

Netflix Dataset Netflix Movies and TV Shows 2021# This Netflix Dataset has information about the TV shows and Movies available on Netflix till 2021.# This dataset is collected from flexible which is third party Netflix search engine and available on Kaggle for free.

In [1]: *# Importing the dataset*

```
import pandas as pd
data = pd.read_csv(r"C:\Users\97474\Downloads\8. Netflix Dataset.csv")
```

In [2]: data

Out[2]:

| | Show_Id | Category | Title | Director | Cast | Country | Release_Date | Rating | Duration |
|------|---------|----------|-------------------------|-------------------|---|---|--------------------|--------|----------|
| 0 | s1 | TV Show | 3% | NaN | João Miguel, Bianca Comparato, Michel Gomes, R... | Brazil | August 14, 2020 | TV-MA | Season |
| 1 | s2 | Movie | 07:19 | Jorge Michel Grau | Demián Bichir, Héctor Bonilla, Oscar Serrano, ... | Mexico | December 23, 2016 | TV-MA | 93 m |
| 2 | s3 | Movie | 23:59 | Gilbert Chan | Tedd Chan, Stella Chung, Henley Hii, Lawrence ... | Singapore | December 20, 2018 | R | 78 m |
| 3 | s4 | Movie | 9 | Shane Acker | Elijah Wood, John C. Reilly, Jennifer Connelly... | United States | November 16, 2017 | PG-13 | 80 m |
| 4 | s5 | Movie | 21 | Robert Luketic | Jim Sturgess, Kevin Spacey, Kate Bosworth, Aar... | United States | January 1, 2020 | PG-13 | 123 m |
| ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| 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 m |
| 7785 | s7784 | Movie | Zubaan | Mozez Singh | Vicky Kaushal, Sarah-Jane Dias, Raaghav Chanan... | India | March 2, 2019 | TV-14 | 111 m |
| 7786 | s7785 | Movie | Zulu Man in Japan | NaN | Nasty C | NaN | September 25, 2020 | TV-MA | 44 m |
| 7787 | s7786 | TV Show | Zumbo's Just Desserts | NaN | Adriano Zumbo, Rachel Khoo | Australia | October 31, 2020 | TV-PG | 1 Seas |
| 7788 | s7787 | Movie | ZZ TOP: THAT LITTLE OL' | Sam Dunn | NaN | United Kingdom, Canada, | March 1, 2020 | TV-MA | 90 m |

| Show_Id | Category | Title | Director | Cast | Country | Release_Date | Rating | Duration |
|---------|----------|-----------------|----------------|----------------|---------------|--------------|--------|----------|
| 7700 | TV Show | BAND FROM TEXAS | JAMES HAMILTON | JAMES HAMILTON | United States | 1970-01-01 | 8.5 | 30 min |
| | | 1970-01-01 | | | 8.5 | 30 min | | |

Getting some basic information from this Dataset

Head

```
In [5]: data.head(5)
```

| | Show_Id | Category | Title | Director | Cast | Country | Release_Date | Rating | Duration |
|---|---------|----------|-------|-------------------|---|---------------|-------------------|--------|-----------|
| 0 | s1 | TV Show | 3% | NaN | João Miguel, Bianca Comparato, Michel Gomes, R... | Brazil | August 14, 2020 | TV-MA | 4 Seasons |
| 1 | s2 | Movie | 07:19 | Jorge Michel Grau | Demián Bichir, Héctor Bonilla, Oscar Serrano, ... | Mexico | December 23, 2016 | TV-MA | 93 min |
| 2 | s3 | Movie | 23:59 | Gilbert Chan | Tedd Chan, Stella Chung, Henley Hii, Lawrence ... | Singapore | December 20, 2018 | R | 78 min |
| 3 | s4 | Movie | 9 | Shane Acker | Elijah Wood, John C. Reilly, Jennifer Connelly... | United States | November 16, 2017 | PG-13 | 80 min |
| 4 | s5 | Movie | 21 | Robert Luketic | Jim Sturgess, Kevin Spacey, Kate Bosworth, Aar... | United States | January 1, 2020 | PG-13 | 123 min |

Tail

```
In [6]: data.tail()
```

Out[6]:

| | Show_Id | Category | Title | Director | Cast | Country | Release_Date | Rating | Duration |
|------|---------|----------|---|-------------|---|---|--------------------|--------|----------|
| 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 mir |
| 7785 | s7784 | Movie | Zubaan | Mozez Singh | Vicky Kaushal, Sarah-Jane Dias, Raaghav Chanan... | India | March 2, 2019 | TV-14 | 111 mir |
| 7786 | s7785 | Movie | Zulu Man in Japan | NaN | Nasty C | NaN | September 25, 2020 | TV-MA | 44 mir |
| 7787 | s7786 | TV Show | Zumbo's Just Desserts | NaN | Adriano Zumbo, Rachel Khoo | Australia | October 31, 2020 | TV-PG | 1 Season |
| 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 mir |

Shape

In [7]:

data.shape

Out[7]:

(7789, 11)

Size

In [8]:

data.size

Out[8]:

85679

Columns

In [9]:

data.columns

Out[9]:

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

dtypes

```
In [11]: data.dtypes
```

```
Out[11]: 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
```

Info

```
In [13]: data.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
```

Task 1 find the Duplicate Records

Duplicate

```
In [14]: data.duplicated()
```

```
Out[14]: 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 [15]: data[data.duplicated()]
```

Out[15]:

| | Show_Id | Category | Title | Director | Cast | Country | Release_Date | Rating | Duration |
|------|---------|----------|-------------------|----------------|---|---------------|-------------------|--------|----------|
| 6300 | s684 | Movie | Backfire | Dave Patten | Black Deniro, Byron "Squally" Vinson, Dominic ... | United States | April 5, 2019 | TV-MA | 97 min |
| 6622 | s6621 | Movie | The Lost Okoroshi | Abba T. Makama | Seun Ajayi, Judith Audu, Tope Tedela, Ifu Enna... | Nigeria | September 4, 2020 | TV-MA | 94 min |



To remove the Duplicate Records

```
In [16]: data.drop_duplicates()
```

Out[16]:

| | Show_Id | Category | Title | Director | Cast | Country | Release_Date | Rating | Duration |
|------|---------|----------|-------------------------|-------------------|---|---|--------------------|--------|----------|
| 0 | s1 | TV Show | 3% | NaN | João Miguel, Bianca Comparato, Michel Gomes, R... | Brazil | August 14, 2020 | TV-MA | Season |
| 1 | s2 | Movie | 07:19 | Jorge Michel Grau | Demián Bichir, Héctor Bonilla, Oscar Serrano, ... | Mexico | December 23, 2016 | TV-MA | 93 m |
| 2 | s3 | Movie | 23:59 | Gilbert Chan | Tedd Chan, Stella Chung, Henley Hii, Lawrence ... | Singapore | December 20, 2018 | R | 78 m |
| 3 | s4 | Movie | 9 | Shane Acker | Elijah Wood, John C. Reilly, Jennifer Connelly... | United States | November 16, 2017 | PG-13 | 80 m |
| 4 | s5 | Movie | 21 | Robert Luketic | Jim Sturgess, Kevin Spacey, Kate Bosworth, Aar... | United States | January 1, 2020 | PG-13 | 123 m |
| ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| 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 m |
| 7785 | s7784 | Movie | Zubaan | Mozez Singh | Vicky Kaushal, Sarah-Jane Dias, Raaghav Chanan... | India | March 2, 2019 | TV-14 | 111 m |
| 7786 | s7785 | Movie | Zulu Man in Japan | NaN | Nasty C | NaN | September 25, 2020 | TV-MA | 44 m |
| 7787 | s7786 | TV Show | Zumbo's Just Desserts | NaN | Adriano Zumbo, Rachel Khoo | Australia | October 31, 2020 | TV-PG | 1 Seas |
| 7788 | s7787 | Movie | ZZ TOP: THAT LITTLE OL' | Sam Dunn | NaN | United Kingdom, Canada, | March 1, 2020 | TV-MA | 90 m |

| Show_Id | Category | Title | Director | Cast | Country | Release_Date | Rating | Duration |
|---------|----------|-----------------|----------|------|---------------|--------------|--------|----------|
| | | BAND FROM TEXAS | | | United States | | | |

7707 11 1

After running the duplicates you will see that No.of rows have changed## These changes are not permanent to make permanent changes run Inplace= True command

```
In [18]: data.drop_duplicates(inplace= True)
```

Null values

```
In [19]: data
```


Out[19]:

| | Show_Id | Category | Title | Director | Cast | Country | Release_Date | Rating | Duration |
|------|---------|----------|-------------------------|-------------------|---|---|--------------------|--------|----------|
| 0 | s1 | TV Show | 3% | NaN | João Miguel, Bianca Comparato, Michel Gomes, R... | Brazil | August 14, 2020 | TV-MA | Season |
| 1 | s2 | Movie | 07:19 | Jorge Michel Grau | Demián Bichir, Héctor Bonilla, Oscar Serrano, ... | Mexico | December 23, 2016 | TV-MA | 93 m |
| 2 | s3 | Movie | 23:59 | Gilbert Chan | Tedd Chan, Stella Chung, Henley Hii, Lawrence ... | Singapore | December 20, 2018 | R | 78 m |
| 3 | s4 | Movie | 9 | Shane Acker | Elijah Wood, John C. Reilly, Jennifer Connelly... | United States | November 16, 2017 | PG-13 | 80 m |
| 4 | s5 | Movie | 21 | Robert Luketic | Jim Sturgess, Kevin Spacey, Kate Bosworth, Aar... | United States | January 1, 2020 | PG-13 | 123 m |
| ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| 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 m |
| 7785 | s7784 | Movie | Zubaan | Mozez Singh | Vicky Kaushal, Sarah-Jane Dias, Raaghav Chanan... | India | March 2, 2019 | TV-14 | 111 m |
| 7786 | s7785 | Movie | Zulu Man in Japan | NaN | Nasty C | NaN | September 25, 2020 | TV-MA | 44 m |
| 7787 | s7786 | TV Show | Zumbo's Just Desserts | NaN | Adriano Zumbo, Rachel Khoo | Australia | October 31, 2020 | TV-PG | 1 Seas |
| 7788 | s7787 | Movie | ZZ TOP: THAT LITTLE OL' | Sam Dunn | NaN | United Kingdom, Canada, | March 1, 2020 | TV-MA | 90 m |

| Show_Id | Category | Title | Director | Cast | Country | Release_Date | Rating | Duration |
|---------|----------|-----------------|----------|------|---------------|--------------|--------|----------|
| | | BAND FROM TEXAS | | | United States | | | |

770711

```
In [20]: data.head()
```

| | Show_Id | Category | Title | Director | Cast | Country | Release_Date | Rating | Duration |
|---|---------|----------|-------|-------------------|---|---------------|-------------------|--------|-----------|
| 0 | s1 | TV Show | 3% | NaN | João Miguel, Bianca Comparato, Michel Gomes, R... | Brazil | August 14, 2020 | TV-MA | 4 Seasons |
| 1 | s2 | Movie | 07:19 | Jorge Michel Grau | Demián Bichir, Héctor Bonilla, Oscar Serrano, ... | Mexico | December 23, 2016 | TV-MA | 93 min |
| 2 | s3 | Movie | 23:59 | Gilbert Chan | Tedd Chan, Stella Chung, Henley Hii, Lawrence ... | Singapore | December 20, 2018 | R | 78 min |
| 3 | s4 | Movie | 9 | Shane Acker | Elijah Wood, John C. Reilly, Jennifer Connelly... | United States | November 16, 2017 | PG-13 | 80 min |
| 4 | s5 | Movie | 21 | Robert Luketic | Jim Sturgess, Kevin Spacey, Kate Bosworth, Aar... | United States | January 1, 2020 | PG-13 | 123 min |



```
In [21]: data.isnull()
```

Out[21]:

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

7787 rows × 11 columns



To check the count of Null Values use sum function

In [22]: `data.isnull().sum()`

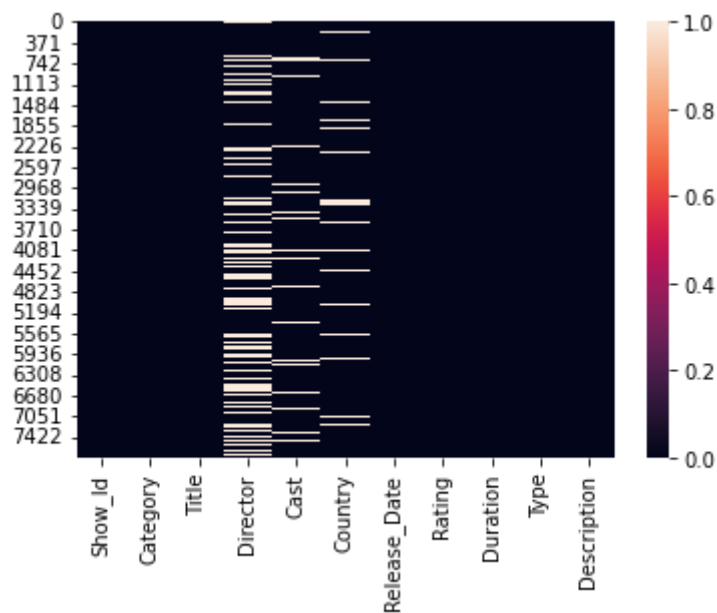
Out[22]:

| | |
|--------------|------|
| 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)

In [23]: `##Import seaborn``import seaborn as sns`In [24]: `sns.heatmap(data.isnull())`Out[24]: `<AxesSubplot:>`



Q1. For 'House of Cards', what is the show id and who is the Director of this show?

In [26]: `data.head()`

Out[26]:

| | Show_Id | Category | Title | Director | Cast | Country | Release_Date | Rating | Duration | |
|---|---------|----------|-------|-------------------|---|---------------|-------------------|--------|-----------|----------|
| 0 | s1 | TV Show | 3% | NaN | João Miguel, Bianca Comparato, Michel Gomes, R... | Brazil | August 14, 2020 | TV-MA | 4 Seasons | Int T TV |
| 1 | s2 | Movie | 07:19 | Jorge Michel Grau | Demián Bichir, Héctor Bonilla, Oscar Serrano, ... | Mexico | December 23, 2016 | TV-MA | 93 min | Int |
| 2 | s3 | Movie | 23:59 | Gilbert Chan | Tedd Chan, Stella Chung, Henley Hii, Lawrence ... | Singapore | December 20, 2018 | R | 78 min | Int |
| 3 | s4 | Movie | 9 | Shane Acker | Elijah Wood, John C. Reilly, Jennifer Connelly... | United States | November 16, 2017 | PG-13 | 80 min | Inc M |
| 4 | s5 | Movie | 21 | Robert Luketic | Jim Sturgess, Kevin Spacey, Kate Bosworth, Aar... | United States | January 1, 2020 | PG-13 | 123 min | |

In [27]: data[data['Title'].isin(['House of Cards'])] ##with .isin method

Out[27]:

| | Show_Id | Category | Title | Director | Cast | Country | Release_Date | Rating | Duration | |
|------|---------|----------|----------------|---|---|---------------|------------------|--------|-----------|-------|
| 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 | Dr Th |

In [29]: data[data['Title'].str.contains("House of Cards")] ## with .str.contains method

4/25/23, 4:52 PMNetflix Project

Out[29]:

| | Show_Id | Category | Title | Director | Cast | Country | Release_Date | Rating | Duration | |
|------|---------|----------|----------------|---|---|---------------|------------------|--------|-----------|-------|
| 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 | Dr Th |

Q2. In which Year highest number of the TV shows and Movies were released? Show with the Bar Graph.

In [30]: data.dtypes

Out[30]:

| | |
|--------------|--------|
| 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 [32]: data['Date_N'] = pd.to_datetime(data['Release_Date'])

In [34]: data.head()

Out[34]:

| | Show_Id | Category | Title | Director | Cast | Country | Release_Date | Rating | Duration | |
|---|---------|----------|-------|-------------------|---|---------------|-------------------|--------|-----------|----------|
| 0 | s1 | TV Show | 3% | NaN | João Miguel, Bianca Comparato, Michel Gomes, R... | Brazil | August 14, 2020 | TV-MA | 4 Seasons | Int T TV |
| 1 | s2 | Movie | 07:19 | Jorge Michel Grau | Demián Bichir, Héctor Bonilla, Oscar Serrano, ... | Mexico | December 23, 2016 | TV-MA | 93 min | Int |
| 2 | s3 | Movie | 23:59 | Gilbert Chan | Tedd Chan, Stella Chung, Henley Hii, Lawrence ... | Singapore | December 20, 2018 | R | 78 min | Int |
| 3 | s4 | Movie | 9 | Shane Acker | Elijah Wood, John C. Reilly, Jennifer Connelly... | United States | November 16, 2017 | PG-13 | 80 min | Inc M |
| 4 | s5 | Movie | 21 | Robert Luketic | Jim Sturgess, Kevin Spacey, Kate Bosworth, Aar... | United States | January 1, 2020 | PG-13 | 123 min | |

In [35]: data.dtypes

Out[35]: 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

In [36]: data['Date_N'].dt.year.value_counts()

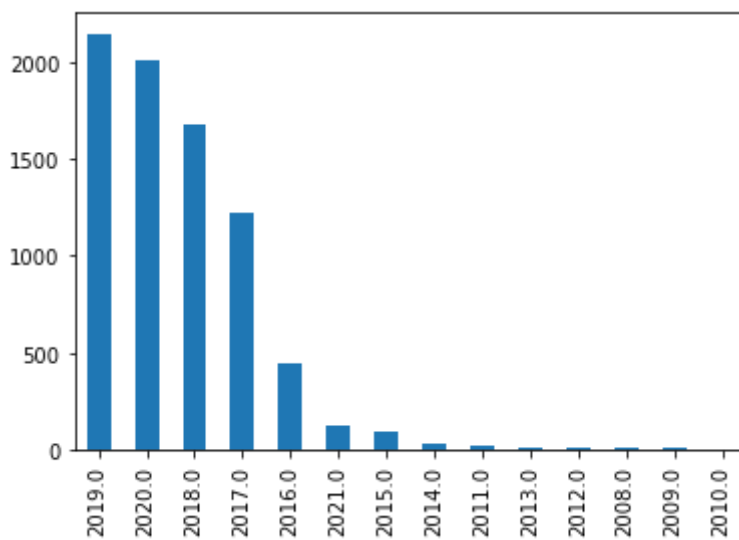
```
Out[36]:
```

| | |
|--------|------|
| 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: Date_N, dtype: int64

```
In [37]: data['Date_N'].dt.year.value_counts().plot(kind='bar')
```

```
Out[37]: <AxesSubplot:>
```



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

```
In [39]: data.groupby('Category').Category.count()
```

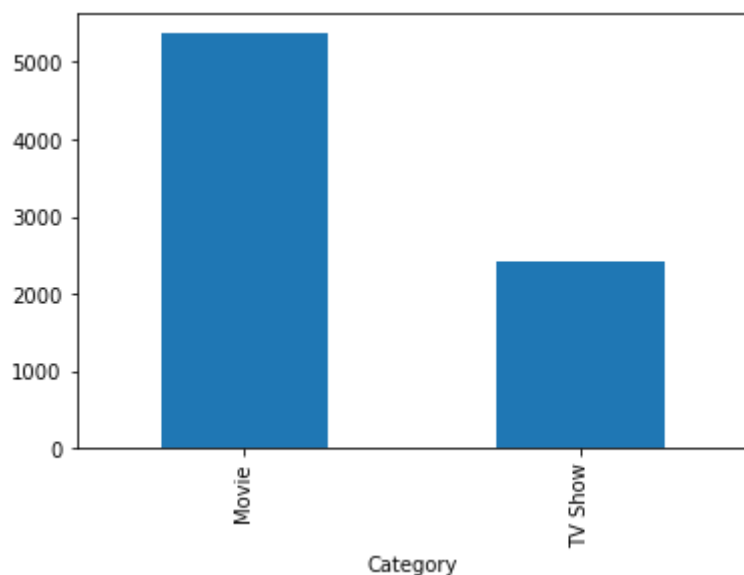
```
Out[39]:
```

| | |
|----------|------|
| Category | |
| Movie | 5377 |
| TV Show | 2410 |

Name: Category, dtype: int64

```
In [40]: data.groupby('Category').Category.count().plot(kind = 'bar')
```

```
Out[40]: <AxesSubplot:xlabel='Category'>
```

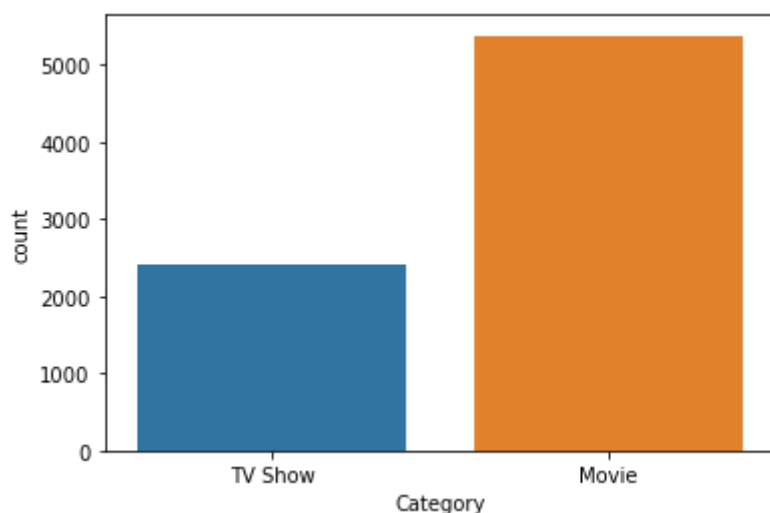



```
In [41]: sns.countplot(data['Category'])
```

C:\Users\97474\anaconda3\lib\site-packages\seaborn_decorators.py:36: FutureWarning: Pass the following variable as a keyword arg: x. From version 0.12, the only valid positional argument will be `data`, and passing other arguments without an explicit keyword will result in an error or misinterpretation.

```
warnings.warn(
```

```
Out[41]: <AxesSubplot:xlabel='Category', ylabel='count'>
```



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

```
In [42]: data.head()
```

Out[42]:

| | Show_Id | Category | Title | Director | Cast | Country | Release_Date | Rating | Duration | |
|---|---------|----------|-------|-------------------|---|---------------|-------------------|--------|-----------|----------|
| 0 | s1 | TV Show | 3% | NaN | João Miguel, Bianca Comparato, Michel Gomes, R... | Brazil | August 14, 2020 | TV-MA | 4 Seasons | Int T TV |
| 1 | s2 | Movie | 07:19 | Jorge Michel Grau | Demián Bichir, Héctor Bonilla, Oscar Serrano, ... | Mexico | December 23, 2016 | TV-MA | 93 min | Int |
| 2 | s3 | Movie | 23:59 | Gilbert Chan | Tedd Chan, Stella Chung, Henley Hii, Lawrence ... | Singapore | December 20, 2018 | R | 78 min | Int |
| 3 | s4 | Movie | 9 | Shane Acker | Elijah Wood, John C. Reilly, Jennifer Connelly... | United States | November 16, 2017 | PG-13 | 80 min | Inc M |
| 4 | s5 | Movie | 21 | Robert Luketic | Jim Sturgess, Kevin Spacey, Kate Bosworth, Aar... | United States | January 1, 2020 | PG-13 | 123 min | |

In [43]: data['Year'] = data['Date_N'].dt.year

In [44]: data['Year']

Out[44]:

| | |
|------|--------|
| 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: Year, Length: 7787, dtype: float64

In [47]: data.head(2)

Out[47]:

| | Show_Id | Category | Title | Director | Cast | Country | Release_Date | Rating | Duration | |
|---|---------|----------|-------|-------------------|---|---------|-------------------|--------|-----------|--------------|
| 0 | s1 | TV Show | 3% | NaN | João Miguel, Bianca Comparato, Michel Gomes, R... | Brazil | August 14, 2020 | TV-MA | 4 Seasons | Inte T' TV 5 |
| 1 | s2 | Movie | 07:19 | Jorge Michel Grau | Demián Bichir, Héctor Bonilla, Oscar Serrano, ... | Mexico | December 23, 2016 | TV-MA | 93 min | Inte |

In [54]:

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

Out[54]:

| Show_Id | Category | Title | Director | Cast | Country | Release_Date | Rating | Duration | Type | Descr |
|---------|----------|-------|----------|------|---------|--------------|--------|----------|------|-------|
|---------|----------|-------|----------|------|---------|--------------|--------|----------|------|-------|

In [53]:

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

Out[53]:

| | Show_Id | Category | Title | Director | Cast | Country | Release_Date | Rating | Duration |
|------|---------|----------|-------------------------------|-----------------------------|--|---|--------------------|--------|----------|
| 4 | s5 | Movie | 21 | Robert Luketic | Jim Sturgess, Kevin Spacey, Kate Bosworth, Aaron Eckhart | United States | January 1, 2020 | PG-13 | 123 |
| 6 | s7 | Movie | 122 | Yasir Al Yasiri | Amina Khalil, Ahmed Dawood, Tarek Lotfy, Ahmed El Emam | Egypt | June 1, 2020 | TV-MA | 95 |
| 14 | s15 | Movie | 3022 | John Suits | Omar Epps, Kate Walsh, Miranda Cosgrove, Angus T. Jones | United States | March 19, 2020 | R | 91 |
| 27 | s28 | Movie | #Alive | Cho Il | Yoo Ah-in, Park Shin-hye | South Korea | September 8, 2020 | TV-MA | 99 |
| 28 | s29 | Movie | #AnneFrank - Parallel Stories | Sabina Fedeli, Anna Migotto | Helen Mirren, Gengher Gatti | Italy | July 1, 2020 | TV-14 | 95 |
| ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| 7762 | s7761 | Movie | Zaki Chan | Wael Ihsan | Ahmed Helmy, Yasmin Abdulaziz, Hassan Hosny, Hossam El Sherpieny | Egypt | May 19, 2020 | TV-PG | 109 |
| 7783 | s7782 | Movie | Zoom | Peter Hewitt | Tim Allen, Courteney Cox, Chevy Chase, Kate MacLaren | United States | January 11, 2020 | PG | 88 |
| 7784 | s7783 | Movie | Zozo | Josef Fares | Imad Creidi, Antoinette Turk, Elias Gergi, Carolee Duvall | Sweden, Czech Republic, United Kingdom, Denmark | October 19, 2020 | TV-MA | 99 |
| 7786 | s7785 | Movie | Zulu Man in Japan | NaN | Nasty C | NaN | September 25, 2020 | TV-MA | 44 |
| 7788 | s7787 | Movie | ZZ TOP: THAT LITTLE OL' | Sam Dunn | NaN | United Kingdom, Canada, | March 1, 2020 | TV-MA | 90 |

| Show_Id | Category | Title | Director | Cast | Country | Release_Date | Rating | Duration |
|---------|----------|-----------------|----------|------|---------------|--------------|--------|----------|
| | | BAND FROM TEXAS | | | United States | | | |

1210 1210

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

```
In [55]: data.head(2)
```

| | Show_Id | Category | Title | Director | Cast | Country | Release_Date | Rating | Duration |
|---|---------|----------|-------|-------------------|---|---------|-------------------|--------|-----------|
| 0 | s1 | TV Show | 3% | NaN | João Miguel, Bianca Comparato, Michel Gomes, R... | Brazil | August 14, 2020 | TV-MA | 4 Seasons |
| 1 | s2 | Movie | 07:19 | Jorge Michel Grau | Demían Bichir, Héctor Bonilla, Oscar Serrano, ... | Mexico | December 23, 2016 | TV-MA | 93 min |

```
In [57]: data[(data['Category'] == 'TV Show') & (data['Country'] == 'India']]['Title']
```

```
Out[57]: 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 ?

```
In [58]: data.head(2)
```

Out[58]:

| | Show_Id | Category | Title | Director | Cast | Country | Release_Date | Rating | Duration |
|---|---------|----------|-------|-------------------|---|---------|-------------------|--------|-----------|
| 0 | s1 | TV Show | 3% | NaN | João Miguel, Bianca Comparato, Michel Gomes, R... | Brazil | August 14, 2020 | TV-MA | 4 Seasons |
| 1 | s2 | Movie | 07:19 | Jorge Michel Grau | Demián Bichir, Héctor Bonilla, Oscar Serrano, ... | Mexico | December 23, 2016 | TV-MA | 93 min |

In [59]: `data['Director'].value_counts()`

Out[59]:

| | |
|------------------------|----|
| Raúl Campos, Jan Suter | 18 |
| Marcus Raboy | 16 |
| Jay Karas | 14 |
| Cathy Garcia-Molina | 13 |
| Jay Chapman | 12 |
| .. | .. |
| Vibhu Virender Puri | 1 |
| Lucien Jean-Baptiste | 1 |
| Jason Krawczyk | 1 |
| Quinn Lasher | 1 |
| Sam Dunn | 1 |

Name: Director, Length: 4050, dtype: int64

In [60]: `data['Director'].value_counts().head(10)`

Out[60]:

| | |
|------------------------|----|
| 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

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

In [61]: `##data[(data['Category'] == 'Movie') & (data['Type'] == 'Comedies')]`
`data.head(2)`

Out[61]:

| | Show_Id | Category | Title | Director | Cast | Country | Release_Date | Rating | Duration | |
|---|---------|----------|-------|-------------------|---|---------|-------------------|--------|-----------|--------------|
| 0 | s1 | TV Show | 3% | NaN | João Miguel, Bianca Comparato, Michel Gomes, R... | Brazil | August 14, 2020 | TV-MA | 4 Seasons | Inte T' TV 5 |
| 1 | s2 | Movie | 07:19 | Jorge Michel Grau | Demián Bichir, Héctor Bonilla, Oscar Serrano, ... | Mexico | December 23, 2016 | TV-MA | 93 min | Inte |



```
In [62]: data[(data['Category'] == 'Movie') & (data['Type'] == 'Comedies')]
```

Out[62]:

| | Show_Id | Category | Title | Director | Cast | Country | Release_Date | Rating | Dura |
|------|---------|----------|-----------------------------|------------------------|---|------------------------|-------------------|--------|------|
| 33 | s34 | Movie | #realityhigh | Fernando Lebrija | Nesta Cooper, Kate Walsh, John Michael Higgins... | United States | September 8, 2017 | TV-14 | 99 |
| 72 | s73 | Movie | 17 Again | Burr Steers | Zac Efron, Leslie Mann, Matthew Perry, Thomas ... | United States | January 1, 2021 | PG-13 | 102 |
| 84 | s85 | Movie | 21 & Over | Jon Lucas, Scott Moore | Miles Teller, Skylar Astin, Justin Chon, Sarah... | United States | April 16, 2019 | R | 93 |
| 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 |
| 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 |
| ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| 7341 | s7340 | Movie | Undercover Brother 2 | Leslie Small | Michael Jai White, Vince Swann, Barry Bostwick... | United States | November 5, 2019 | R | 85 |
| 7590 | s7589 | Movie | Where's the Money | Scott Zabielski | Andrew Bachelor, Kat Graham, Mike Epps, Terry ... | United States | January 22, 2018 | R | 86 |
| 7623 | s7622 | Movie | Wild Oats | Andy Tennant | Shirley MacLaine, Jessica Lange, Billy Connoll... | Germany, United States | May 13, 2017 | PG-13 | 86 |
| 7634 | s7633 | Movie | Wine Country | Amy Poehler | Amy Poehler, Maya Rudolph, | United States | May 10, 2019 | R | 104 |

| | Show_Id | Category | Title | Director | Cast | Country | Release_Date | Rating | Duration |
|------|---------|----------|---------|---------------|---|---------------|----------------|--------|----------|
| | | | | | Ana Gasteyer, Rache... | | | | |
| 7664 | s7663 | Movie | Work It | Laura Terruso | Sabrina Carpenter, Jordan Fisher, Liza Koshy, ... | United States | August 7, 2020 | TV-14 | 94 |
| 27 | 12 | | | | | | | | |

```
In [63]: data[(data['Category'] == 'Movie') & (data['Type'] == 'Comedies')|(data['Country'] == 'United States')]
```

Out[63]:

| | Show_Id | Category | Title | Director | Cast | Country | Release_Date | Rating | Du |
|------|---------|----------|------------------------|------------------|--|----------------|-------------------|--------|-----|
| 19 | s20 | Movie | '89 | NaN | Lee Dixon, Ian Wright, Paul Merson | United Kingdom | May 16, 2018 | TV-PG | 8 |
| 33 | s34 | Movie | #realityhigh | Fernando Lebrija | Nesta Cooper, Kate Walsh, John Michael Higgins... | United States | September 8, 2017 | TV-14 | 9 |
| 58 | s59 | TV Show | 100% Hotter | NaN | Daniel Palmer, Melissa Sophia, Karen Williams,... | United Kingdom | November 1, 2019 | TV-14 | 1 S |
| 72 | s73 | Movie | 17 Again | Burr Steers | Zac Efron, Leslie Mann, Matthew Perry, Thomas ... | United States | January 1, 2021 | PG-13 | 10 |
| 82 | s83 | Movie | 2036 Origin Unknown | Hasraf Dulull | Katee Sackhoff, Ray Fearon, Julie Cox, Steven ... | United Kingdom | December 20, 2018 | TV-14 | 9 |
| ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| 7670 | s7669 | TV Show | World War II in Colour | NaN | Robert Powell | United Kingdom | August 1, 2017 | TV-MA | 1 S |
| 7671 | s7670 | TV Show | World's Busiest Cities | NaN | Anita Rani, Ade Adepitan, Dan Snow | United Kingdom | February 1, 2019 | TV-PG | 1 S |
| 7688 | s7687 | Movie | XV: Beyond the Tryline | Pierre Deschamps | NaN | United Kingdom | March 18, 2020 | TV-14 | 9 |
| 7725 | s7724 | Movie | You Can Tutu | James Brown | Lily O'Regan, Jeannettysy Enriquez Borges, Joel... | United Kingdom | December 31, 2017 | TV-G | 8 |
| 7740 | s7739 | TV Show | Young Wallander | NaN | Adam Pålsson, Richard | United Kingdom | September 3, 2020 | TV-MA | 1 S |

| Show_Id | Category | Title | Director | Cast | Country | Release_Date | Rating | Du |
|---------|----------|-------|----------|-----------------------------------|---------|--------------|--------|----|
| | | | | Dillane, Leanne Best, El... | | | | |
| 105 | 10 | | | | | | | |

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

In [64]: data.head(2)

Out[64]:

| | Show_Id | Category | Title | Director | Cast | Country | Release_Date | Rating | Duration |
|---|---------|----------|-------|-------------------|---|---------|-------------------|--------|-----------|
| 0 | s1 | TV Show | 3% | NaN | João Miguel, Bianca Comparato, Michel Gomes, R... | Brazil | August 14, 2020 | TV-MA | 4 Seasons |
| 1 | s2 | Movie | 07:19 | Jorge Michel Grau | Demián Bichir, Héctor Bonilla, Oscar Serrano, ... | Mexico | December 23, 2016 | TV-MA | 93 min |

In [66]: data[data['Cast'] == 'Tom Cruise']

Out[66]:

| Show_Id | Category | Title | Director | Cast | Country | Release_Date | Rating | Duration | Type | Descr |
|---------|----------|-------|----------|------|---------|--------------|--------|----------|------|-------|
|---------|----------|-------|----------|------|---------|--------------|--------|----------|------|-------|

In [67]: data[data['Cast'].str.contains('Tom Cruise')]

```

-----
ValueError                                Traceback (most recent call last)
Input In [67], in <cell line: 1>()
----> 1 data[data['Cast'].str.contains('Tom Cruise')]

File ~\anaconda3\lib\site-packages\pandas\core\frame.py:3495, in DataFrame.__getitem__(self, key)
    3492     return self.where(key)
    3494 # Do we have a (boolean) 1d indexer?
-> 3495 if com.is_bool_indexer(key):
    3496     return self._getitem_bool_array(key)
    3498 # We are left with two options: a single key, and a collection of keys,
    3499 # We interpret tuples as collections only for non-MultiIndex

File ~\anaconda3\lib\site-packages\pandas\core\common.py:144, in is_bool_indexer(key)
    140     na_msg = "Cannot mask with non-boolean array containing NA / NaN values"
    141     if lib.infer_dtype(key) == "boolean" and isna(key).any():
    142         # Don't raise on e.g. ["A", "B", np.nan], see
    143         # test_loc_getitem_list_of_labels_categoricalindex_with_na
--> 144         raise ValueError(na_msg)
    145     return False
    146 return True

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

```

```
In [ ]: ## Remove null values
```

```
In [68]: data_new = data.dropna()
```

```
In [70]: data_new.head(2)
```

```
Out[70]:
```

| | Show_Id | Category | Title | Director | Cast | Country | Release_Date | Rating | Duration |
|---|---------|----------|-------|-------------------|---|-----------|-------------------|--------|--------------|
| 1 | s2 | Movie | 07:19 | Jorge Michel Grau | Demián Bichir, Héctor Bonilla, Oscar Serrano, ... | Mexico | December 23, 2016 | TV-MA | 93 min Inter |
| 2 | s3 | Movie | 23:59 | Gilbert Chan | Tedd Chan, Stella Chung, Henley Hii, Lawrence ... | Singapore | December 20, 2018 | R | 78 min Inter |

```
In [72]: data_new[data_new['Cast'].str.contains('Tom Cruise')]
```

Out[72]:

| | Show_Id | Category | Title | Director | Cast | Country | Release_Date | Rating | Duration |
|------|---------|----------|----------|----------------------|---|---------------|-----------------|--------|----------|
| 3860 | s3861 | Movie | Magnolia | Paul Thomas Anderson | Jeremy Blackman, Tom Cruise, Melinda Dillon, A... | United States | January 1, 2020 | R | 189 mi |
| 5071 | s5071 | Movie | Rain Man | Barry Levinson | Dustin Hoffman, Tom Cruise, Valeria Golino, Ge... | United States | July 1, 2019 | R | 134 mi |

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

In [74]: `data.head(2)`

Out[74]:

| | Show_Id | Category | Title | Director | Cast | Country | Release_Date | Rating | Duration |
|---|---------|----------|-------|-------------------|---|---------|-------------------|--------|-----------|
| 0 | s1 | TV Show | 3% | NaN | João Miguel, Bianca Comparato, Michel Gomes, R... | Brazil | August 14, 2020 | TV-MA | 4 Seasons |
| 1 | s2 | Movie | 07:19 | Jorge Michel Grau | Demián Bichir, Héctor Bonilla, Oscar Serrano, ... | Mexico | December 23, 2016 | TV-MA | 93 min |

In [76]: `data['Rating'].nunique()` *## total values or to find the count*

Out[76]: 14

In [77]: `data['Rating'].unique()` *## to know the different unique values*

Out[77]: 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 ?

In [80]: `data[(data['Category'] == 'Movie') & (data['Rating'] == 'TV-14')]`

Out[80]:

| | Show_Id | Category | Title | Director | Cast | Country | Release_Date | Rating | Dur |
|------|---------|----------|--------------------------|--------------------|---|----------|--------------------|--------|-----|
| 8 | s9 | Movie | 706 | Shravan Kumar | Divya Dutta, Atul Kulkarni, Mohan Agashe, Anup... | India | April 1, 2019 | TV-14 | 11 |
| 15 | s16 | Movie | Oct-01 | Kunle Afolayan | Sadiq Daba, David Bailie, Kayode Olaiya, Kehin... | Nigeria | September 1, 2019 | TV-14 | 14 |
| 18 | s19 | Movie | 15-Aug | Swapnaneel Jayakar | Rahul Pethe, Mrunmayee Deshpande, Adinath Koth... | India | March 29, 2019 | TV-14 | 12 |
| 20 | s21 | Movie | Kuch Bheege Alfaaz | Onir | Geetanjali Thapa, Zain Khan Durrani, Shray Rai... | India | September 1, 2018 | TV-14 | 11 |
| 21 | s22 | Movie | Goli Soda 2 | Vijay Milton | Samuthirakani, Bharath Seeni, Vinoth, Esakki B... | India | September 15, 2018 | TV-14 | 12 |
| ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| 7765 | s7764 | Movie | Zenda | Avadhoot Gupte | Santosh Juvekar, Siddharth Chandekar, Sachit P... | India | February 15, 2018 | TV-14 | 12 |
| 7766 | s7765 | Movie | Zero | Aanand Rai | Shah Rukh Khan, Anushka Sharma, Katrina Kaif, ... | India | May 21, 2019 | TV-14 | 15 |
| 7770 | s7769 | Movie | Zindagi Kitni Haseen Hay | Anjum Shahzad | Feroze Khan, Sajal Ali, Jibrayl Ahmed Rajput, ... | Pakistan | October 1, 2018 | TV-14 | 12 |
| 7771 | s7770 | Movie | Zindagi Na Milegi Dobara | Zoya Akhtar | Hrithik Roshan, Abhay Deol, Farhan Akhtar, Kat... | India | December 15, 2019 | TV-14 | 15 |
| 7785 | s7784 | Movie | Zubaan | Mozez Singh | Vicky Kaushal, Sarah-Jane Dias, Raaghav Chanan... | India | March 2, 2019 | TV-14 | 11 |

1272 rows × 13 columns



```
In [81]: data[(data['Category'] == 'Movie') & (data['Rating'] == 'TV-14')].shape
```

```
Out[81]: (1272, 13)
```

```
In [78]: data[(data['Category'] == 'Movie') & (data['Rating'] == 'TV-14') & (data['Country']
```

Out[78]:

| | Show_Id | Category | Title | Director | Cast | Country | Release_Date | Rating |
|------|---------|----------|---|--|---|---------|-------------------|--------|
| 30 | s31 | Movie | #cats_the_mewvie | Michael Margolis | NaN | Canada | February 5, 2020 | TV-1 |
| 34 | s35 | Movie | #Roxy | Michael Kennedy | Jake Short, Sarah Fisher, Booboo Stewart, Dann... | Canada | April 10, 2019 | TV-1 |
| 608 | s609 | Movie | At First Light | Jason Stone | Stefanie Scott, Theodore Pellerin, Percy Hynes... | Canada | December 27, 2018 | TV-1 |
| 1506 | s1507 | Movie | Counterfeiting in Suburbia | Jason Bourque | Sarah Butler, Larissa Albuquerque, Kayla Walla... | Canada | July 1, 2018 | TV-1 |
| 3713 | s3714 | Movie | Long Time Running | Jennifer Baichwal, Nicholas de Pencier | Gord Downie, Paul Langlois, Gord Sinclair, Rob... | Canada | November 12, 2017 | TV-1 |
| 3956 | s3957 | Movie | Martin Matte: La vie, la mort...eh la la..! | Jean-François Blais | Martin Matte | Canada | October 14, 2019 | TV-1 |
| 5336 | s5336 | Movie | Sadie's Last Days on Earth | Michael Seater | Morgan Taylor Campbell, Clark Backo, Ricardo H... | Canada | August 22, 2017 | TV-1 |
| 5393 | s5393 | Movie | Sardaar ji | Rohit Jugraj | Diljit Dosanjh, Neeru Bajwa, Mandy Takhar, Jas... | Canada | December 1, 2017 | TV-1 |
| 6062 | s6062 | Movie | The Accountant of Auschwitz | Matthew Shoychet | NaN | Canada | July 1, 2019 | TV-1 |
| 7025 | s7024 | Movie | The Wrong Babysitter | George Mendeluk | Daphne Zuniga, Seann Gallagher, Lisa Marie Car... | Canada | June 18, 2019 | TV-1 |
| 7041 | s7040 | Movie | There's Something in the | Ellen Page, Ian | Ellen Page | Canada | March 27, 2020 | TV-1 |

| Show_Id | Category | Title | Director | Cast | Country | Release_Date | Rating | Duration |
|---------|----------|-------|----------|------|---------|--------------|--------|----------|
| | | Water | Daniel | | | | | |

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

```
In [82]: data.head(2)
```

| Out[82]: | Show_Id | Category | Title | Director | Cast | Country | Release_Date | Rating | Duration |
|----------|---------|----------|-------|-------------------|---|---------|-------------------|--------|-----------|
| 0 | s1 | TV Show | 3% | NaN | João Miguel, Bianca Comparato, Michel Gomes, R... | Brazil | August 14, 2020 | TV-MA | 4 Seasons |
| 1 | s2 | Movie | 07:19 | Jorge Michel Grau | Demián Bichir, Héctor Bonilla, Oscar Serrano, ... | Mexico | December 23, 2016 | TV-MA | 93 min |

```
In [85]: data[(data['Category'] == 'TV Show') & (data['Rating'] == 'R')]
```

| Out[85]: | Show_Id | Category | Title | Director | Cast | Country | Release_Date | Rating | Duration |
|----------|---------|----------|-------------------------------------|-------------------|---|---------|-------------------|--------|----------|
| 4497 | s4498 | TV Show | Nobel | NaN | Aksel Hennie, Tuva Novotny, Anders Danielsen L... | Norway | December 10, 2016 | R | 1 Season |
| 6437 | s6436 | TV Show | The Hateful Eight: Extended Version | Quentin Tarantino | Samuel L. Jackson, Kurt Russell, Jennifer Jaso... | NaN | April 25, 2019 | R | 1 Season |

```
In [87]: data[(data['Category'] == 'TV Show') & (data['Rating'] == 'R') & (data['Year'] > 2018)]
```

Out[87]:

| | Show_Id | Category | Title | Director | Cast | Country | Release_Date | Rating | Duration |
|------|---------|----------|-------------------------------------|-------------------|---|---------|----------------|--------|----------|
| 6437 | s6436 | TV Show | The Hateful Eight: Extended Version | Quentin Tarantino | Samuel L. Jackson, Kurt Russell, Jennifer Jaso... | NaN | April 25, 2019 | R | 1 Season |

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

In [88]: data.head(2)

Out[88]:

| | Show_Id | Category | Title | Director | Cast | Country | Release_Date | Rating | Duration |
|---|---------|----------|-------|-------------------|---|---------|-------------------|--------|-----------|
| 0 | s1 | TV Show | 3% | NaN | João Miguel, Bianca Comparato, Michel Gomes, R... | Brazil | August 14, 2020 | TV-MA | 4 Seasons |
| 1 | s2 | Movie | 07:19 | Jorge Michel Grau | Demián Bichir, Héctor Bonilla, Oscar Serrano, ... | Mexico | December 23, 2016 | TV-MA | 93 min |

In [91]: data['Duration'].unique()

```
Out[91]: 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 [92]: data.Duration.dtypes
```

```
Out[92]: dtype('O')
```

```
In [95]: data[['Minutes','Unit']] = data['Duration'].str.split(' ', expand = True)
```

```
In [96]: data.head(2)
```

```
Out[96]:
```

| | Show_Id | Category | Title | Director | Cast | Country | Release_Date | Rating | Duration | |
|---|---------|----------|-------|-------------------|---|---------|-------------------|--------|-----------|-------------|
| 0 | s1 | TV Show | 3% | NaN | João Miguel, Bianca Comparato, Michel Gomes, R... | Brazil | August 14, 2020 | TV-MA | 4 Seasons | Inte T TV S |
| 1 | s2 | Movie | 07:19 | Jorge Michel Grau | Demián Bichir, Héctor Bonilla, Oscar Serrano, ... | Mexico | December 23, 2016 | TV-MA | 93 min | Inte |

```
In [98]: data['Minutes'].max()

Out[98]: '99'

In [99]: data['Minutes'].min()

Out[99]: '1'

In [100]: data['Minutes'].mean()

Out[100]: inf
```

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

```
In [89]: data.head(2)
```

| | Show_Id | Category | Title | Director | Cast | Country | Release_Date | Rating | Duration | |
|---|---------|----------|-------|-------------------|---|---------|-------------------|--------|-----------|--------------|
| 0 | s1 | TV Show | 3% | NaN | João Miguel, Bianca Comparato, Michel Gomes, R... | Brazil | August 14, 2020 | TV-MA | 4 Seasons | Inte T' TV 5 |
| 1 | s2 | Movie | 07:19 | Jorge Michel Grau | Demián Bichir, Héctor Bonilla, Oscar Serrano, ... | Mexico | December 23, 2016 | TV-MA | 93 min | Inte |

```
In [102]: data_tvshow = data[data['Category'] == 'TV Show']

In [103]: data_tvshow
```

Out[103]:

| | Show_Id | Category | Title | Director | Cast | Country | Release_Date | Rating | Duratio |
|------|---------|----------|--------------------|----------------------|---|-----------------------|-------------------|--------|---------|
| 0 | s1 | TV Show | 3% | NaN | João Miguel, Bianca Comparato, Michel Gomes, R... | Brazil | August 14, 2020 | TV-MA | Season |
| 5 | s6 | TV Show | 46 | Serdar Akar | Erdal Beşikçioğlu, Yasemin Allen, Melis Birkan... | Turkey | July 1, 2017 | TV-MA | 1 Seasc |
| 11 | s12 | TV Show | 1983 | NaN | Robert Więckiewicz, Maciej Musiał, Michalina O... | Poland, United States | November 30, 2018 | TV-MA | 1 Seasc |
| 12 | s13 | TV Show | 1994 | Diego Enrique Osorno | NaN | Mexico | May 17, 2019 | TV-MA | 1 Seasc |
| 16 | s17 | TV Show | Feb-09 | NaN | Shahd El Yaseen, Shaila Sabt, Hala, Hanadi Al-... | NaN | March 20, 2019 | TV-14 | 1 Seasc |
| ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| 7769 | s7768 | TV Show | Zindagi Gulzar Hai | NaN | Sanam Saeed, Fawad Khan, Ayesha Omer, Mehreen ... | Pakistan | December 15, 2016 | TV-PG | 1 Seasc |
| 7777 | s7776 | TV Show | Zoids Wild | NaN | Kensho Ono, Takahiro Sakurai, Mikako Komatsu, ... | Japan | August 14, 2020 | TV-Y7 | 1 Seasc |
| 7779 | s7778 | TV Show | Zombie Dumb | NaN | NaN | NaN | July 1, 2019 | TV-Y7 | Season |
| 7781 | s7780 | TV Show | Zona Rosa | NaN | Manu NNa, Ana Julia Yeyé, Ray Contreras, Pablo... | Mexico | November 26, 2019 | TV-MA | 1 Seasc |
| 7787 | s7786 | TV Show | Zumbo's Just | NaN | Adriano Zumbo, | Australia | October 31, 2020 | TV-PG | 1 Seasc |

| Show_Id | Category | Title | Director | Cast | Country | Release_Date | Rating | Duratic |
|---------|----------|----------|----------|-------------|---------|--------------|--------|---------|
| | | Desserts | | Rachel Khoo | | | | |

Out[103]:

```
In [104]: data_tvshow.Country.value_counts()
```

```
Out[104]: United States      705
United Kingdom      204
Japan              157
South Korea        147
India              71
...
Canada, United States, United Kingdom, France, Luxembourg      1
United States, Italy      1
Chile, Italy      1
Canada, United Kingdom      1
United States, France, South Korea, Indonesia      1
Name: Country, Length: 183, dtype: int64
```

```
In [105]: data_tvshow.Country.value_counts().head(1)
```

```
Out[105]: United States      705
Name: Country, dtype: int64
```

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

```
In [106]: data.head(2)
```

| Out[106]: | | | | | | | | | | | |
|-----------|---------|----------|-------|-------------------|---|---------|-------------------|--------|-----------|-------|------|
| | Show_Id | Category | Title | Director | Cast | Country | Release_Date | Rating | Duration | | |
| 0 | s1 | TV Show | 3% | NaN | João Miguel, Bianca Comparato, Michel Gomes, R... | Brazil | August 14, 2020 | TV-MA | 4 Seasons | Inter | TV S |
| 1 | s2 | Movie | 07:19 | Jorge Michel Grau | Demián Bichir, Héctor Bonilla, Oscar Serrano, ... | Mexico | December 23, 2016 | TV-MA | 93 min | Inter | |

```
In [107]: data.sort_values(by='Year')
```

Out[107]:

| | Show_Id | Category | Title | Director | Cast | Country | Release_Date | Rating | Du |
|------|---------|----------|-----------------------------|----------------------|---|---------------|-------------------|--------|-----|
| 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 | 8 |
| 1765 | s1766 | TV Show | Dinner for Five | NaN | NaN | United States | February 4, 2008 | TV-MA | 1 S |
| 3248 | s3249 | Movie | Just Another Love Story | Ole Bornedal | Anders W. Berthelsen, Rebecka Hemse, Nikolaj L... | Denmark | May 5, 2009 | TV-MA | 10 |
| 5766 | s5766 | Movie | Splatter | Joe Dante | Corey Feldman, Tony Todd, Tara Leigh, Erin Way... | United States | November 18, 2009 | TV-MA | 2 |
| 3840 | s3841 | Movie | Mad Ron's Prevues from Hell | Jim Monaco | Nick Pawlow, Jordu Schell, Jay Kushwara, Micha... | United States | November 1, 2010 | NR | 8 |
| ... | ... | ... | ... | ... | ... | ... | ... | ... | |
| 3374 | s3375 | TV Show | Kikoriki | NaN | Igor Dmitriev | NaN | NaN | TV-Y | Se |
| 3492 | s3493 | TV Show | La Familia P. Luche | NaN | Eugenio Derbez, Consuelo Duval, Luis Manuel Áv... | United States | NaN | TV-14 | Se |
| 3946 | s3947 | TV Show | Maron | NaN | Marc Maron, Judd Hirsch, Josh Brener, Nora Zeh... | United States | NaN | TV-MA | Se |
| 5138 | s5138 | TV Show | Red vs. Blue | NaN | Burnie Burns, Jason Saldaña, Gustavo Sorola, G... | United States | NaN | NR | Se |
| 6066 | s6066 | TV Show | The Adventures | NaN | Luke Jurevicius, | Australia | NaN | TV-Y7 | Se |

| Show_Id | Category | Title | Director | Cast | Country | Release_Date | Rating | Du |
|---------|----------|------------------|----------|---|---------|--------------|--------|----|
| | | of Figaro Pho | | Craig Behenna, Charlotte Haml... | | | | |
| 7707 | 15 | | | | | | | |

In [108...

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


Out[108]:

| | Show_Id | Category | Title | Director | Cast | Country | Release_Date | Rating | Duration |
|------|---------|----------|---------------------|-------------------------|---|---|------------------|--------|----------|
| 5564 | s5564 | Movie | Sherlock Holmes | Guy Ritchie | Robert Downey Jr., Jude Law, Rachel McAdams, M... | United States, Germany, United Kingdom, Australia | January 1, 2021 | PG-13 | 128 |
| 5919 | s5919 | Movie | Surf's Up | Ash Brannon, Chris Buck | Shia LaBeouf, Jeff Bridges, Zooey Deschanel, J... | United States | January 1, 2021 | PG | 86 |
| 980 | s981 | TV Show | Bling Empire | NaN | NaN | NaN | January 15, 2021 | TV-MA | 1 Se |
| 5955 | s5955 | Movie | Taare Zameen Par | Aamir Khan | Aamir Khan, Darsheel Safary, Tanay Chheda, Tis... | India | January 10, 2021 | PG | 162 |
| 366 | s367 | Movie | Al acecho | Francisco D'Eufemia | Rodrigo de la Serna, Belen Blanco, Walter Jako... | NaN | January 12, 2021 | TV-MA | 87 |
| ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| 3374 | s3375 | TV Show | Kikoriki | NaN | Igor Dmitriev | NaN | NaN | TV-Y | Se |
| 3492 | s3493 | TV Show | La Familia P. Luche | NaN | Eugenio Derbez, Consuelo Duval, Luis Manuel Áv... | United States | NaN | TV-14 | Se |
| 3946 | s3947 | TV Show | Maron | NaN | Marc Maron, Judd Hirsch, Josh Brener, Nora Zeh... | United States | NaN | TV-MA | Se |
| 5138 | s5138 | TV Show | Red vs. Blue | NaN | Burnie Burns, Jason | United States | NaN | NR | Se |

| Show_Id | Category | Title | Director | Cast | Country | Release_Date | Rating | Duration | |
|---------|----------|---------|------------------------------|-------------------------------|---|--------------|--------|----------|-----|
| | | | | Saldaña, Gustavo Sorola, G... | | | | | |
| 6066 | s6066 | TV Show | The Adventures of Figaro Pho | NaN | Luke Jurevicius, Craig Behenna, Charlotte Haml... | Australia | NaN | TV-Y7 | See |
| 7707 | s7707 | | | | | | | | |

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

In [109... data.head(2)

Out[109]:

| | Show_Id | Category | Title | Director | Cast | Country | Release_Date | Rating | Duration |
|---|---------|----------|-------|-------------------|---|---------|-------------------|--------|-----------|
| 0 | s1 | TV Show | 3% | NaN | João Miguel, Bianca Comparato, Michel Gomes, R... | Brazil | August 14, 2020 | TV-MA | 4 Seasons |
| 1 | s2 | Movie | 07:19 | Jorge Michel Grau | Demián Bichir, Héctor Bonilla, Oscar Serrano, ... | Mexico | December 23, 2016 | TV-MA | 93 min |

In [111... data[(data['Category'] == 'Movie') & (data['Type'] == 'Dramas')]

Out[111]:

| | Show_Id | Category | Title | Director | Cast | Country | Release_Date | Rating | Durati |
|------|---------|----------|----------------------------|-------------------|---|-----------------------|-------------------|--------|--------|
| 4 | s5 | Movie | 21 | Robert Luketic | Jim Sturgess, Kevin Spacey, Kate Bosworth, Aar... | United States | January 1, 2020 | PG-13 | 123 r |
| 7 | s8 | Movie | 187 | Kevin Reynolds | Samuel L. Jackson, John Heard, Kelly Rowan, Cl... | United States | November 1, 2019 | R | 119 r |
| 170 | s171 | Movie | A Family Man | Mark Williams | Gerard Butler, Gretchen Mol, Alison Brie, Will... | Canada, United States | December 15, 2019 | R | 110 r |
| 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 r |
| 295 | s296 | Movie | Across Grace Alley | Ralph Macchio | Ben Hyland, Marsha Mason, Karina Smirnoff, Col... | United States | December 1, 2016 | TV-PG | 24 r |
| ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| 7417 | s7416 | Movie | Victor | Brandon Dickerson | Patrick Davis, Lisa Vidal, Josh Pence, José Zú... | United States | July 24, 2017 | PG-13 | 110 r |
| 7422 | s7421 | Movie | Villain | Philip Barantini | Craig Fairbrass, George Russo, Robert Gleniste... | United Kingdom | September 5, 2020 | R | 97 r |
| 7449 | s7448 | Movie | VS. | Ed Lilly | Connor Swindells, Fola Evans-Akingbola, Nichol... | United Kingdom | June 19, 2019 | TV-MA | 99 r |
| 7465 | s7464 | Movie | Wakefield | Robin Swicord | Bryan Cranston, Jennifer Garner, | United States | March 2, 2019 | R | 109 r |

| Show_Id | Category | Title | Director | Cast | Country | Release_Date | Rating | Durati | |
|---------|----------|---------|-----------|------------------|---|----------------------|-------------|--------|-------|
| 7480 | s7479 | Movie | War Horse | Steven Spielberg | Jason O'Mara,... | United States, India | May 6, 2019 | PG-13 | 147 r |
| | | | | | Emily Watson, David Thewlis, Peter Mullan, Nie... | | | | |
| 117 | s7479 | TV Show | War Horse | Steven Spielberg | Emily Watson, David Thewlis, Peter Mullan, Nie... | United States, India | May 6, 2019 | PG-13 | 147 r |

```
In [114... data[(data['Category'] == 'TV Show') & (data['Type'] == "Kids' TV")]
```

Out[114]:

| | Show_Id | Category | Title | Director | Cast | Country | Release_Date | Rating | |
|------|---------|----------|-------------------|---------------------|---|------------------------------|--------------------|--------|-----|
| 111 | s112 | TV Show | 44 Cats | NaN | Sarah Natochenny, Suzy Myers, Simona Berman, E... | Italy | October 1, 2020 | TV-Y7 | |
| 276 | s277 | TV Show | Abby Hatcher | Kyran Kelly | Macy Drouin, Wyatt White, Paul Sun-Hyung Lee, ... | United States, Canada | July 1, 2020 | TV-Y | |
| 434 | s435 | TV Show | Alphablocks | NaN | Teresa Gallagher, David Holt, Lizzie Waterworth | United Kingdom | May 25, 2020 | TV-Y | |
| 598 | s599 | TV Show | Ask the StoryBots | NaN | Judy Greer, Erin Fitzgerald, Fred Tatasciore, ... | United States | August 2, 2019 | TV-Y | |
| 706 | s707 | TV Show | Bal Ganesh | Vijay S. Bhanushali | Meghna Erande Joshi, Parminder Ghumman | NaN | March 31, 2020 | TV-Y7 | |
| ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| 7668 | s7667 | TV Show | World of Winx | Iginio Straffi | Haven Paschall, Alysha Deslorieux, Jessica Paq... | Italy, United States | June 16, 2017 | TV-Y7 | |
| 7717 | s7716 | TV Show | Yoko | NaN | Eileen Stevens, Alyson Leigh Rosenfeld, Sarah ... | NaN | June 23, 2018 | TV-Y | |
| 7719 | s7718 | TV Show | YOM | NaN | Sairaj, Devyani Dagaonkar, Ketan Singh, Mayur ... | NaN | June 7, 2018 | TV-Y7 | |
| 7758 | s7757 | TV Show | Z4 | NaN | Apollo Costa, Gabriel Santana, Matheus Lustosa... | Brazil | February 22, 2019 | TV-PG | |
| 7761 | s7760 | TV Show | Zak Storm | NaN | Michael Johnston, Jessica Gee- | United States, France, South | September 13, 2018 | TV-Y7 | |

| Show_Id | Category | Title | Director | Cast | Country | Release_Date | Rating | ... |
|---------|----------|-------|----------|------------------------|---------------------|--------------|--------|-----|
| | | | | George, Christin... | Korea, Indonesia | | | |
| 335 | 15 | | | | | | | |

In [115...

data[(data['Category'] == 'Movie') & (data['Type'] == 'Dramas') | (data['Category']

Out[115]:

| | Show_Id | Category | Title | Director | Cast | Country | Release_Date | Rating | Duration |
|-------------|---------|----------|----------------------------|----------------|---|------------------------------|--------------------|--------|----------|
| 4 | s5 | Movie | 21 | Robert Luketic | Jim Sturgess, Kevin Spacey, Kate Bosworth, Aaron... | United States | January 1, 2020 | PG-13 | 123 m |
| 7 | s8 | Movie | 187 | Kevin Reynolds | Samuel L. Jackson, John Heard, Kelly Rowland, Cl... | United States | November 1, 2019 | R | 119 m |
| 111 | s112 | TV Show | 44 Cats | NaN | Sarah Natochenny, Suzy Myers, Simona Berman, E... | Italy | October 1, 2020 | TV-Y7 | Season |
| 170 | s171 | Movie | A Family Man | Mark Williams | Gerard Butler, Gretchen Mol, Alison Brie, Will... | Canada, United States | December 15, 2019 | R | 110 m |
| 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 m |
| ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| 7668 | s7667 | TV Show | World of Winx | Iginio Straffi | Haven Paschall, Alysha Deslorieux, Jessica Paq... | Italy, United States | June 16, 2017 | TV-Y7 | Season |
| 7717 | s7716 | TV Show | Yoko | NaN | Eileen Stevens, Alyson Leigh Rosenfeld, Sarah ... | NaN | June 23, 2018 | TV-Y | 1 Season |
| 7719 | s7718 | TV Show | YOM | NaN | Sairaj, Devyani Dagaonkar, Ketan Singh, Mayur ... | NaN | June 7, 2018 | TV-Y7 | 1 Season |
| 7758 | s7757 | TV Show | Z4 | NaN | Apollo Costa, Gabriel Santana, Matheus Lustosa... | Brazil | February 22, 2019 | TV-PG | Season |
| 7761 | s7760 | TV Show | Zak Storm | NaN | Michael Johnston, Jessica Gee-George, Christin... | United States, France, South | September 13, 2018 | TV-Y7 | Season |

| Show_Id | Category | Title | Director | Cast | Country | Release_Date | Rating | Duration |
|---------|----------|-------|----------|------|---------------------|--------------|--------|----------|
| | | | | | Korea, Indonesia | | | |
| 333 | 15 | | | | | | | |

In []: