netflix-viewing-patterns-analysis

August 11, 2024

```python
[1]: import pandas as pd
     import numpy as np
     import matplotlib.pyplot as plt
     import seaborn as sns
```

```python
[2]: df = pd.read_csv("File.csv")
     print(df)
```

```
      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        Mozez 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]
```

[3]: `df.shape`

[3]: (7789, 11)

[4]: `df.head()`

```
[4]:   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…
```

[5]: `df.tail()`

```
[5]:       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…

```
[6]: df.describe()
```

```
[6]:
```

	Show_Id	Category	Title	Director	Cast \
count	7789	7789	7789	5401	7071
unique	7787	2	7787	4050	6831
top	s684	Movie	Backfire	Raúl Campos, Jan Suter	David Attenborough
freq	2	5379	2	18	18

	Country	Release_Date	Rating	Duration	Type \
count	7282	7779	7782	7789	7789
unique	681	1565	14	216	492
top	United States	January 1, 2020	TV-MA	1 Season	Documentaries
freq	2556	118	2865	1608	334

	Description
count	7789
unique	7769
top	Multiple women report their husbands as missin…
freq	3

```
[7]: df.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
```

[8]: `df.count()`

[8]:
```
Show_Id        7789
Category       7789
Title          7789
Director       5401
Cast           7071
Country        7282
Release_Date   7779
Rating         7782
Duration       7789
Type           7789
Description    7789
dtype: int64
```

[9]: `df.dtypes`

[9]:
```
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
```

[10]: `df[df.duplicated()]`

```
[10]:      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…
```

```python
[11]: #remove the duplicate rows permanently
      df.drop_duplicates(inplace=True)
```

```python
[12]: df[df.duplicated()]
```

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

```python
[13]: df.shape
```

```
[13]: (7787, 11)
```

Is there any null values present in any column?

```python
[14]: df.isnull()
      #true is null value and false is non-null value
```

```
[14]:       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
```
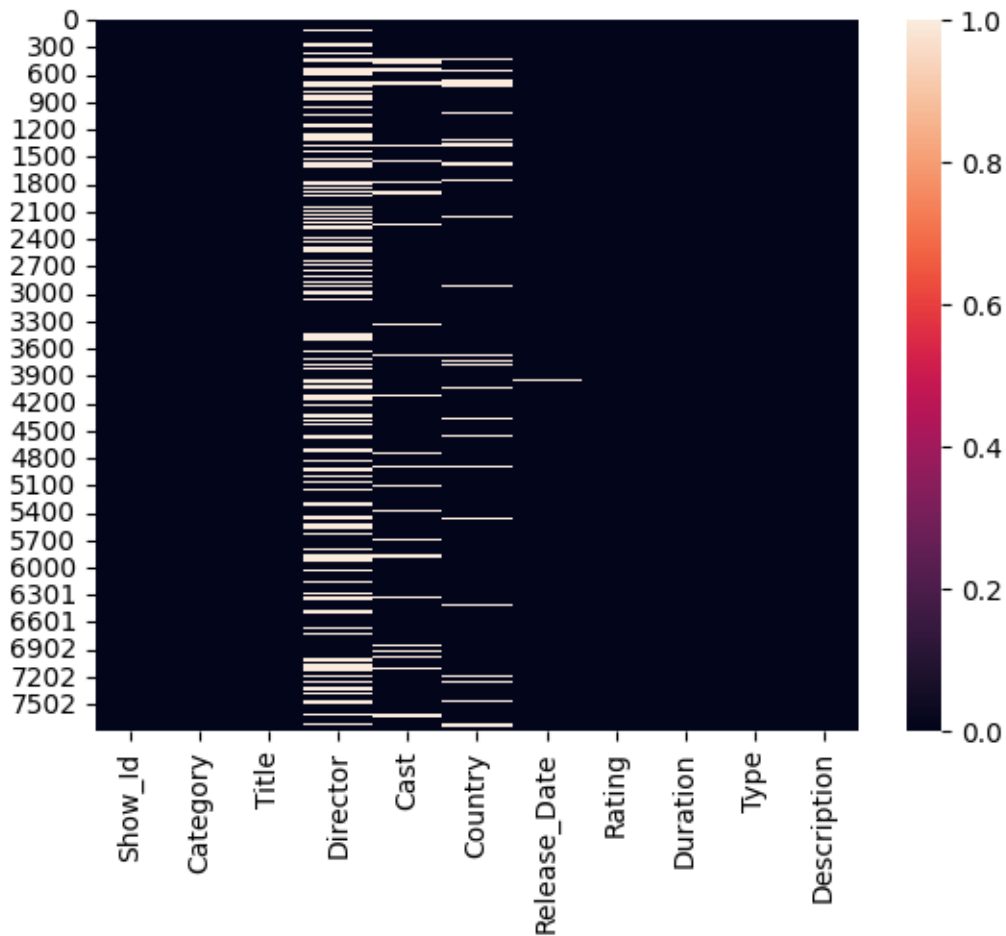
```
7785      False      False  False      False  False      False      False
7786      False      False  False       True  False       True      False
7787      False      False  False       True  False      False      False
7788      False      False  False      False   True      False      False


        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]
```

```
[15]: df.isnull().sum()
      #to show the count of null values in each column
```

```
[15]: 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
```

```
[16]: sns.heatmap(df.isnull())
```

```
[16]: <Axes: >
```

For 'house of cards' what is the show id and who is the director of this show?

```
[17]: df.head(5)
```

```
[17]:   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…
```

[18]:
```python
df[df['Title'].isin(['House of Cards'])]    #to show all the records of a
                                            #particular item in any column
```

[18]:
```
      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 …
```

[19]:
```python
df['Title'].str.contains('House of Cards')
```

[19]:
```
0        False
1        False
2        False
3        False
4        False
         …
```

```
7784    False
7785    False
7786    False
7787    False
7788    False
Name: Title, Length: 7787, dtype: bool
```

In which year highest number of the Tv shows and movies were released?show with bar graph

```
[20]: df.dtypes
```

```
[20]: 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
```

```
[21]: df['Date_N'] = pd.to_datetime(df['Release_Date'], errors='coerce')
```

```
[22]: df.head()
```

```
[22]:   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
```

[23]: ```python
df.dtypes
```

[23]: ```
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
```

[24]: ```python
df['Date_N'].dt.year.value_counts() #it counts all the individual years in
    ↪date columns
```

[24]: ```
Date_N
2019.0    2136
2020.0    2008
2018.0    1661
2017.0    1201
2016.0     432
2021.0     117
2015.0      79
2014.0      24
2011.0      13
2013.0      10
2012.0       3
```
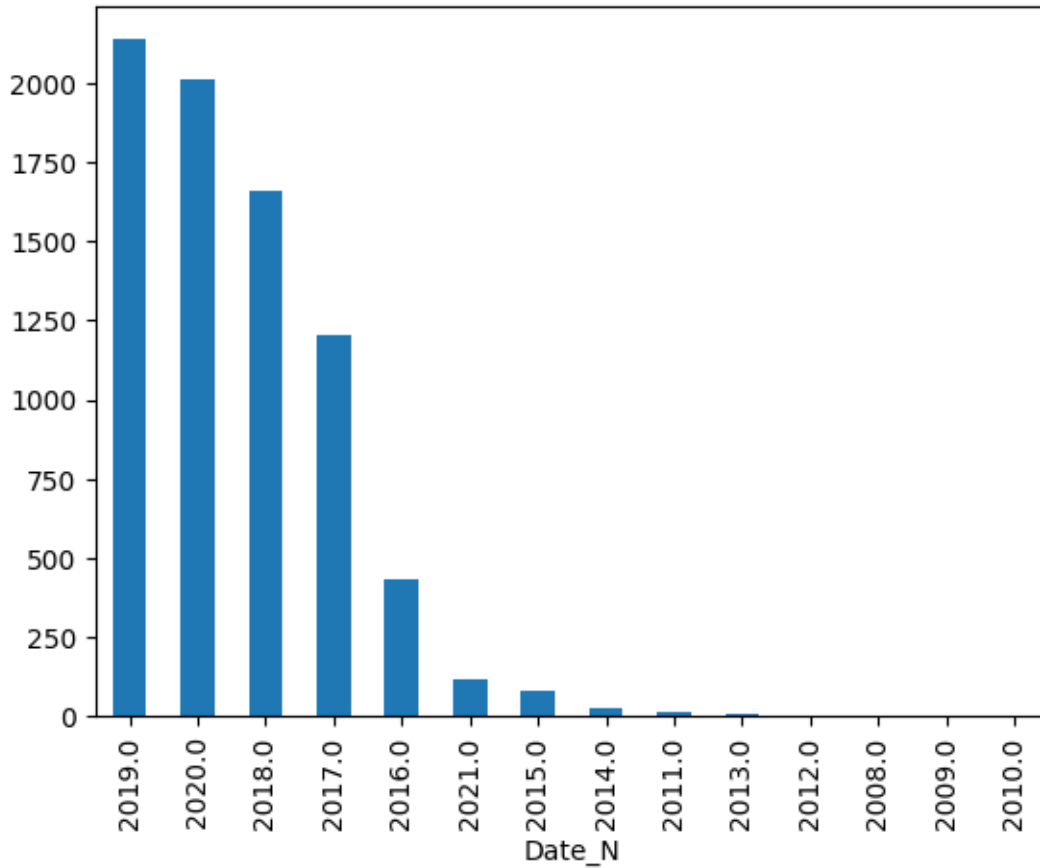
```
2008.0       2
2009.0       2
2010.0       1
Name: count, dtype: int64
```

[25]: ```python
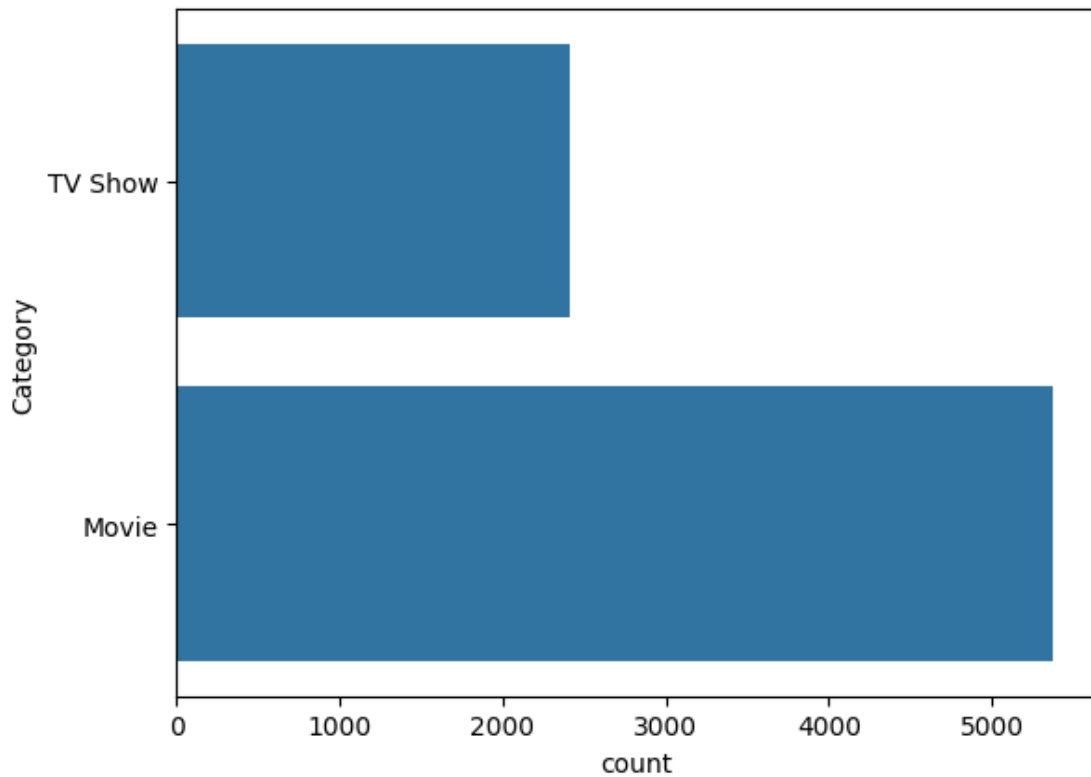df['Date_N'].dt.year.value_counts().plot(kind='bar')
```

[25]: `<Axes: xlabel='Date_N'>`



How many movies and tv shows are in the dataset? show with bar garph

[26]: ```python
df.groupby('Category').Category.count()    #to groupby all unique all and show
    ↪their counts
```

[26]: ```
Category
Movie   5377
TV Show   2410
Name: Category, dtype: int64
```

```
[27]: sns.countplot(df['Category'])
```

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


Show all the movies that were released in year 2020

```
[28]: df.head()
```

```
[28]:    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
```

[29]:
```python
df['Year']= df['Date_N'].dt.year
```

[30]:
```python
df.head(2)
```

[30]:
```
  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
```

[31]:
```python
df[(df['Category']== 'Movie') & (df['Year']== 2020)]
```

```
[31]:        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]
```

FILTERING– Show only the titles of all TV shows that were released in India Only

```
[32]:  df.head(2)

[32]:   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
```

[33]: `df[(df['Category']== 'TV Show') & (df['Country']== 'India')]`

```
[33]:       Show_Id Category                              Title     Director  \
      86        s87  TV Show       21 Sarfarosh: Saragarhi 1897          NaN
      132      s133  TV Show                        7 (Seven)  Nizar Shafi
      340      s341  TV Show                      Agent Raghav          NaN
      364      s365  TV Show                      Akbar Birbal          NaN
      533      s534  TV Show                 Anjaan: Rural Myths          NaN
      …         …        …                              …            …
      6249    s6249  TV Show                The Creative Indians          NaN
      6400    s6399  TV Show  The Golden Years with Javed Akhtar          NaN
      6469    s6468  TV Show                 The House That Made Me          NaN
      7294    s7293  TV Show                         Typewriter          NaN
      7705    s7704  TV Show                      Yeh Meri Family          NaN

                                                    Cast Country  \
      86               Luke Kenny, Mohit Raina, Mukul Dev   India
      132    Rahman, Havish, Regina Cassandra, Nandita Swet…   India
      340    Sharad Kelkar, Aahana Kumra, Mahesh Manjrekar,…   India
      364        Kiku Sharda, Vishal Kotian, Delnaaz Irani   India
      533                                             NaN   India
      …                                               …       …
      6249                                            NaN   India
      6400                                            NaN   India
      6469                                   Vinay Pathak   India
      7294   Aarna Sharma, Aaryansh Malviya, Mikail Gandhi,…   India
      7705   Vishesh Bansal, Mona Singh, Akarsh Khurana, Ah…   India

                Release_Date Rating   Duration  \
      86      December 1, 2018  TV-14   1 Season
      132        July 30, 2019  TV-14   1 Season
      340       April 15, 2017  TV-14   1 Season
      364       March 31, 2020   TV-G   1 Season
      533    December 15, 2018  TV-14   1 Season
      …                  …        …         …
      6249     August 24, 2020  TV-MA  2 Seasons
      6400        June 1, 2017   TV-G   1 Season
```

```
6469       March 31, 2017  TV-PG  3 Seasons
7294        July 19, 2019  TV-MA   1 Season
7705     August 31, 2018  TV-PG   1 Season


                                                  Type  \
86                  International TV Shows, TV Dramas
132                                          TV Shows
340     Crime TV Shows, International TV Shows, TV Act…
364                    Kids' TV, TV Comedies, TV Dramas
533      International TV Shows, TV Horror, TV Thrillers
…                                                    …
6249              Docuseries, International TV Shows
6400              Docuseries, International TV Shows
6469               International TV Shows, Reality TV
7294     International TV Shows, TV Horror, TV Mysteries
7705                International TV Shows, TV Comedies


                                 Description      Date_N    Year
86      In one of history's greatest last stands, a ba…  2018-12-01  2018.0
132     Multiple women report their husbands as missin…  2019-07-30  2019.0
340     A mix of brilliance, erudition and skill enabl…  2017-04-15  2017.0
364     From battles of wit to fights for justice, Emp…  2020-03-31  2020.0
533     Spine-chilling stories of malevolent spirits u…  2018-12-15  2018.0
…                                                    …           …       …
6249    From chefs and comedians to filmmakers and fas…  2020-08-24  2020.0
6400    Writer, poet and lyricist Javed Akhtar hosts t…  2017-06-01  2017.0
6469    With host Vinay Pathak, Indian celebrities ret…  2017-03-31  2017.0
7294    Three young friends in Goa plan to search an o…  2019-07-19  2019.0
7705    In the summer of 1998, middle child Harshu bal…  2018-08-31  2018.0


[71 rows x 13 columns]
```

```
[34]: df[(df['Category']== 'TV Show') & (df['Country']== 'India')] ['Title']
```

```
[34]: 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
```

show top 10 directors who gave the highest number of tv shows and movies to netflix

```
[35]: #value_counts()

      df['Director'].value_counts().head(10)
```

```
[35]: Director
      Raúl Campos, Jan Suter    18
      Marcus Raboy              16
      Jay Karas                 14
      Cathy Garcia-Molina       13
      Martin Scorsese           12
      Jay Chapman               12
      Youssef Chahine           12
      Steven Spielberg          10
      David Dhawan               9
      Johnnie To                 8
      Name: count, dtype: int64
```

show all the records where category is movie and type is comedies or country is united kingdom

```
[36]: df[(df['Category']== 'Movie') &(df['Type']== 'Comedies')| (df['Country']==
      ↪'Unitedd Kingdom')]
```

```
[36]:       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 Zabielski
      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 Connoll…
      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]
```

in how many movies/shows Tom Cruise was cast?

```
[37]: df.head(5)
```

```
[37]:   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     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
2   When an army recruit is found dead, his fellow… 2018-12-20   2018.0
3   In a postapocalyptic world, rag-doll robots hi… 2017-11-16   2017.0
4   A brilliant group of students become card-coun… 2020-01-01   2020.0
```

[38]: `df[df['Cast']== 'Tom Cruise']`

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

[39]: `df['Cast'].str.contains('Tom Cruise')`

[39]:
```
0        False
1        False
2        False
3        False
4        False
         …
7784     False
7785     False
7786     False
7787     False
7788       NaN
Name: Cast, Length: 7787, dtype: object
```

[41]:
```
#CREATING NEW DATA FRAME TO DROP ALL NULL VALUES
df_new= df.dropna()
```

```
[42]: df_new.head(3)
```

```
[42]:   Show_Id Category  Title        Director  \
      1      s2    Movie  07:19  Jorge Michel Grau
      2      s3    Movie  23:59        Gilbert Chan
      3      s4    Movie      9         Shane Acker


                                             Cast        Country  \
      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


           Release_Date Rating Duration  \
      1  December 23, 2016  TV-MA   93 min
      2  December 20, 2018      R   78 min
      3  November 16, 2017  PG-13   80 min


                                                 Type  \
      1                   Dramas, International Movies
      2            Horror Movies, International Movies
      3  Action & Adventure, Independent Movies, Sci-Fi…


                                         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
      3  In a postapocalyptic world, rag-doll robots hi… 2017-11-16  2017.0
```

```
[45]: df_new[df_new['Cast'].str.contains('Tom Cruise')]
```

```
[45]:       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
```

what are the different ratings defined by netflix?

```
[47]: df.Rating.nunique() #
```

```
[47]: 14
```

```
[48]: df.Rating.unique()
```

```
[48]: 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)
```

how many movies got the TV-14 rating in US?

```
[49]: df[(df['Category']== 'Movie') & (df['Rating']== 'TV-14') &␣
      ↪(df['Country']=='United States')].shape
```

```
[49]: (200, 13)
```

```
[52]: df[(df['Category']== 'Movie') & (df['Rating']== 'R') & (df['Year']=='2020')].
      ↪shape
```

```
[52]: (0, 13)
```

```
[51]: df[(df['Category']== 'Movie') & (df['Rating']== 'G') & (df['Country']=='United␣
      ↪States')].shape
```

```
[51]: (29, 13)
```

What is the maximum duration of a MOVIE/SHOW on Netflix?

```
[53]: df.head(2)
```

```
[53]:   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
```

[55]: `df['Duration'].unique()`

[55]:
```
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)
```

[56]: `df.Duration.dtypes`

[56]: `dtype('O')`

```
[59]:  #spilt the data into 2 columns minutes and unit

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

```
[60]:  df.head()
```

```
[60]:    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    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
       2  When an army recruit is found dead, his fellow… 2018-12-20  2018.0
       3  In a postapocalyptic world, rag-doll robots hi… 2017-11-16  2017.0
       4  A brilliant group of students become card-coun… 2020-01-01  2020.0

         Minutes     Unit
       0       4  Seasons
       1      93      min
       2      78      min
       3      80      min
       4     123      min
```

```
[61]: df.Minutes.max()
```

```
[61]: '99'
```

```
[62]: df.Minutes.min()
```

```
[62]: '1'
```

which individual Country has the highest No. of Tv shows

```
[63]: df.head(2)
```

```
[63]:   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
```

```
[65]: df_tvshow = df[df['Category']=='TV Show']
```

```
[66]: df_tvshow.head(2)
```

```
[66]:   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
```

[67]: `df_tvshow.Country.value_counts()`

[67]:
```
Country
United States                                      705
United Kingdom                                     204
Japan                                              157
South Korea                                        147
India                                               71
                                                   ...
United Kingdom, Ireland, United States               1
United Kingdom, Spain                                 1
Italy, United States                                  1
Japan, Canada                                         1
United States, France, South Korea, Indonesia        1
Name: count, Length: 183, dtype: int64
```

[69]: `df_tvshow.Country.value_counts().head(1)`

[69]:
```
Country
United States     705
Name: count, dtype: int64
```

How can we sort the dataset by year?

[70]: `df.head(10)`

[70]:
```
   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
5       s6  TV Show     46         Serdar Akar
6       s7    Movie    122     Yasir Al Yasiri
```

```
7      s8    Movie     187      Kevin Reynolds
8      s9    Movie     706      Shravan Kumar
9     s10    Movie    1920       Vikram Bhatt

                                         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
5  Erdal Beşikçioğlu, Yasemin Allen, Melis Birkan…        Turkey
6  Amina Khalil, Ahmed Dawood, Tarek Lotfy, Ahmed…         Egypt
7  Samuel L. Jackson, John Heard, Kelly Rowan, Cl…  United States
8  Divya Dutta, Atul Kulkarni, Mohan Agashe, Anup…         India
9  Rajneesh Duggal, Adah Sharma, Indraneil Sengup…         India

      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
5       July 1, 2017  TV-MA    1 Season
6       June 1, 2020  TV-MA      95 min
7   November 1, 2019      R     119 min
8      April 1, 2019  TV-14     118 min
9  December 15, 2017  TV-MA     143 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
5    International TV Shows, TV Dramas, TV Mysteries
6           Horror Movies, International Movies
7                                         Dramas
8           Horror Movies, International Movies
9    Horror Movies, International Movies, Thrillers

                                  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
2  When an army recruit is found dead, his fellow…  2018-12-20  2018.0
3  In a postapocalyptic world, rag-doll robots hi…  2017-11-16  2017.0
4  A brilliant group of students become card-coun…  2020-01-01  2020.0
5  A genetics professor experiments with a treatm…  2017-07-01  2017.0
```

```
6  After an awful accident, a couple admitted to … 2020-06-01  2020.0
7  After one of his high school students attacks … 2019-11-01  2019.0
8  When a doctor goes missing, his psychiatrist w… 2019-04-01  2019.0
9  An architect and his wife move into a castle t… 2017-12-15  2017.0

   Minutes     Unit
0        4  Seasons
1       93      min
2       78      min
3       80      min
4      123      min
5        1   Season
6       95      min
7      119      min
8      118      min
9      143      min
```

[71]: `df.sort_values(by='Year').head(5)`

```
[71]:      Show_Id Category                     Title            Director  \
      1765   s1766  TV Show              Dinner for Five                  NaN
      7115   s7114    Movie        To and From New York  Sorin Dan Mihalcescu
      5766   s5766    Movie                    Splatter            Joe Dante
      3248   s3249    Movie      Just Another Love Story          Ole Bornedal
      3840   s3841    Movie  Mad Ron's Prevues from Hell           Jim Monaco

                                                       Cast        Country  \
      1765                                              NaN  United States
      7115  Barbara King, Shaana Diya, John Krisiukenas, Y…  United States
      5766  Corey Feldman, Tony Todd, Tara Leigh, Erin Way…  United States
      3248  Anders W. Berthelsen, Rebecka Hemse, Nikolaj L…        Denmark
      3840  Nick Pawlow, Jordu Schell, Jay Kushwara, Micha…  United States

               Release_Date Rating  Duration  \
      1765   February 4, 2008  TV-MA  1 Season
      7115     January 1, 2008  TV-MA     81 min
      5766  November 18, 2009  TV-MA     29 min
      3248         May 5, 2009  TV-MA    104 min
      3840   November 1, 2010     NR     84 min

                                         Type  \
      1765          Stand-Up Comedy & Talk Shows
      7115  Dramas, Independent Movies, Thrillers
      5766                          Horror Movies
      3248          Dramas, International Movies
      3840            Cult Movies, Horror Movies
```

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


      Minutes    Unit
1765        1  Season
7115       81     min
5766       29     min
3248      104     min
3840       84     min
```

[73]: `df.sort_values(by='Year', ascending=False).head(5)   #to show the latest␣
↪records use ascending`

[73]:
```
      Show_Id Category                      Title             Director  \
4786    s4787    Movie               Passenger 57          Kevin Hooks
1004    s1005    Movie                BluffMaster!          Rohan Sippy
5850    s5850    Movie                  Striptease       Andrew Bergman
601      s602    Movie             Asphalt Burning       Hallvard Bræin
5522    s5522    Movie  Sex and the City: The Movie  Michael Patrick King


                                            Cast        Country  \
4786  Wesley Snipes, Bruce Payne, Tom Sizemore, Alex…  United States
1004  Abhishek Bachchan, Priyanka Chopra, Riteish De…          India
5850  Demi Moore, Burt Reynolds, Armand Assante, Vin…  United States
601   Anders Baasmo, Kathrine Thorborg Johansen, Ida…         Norway
5522  Sarah Jessica Parker, Kim Cattrall, Kristin Da…  United States


         Release_Date Rating Duration  \
4786  January 1, 2021      R    84 min
1004  January 8, 2021  TV-14   129 min
5850  January 1, 2021      R   117 min
601   January 2, 2021  TV-14   101 min
5522  January 1, 2021      R   145 min


                                           Type  \
4786                         Action & Adventure
1004    Comedies, International Movies, Romantic Movies
5850                            Comedies, Dramas
601    Action & Adventure, Comedies, International Mo…
5522              Comedies, Dramas, Romantic Movies


                                      Description       Date_N    Year  \
4786  Air marshal John Cutter must stop notorious te… 2021-01-01  2021.0
```

```
1004   When his girlfriend learns the truth about his… 2021-01-08  2021.0
5850   A former FBI employee works as a stripper to f… 2021-01-01  2021.0
601    When the brakes slam on his wedding, Roy accep… 2021-01-02  2021.0
5522   When Carrie's big step forward in her relation… 2021-01-01  2021.0

      Minutes Unit
4786       84  min
1004      129  min
5850      117  min
601       101  min
5522      145  min
```

Find all the instance where: category is'Movie' and type is 'Drama'

```
[75]: df[(df["Category"] == "Movie") & (df["Type"] == "Dramas")].head(2)
```

```
[75]:    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
```

Find all the instances where:Category is 'TV show' and Type is 'kids Tv'

```
[76]: df[(df["Category"] == "TV Show") & (df["Type"] == "Kids' TV")].head(2)
```

```
[76]:     Show_Id Category          Title       Director  \
      111     s112  TV Show        44 Cats            NaN
      276     s277  TV Show   Abby Hatcher    Kyran Kelly

                                             Cast                  Country  \
      111  Sarah Natochenny, Suzy Myers, Simona Berman, E…                    Italy
      276  Macy Drouin, Wyatt White, Paul Sun-Hyung Lee, …   United States, Canada
```

```
        Release_Date Rating   Duration       Type  \
111  October 1, 2020  TV-Y7  2 Seasons  Kids' TV
276     July 1, 2020   TV-Y   1 Season  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

     Minutes      Unit
111        2   Seasons
276        1    Season
```

[ ]: