

Data Analysis with Python in Netflix Dataset



```
In [3]: import pandas as pd
import numpy as np
import seaborn as sns
from matplotlib import pyplot as plt
```

```
In [2]: netflix=pd.read_csv("C:\Users\Pranav\Desktop\DATA SCIENCE DATA\GC File\8. Netflix Dataset.csv")
netflix.head()
```

Out[2]:	Show_Id	Category	Title	Director	Cast	Country	Release_Date	Rating	Duration	Type	Description
0	s1	TV Show	3%	NaN	João Miguel, Bianca Comparato, Michel Gomes, R...	Brazil	August 14, 2020	TV-MA	4 Seasons	International TV Shows, TV Dramas, TV Sci-Fi &...	In a future where the elite inhabit an island ...
1	s2	Movie	07:19	Jorge Michel Grau	Demian Bichir, Héctor Bonilla, Oscar Serrano, ...	Mexico	December 23, 2016	TV-MA	93 min	Dramas, International Movies	After a devastating earthquake his Mexico C...
2	s3	Movie	23:59	Gilbert Chan	Teddi Chan, Stella Chung, Henry Hui, Lawrence ...	Singapore	December 20, 2018	R	78 min	Horror Movies, International Movies	When an army recruit is found dead, his fello...
3	s4	Movie	9	Shane Acker	Elijah Wood, John C. Reilly, Jennifer Connelly...	United States	November 16, 2017	PG-13	80 min	Action & Adventure, Independent Movies, Sci-Fi...	In a postapocalyptic world, rag-doll robots h...
4	s5	Movie	21	Robert Luketic	Jim Sturgess, Kevin Spacey, Kate Bosworth, Aar...	United States	January 1, 2020	PG-13	123 min	Dramas	A brilliant group of students become card-coun...

```
In [3]: #to see the last five rows
netflix.tail()
```

Out[3]:	Show_Id	Category	Title	Director	Cast	Country	Release_Date	Rating	Duration	Type	Description
7784	s7783	Movie		Zozo	Josef Fares	Sweden, Czech Republic, United Kingdom, Denmark...	October 19, 2020	TV-MA	99 min	Dramas, International Movies	When Lebanon's Civil War deprives Zozo of his ...
7785	s7784	Movie		Zubana	Mozez Singh	India	March 2, 2019	TV-14	111 min	Dramas, International Movies, Music & Musicals	A scrappy but poor boy worms his way into a ty...
7786	s7785	Movie		Zulu Man in Japan	NaN	NaN	September 25, 2020	TV-MA	44 min	Documentaries, International Movies, Music & M...	In this documentary, South African rapper Nast...
7787	s7786	TV Show		Zumbo's Just Desserts	NaN	Adriano Zumbo, Rachel Khoo	October 31, 2020	TV-PG	1 Season	International TV Shows, Reality TV	Dessert wizard Adriano Zumbo looks for the nex...
7788	s7787	Movie		ZZ TOP: THAT LITTLE OL' BAND FROM TEXAS	Sam Dunn	NaN	March 1, 2020	TV-MA	90 min	Documentaries, Music & Musicals	This documentary delves into the mystique behi...

```
In [4]: # shape of dataset
netflix.shape
```

```
Out[4]: (7789, 11)
```

```
In [5]: # information about dataset
netflix.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              5461 non-null   object
4   Cast                  7971 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: 665.1+ KB
```

```
In [6]: #describe dataset
netflix.describe()
```

Out[6]:	Show_Id	Category	Title	Director	Cast	Country	Release_Date	Rating	Duration	Type	Description
count	7789	7789	7789	5461	7071	7282	7779	7782	7789	7789	7789
unique	7787	2	7787	4050	6831	681	1555	14	216	462	1
top	s6621	Movie	The Lost Okoroshi	Raul Campos, Jan Suter	David Astenborough	United States	January 1, 2020	TV-MA	1 Season	Documentaries	Multiple women report their husbands as missin...
freq	2	5379	2	18	18	2556	118	2865	1608	334	3

```
In [7]: # Find out null value in dataset
netflix.isnull().sum()
```

```
Out[7]: Show_Id      0
Category      0
Title         0
Director     2388
Cast         748
Country      597
Release_Date  10
Rating       7
Type         0
Description  0
dtype: int64
```

```
In [8]: # index of dataset
netflix.index
```

```
Out[8]: RangeIndex(start=0, stop=7789, step=1)
```

```
In [9]: # columns in dataset
netflix.columns
```

```
Out[9]: Index(['Show_Id', 'Category', 'Title', 'Director', 'Cast', 'Country', 'Release_Date', 'Rating', 'Duration', 'Type', 'Description'], dtype='object')
```

```
In [10]: # Dtypes of dataset
netflix.dtypes
```

```
Out[10]: Show_Id      object
Category      object
Title         object
Director      object
Cast          object
Country       object
Release_Date  object
Duration      object
Rating        object
Type          object
Description   object
dtype: object
```

```
In [11]: #unique of dataset
netflix.nunique()
```

```
Out[11]: Show_Id      7787
Category      2
Title         7787
Director     4050
Cast         6831
Country      681
Release_Date 1565
Rating       14
Duration     216
Type         492
Description  7769
dtype: int64
```

```
In [12]: #value counts in dataset
netflix.value_counts()
```

```
Out[12]: Show_Id      Category      Title      Release_Date      Director      Cast      Duration      Type      Description
0      s331      Movie      Aftermath      April 5, 2019      Elliott Lester      Arnold Schwarzenegger, Scott McAniry, Maggie Grace, Judah Nelson, Glenn Morshower, Hannah Ware, Mo McRae, Martin Donovan, Lar...
1      s332      Movie      Backfire      May 19, 2020      Dave Patten      Black Deniro, Byron "Squally" Vinson, Dominic Costa, Nick Ferraro, Peter Ferriero, Jowhar Jones 2
2      s333      Movie      Karar      April 5, 2019      Ali Ragab      Mohamed Saad, Hassan Hosny, Ragaa Al-Geddawy, Yassin Abdulaziz, Alaa Moray
3      s334      Movie      Egypt      May 19, 2020      TV-14      107 min      Comedies, International Movies
4      s335      Movie      Hungry aunt and uncle try to con him by marrying his off to a fake relative.
5      s336      Movie      Kardec      Wagner de Assis Leonardo Medeiros, Sandro Corveloni, Genezio de Barros, Guilherme Piva, Leonardo Franco, Dalton Vigh, Charles Baudin, Julia K...
6      s337      Movie      19th-century France, professor Léo Rival attends a séance and is moved to found spiri...
7      s338      Movie      turns into a wild race for survival with killers in hot pursuit.
8      s339      Movie      Karla Bela      Burak Aksak      Cemil Zokurt, Seda Bakan, Erkan Kolcak Kostendil, Cihan Ercan, Berat Yenilmez, İstar Gökseven, Erdul Tosun, Tarık Uluoğlu
9      s340      Movie      The road trip turns into a wild race for survival with killers in hot pursuit.
10     s341      Movie      Blue Jay      Alex Lehmann      Sarah Paulson, Mark Duplass, Clu Gulager
11     s342      Movie      United States      December 2, 2016      TV-98      81 min      Dramas, Independent Movies, Romantic Movies
12     s343      Movie      Their old hometown, where they rediscove...
13     s344      Movie      Length: 4809, dtype: int64
```

```
In [13]: # Dtypes of dataset
netflix.dtypes
```

```
Out[13]: Show_Id      object
Category      object
Title         object
Director      object
Cast          object
Country       object
Release_Date  object
Duration      object
Rating        object
Type          object
Description   object
dtype: object
```

```
In [14]: #check the duplicate rows in dataset
netflix.duplicated()
```

Out[14]:	Show_Id	Category	Title	Director	Cast	Country	Release_Date	Rating	Duration	Type	Description
6300	s684	Movie	Backlit	Dave Patten	Black Deniro, Byron "Squally" Vinson, Domin...	United States	April 5, 2019	TV-MA	97 min	Dramas, Independent Movies, Thrillers	When two would-be robbers accidentally kill a...
6622	s6621	Movie	The Lost Okoroshi	Abbas T. Makana	Seun Ajayi, Judith Aduke, Tope Tedela, Ru...	Nigeria	September 4, 2020	TV-MA	94 min	Comedies, Dramas, Independent Movies	A disillusioned security guard transforms into...

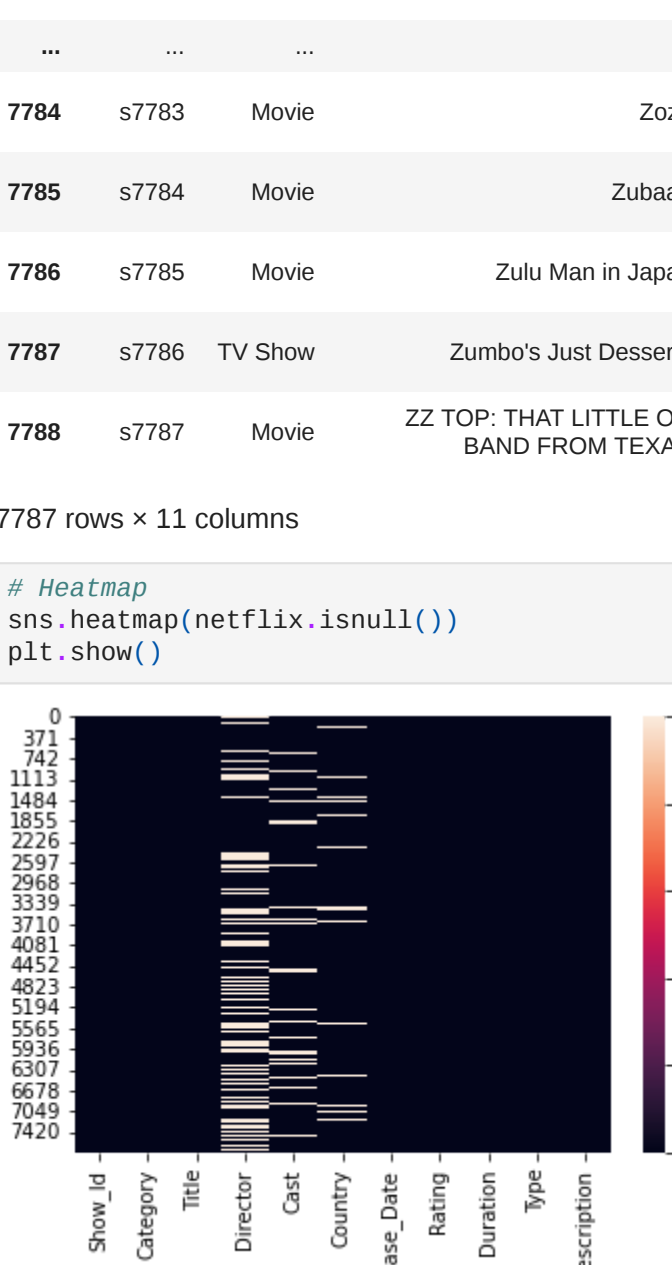
```
In [15]: # Remove the duplicate rows
netflix.drop_duplicates()
```

Out[15]:	Show_Id	Category	Title	Director	Cast	Country	Release_Date	Rating	Duration	Type	Description
0	s1	TV Show	3%	NaN	João Miguel, Bianca Comparato, Michel Gomes, R...	Brazil	August 14, 2020	TV-MA	4 Seasons	International TV Shows, TV Dramas, TV Sci-Fi &...	In a future where the elite inhabit an island ...
1	s2	Movie	07:19	Jorge Michel Grau	Demian Bichir, Héctor Bonilla, Oscar Serrano, ...	Mexico	December 23, 2016	TV-MA	93 min	Dramas, International Movies	After a devastating earthquake his Mexico Cl...
2	s3	Movie	23:59	Gilbert Chan	Teddi Chan, Stella Chung, Henry Hui, Lawrence ...	Singapore	December 20, 2018	R	78 min	Horror Movies, International Movies	When an army recruit is found dead, his fello...
3	s4	Movie	9	Shane Acker	Elijah Wood, John C. Reilly, Jennifer Connelly...	United States	November 16, 2017	PG-13	80 min	Action & Adventure, Independent Movies, Sci-Fi...	In a postapocalyptic world, rag-doll robots h...
4	s5	Movie	21	Robert Luketic	Jim Sturgess, Kevin Spacey, Kate Bosworth, Aar...	United States	January 1, 2020	PG-13	123 min	Dramas	A brilliant group of students become card-coun...

...
7784	s7783	Movie		Zozo	Josef Fares	Sweden, Czech Republic, United Kingdom, Denmark...	October 19, 2020	TV-MA	99 min	Dramas, International Movies	When Lebanon's Civil War deprives Zozo of his ...
7785	s7784	Movie		Zubana	Mozez Singh	India	March 2, 2019	TV-14	111 min	Dramas, International Movies, Music & Musicals	A scrappy but poor boy worms his way into a ty...
7786	s7785	Movie		Zulu Man in Japan	NaN	NaN	September 25, 2020	TV-MA	44 min	Documentaries, International Movies, Music & M...	In this documentary, South African rapper Nast...
7787	s7786	TV Show		Zumbo's Just Desserts	NaN	Adriano Zumbo, Rachel Khoo	October 31, 2020	TV-PG	1 Season	International TV Shows, Reality TV	Dessert wizard Adriano Zumbo looks for the nex...
7788	s7787	Movie		ZZ TOP: THAT LITTLE OL' BAND FROM TEXAS	Sam Dunn	NaN	March 1, 2020	TV-MA	90 min	Documentaries, Music & Musicals	This documentary delves into the mystique behi...

7787 rows x 11 columns

```
In [16]: # Heatmap
sns.heatmap(netflix.isnull())
plt.show()
```



```
In [17]: # For 'House of cards', what is the show id and who is the director of this show?
netflix[netflix['Title'].isin(['House of Cards'])]
```

Out[17]:	Show_Id	Category	Title	Director	Cast	Country	Release_Date	Rating	Duration	Type	Description
2832	s2833	TV Show	House of Cards	Robin Wright, David Fincher, Gerald McRaney, J...	Kevin Spacey, Robin Wright, Kate Mara, Corey S...	United States	November 2, 2018	TV-MA	6 Seasons	TV Dramas, TV Thrillers	A ruthless politician will stop at nothing to ...

```
In [18]: netflix[netflix['Title'].str.contains('House of Cards')]
```

Out[18]:	Show_Id	Category	Title	Director	Cast	Country	Release_Date	Rating	Duration	Type	Description
2832	s2833	TV Show	House of Cards	Robin Wright, David Fincher, Gerald McRaney, J...	Kevin Spacey, Robin Wright, Kate Mara, Corey S...	United States	November 2, 2018	TV-MA	6 Seasons	TV Dramas, TV Thrillers	A ruthless politician will stop at nothing to ...

```
In [19]: # the year in which the movie and show are most released
netflix['Date_N'].pd.to_datetime(netflix['Release_Date'])
```

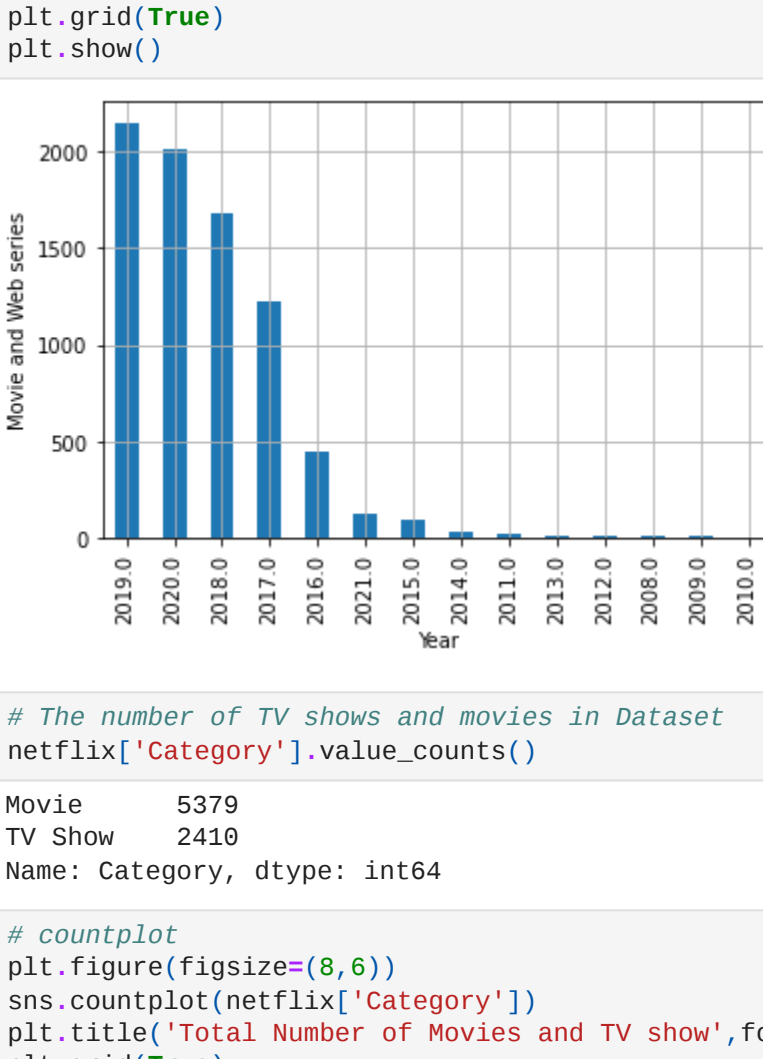
```
Out[19]: netflix.head()
```

Out[19]:	Show_Id	Category	Title	Director	Cast	Country	Release_Date	Rating	Duration	Type	Description	Date_N
0	s1	TV Show	3%	NaN	João Miguel, Bianca Comparato, Michel Gomes, R...	Brazil	August 14, 2020	TV-MA	4 Seasons	International TV Shows, TV Dramas, TV Sci-Fi &...	In a future where the elite inhabit an island ...	2020-09-14
1	s2	Movie	07:19	Jorge Michel Grau	Demian Bichir, Héctor Bonilla, Oscar Serrano, ...	Mexico	December 23, 2016	TV-MA	93 min	Dramas, International Movies	After a devastating earthquake his Mexico Cl...	2016-12-23
2	s3	Movie	23:59	Gilbert Chan	Teddi Chan, Stella Chung, Henry Hui, Lawrence ...	Singapore	December 20, 2018	R	78 min	Horror Movies, International Movies	When an army recruit is found dead, his fello...	2018-12-20
3	s4	Movie	9	Shane Acker	Elijah Wood, John C. Reilly, Jennifer Connelly...	United States	November 16, 2017	PG-13	80 min	Action & Adventure, Independent Movies, Sci-Fi...	In a postapocalyptic world, rag-doll robots h...	2017-11-16
4	s5	Movie	21	Robert Luketic	Jim Sturgess, Kevin Spacey, Kate Bosworth, Aar...	United States	January 1, 2020	PG-13	123 min	Dramas	A brilliant group of students become card-coun...	2020-01-01

```
In [21]: netflix['Date_N'].dt.year.value_counts()
```

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	

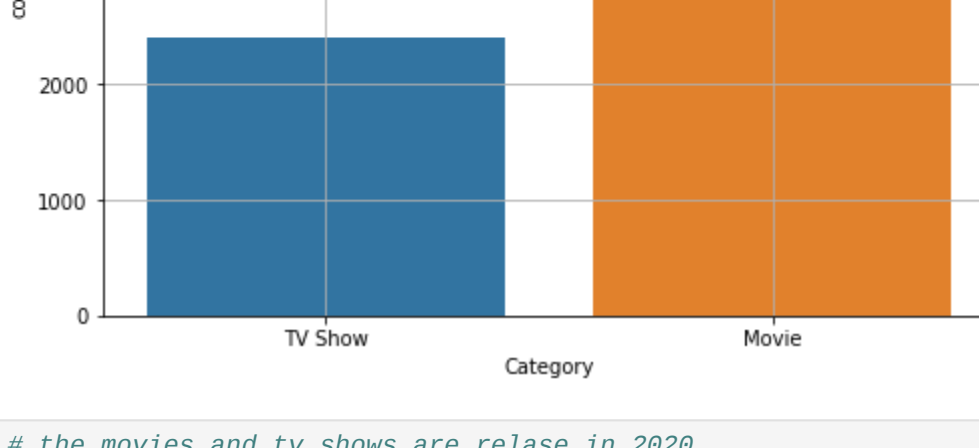
```
In [22]: #bargraph
netflix['Date_N'].dt.year.value_counts().plot(kind='bar')
plt.xlabel('Year')
plt.ylabel('Movie and Web series')
plt.grid(True)
plt.show()
```



```
In [23]: # The number of TV shows and movies in Dataset
netflix['Category'].value_counts()
```

warnings.warn(Total Number of Movies and TV show
--

```
In [24]: # countplot
plt.figure(figsize=(8,6))
sns.countplot(netflix['category'])
plt.title('Total Number of Movies and TV show', fontsize=12)
plt.grid(True)
plt.show()
```



```
In [25]: # the movies and tv shows are release in 2020
netflix[Year]==netflix['Date_N'].dt.year
```

```
Out[25]: netflix.head()
```

Out[25]:	Show_Id	Category	Title	Director	Cast	Country	Release_Date	Rating	Duration	Type	Description	Date_N	Year
0	s1	TV Show	3%	NaN	João Miguel, Bianca Comparato, Michel Gomes, R...	Brazil	August 14, 2020	TV-MA	4 Seasons	International TV Shows, TV Dramas, TV Sci-Fi &...	In a future where the elite inhabit an island ...	2020-09-14	2020.0
1	s2	Movie	07:19	Jorge Michel Grau	Demian Bichir, Héctor Bonilla, Oscar Serrano, ...	Mexico	December 23, 2016	TV-MA	93 min	Dramas, International Movies	After a devastating earthquake his Mexico Cl...	2016-12-23	2016.0
2	s3	Movie	23:59	Gilbert Chan	Teddi Chan, Stella Chung, Henry Hui, Lawrence ...	Singapore	December 20, 2018	R	78 min	Horror Movies, International Movies	When an army recruit is found dead, his fello...	2018-12-20	2018.0
3	s4	Movie	9	Shane Acker	Elijah Wood, John C. Reilly, Jennifer Connelly...	United States	November 16, 2017	PG-13	80 min	Action & Adventure, Independent Movies, Sci-Fi...	In a postapocalyptic world, rag-doll robots h...	2017-11-16	2017.0
4	s5	Movie	21	Robert Luketic	Jim Sturgess, Kevin Spacey, Kate Bosworth, Aar...	United States	January 1, 2020	PG-13	123 min	Dramas	A brilliant group of students become card-coun...	2020-01-01	2020.0

```
In [27]: #filtering
netflix[netflix['Category']== 'Movie'] & (netflix['Year']==2020.0)]
```

Out[27]:	Show_Id	Category	Title	Director	Cast	Country	Release_Date	Rating	Duration	Type	Description	Date_N	Year
4	s5	Movie	21	Robert Luketic	Jim Sturgess, Kevin Spacey, Kate Bosworth, Aar...	United States	January 1, 2020	PG-13	123 min	Dramas	A brilliant group of students become card-coun...	2020-01-01	2020.0
6	s7	Movie	122	Yasir Al Yasin	Amna Khalil, Ahmed Dawood, Cheryl Chase, Kate Ma...	Egypt	March 1, 2020	TV-MA	95 min	Horror Movies, International Movies, Sci-Fi & Fantasy, Thrillers	After an awful accident, a couple admitted to...	2020-03-01	2020.0
14	s15	Movie	3022	John Sals	Omair Etyks, Kate Walsh, Miranda Cosgrove, Angus...	United States	June 19, 2020	R	91 min	Independent Movies, Sci-Fi & Fantasy, Thrillers	Stranded when the Earth is suddenly destroyed ...	2020-03-19	2020.0
27	s28	Movie	#Ave	Cho Il	Moo Ah-in, Park Shin-hye	South Korea	September 6, 2020	TV-MA	99 min	Horror Movies, International Movies, Sci-Fi...	As a greedy virus rampsages a city, a lone man ...	2020-09-08	2020.0
28	s29	Movie	#NameFrank - Parallel Stories	Sabina Fedeli, Anna Magotto	Helen Mirren, Genghis Gatti	Italy	July 1, 2020	TV-14	95 min	Documentaries, International Movies	Through her diary, Anne Frank's story is retol...	2020-07-01	2020.0
...
7762	s7761	Movie	Zaki Chan	Wael Isnan	Ahmed Helmy, Yassin Abdulaziz, Hassan Hosny, H...	Egypt	May 19, 2020	TV-PG	109 min	Comedies, International Movies	An unqualified young man has his work cut out ...	2020-05-19	2020.0
7783	s7782	Movie	Zoom	Peter Hewitt	Tim Allen, Courtney Cox, Cori Corbin	United States	January 11, 2020	PG	88 min	Children & Family Movies, Romantic Movies	Dragged from civilian life, a former superhero ...	2020-01-11	2020.0
7784	s7783	Movie	Zozo	Josef Fares	Imad Creid, Antonette Turk, Elias Gerig, Car...	Sweden, Czech Republic, United Kingdom, Denmark...	October 19, 2020	TV-MA	99 min	Dramas, International Movies	When Lebanon's Civil War deprives Zozo of his ...	2020-09-14	2020.0
7786	s7785	Movie	Zulu Man in Japan	NaN	NaN	NaN	September 25, 2020	TV-MA	44 min	Documentaries, International Movies, Music & M...	In this documentary, South African rapper Nast...	2020-09-25	2020.0
7788	s7787	Movie	ZZ TOP: THAT LITTLE OL' BAND FROM TEXAS	Sam Dunn	NaN	NaN	March 1, 2020	TV-MA	90 min	Documentaries, Music & Musicals	This documentary delves into the mystique behi...	2020-03-01	2020.0

1313 rows x 13 columns

```
In [28]: # the tv show realised in india
netflix[netflix['Category']== 'TV Show'] & (netflix['Country']== 'India']
```

86	s87	TV Show	21 Sarfarosh: Saragahat 1897	NaN	Luke Kenny, Mohit Rana, Mukul Dev	India	December 1, 2018	TV-14	1 Season	International TV Shows, TV Dramas	In one of history's greatest last stands, a ba...	2018-12-01	2018.0	
132	s133	TV Show	7 (Seven)	Nazir Shahi	Rahman, Havish, Regina Cassandra, Nandita Swet...	India	July 30, 2019	TV-14	1 Season	TV Shows	Multiple women report their husbands as missi...	2019-07-30	2019.0	
340	s341	TV Show	Agent Raghav	NaN	Shardul Kekar, Ashana Kumra, Mahesh Manjrekar...	India	April 15, 2017	TV-14	1 Season	Crime TV Shows, International TV Shows, TV Act...	A mix of brilliance, endurance and skill enabl...	2017-04-15	2017.0	
364	s365	TV Show	Akbar Barhai	NaN	Kiku Sharda, Vishal Kohan, Dehazh Rana	India	March 31, 2020	TV-G	1 Season	Kids' TV, TV Comedies, TV Dramas	From battles of wit to fights for justice, Emp...	2020-03-31	2020.0	
533	s534	TV Show	Anjan: Rural Myths	Anjan	NaN	NaN	India	December 15, 2018	TV-14	1 Season	International TV Shows, TV Horror, TV Thrillers	Spine-chilling stories of malevolent spirits u...	2018-12-15	2018.0
...	
6249	s6249	TV Show	The Golden Indians	NaN	NaN	NaN	August 24, 2020	TV-MA	2 Seasons	Docuseries, International TV Shows	From chefs and comedians to athletes and fee...	2020-08-24	2020.0	
6400	s6399	TV Show	The Crows Years with Javed Akhtar	NaN	NaN	NaN	India	June 1, 2017	TV-G	1 Season	International, International TV Shows	Writer, poet & lyricist Javed Akhtar hosts L...	2017-06-01	2017.0
6460	s6468	TV Show	The Mounso The Mounso	NaN	NaN	NaN	India	March 31, 2017	TV-14	3 Seasons	International TV Shows, Reality TV	With host Vinay Pathak, India's...	2017-03-31	2017.0