

```
In [1]: import pandas as pd
import numpy as np
import warnings
warnings.filterwarnings('ignore')
```

## Show the use of Boolean masking on Series objects

### Example 1

```
In [2]: twopowers_sr = pd.Series([1,2,4,8,16,32,64,128,256,512,1024])
BM=[False, False, False, True, False, False, True, True,True,True,True]
```

```
In [3]: twopowers_sr[BM]
```

```
Out[3]: 3      8
6     64
7    128
8    256
9    512
10   1024
dtype: int64
```

### Example 2

```
In [4]: BM = twopowers_sr>=500
twopowers_sr[BM]
```

```
Out[4]: 9     512
10    1024
dtype: int64
```

## Use on DataFrame

```
In [5]: data = pd.read_csv('netflix_titles_2021.csv')
data.head()
```

```
Out[5]:
```

	show_id	type	title	director	cast	country	date_added	release_year	rating	duration	listed_in	description
0	s1	Movie	Dick Johnson Is Dead	Kirsten Johnson	NaN	United States	September 25, 2021	2020	PG-13	90 min	Documentaries	As her father nears the end of his life, filmm...
1	s2	TV Show	Blood & Water	NaN	Ama Qamata, Khosi Ngema, Gail Mabalane, Thaban...	South Africa	September 24, 2021	2021	TV-MA	2 Seasons	International TV Shows, TV Dramas, TV Mysteries	After crossing paths at a party, a Cape Town t...
2	s3	TV Show	Ganglands	Julien Leclercq	Sami Bouajila, Tracy Gotoas, Samuel Jouy, Nabi...	NaN	September 24, 2021	2021	TV-MA	1 Season	Crime TV Shows, International TV Shows, TV Act...	To protect his family from a powerful drug lor...
3	s4	TV Show	Jailbirds New Orleans	NaN	NaN	NaN	September 24, 2021	2021	TV-MA	1 Season	Docuseries, Reality TV	Feuds, flirtations and toilet talk go down amo...
4	s5	TV Show	Kota Factory	NaN	Mayur More, Jitendra Kumar, Ranjan Raj, Alam K...	India	September 24, 2021	2021	TV-MA	2 Seasons	International TV Shows, Romantic TV Shows, TV ...	In a city of coaching centers known to train l...

## unique() and nunique() are used to count the the categorical values in a column

### Example

```
In [6]: data.type.nunique()
```

```
Out[6]: 2
```

```
In [7]: data.type.unique()
```

```
Out[7]: array(['Movie', 'TV Show'], dtype=object)
```

```
In [8]: print(data.rating.unique())
```

```
['PG-13' 'TV-MA' 'PG' 'TV-14' 'TV-PG' 'TV-Y' 'TV-Y7' 'R' 'TV-G' 'G'
'NC-17' '74 min' '84 min' '66 min' 'NR' nan 'TV-Y7-FV' 'UR']
```



```
In [14]: data.rating.unique()
```

```
Out[14]: array(['PG-13', 'TV-MA', 'PG', 'TV-14', 'TV-PG', 'TV-Y', 'TV-Y7', 'R',  
              'TV-G', 'G', 'NC-17', '74 min', '84 min', '66 min', 'NR', nan,  
              'TV-Y7-FV', 'UR'], dtype=object)
```

### PG

```
In [15]: BM = data.rating == 'PG'  
data[BM].release_year.value_counts()
```

```
Out[15]: 2018    31  
        2011    18  
        2014    15  
        2017    15  
        2020    15  
        2013    14  
        2016    14  
        2019    12  
        2021    11  
        2015    11  
        2007    10  
        2008    10  
        2009    10  
        2010     8  
        2006     8  
        2004     8  
        2012     7  
        2005     5  
        2001     5  
        2003     5  
        2002     4  
        1976     4  
        1984     4  
        2000     4  
        1993     4  
        1989     3  
        1994     3  
        1992     3  
        1981     2  
        1975     2  
        1982     2  
        1995     2  
        1978     2  
        1977     2  
        1986     2  
        1999     2  
        1983     1  
        1974     1  
        1973     1  
        1997     1  
        1980     1  
        1979     1  
        1985     1  
        1991     1  
        1990     1  
        1996     1  
Name: release_year, dtype: int64
```

### TV-MA

```
In [16]: BM = data.rating == 'TV-MA'
data[BM].release_year.value_counts()
```

```
Out[16]: 2018    549
         2019    500
         2020    469
         2017    451
         2016    341
         2021    270
         2015    184
         2014     79
         2013     64
         2012     54
         2010     42
         2011     27
         2008     25
         2009     18
         2006     17
         2007     17
         2004     10
         2003      8
         2005      8
         2000      7
```

#### Number of shows in South Africa

```
In [17]: BM = data.country == 'South Africa'
data[BM].type.value_counts()
```

```
Out[17]: Movie      24
         TV Show     6
         Name: type, dtype: int64
```

#### Number of countries released shows on August 27, 2021

```
In [18]: BM = data.date_added == 'August 27, 2021'
data[BM].country.value_counts()
```

```
Out[18]: India      18
         , South Korea  1
         Nigeria      1
         Ireland      1
         Name: country, dtype: int64
```

```
In [19]: data.listed_in.nunique()
```

```
Out[19]: 514
```

```
In [20]: data.listed_in.unique()
```

```
'International Movies, Sports Movies', 'International TV Shows',
'Classic & Cult TV, Kids' TV, Spanish-Language TV Shows',
'Romantic TV Shows, Spanish-Language TV Shows, TV Dramas',
'Children & Family Movies, Comedies, Faith & Spirituality',
'British TV Shows, Crime TV Shows, TV Dramas',
'Classic Movies, Dramas, Music & Musicals',
'Cult Movies, Horror Movies, Thrillers',
'Action & Adventure, Classic Movies, Sci-Fi & Fantasy',
'TV Action & Adventure, TV Comedies',
'Classic Movies, Comedies, Music & Musicals', 'Independent Movies',
'Documentaries, Horror Movies',
'Classic & Cult TV, TV Horror, TV Mysteries',
'Comedies, Faith & Spirituality, International Movies',
'Dramas, Horror Movies, Sci-Fi & Fantasy',
'British TV Shows, TV Dramas, TV Sci-Fi & Fantasy',
'Comedies, Cult Movies, Horror Movies',
'Comedies, Cult Movies, Sports Movies',
'Classic Movies, Documentaries',
'Action & Adventure, Faith & Spirituality, Sci-Fi & Fantasy',
'Action & Adventure, Children & Family Movies'.
```

#### List of countries which shows the genre 'Comedies, International Movies'

```
In [21]: BM = data.listed_in == 'Comedies, International Movies'
data[BM].country.value_counts()
```

```
Out[21]: Egypt                29
          Turkey               23
          India               20
          Spain               10
          Nigeria              9
          Germany              7
          Hong Kong            5
          Italy                4
          Brazil               4
          Philippines           4
          Colombia             3
          France, Belgium      3
          France               3
          Canada               3
          Argentina, Spain     2
          Indonesia            2
          Chile                2
          Netherlands          2
          Romania              2
          United Arab Emirates  2
          Saudi Arabia         2
          Mexico               2
          United Kingdom       1
          Turkey, South Korea  1
          Israel               1
          South Korea           1
          United States         1
          Sweden               1
          Peru                 1
          United Kingdom, United States 1
          Kuwait, United States 1
          Pakistan             1
          Argentina            1
          Ireland              1
          Name: country, dtype: int64
```

**Countries which shows : 'Documentaries, LGBTQ Movies, Sports Movies'**

```
In [22]: BM = data.listed_in == 'Action & Adventure, Thrillers'
data[BM].country.value_counts()
```

```
Out[22]: United States                2
          United Kingdom, Germany, France, United States 1
          United States, United Kingdom, Denmark, Sweden 1
          Name: country, dtype: int64
```