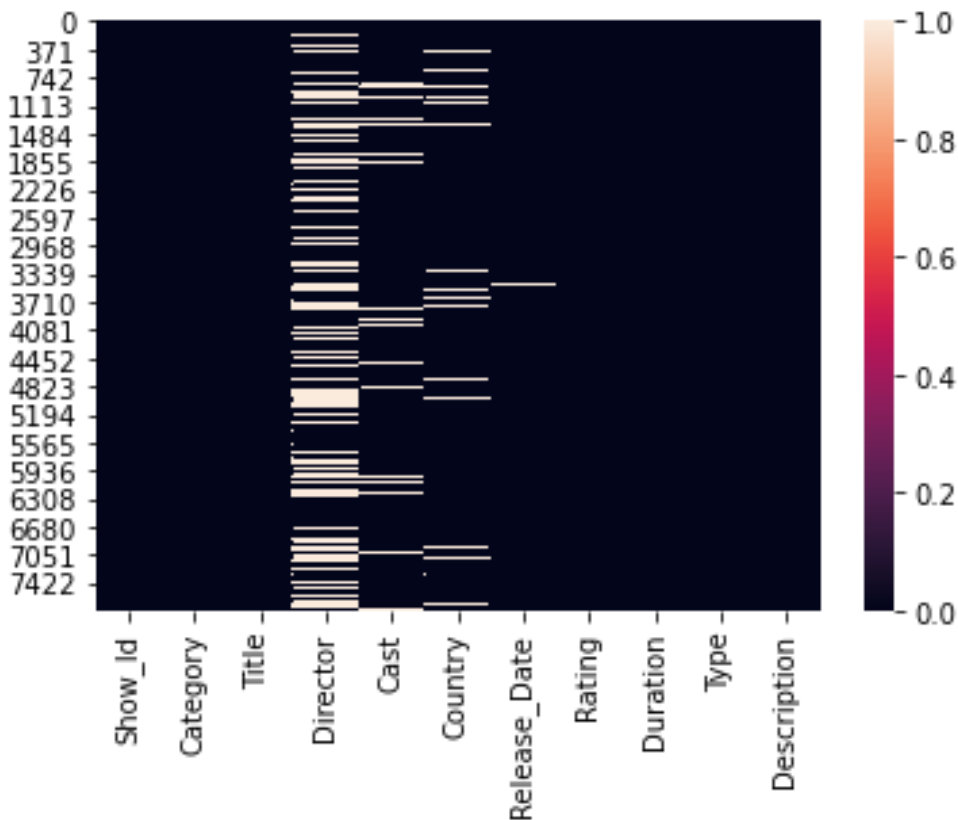
```
Show_Id          0  
Category         0  
Title            0  
Director        2388  
Cast            718  
Country         507  
Release_Date     10  
Rating           7  
Duration         0  
Type            0  
Description      0  
dtype: int64
```

```
seaborn library (heat-map)
```

```
import seaborn as sns                                     # To  
import Seaborn Library
```

```
sns.heatmap(data.isnull())                                #  
Using heat-map to show null values count
```

```
<matplotlib.axes._subplots.AxesSubplot at 0x2d34665f550>
```



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

isin()

data.head()

	Show_Id	Category	Title	Director	Cast	Country
0	s1	TV Show	3%	NaN	João Miguel, Bianca Comparato, Michel Gomes, R...	Brazil
1	s2	Movie	07:19	Jorge Michel Grau	Demián Bichir, Héctor Bonilla, Oscar Serrano, ...	Mexico
2	s3	Movie	23:59	Gilbert Chan	Tedd Chan, Stella Chung, Henley Hii, Lawrence ...	Singapore
3	s4	Movie	9	Shane Acker	Elijah Wood, John C. Reilly, Jennifer Connelly...	United States
4	s5	Movie	21	Robert Luketic	Jim Sturgess, Kevin Spacey, Kate Bosworth, Aar...	United States

	Release_Date	Rating	Duration
0	August 14, 2020	TV-MA	4 Seasons

1	December 23, 2016	TV-MA	93 min
2	December 20, 2018	R	78 min
3	November 16, 2017	PG-13	80 min
4	January 1, 2020	PG-13	123 min

	Type \
0	International TV Shows, TV Dramas, TV Sci-Fi &...
1	Dramas, International Movies
2	Horror Movies, International Movies
3	Action & Adventure, Independent Movies, Sci-Fi...
4	Dramas

	Description
0	In a future where the elite inhabit an island ...
1	After a devastating earthquake hits Mexico Cit...
2	When an army recruit is found dead, his fellow...
3	In a postapocalyptic world, rag-doll robots hi...
4	A brilliant group of students become card-coun...

```
data[data['Title'].isin(['House of Cards'])] # To show all records of
a particular item in any column
```

Show_Id	Category	Title \
2832	s2833 TV Show	House of Cards

	Director \
2832	Robin Wright, David Fincher, Gerald McRaney, J...

	Cast	Country \
2832	Kevin Spacey, Robin Wright, Kate Mara, Corey S...	United States

	Release_Date	Rating	Duration	Type \
2832	November 2, 2018	TV-MA	6 Seasons	TV Dramas, TV Thrillers

	Description
2832	A ruthless politician will stop at nothing to ...

```
str.contains()
data[data['Title'].str.contains('House of Cards')] # To show all
records of a particular string in any column
```

Show_Id	Category	Title \
2832	s2833 TV Show	House of Cards

	Director \
2832	Robin Wright, David Fincher, Gerald McRaney, J...

	Cast	Country \
2832	Kevin Spacey, Robin Wright, Kate Mara, Corey S...	United States

	Release_Date	Rating	Duration	Type \
2832	November 2, 2018	TV-MA	6 Seasons	TV Dramas, TV Thrillers

	Description
2832	A ruthless politician will stop at nothing to ...

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

dtypes

data.dtypes

```
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
```

to_datetime

```
data['Date_N'] = pd.to_datetime(data['Release_Date'])
```

data.head()

	Show_Id	Category	Title	Director \
0	s1	TV Show	3%	NaN
1	s2	Movie	07:19	Jorge Michel Grau
2	s3	Movie	23:59	Gilbert Chan
3	s4	Movie	9	Shane Acker
4	s5	Movie	21	Robert Luketic

	Cast	Country \
0	João Miguel, Bianca Comparato, Michel Gomes, R...	Brazil
1	Demián Bichir, Héctor Bonilla, Oscar Serrano, ...	Mexico
2	Tedd Chan, Stella Chung, Henley Hii, Lawrence ...	Singapore
3	Elijah Wood, John C. Reilly, Jennifer Connelly...	United States
4	Jim Sturgess, Kevin Spacey, Kate Bosworth, Aar...	United States

	Release_Date	Rating	Duration \
0	August 14, 2020	TV-MA	4 Seasons
1	December 23, 2016	TV-MA	93 min
2	December 20, 2018	R	78 min

3	November 16, 2017	PG-13	80 min
4	January 1, 2020	PG-13	123 min

	Type \
0	International TV Shows, TV Dramas, TV Sci-Fi &...
1	Dramas, International Movies
2	Horror Movies, International Movies
3	Action & Adventure, Independent Movies, Sci-Fi...
4	Dramas

	Description	Date_N
0	In a future where the elite inhabit an island ...	2020-08-14
1	After a devastating earthquake hits Mexico Cit...	2016-12-23
2	When an army recruit is found dead, his fellow...	2018-12-20
3	In a postapocalyptic world, rag-doll robots hi...	2017-11-16
4	A brilliant group of students become card-coun...	2020-01-01

data.dtypes

Show_Id	object
Category	object
Title	object
Director	object
Cast	object
Country	object
Release_Date	object
Rating	object
Duration	object
Type	object
Description	object
Date_N	datetime64[ns]
dtype:	object

dt.year.value_counts()

data['Date_N'].dt.year.value_counts() *# It counts the occurrence of all individual Years in Date column.*

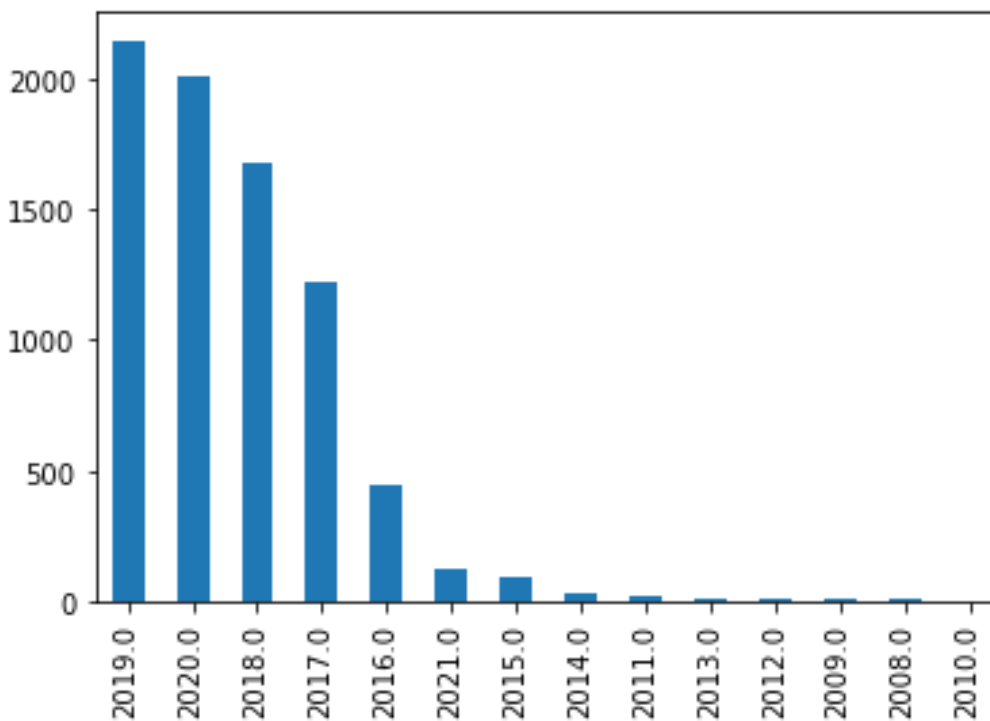
2019.0	2153
2020.0	2009
2018.0	1685
2017.0	1225
2016.0	443
2021.0	117
2015.0	88
2014.0	25
2011.0	13
2013.0	11
2012.0	3
2009.0	2

```
2008.0      2
2010.0      1
Name: Date_N, dtype: int64
```

Bar Graph

```
data['Date_N'].dt.year.value_counts().plot(kind='bar')
```

```
<matplotlib.axes._subplots.AxesSubplot at 0x2d347300190>
```



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

```
groupby()
```

```
data.head(2)
```

	Show_Id	Category	Title	Director	\
0	s1	TV Show	3%		NaN
1	s2	Movie	07:19	Jorge Michel Grau	

		Cast	Country	\
0	João Miguel, Bianca Comparato, Michel Gomes, R...		Brazil	
1	Demián Bichir, Héctor Bonilla, Oscar Serrano, ...		Mexico	

	Release_Date	Rating	Duration	\
0	August 14, 2020	TV-MA	4 Seasons	
1	December 23, 2016	TV-MA	93 min	

```

                                Type \
0  International TV Shows, TV Dramas, TV Sci-Fi &...
1                                Dramas, International Movies

                                Description      Date_N
0  In a future where the elite inhabit an island ... 2020-08-14
1  After a devastating earthquake hits Mexico Cit... 2016-12-23

data.groupby('Category').Category.count()           # To group all
unique items of a column and show their count

```

```

Category
Movie      5377
TV Show    2410
Name: Category, dtype: int64

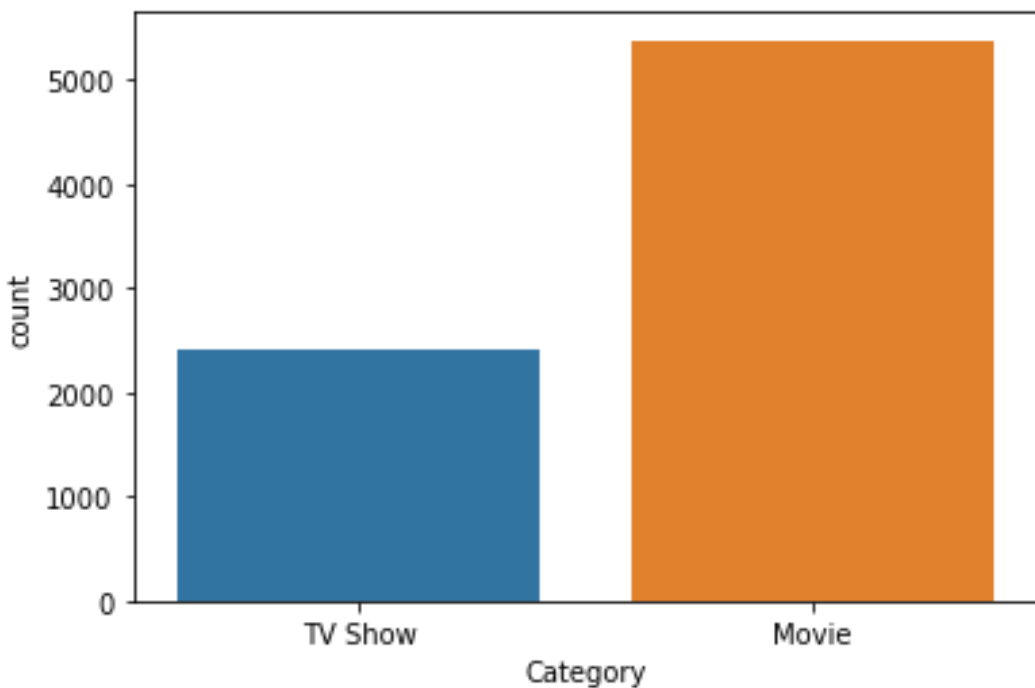
```

```

countplot()
sns.countplot(data['Category'])           # To show the count of all unique
values of any column in the form of bar graph

<matplotlib.axes._subplots.AxesSubplot at 0x2d347387df0>

```



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

Creating new column

```
data.head(2)
```

	Show_Id	Category	Title	Director	\
0	s1	TV Show	3%	NaN	
1	s2	Movie	07:19	Jorge Michel Grau	

	Cast	Country	\
0	João Miguel, Bianca Comparato, Michel Gomes, R...	Brazil	
1	Demián Bichir, Héctor Bonilla, Oscar Serrano, ...	Mexico	

	Release_Date	Rating	Duration	\
0	August 14, 2020	TV-MA	4 Seasons	
1	December 23, 2016	TV-MA	93 min	

	Type	\
0	International TV Shows, TV Dramas, TV Sci-Fi &...	
1	Dramas, International Movies	

	Description	Date_N
0	In a future where the elite inhabit an island ...	2020-08-14
1	After a devastating earthquake hits Mexico Cit...	2016-12-23

to create new Year column ; it will consider only year

```
data['Year'] = data['Date_N'].dt.year
```

```
data.head(2)
```

	Show_Id	Category	Title	Director	\
0	s1	TV Show	3%	NaN	
1	s2	Movie	07:19	Jorge Michel Grau	

	Cast	Country	\
0	João Miguel, Bianca Comparato, Michel Gomes, R...	Brazil	
1	Demián Bichir, Héctor Bonilla, Oscar Serrano, ...	Mexico	

	Release_Date	Rating	Duration	\
0	August 14, 2020	TV-MA	4 Seasons	
1	December 23, 2016	TV-MA	93 min	

	Type	\
0	International TV Shows, TV Dramas, TV Sci-Fi &...	
1	Dramas, International Movies	

	Description	Date_N	Year
0	In a future where the elite inhabit an island ...	2020-08-14	2020.0
1	After a devastating earthquake hits Mexico Cit...	2016-12-23	2016.0

Filtering

```
data[ (data['Category'] == 'Movie') & (data['Year']==2000) ]
```


Empty DataFrame

Columns: [Show_Id, Category, Title, Director, Cast, Country, Release_Date, Rating, Duration, Type, Description, Date_N, Year]

Index: []

```
data[ (data['Category'] == 'Movie') & (data['Year']==2020) ]
```

	Show_Id	Category	Title \
4	s5	Movie	21
6	s7	Movie	122
14	s15	Movie	3022
27	s28	Movie	#Alive
28	s29	Movie	#AnneFrank - Parallel Stories
...
7762	s7761	Movie	Zaki Chan
7783	s7782	Movie	Zoom
7784	s7783	Movie	Zozo
7786	s7785	Movie	Zulu Man in Japan
7788	s7787	Movie	ZZ TOP: THAT LITTLE OL' BAND FROM TEXAS

	Director \
4	Robert Luketic
6	Yasir Al Yasiri
14	John Suits
27	Cho Il
28	Sabina Fedeli, Anna Migotto
...	...
7762	Wael Ihsan
7783	Peter Hewitt
7784	Josef Fares
7786	NaN
7788	Sam Dunn

	Cast \
4	Jim Sturgess, Kevin Spacey, Kate Bosworth, Aar...
6	Amina Khalil, Ahmed Dawood, Tarek Lotfy, Ahmed...
14	Omar Epps, Kate Walsh, Miranda Cosgrove, Angus...
27	Yoo Ah-in, Park Shin-hye
28	Helen Mirren, Gengher Gatti
...	...
7762	Ahmed Helmy, Yasmin Abdulaziz, Hassan Hosny, H...
7783	Tim Allen, Courteney Cox, Chevy Chase, Kate Ma...
7784	Imad Creidi, Antoinette Turk, Elias Gergi, Car...
7786	Nasty C
7788	NaN

	Country	Release_Date
\		
4	United States	January 1, 2020
6	Egypt	June 1, 2020

14		United States	March 19, 2020
27		South Korea	September 8, 2020
28		Italy	July 1, 2020
...	
7762		Egypt	May 19, 2020
7783		United States	January 11, 2020
7784	Sweden, Czech Republic, United Kingdom, Denmar...		October 19, 2020
7786		NaN	September 25, 2020
7788	United Kingdom, Canada, United States		March 1, 2020

	Rating	Duration	Type \
4	PG-13	123 min	Dramas
6	TV-MA	95 min	Horror Movies, International Movies
14	R	91 min	Independent Movies, Sci-Fi & Fantasy, Thrillers
27	TV-MA	99 min	Horror Movies, International Movies, Thrillers
28	TV-14	95 min	Documentaries, International Movies
...
7762	TV-PG	109 min	Comedies, International Movies, Romantic Movies
7783	PG	88 min	Children & Family Movies, Comedies
7784	TV-MA	99 min	Dramas, International Movies
7786	TV-MA	44 min	Documentaries, International Movies, Music & M...
7788	TV-MA	90 min	Documentaries, Music & Musicals

	Description	Date_N	Year
4	A brilliant group of students become card-coun...	2020-01-01	2020.0
6	After an awful accident, a couple admitted to ...	2020-06-01	2020.0
14	Stranded when the Earth is suddenly destroyed ...	2020-03-19	2020.0
27	As a grisly virus rampages a city, a lone man ...	2020-09-08	2020.0
28	Through her diary, Anne Frank's story is retol...	2020-07-01	2020.0
...
7762	An unqualified young man has his work cut out ...	2020-05-19	2020.0
7783	Dragged from civilian life, a former superhero...	2020-01-11	2020.0
7784	When Lebanon's Civil War deprives Zozo of his ...	2020-10-19	2020.0
7786	In this documentary, South African rapper Nast...	2020-09-25	2020.0
7788	This documentary delves into the mystique behi...	2020-03-01	2020.0

[1312 rows x 13 columns]

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

Filtering

data.head(2)

	Show_Id	Category	Title	Director	\
0	s1	TV Show	3%	NaN	
1	s2	Movie	07:19	Jorge Michel Grau	

```

                                Cast Country \
0  João Miguel, Bianca Comparato, Michel Gomes, R...  Brazil
1  Demián Bichir, Héctor Bonilla, Oscar Serrano, ...  Mexico

      Release_Date Rating  Duration \
0   August 14, 2020  TV-MA  4 Seasons
1  December 23, 2016  TV-MA    93 min

                                Type \
0  International TV Shows, TV Dramas, TV Sci-Fi &...
1                                Dramas, International Movies

                                Description  Date_N  Year
0  In a future where the elite inhabit an island ... 2020-08-14  2020.0
1  After a devastating earthquake hits Mexico Cit... 2016-12-23  2016.0

```

```

data[ (data['Category']=='TV Show') & (data['Country']=='India') ] ['Title']

86          21 Sarfarosh: Saragarhi 1897
132                                7 (Seven)
340                                Agent Raghav
364                                Akbar Birbal
533          Anjaan: Rural Myths
...
6249          The Creative Indians
6400  The Golden Years with Javed Akhtar
6469          The House That Made Me
7294                                Typewriter
7705          Yeh Meri Family
Name: Title, Length: 71, dtype: object

```

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

`value_counts()`

`data.head(2)`

```

      Show_Id Category  Title  Director \
0         s1  TV Show    3%         NaN
1         s2   Movie  07:19  Jorge Michel Grau

                                Cast Country \
0  João Miguel, Bianca Comparato, Michel Gomes, R...  Brazil
1  Demián Bichir, Héctor Bonilla, Oscar Serrano, ...  Mexico

      Release_Date Rating  Duration \
0   August 14, 2020  TV-MA  4 Seasons

```

	Type \
0	International TV Shows, TV Dramas, TV Sci-Fi &...
1	Dramas, International Movies

	Description	Date_N	Year
0	In a future where the elite inhabit an island ...	2020-08-14	2020.0
1	After a devastating earthquake hits Mexico Cit...	2016-12-23	2016.0

Raúl Campos, Jan Suter	18
Marcus Raboy	16
Jay Karas	14
Cathy Garcia-Molina	13
Youssef Chahine	12
Martin Scorsese	12
Jay Chapman	12
Steven Spielberg	10
David Dhawan	9
Hakan Algül	8
Name: Director, dtype: int64	

Filtering (And, Or Operators)

	Show_Id	Category	Title	Director	\
0	s1	TV Show	3%	NaN	
1	s2	Movie	07:19	Jorge Michel Grau	

		Cast	Country	\
0	João Miguel, Bianca Comparato, Michel Gomes, R...		Brazil	
1	Demián Bichir, Héctor Bonilla, Oscar Serrano, ...		Mexico	

	Release_Date	Rating	Duration	\
0	August 14, 2020	TV-MA	4 Seasons	
1	December 23, 2016	TV-MA	93 min	

	Type	\
0	International TV Shows, TV Dramas, TV Sci-Fi &...	
1	Dramas, International Movies	

```
0 In a future where the elite inhabit an island ... 2020-08-14 2020.0
1 After a devastating earthquake hits Mexico Cit... 2016-12-23 2016.0
```

```
data[ (data['Category']=='Movie') & (data['Type']=='Comedies') ]
```

	Show_Id	Category	Title	Director	\
33	s34	Movie	#realityhigh	Fernando Lebrija	
72	s73	Movie	17 Again	Burr Steers	
84	s85	Movie	21 & Over	Jon Lucas, Scott Moore	
148	s149	Movie	A Bad Moms Christmas	Jon Lucas, Scott Moore	
174	s175	Movie	A Futile and Stupid Gesture	David Wain	
...	
7341	s7340	Movie	Undercover Brother 2	Leslie Small	
7590	s7589	Movie	Where's the Money	Scott Ziehl	
7623	s7622	Movie	Wild Oats	Andy Tennant	
7634	s7633	Movie	Wine Country	Amy Poehler	
7664	s7663	Movie	Work It	Laura Terruso	

	Cast	\
33	Nesta Cooper, Kate Walsh, John Michael Higgins...	
72	Zac Efron, Leslie Mann, Matthew Perry, Thomas ...	
84	Miles Teller, Skylar Astin, Justin Chon, Sarah...	
148	Mila Kunis, Kristen Bell, Kathryn Hahn, Susan ...	
174	Will Forte, Domhnall Gleeson, Martin Mull, Joe...	
...	...	
7341	Michael Jai White, Vince Swann, Barry Bostwick...	
7590	Andrew Bachelor, Kat Graham, Mike Epps, Terry ...	
7623	Shirley MacLaine, Jessica Lange, Billy Connolly...	
7634	Amy Poehler, Maya Rudolph, Ana Gasteyer, Rache...	
7664	Sabrina Carpenter, Jordan Fisher, Liza Koshy, ...	

	Country	Release_Date	Rating	Duration	Type	\
33	United States	September 8, 2017	TV-14	99 min	Comedies	
72	United States	January 1, 2021	PG-13	102 min	Comedies	
84	United States	April 16, 2019	R	93 min	Comedies	
148	United States, China	February 14, 2020	R	104 min	Comedies	
174	United States	January 26, 2018	TV-MA	102 min	Comedies	
...	
7341	United States	November 5, 2019	R	85 min	Comedies	
7590	United States	January 22, 2018	R	86 min	Comedies	
7623	Germany, United States	May 13, 2017	PG-13	86 min	Comedies	
7634	United States	May 10, 2019	R	104 min	Comedies	
7664	United States	August 7, 2020	TV-14	94 min	Comedies	

	Description	Date_N	Year
33	When nerdy high schooler Dani finally attracts...	2017-09-08	2017.0
72	Nearing a midlife crisis, thirty-something Mik...	2021-01-01	2021.0
84	Jeff's straight-and-narrow life changes abrupt...	2019-04-16	2019.0
148	Stressed-out moms Amy, Carla and Kiki are back...	2020-02-14	2020.0
174	In a brief life full of triumph and failure, "...	2018-01-26	2018.0

```

...
7341 When a beloved secret agent falls deep into a ... 2019-11-05 2019.0
7590 Hunting for a stash of stolen money, a sharp-w... 2018-01-22 2018.0
7623 When insurance accidentally pays her millions,... 2017-05-13 2017.0
7634 When longtime friends meet up for a wine-soake... 2019-05-10 2019.0
7664 A brilliant but clumsy high school senior vows... 2020-08-07 2020.0

```

[97 rows x 13 columns]

```

data[ (data['Category']=='Movie') & (data['Type']=='Comedies') |
(data['Country']=='United Kingdom')]

```

	Show_Id	Category	Title	Director	\
19	s20	Movie	'89	NaN	
33	s34	Movie	#realityhigh	Fernando Lebrija	
58	s59	TV Show	100% Hotter	NaN	
72	s73	Movie	17 Again	Burr Steers	
82	s83	Movie	2036 Origin Unknown	Hasraf Dulull	
...	
7670	s7669	TV Show	World War II in Colour	NaN	
7671	s7670	TV Show	World's Busiest Cities	NaN	
7688	s7687	Movie	XV: Beyond the Tryline	Pierre Deschamps	
7725	s7724	Movie	You Can Tutu	James Brown	
7740	s7739	TV Show	Young Wallander	NaN	

	Cast	Country	\
19	Lee Dixon, Ian Wright, Paul Merson	United Kingdom	
33	Nesta Cooper, Kate Walsh, John Michael Higgins...	United States	
58	Daniel Palmer, Melissa Sophia, Karen Williams,...	United Kingdom	
72	Zac Efron, Leslie Mann, Matthew Perry, Thomas ...	United States	
82	Katee Sackhoff, Ray Fearon, Julie Cox, Steven ...	United Kingdom	
...	
7670	Robert Powell	United Kingdom	
7671	Anita Rani, Ade Adepitan, Dan Snow	United Kingdom	
7688	NaN	United Kingdom	
7725	Lily O'Regan, Jeannettsy Enriquez Borges, Joel...	United Kingdom	
7740	Adam Pålsson, Richard Dillane, Leanne Best, El...	United Kingdom	

	Release_Date	Rating	Duration	\
19	May 16, 2018	TV-PG	87 min	
33	September 8, 2017	TV-14	99 min	
58	November 1, 2019	TV-14	1 Season	
72	January 1, 2021	PG-13	102 min	
82	December 20, 2018	TV-14	95 min	
...	
7670	August 1, 2017	TV-MA	1 Season	
7671	February 1, 2019	TV-PG	1 Season	
7688	March 18, 2020	TV-14	91 min	
7725	December 31, 2017	TV-G	87 min	

7740 September 3, 2020 TV-MA 1 Season

```

                                Type \
19                               Sports Movies
33                               Comedies
58   British TV Shows, International TV Shows, Real...
72                               Comedies
82                               Sci-Fi & Fantasy
...
7670 British TV Shows, Docuseries, International TV...
7671                               British TV Shows, Docuseries
7688                               Documentaries, Sports Movies
7725                               Children & Family Movies
7740 Crime TV Shows, International TV Shows, TV Dramas
```

	Description	Date_N	Year
19	Mixing old footage with interviews, this is th...	2018-05-16	2018.0
33	When nerdy high schooler Dani finally attracts...	2017-09-08	2017.0
58	A stylist, a hair designer and a makeup artist...	2019-11-01	2019.0
72	Nearing a midlife crisis, thirty-something Mik...	2021-01-01	2021.0
82	Working with an artificial intelligence to inv...	2018-12-20	2018.0
...
7670	Footage of the most dramatic moments from Worl...	2017-08-01	2017.0
7671	From Moscow to Mexico City, three BBC journali...	2019-02-01	2019.0
7688	Set against the 2015 Rugby World Cup, this doc...	2020-03-18	2020.0
7725	A gifted young ballet dancer struggles to find...	2017-12-31	2017.0
7740	An incendiary hate crime stirs civil unrest, f...	2020-09-03	2020.0

[485 rows x 13 columns]

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

```
data.head(2)
```

	Show_Id	Category	Title	Director	\
0	s1	TV Show	3%		NaN
1	s2	Movie	07:19	Jorge Michel Grau	

		Cast	Country	\
0	João Miguel, Bianca Comparato, Michel Gomes, R...		Brazil	
1	Demián Bichir, Héctor Bonilla, Oscar Serrano, ...		Mexico	

	Release_Date	Rating	Duration	\
0	August 14, 2020	TV-MA	4 Seasons	
1	December 23, 2016	TV-MA	93 min	

	Type	\
0	International TV Shows, TV Dramas, TV Sci-Fi &...	

1

Dramas, International Movies

	Description	Date_N	Year
0	In a future where the elite inhabit an island ...	2020-08-14	2020.0
1	After a devastating earthquake hits Mexico Cit...	2016-12-23	2016.0

filtering

```
data[data['Cast'] == 'Tom Cruise']
```

Empty DataFrame

Columns: [Show_Id, Category, Title, Director, Cast, Country, Release_Date, Rating, Duration, Type, Description, Date_N, Year]
Index: []

str.contains()

```
data[data['Cast'].str.contains('Tom Cruise')]
```

ValueError Traceback (most recent call last)

<ipython-input-47-dd5e43449832> in <module>

```
1 # data[data['Cast'].str.contains('Tom Cruise')]
```

```
2
```

```
----> 3 data[data['Cast'].str.contains('Tom Cruise')]
```

~\anaconda3\lib\site-packages\pandas\core\frame.py in __getitem__(self, key)

```
3012
```

```
3013         # Do we have a (boolean) 1d indexer?
```

```
-> 3014         if com.is_bool_indexer(key):
```

```
3015             return self._getitem_bool_array(key)
```

```
3016
```

~\anaconda3\lib\site-packages\pandas\core\common.py in is_bool_indexer(key)

```
112         # Don't raise on e.g. ["A", "B", np.nan], see
```

```
113         #
```

test_loc_getitem_list_of_labels_categoricalindex_with_na

```
--> 114         raise ValueError(na_msg)
```

```
115         return False
```

```
116         return True
```

ValueError: Cannot mask with non-boolean array containing NA / NaN values

Creating new data-frame

It drops the rows that contains all or any missing values.

```
data_new = data.dropna()
```

```
data_new.head(2)
```


	Show_Id	Category	Title	Director	\
1	s2	Movie	07:19	Jorge Michel Grau	
2	s3	Movie	23:59	Gilbert Chan	

	Cast	Country	\
1	Demián Bichir, Héctor Bonilla, Oscar Serrano, ...	Mexico	
2	Tedd Chan, Stella Chung, Henley Hii, Lawrence ...	Singapore	

	Release_Date	Rating	Duration	Type	\
1	December 23, 2016	TV-MA	93 min	Dramas, International Movies	
2	December 20, 2018	R	78 min	Horror Movies, International Movies	

	Description	Date_N	Year
1	After a devastating earthquake hits Mexico Cit...	2016-12-23	2016.0
2	When an army recruit is found dead, his fellow...	2018-12-20	2018.0

```
data_new[data_new['Cast'].str.contains('Tom Cruise')]
```

	Show_Id	Category	Title	Director	\
3860	s3861	Movie	Magnolia	Paul Thomas Anderson	
5071	s5071	Movie	Rain Man	Barry Levinson	

	Cast	Country	\
3860	Jeremy Blackman, Tom Cruise, Melinda Dillon, A...	United States	
5071	Dustin Hoffman, Tom Cruise, Valeria Golino, Ge...	United States	

	Release_Date	Rating	Duration	Type	\
3860	January 1, 2020	R	189 min	Dramas, Independent Movies	
5071	July 1, 2019	R	134 min	Classic Movies, Dramas	

	Description	Date_N	Year
3860	Through chance, human action, past history and...	2020-01-01	2020.0
5071	A fast-talking yuppie is forced to slow down w...	2019-07-01	2019.0

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

nunique()

```
data.head(2)
```

	Show_Id	Category	Title	Director	\
0	s1	TV Show	3%	NaN	
1	s2	Movie	07:19	Jorge Michel Grau	

	Cast	Country	\
0	João Miguel, Bianca Comparato, Michel Gomes, R...	Brazil	
1	Demián Bichir, Héctor Bonilla, Oscar Serrano, ...	Mexico	

	Release_Date	Rating	Duration	\
0	August 14, 2020	TV-MA	4 Seasons	
1	December 23, 2016	TV-MA	93 min	

	Type	\
0	International TV Shows, TV Dramas, TV Sci-Fi &...	
1	Dramas, International Movies	

	Description	Date_N	Year
0	In a future where the elite inhabit an island ...	2020-08-14	2020.0
1	After a devastating earthquake hits Mexico Cit...	2016-12-23	2016.0

```
data['Rating'].nunique()
```

```
14
```

```
unique()
```

```
data['Rating'].unique()
```

```
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)
```

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

```
data.head(2)
```

	Show_Id	Category	Title	Director	\
0	s1	TV Show	3%		NaN
1	s2	Movie	07:19	Jorge Michel Grau	

	Cast	Country	\
0	João Miguel, Bianca Comparato, Michel Gomes, R...	Brazil	
1	Demián Bichir, Héctor Bonilla, Oscar Serrano, ...	Mexico	

	Release_Date	Rating	Duration	\
0	August 14, 2020	TV-MA	4 Seasons	
1	December 23, 2016	TV-MA	93 min	

	Type	\
0	International TV Shows, TV Dramas, TV Sci-Fi &...	
1	Dramas, International Movies	

	Description	Date_N	Year
0	In a future where the elite inhabit an island ...	2020-08-14	2020.0
1	After a devastating earthquake hits Mexico Cit...	2016-12-23	2016.0

```
data[(data['Category']=='Movie') & (data['Rating']=='TV-14')].shape
```

```
(1272, 13)
```

```
data[(data['Category']=='Movie') & (data['Rating']=='TV-14') &
(data['Country']=='Canada')].shape
```

```
(11, 13)
```

Q.9.2. How many TV Show got the 'R' rating, after year 2018 ?

```
data.head(2)
```

```
   Show_Id Category  Title      Director \
0         s1  TV Show      3%          NaN
1         s2   Movie  07:19  Jorge Michel Grau

                                     Cast Country \
0  João Miguel, Bianca Comparato, Michel Gomes, R...  Brazil
1  Demián Bichir, Héctor Bonilla, Oscar Serrano, ...  Mexico

   Release_Date Rating  Duration \
0   August 14, 2020  TV-MA   4 Seasons
1  December 23, 2016  TV-MA    93 min

                                     Type \
0  International TV Shows, TV Dramas, TV Sci-Fi &...
1                                Dramas, International Movies

   Description      Date_N  Year
0  In a future where the elite inhabit an island ... 2020-08-14  2020.0
1  After a devastating earthquake hits Mexico Cit... 2016-12-23  2016.0

data[(data['Category']=='TV Show') & (data['Rating']=='R')]

   Show_Id Category      Title      Director \
4497   s4498  TV Show      Nobel          NaN
6437   s6436  TV Show  The Hateful Eight: Extended Version  Quentin Tarantino

                                     Cast Country \
4497  Aksel Hennie, Tuva Novotny, Anders Danielsen L...  Norway
6437  Samuel L. Jackson, Kurt Russell, Jennifer Jaso...   NaN

   Release_Date Rating  Duration \
4497  December 10, 2016      R   1 Season
6437   April 25, 2019      R   1 Season

                                     Type \
4497  International TV Shows, TV Dramas, TV Thrillers
6437                                TV Shows
```

		Description	Date_N	Year
4497		A series of incidents in Afghanistan set compl...	2016-12-10	2016.0
6437		Trapped at a stagecoach stop as a storm rages ...	2019-04-25	2019.0

```
data[(data['Category']=='TV Show') & (data['Rating']=='R') & (data['Year'] > 2018)]
```

	Show_Id	Category	Title	Director
\				
6437	s6436	TV Show	The Hateful Eight: Extended Version	Quentin Tarantino

		Cast	Country	\
6437		Samuel L. Jackson, Kurt Russell, Jennifer Jaso...	NaN	

	Release_Date	Rating	Duration	Type	\
6437	April 25, 2019	R	1 Season	TV Shows	

		Description	Date_N	Year
6437		Trapped at a stagecoach stop as a storm rages ...	2019-04-25	2019.0

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

```
data.head(2)
```

	Show_Id	Category	Title	Director	\
0	s1	TV Show	3%	NaN	
1	s2	Movie	07:19	Jorge Michel Grau	

		Cast	Country	\
0		João Miguel, Bianca Comparato, Michel Gomes, R...	Brazil	
1		Demián Bichir, Héctor Bonilla, Oscar Serrano, ...	Mexico	

	Release_Date	Rating	Duration	\
0	August 14, 2020	TV-MA	4 Seasons	
1	December 23, 2016	TV-MA	93 min	

		Type	\
0		International TV Shows, TV Dramas, TV Sci-Fi &...	
1		Dramas, International Movies	

		Description	Date_N	Year
0		In a future where the elite inhabit an island ...	2020-08-14	2020.0
1		After a devastating earthquake hits Mexico Cit...	2016-12-23	2016.0

```
data.Duration.unique()
```

```
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)
```

```
data.Duration.dtypes
```

```
dtype('O')
```

```
str.split()
```

```
data.head(2)
```

	Show_Id	Category	Title	Director	\
0	s1	TV Show	3%		NaN
1	s2	Movie	07:19	Jorge Michel	Grau

	Cast	Country	\
0	João Miguel, Bianca Comparato, Michel Gomes, R...	Brazil	
1	Demián Bichir, Héctor Bonilla, Oscar Serrano, ...	Mexico	

	Release_Date	Rating	Duration	\
0	August 14, 2020	TV-MA	4 Seasons	
1	December 23, 2016	TV-MA	93 min	

	Type	\
0	International TV Shows, TV Dramas, TV Sci-Fi &...	
1	Dramas, International Movies	

	Description	Date_N	Year
0	In a future where the elite inhabit an island ...	2020-08-14	2020.0
1	After a devastating earthquake hits Mexico Cit...	2016-12-23	2016.0

```
data[['Minutes', 'Unit']] = data['Duration'].str.split(' ', expand = True)
```

```
data.head(2)
```

	Show_Id	Category	Title	Director	\
0	s1	TV Show	3%	NaN	
1	s2	Movie	07:19	Jorge Michel Grau	

	Cast	Country	\
0	João Miguel, Bianca Comparato, Michel Gomes, R...	Brazil	
1	Demián Bichir, Héctor Bonilla, Oscar Serrano, ...	Mexico	

	Release_Date	Rating	Duration	\
0	August 14, 2020	TV-MA	4 Seasons	
1	December 23, 2016	TV-MA	93 min	

	Type	\
0	International TV Shows, TV Dramas, TV Sci-Fi &...	
1	Dramas, International Movies	

	Description	Date_N	Year	\
0	In a future where the elite inhabit an island ...	2020-08-14	2020.0	
1	After a devastating earthquake hits Mexico Cit...	2016-12-23	2016.0	

	Minutes	Unit
0	4	Seasons
1	93	min

```
max()
```

```
data['Minutes'].max()
```


	Description	Date_N	Year	\
0	In a future where the elite inhabit an island ...	2020-08-14	2020.0	
1	After a devastating earthquake hits Mexico Cit...	2016-12-23	2016.0	

	Minutes	Unit
0	4	Seasons
1	93	min

```
data_tvshow = data[data['Category'] == 'TV Show']
```

```
data_tvshow.head(2)
```

	Show_Id	Category	Title	Director	\
0	s1	TV Show	3%	NaN	
5	s6	TV Show	46	Serdar Akar	

		Cast	Country	Release_Date
0	João Miguel, Bianca Comparato, Michel Gomes, R...	Brazil	August 14, 2020	
5	Erdal Beşikçioğlu, Yasemin Allen, Melis Birkan...	Turkey	July 1, 2017	

	Rating	Duration	Type	\
0	TV-MA	4 Seasons	International TV Shows, TV Dramas, TV Sci-Fi &...	
5	TV-MA	1 Season	International TV Shows, TV Dramas, TV Mysteries	

	Description	Date_N	Year	\
0	In a future where the elite inhabit an island ...	2020-08-14	2020.0	
5	A genetics professor experiments with a treatm...	2017-07-01	2017.0	

	Minutes	Unit
0	4	Seasons
5	1	Season

```
data_tvshow.Country.value_counts()
```

United States	705
United Kingdom	204
Japan	157
South Korea	147
India	71
...	
Italy, United Kingdom, France	1
Australia, Canada	1
Turkey, Azerbaijan	1
Canada, Germany, South Africa	1
United States, United Kingdom, Australia	1

Name: Country, Length: 183, dtype: int64


```
data_tvshow.Country.value_counts().head(1)
```

```
United States    705
Name: Country, dtype: int64
```

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

```
data.head(2)
```

```
   Show_Id Category  Title      Director \
0        s1  TV Show    3%           NaN
1        s2   Movie  07:19  Jorge Michel Grau

                                     Cast Country \
0  João Miguel, Bianca Comparato, Michel Gomes, R...  Brazil
1  Demián Bichir, Héctor Bonilla, Oscar Serrano, ...  Mexico

   Release_Date Rating  Duration \
0  August 14, 2020  TV-MA  4 Seasons
1  December 23, 2016  TV-MA    93 min

                                     Type \
0  International TV Shows, TV Dramas, TV Sci-Fi &...
1                                Dramas, International Movies

                                     Description  Date_N  Year \
0  In a future where the elite inhabit an island ... 2020-08-14  2020.0
1  After a devastating earthquake hits Mexico Cit... 2016-12-23  2016.0

   Minutes  Unit
0         4  Seasons
1        93    min
```

```
data.sort_values(by = 'Year')
```

```
   Show_Id Category  Title      Director \
7115  s7114   Movie  To and From New York  Sorin Dan Mihalcescu
1765  s1766  TV Show    Dinner for Five           NaN
3248  s3249   Movie  Just Another Love Story  Ole Bornedal
5766  s5766   Movie    Splatter          Joe Dante
3840  s3841   Movie  Mad Ron's Prevues from Hell  Jim Monaco
...     ...     ...     ...     ...
3374  s3375  TV Show    Kikoriki           NaN
3492  s3493  TV Show  La Familia P. Luche           NaN
3946  s3947  TV Show    Maron           NaN
5138  s5138  TV Show  Red vs. Blue           NaN
```

6066	s6066	TV Show	The Adventures of Figaro Pho	NaN
------	-------	---------	------------------------------	-----

	Cast	Country	\
7115	Barbara King, Shaana Diya, John Krisiukenas, Y...	United States	
1765	NaN	United States	
3248	Anders W. Berthelsen, Rebecka Hemse, Nikolaj L...	Denmark	
5766	Corey Feldman, Tony Todd, Tara Leigh, Erin Way...	United States	
3840	Nick Pawlow, Jordu Schell, Jay Kuschwara, Micha...	United States	
...	
3374	Igor Dmitriev	NaN	
3492	Eugenio Derbez, Consuelo Duval, Luis Manuel Áv...	United States	
3946	Marc Maron, Judd Hirsch, Josh Brener, Nora Zeh...	United States	
5138	Burnie Burns, Jason Saldaña, Gustavo Sorola, G...	United States	
6066	Luke Jurevicius, Craig Behenna, Charlotte Haml...	Australia	

	Release_Date	Rating	Duration	\
7115	January 1, 2008	TV-MA	81 min	
1765	February 4, 2008	TV-MA	1 Season	
3248	May 5, 2009	TV-MA	104 min	
5766	November 18, 2009	TV-MA	29 min	
3840	November 1, 2010	NR	84 min	
...	
3374	NaN	TV-Y	2 Seasons	
3492	NaN	TV-14	3 Seasons	
3946	NaN	TV-MA	4 Seasons	
5138	NaN	NR	13 Seasons	
6066	NaN	TV-Y7	2 Seasons	

	Type	\
7115	Dramas, Independent Movies, Thrillers	
1765	Stand-Up Comedy & Talk Shows	
3248	Dramas, International Movies	
5766	Horror Movies	
3840	Cult Movies, Horror Movies	
...	...	
3374	Kids' TV	
3492	International TV Shows, Spanish-Language TV Sh...	
3946	TV Comedies	
5138	TV Action & Adventure, TV Comedies, TV Sci-Fi ...	
6066	Kids' TV, TV Comedies	

	Description	Date_N	Year	\
7115	While covering a story in New York City, a Sea...	2008-01-01	2008.0	
1765	In each episode, four celebrities join host Jo...	2008-02-04	2008.0	
3248	When he causes a car accident that leaves a yo...	2009-05-05	2009.0	
5766	After committing suicide, a washed-up rocker r...	2009-11-18	2009.0	
3840	This collection cherry-picks trailers, forgott...	2010-11-01	2010.0	
...	
3374	A wacky rabbit and his gang of animal pals hav...	NaN	NaN	

3492	This irreverent sitcom featues Ludovico, Feder...	NaT	NaN
3946	Marc Maron stars as Marc Maron, who interviews...	NaT	NaN
5138	This parody of first-person shooter games, mil...	NaT	NaN
6066	Imagine your worst fears, then multiply them: ...	NaT	NaN

	Minutes	Unit
7115	81	min
1765	1	Season
3248	104	min
5766	29	min
3840	84	min
...
3374	2	Seasons
3492	3	Seasons
3946	4	Seasons
5138	13	Seasons
6066	2	Seasons

[7787 rows x 15 columns]

data.sort_values(by = 'Year', ascending = False).head(10)

	Show_Id	Category	Title \
5564	s5564	Movie	Sherlock Holmes
5919	s5919	Movie	Surf's Up
980	s981	TV Show	Bling Empire
5955	s5955	Movie	Taare Zameen Par
366	s367	Movie	Al acecho
560	s561	Movie	Apaharan
1355	s1356	Movie	Chris Rock Total Blackout: The Tamborine Exten...
5922	s5922	TV Show	Surviving Death
4269	s4270	Movie	Mud
2799	s2800	Movie	Hook

	Director \
5564	Guy Ritchie
5919	Ash Brannon, Chris Buck
980	NaN
5955	Aamir Khan
366	Francisco D'Eufemia
560	Prakash Jha
1355	Chris Rock
5922	NaN
4269	Jeff Nichols
2799	Steven Spielberg

	Cast \
5564	Robert Downey Jr., Jude Law, Rachel McAdams, M...
5919	Shia LaBeouf, Jeff Bridges, Zooey Deschanel, J...

980		NaN
5955	Aamir Khan, Darsheel Safary, Tanay Chheda, Tis...	
366	Rodrigo de la Serna, Belen Blanco, Walter Jako...	
560	Ajay Devgn, Nana Patekar, Bipasha Basu, Ayub K...	
1355		Chris Rock
5922		NaN
4269	Matthew McConaughey, Reese Witherspoon, Tye Sh...	
2799	Dustin Hoffman, Robin Williams, Julia Roberts,...	

	Country	Release_Date	\
5564	United States, Germany, United Kingdom, Australia	January 1, 2021	
5919	United States	January 1, 2021	
980	NaN	January 15, 2021	
5955	India	January 10, 2021	
366	NaN	January 12, 2021	
560	India	January 8, 2021	
1355	NaN	January 12, 2021	
5922	United States	January 6, 2021	
4269	United States	January 1, 2021	
2799	United States	January 15, 2021	

	Rating	Duration	Type	\
5564	PG-13	128 min	Action & Adventure, Comedies	
5919	PG	86 min	Children & Family Movies, Comedies, Sports Movies	
980	TV-MA	1 Season	Reality TV	
5955	PG	162 min	Dramas, International Movies	
366	TV-MA	81 min	International Movies, Thrillers	
560	TV-14	161 min	Dramas, International Movies	
1355	TV-MA	98 min	Stand-Up Comedy	
5922	TV-MA	1 Season	Docuseries, Reality TV	
4269	PG-13	131 min	Dramas, Independent Movies	
2799	PG	142 min	Children & Family Movies	

	Description	Date_N	Year	\
5564	The game is afoot for an eccentric detective w...	2021-01-01	2021.0	
5919	This Oscar-nominated animated comedy goes behi...	2021-01-01	2021.0	
980	Follow LA's wildly wealthy Asian and Asian Ame...	2021-01-15	2021.0	
5955	When daydreamer Ishaan is sent to boarding sch...	2021-01-10	2021.0	
366	Looking for a fresh start, a park ranger gets ...	2021-01-12	2021.0	
560	Raised under the condescending eye of his acti...	2021-01-08	2021.0	
1355	In this extended cut of his 2018 special, Chri...	2021-01-12	2021.0	
5922	What happens after we die? This docuseries exp...	2021-01-06	2021.0	
4269	Two Mississippi teens meet peculiar drifter Mu...	2021-01-01	2021.0	
2799	Peter Pan, now grown up and a workaholic, must...	2021-01-15	2021.0	

	Minutes	Unit
5564	128	min
5919	86	min
980	1	Season

```

5955      162      min
366       81      min
560      161      min
1355      98      min
5922       1 Season
4269     131      min
2799     142      min

```

Q.13. Find all the instances where :

Category is 'Movie' and Type is 'Dramas'

or

Category is 'TV Show' & Type is 'Kids' TV'

`data.head(2)`

```

Show_Id Category Title          Director \
0      s1  TV Show      3%              NaN
1      s2   Movie  07:19  Jorge Michel Grau

```

```

Cast Country \
0 João Miguel, Bianca Comparato, Michel Gomes, R...  Brazil
1 Demián Bichir, Héctor Bonilla, Oscar Serrano, ...  Mexico

```

```

Release_Date Rating  Duration \
0   August 14, 2020  TV-MA  4 Seasons
1  December 23, 2016  TV-MA    93 min

```

```

Type \
0 International TV Shows, TV Dramas, TV Sci-Fi &...
1                      Dramas, International Movies

```

```

Description      Date_N      Year \
0 In a future where the elite inhabit an island ... 2020-08-14  2020.0
1 After a devastating earthquake hits Mexico Cit... 2016-12-23  2016.0

```

```

Minutes      Unit
0         4  Seasons
1        93      min

```

`data [(data['Category']=='Movie') & (data['Type']=='Dramas')].head(2)`

```

Show_Id Category Title          Director \
4      s5   Movie    21  Robert Luketic
7      s8   Movie   187  Kevin Reynolds

```

	Cast	Country	\
4	Jim Sturgess, Kevin Spacey, Kate Bosworth, Aar...	United States	
7	Samuel L. Jackson, John Heard, Kelly Rowan, Cl...	United States	

	Release_Date	Rating	Duration	Type	\
4	January 1, 2020	PG-13	123 min	Dramas	
7	November 1, 2019	R	119 min	Dramas	

	Description	Date_N	Year	\
4	A brilliant group of students become card-coun...	2020-01-01	2020.0	
7	After one of his high school students attacks ...	2019-11-01	2019.0	

	Minutes	Unit
4	123	min
7	119	min

```
data [ (data['Category']=='TV Show') & (data['Type']=='Kids' TV) ]
```

	Show_Id	Category	Title	Director	\
111	s112	TV Show	44 Cats	NaN	
276	s277	TV Show	Abby Hatcher	Kyran Kelly	
434	s435	TV Show	Alphablocks	NaN	
598	s599	TV Show	Ask the StoryBots	NaN	
706	s707	TV Show	Bal Ganesh	Vijay S. Bhanushali	
...	
7668	s7667	TV Show	World of Winx	Iginio Straffi	
7717	s7716	TV Show	Yoko	NaN	
7719	s7718	TV Show	YOM	NaN	
7758	s7757	TV Show	Z4	NaN	
7761	s7760	TV Show	Zak Storm	NaN	

	Cast	\
111	Sarah Natochenny, Suzy Myers, Simona Berman, E...	
276	Macy Drouin, Wyatt White, Paul Sun-Hyung Lee, ...	
434	Teresa Gallagher, David Holt, Lizzie Waterworth	
598	Judy Greer, Erin Fitzgerald, Fred Tatasciore, ...	
706	Meghna Erande Joshi, Parminder Ghuman	
...	...	
7668	Haven Paschall, Alysha Deslorieux, Jessica Paq...	
7717	Eileen Stevens, Alyson Leigh Rosenfeld, Sarah ...	
7719	Sairaj, Devyani Dagaonkar, Ketan Singh, Mayur ...	
7758	Apollo Costa, Gabriel Santana, Matheus Lustosa...	
7761	Michael Johnston, Jessica Gee-George, Christin...	

	Country	Release_Date	\
111	Italy	October 1, 2020	
276	United States, Canada	July 1, 2020	
434	United Kingdom	May 25, 2020	
598	United States	August 2, 2019	

706		NaN	March 31, 2020
...	
7668	Italy, United States		June 16, 2017
7717		NaN	June 23, 2018
7719		NaN	June 7, 2018
7758		Brazil	February 22, 2019
7761	United States, France, South Korea, Indonesia		September 13, 2018

	Rating	Duration	Type \
111	TV-Y7	2 Seasons	Kids' TV
276	TV-Y	1 Season	Kids' TV
434	TV-Y	5 Seasons	Kids' TV
598	TV-Y	3 Seasons	Kids' TV
706	TV-Y7	1 Season	Kids' TV
...
7668	TV-Y7	2 Seasons	Kids' TV
7717	TV-Y	1 Season	Kids' TV
7719	TV-Y7	1 Season	Kids' TV
7758	TV-PG	2 Seasons	Kids' TV
7761	TV-Y7	3 Seasons	Kids' TV

	Description	Date_N	Year \
111	Paw-esome tales abound when singing furry frie...	2020-10-01	2020.0
276	A big-hearted girl helps her Fuzzly friends wh...	2020-07-01	2020.0
434	The letters of the alphabet come to life in Al...	2020-05-25	2020.0
598	Five curious little creatures track down the a...	2019-08-02	2019.0
706	Watch Ganesh destroy demons, disarm invaders a...	2020-03-31	2020.0
...
7668	The reality show "WOW!" engages the Winx in th...	2017-06-16	2017.0
7717	Friends Mai, Oto and Vik's games at the park b...	2018-06-23	2018.0
7719	With the mind of a human being, and the body o...	2018-06-07	2018.0
7758	Fading music biz veteran Zé realizes he has ju...	2019-02-22	2019.0
7761	Teen surfer Zak Storm is mysteriously transpor...	2018-09-13	2018.0

	Minutes	Unit
111	2	Seasons
276	1	Season
434	5	Seasons
598	3	Seasons
706	1	Season
...
7668	2	Seasons
7717	1	Season
7719	1	Season
7758	2	Seasons
7761	3	Seasons

[205 rows x 15 columns]

```
data [ (data['Category']=='Movie') & (data['Type']=='Dramas') |
(data['Category']=='TV Show') & (data['Type']=='Kids' TV") ]
```

	Show_Id	Category	Title	Director	\
4	s5	Movie	21	Robert Luketic	
7	s8	Movie	187	Kevin Reynolds	
111	s112	TV Show	44 Cats	NaN	
170	s171	Movie	A Family Man	Mark Williams	
232	s233	Movie	A Stoning in Fulham County	Larry Elikann	
...	
7668	s7667	TV Show	World of Winx	Iginio Straffi	
7717	s7716	TV Show	Yoko	NaN	
7719	s7718	TV Show	YOM	NaN	
7758	s7757	TV Show	Z4	NaN	
7761	s7760	TV Show	Zak Storm	NaN	

	Cast	\
4	Jim Sturgess, Kevin Spacey, Kate Bosworth, Aar...	
7	Samuel L. Jackson, John Heard, Kelly Rowan, Cl...	
111	Sarah Natochenny, Suzy Myers, Simona Berman, E...	
170	Gerard Butler, Gretchen Mol, Alison Brie, Will...	
232	Ken Olin, Jill Eikenberry, Maureen Mueller, Gr...	
...	...	
7668	Haven Paschall, Alysha Deslorieux, Jessica Paq...	
7717	Eileen Stevens, Alyson Leigh Rosenfeld, Sarah ...	
7719	Sairaj, Devyani Dagaonkar, Ketan Singh, Mayur ...	
7758	Apollo Costa, Gabriel Santana, Matheus Lustosa...	
7761	Michael Johnston, Jessica Gee-George, Christin...	

	Country	Release_Date	\
4	United States	January 1, 2020	
7	United States	November 1, 2019	
111	Italy	October 1, 2020	
170	Canada, United States	December 15, 2019	
232	United States	October 1, 2011	
...	
7668	Italy, United States	June 16, 2017	
7717	NaN	June 23, 2018	
7719	NaN	June 7, 2018	
7758	Brazil	February 22, 2019	
7761	United States, France, South Korea, Indonesia	September 13, 2018	

	Rating	Duration	Type	\
4	PG-13	123 min	Dramas	
7	R	119 min	Dramas	
111	TV-Y7	2 Seasons	Kids' TV	
170	R	110 min	Dramas	
232	TV-14	95 min	Dramas	
...	

7668	TV-Y7	2 Seasons	Kids' TV
7717	TV-Y	1 Season	Kids' TV
7719	TV-Y7	1 Season	Kids' TV
7758	TV-PG	2 Seasons	Kids' TV
7761	TV-Y7	3 Seasons	Kids' TV

	Description	Date_N	Year	\
4	A brilliant group of students become card-coun...	2020-01-01	2020.0	
7	After one of his high school students attacks ...	2019-11-01	2019.0	
111	Paw-esome tales abound when singing furry frie...	2020-10-01	2020.0	
170	A ruthless corporate headhunter battles his ri...	2019-12-15	2019.0	
232	After reckless teens kill an Amish child, a pr...	2011-10-01	2011.0	
...	
7668	The reality show "WOW!" engages the Winx in th...	2017-06-16	2017.0	
7717	Friends Mai, Oto and Vik's games at the park b...	2018-06-23	2018.0	
7719	With the mind of a human being, and the body o...	2018-06-07	2018.0	
7758	Fading music biz veteran Zé realizes he has ju...	2019-02-22	2019.0	
7761	Teen surfer Zak Storm is mysteriously transpor...	2018-09-13	2018.0	

	Minutes	Unit
4	123	min
7	119	min
111	2	Seasons
170	110	min
232	95	min
...
7668	2	Seasons
7717	1	Season
7719	1	Season
7758	2	Seasons
7761	3	Seasons

[322 rows x 15 columns]

----- ***** -----