

Netflix EDA Documentation

January 11, 2023

```
[ ]: import pandas as pd
import numpy as np
import os
```

0.1 Import Netflix Data set

0.1.1 Dataset Source : created by Shivam Bansal at <https://www.kaggle.com/shivamb/netflix-shows>

```
[ ]: pwd = os.getcwd()
filepath = pwd + "/Practice datasets/netflix_titles.csv"
netflix_df = pd.read_csv(filepath)
netflix_df

# # Function for reading CSV files.
# def read_csv_data(dataset_location, dataset_name):
#     pwd = os.getcwd()
#     filepath = pwd + dataset_location
#     dataset_name = pd.read_csv(filepath)

#     return dataset_name

# # function call
# read_csv_data(dataset_location = "/Practice datasets/netflix_titles.csv",
# ↪dataset_name = netflix_df)
```

```
[ ]:      show_id      type      title \
0         s1  TV Show          3%
1         s2   Movie        7:19
2         s3   Movie       23:59
3         s4   Movie           9
4         s5   Movie          21
...      ...      ...      ...
7782    s7783   Movie          Zozo
7783    s7784   Movie          Zubaan
7784    s7785   Movie    Zulu Man in Japan
7785    s7786   TV Show    Zumbo's Just Desserts
```

7786 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... |
| ... | ... | ... |
| 7782 | Josef Fares | Imad Creidi, Antoinette Turk, Elias Gergi, Car... |
| 7783 | Mozez Singh | Vicky Kaushal, Sarah-Jane Dias, Raaghav Chanan... |
| 7784 | NaN | Nasty C |
| 7785 | NaN | Adriano Zumbo, Rachel Khoo |
| 7786 | Sam Dunn | NaN |

| | country | date_added \ |
|------|---|--------------------|
| 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 |
| ... | ... | ... |
| 7782 | Sweden, Czech Republic, United Kingdom, Denmar... | October 19, 2020 |
| 7783 | India | March 2, 2019 |
| 7784 | NaN | September 25, 2020 |
| 7785 | Australia | October 31, 2020 |
| 7786 | United Kingdom, Canada, United States | March 1, 2020 |

| | release_year | rating | duration \ |
|------|--------------|--------|------------|
| 0 | 2020 | TV-MA | 4 Seasons |
| 1 | 2016 | TV-MA | 93 min |
| 2 | 2011 | R | 78 min |
| 3 | 2009 | PG-13 | 80 min |
| 4 | 2008 | PG-13 | 123 min |
| ... | ... | ... | ... |
| 7782 | 2005 | TV-MA | 99 min |
| 7783 | 2015 | TV-14 | 111 min |
| 7784 | 2019 | TV-MA | 44 min |
| 7785 | 2019 | TV-PG | 1 Season |
| 7786 | 2019 | TV-MA | 90 min |

| | listed_in \ |
|---|---|
| 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 |

```

...
7782          Dramas, International Movies
7783      Dramas, International Movies, Music & Musicals
7784 Documentaries, International Movies, Music & M...
7785          International TV Shows, Reality TV
7786          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...
...
7782 When Lebanon's Civil War deprives Zozo of his ...
7783 A scrappy but poor boy worms his way into a ty...
7784 In this documentary, South African rapper Nast...
7785 Dessert wizard Adriano Zumbo looks for the nex...
7786 This documentary delves into the mystique behi...

```

```
[7787 rows x 12 columns]
```

0.2 Explore the Dataset

```
[ ]: # return all columns within the dataset.
list(netflix_df.columns)
```

```
[ ]: ['show_id',
      'type',
      'title',
      'director',
      'cast',
      'country',
      'date_added',
      'release_year',
      'rating',
      'duration',
      'listed_in',
      'description']
```

```
[ ]: # descriptive statistics on all numerical columns within the dataset
netflix_df.describe()
```

```
[ ]:      release_year
count    7787.000000
mean      2013.932580
std         8.757395
```

```

min      1925.000000
25%      2013.000000
50%      2017.000000
75%      2018.000000
max      2021.000000

```

0.3 Identifying unique values

```
[ ]: # see number of unique values in a column
col = netflix_df[["show_id",      "type",      "title", "director", "cast",
↪ "country",      "date_added", "release_year",
↪ "rating",      "duration",      "listed_in", "description"]]
col.nunique()
```

```
[ ]: show_id      7787
type            2
title          7787
director      4049
cast          6831
country        681
date_added    1565
release_year   73
rating         14
duration       216
listed_in      492
description    7769
dtype: int64
```

```
[ ]: # see unique values in a column

netflix_df["rating"].unique()
```

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

```
[ ]: list(netflix_df["type"].unique())
```

```
[ ]: ['TV Show', 'Movie']
```

0.4 Data Types

```
[ ]: data_types = dict(netflix_df.dtypes)
print(data_types)
```

```
{'show_id': dtype('O'), 'type': dtype('O'), 'title': dtype('O'), 'director':
dtype('O'), 'cast': dtype('O'), 'country': dtype('O'), 'date_added': dtype('O'),
```

```
'release_year': dtype('int64'), 'rating': dtype('O'), 'duration': dtype('O'),
'listed_in': dtype('O'), 'description': dtype('O')}]
```

1 Filtering the Dataset

```
[ ]: # return movies only found in France
def filter_by_name(column, filter_val):
    return netflix_df[netflix_df[column] == filter_val]

# function filter via a column name
filter_by_name(column="country", filter_val="France")
```

```
[ ]:      show_id      type      title      director \
49      s50      Movie      10 jours en or      Nicolas Brossette
77      s78      Movie      2 Alone in Paris      Ramzy Bedia, Éric Judor
203     s204      Movie      A Mighty Team      Thomas Sorriaux
248     s249      TV Show      A Very Secret Service      NaN
303     s304      TV Show      Ad Vitam      NaN
...     ...     ...     ...     ...
7498    s7499      Movie      We Are One      Stéphane de Freitas
7517    s7518      Movie      Wedding Unplanned      Reem Kherici
7536    s7537      Movie      West Coast      Benjamin Weill
7605    s7606      TV Show      Who Killed Little Gregory?      NaN
7766    s7767      TV Show      Zig & Sharko      NaN
```

```
cast country \
49      Franck Dubosc, Claude Rich, Marie Kremer, Math... France
77      Ramzy Bedia, Éric Judor, Benoît Magimel, Krist... France
203     Gérard Depardieu, Chantal Lauby, Medi Sadoun, ... France
248     Hugo Becker, Wilfred Benaïche, Christophe Kour... France
303     Yvan Attal, Garance Marillier, Niels Schneider... France
...     ...     ...
7498                                         NaN France
7517     Reem Kherici, Nicolas Duvauchelle, Julia Piat... France
7536     Devi Couzigou, Mathis Crussan, Victor Le Blond... France
7605                                         NaN France
7766                                         NaN France
```

```
date_added release_year rating duration \
49      July 1, 2017      2012 TV-14      97 min
77      June 1, 2020      2008 TV-MA      97 min
203     October 15, 2016      2016 TV-MA      97 min
248      July 30, 2018      2018 TV-MA      2 Seasons
303     November 1, 2019      2018 TV-MA      1 Season
...     ...     ...     ...
7498      July 14, 2020      2020 TV-MA      86 min
7517     October 19, 2017      2017 TV-MA      94 min
```

| | | | | |
|------|-------------------|------|-------|----------|
| 7536 | October 28, 2016 | 2016 | TV-MA | 81 min |
| 7605 | November 20, 2019 | 2019 | TV-MA | 1 Season |
| 7766 | December 1, 2017 | 2016 | TV-Y7 | 1 Season |

| | listed_in \ |
|------|---|
| 49 | Comedies, Dramas, International Movies |
| 77 | Comedies, International Movies |
| 203 | Comedies, International Movies, Sports Movies |
| 248 | International TV Shows, TV Comedies |
| 303 | Crime TV Shows, International TV Shows, TV Dramas |
| ... | ... |
| 7498 | Documentaries, International Movies, Music & M... |
| 7517 | Comedies, International Movies, Romantic Movies |
| 7536 | Comedies, Dramas, International Movies |
| 7605 | Crime TV Shows, Docuseries, International TV S... |
| 7766 | Kids' TV, TV Comedies |

| | description |
|------|---|
| 49 | When a carefree bachelor is unexpectedly left ... |
| 77 | A bumbling Paris policeman is doggedly determi... |
| 203 | When a fit of anger leads to a serious injury,... |
| 248 | At the height of the Cold War in 1960, André M... |
| 303 | In a future where regeneration technology lets... |
| ... | ... |
| 7498 | Activists around the world fight injustice and... |
| 7517 | Mathias's girlfriend finds a business card for... |
| 7536 | Four small-town French teens who style themsel... |
| 7605 | When their 4-year-old son is murdered, a young... |
| 7766 | Zig, an island-bound hyena, will do anything t... |

[115 rows x 12 columns]

```
[ ]: # filtering using multiple conditions. Shows only movies from France with TV-14
      ↪rating TV-14
netflix_df[(netflix_df["country"] == "France") & (netflix_df["rating"] ==
      ↪"TV-14")]
```

| | show_id | type | title \ |
|------|---------|-------|--------------------------------------|
| 49 | s50 | Movie | 10 jours en or |
| 309 | s310 | Movie | Addicted to Life |
| 512 | s513 | Movie | Anelka: Misunderstood |
| 978 | s979 | Movie | Blind Date |
| 1230 | s1231 | Movie | Casablancas: The Man Who Loved Women |
| 1814 | s1815 | Movie | Don't Crack Under Pressure III |
| 1982 | s1983 | Movie | Elles étaient en guerre (1914-1918) |
| 2760 | s2761 | Movie | Hitler's Steel Beast |
| 3224 | s3225 | Movie | Journey to Greenland |

| | | | |
|------|-------|---------|------------------------------------|
| 3378 | s3379 | Movie | Kill Hitler! The Luck of the Devil |
| 3553 | s3554 | Movie | Le K Benzema |
| 3858 | s3859 | Movie | Magnetic |
| 4387 | s4388 | TV Show | Nailed It! France |
| 6071 | s6072 | Movie | The African Doctor |
| 6227 | s6228 | Movie | The Climb |
| 6514 | s6515 | Movie | The Jack King Affair |
| 7009 | s7010 | Movie | The Wolf's Call |
| 7145 | s7146 | Movie | Tony Parker: The Final Shot |

| | director \ |
|------|--------------------------------|
| 49 | Nicolas Brossette |
| 309 | Thierry Donard |
| 512 | Franck Nataf |
| 978 | Clovis Cornillac |
| 1230 | Hubert Woroniecki |
| 1814 | Thierry Donard |
| 1982 | Fabien Beziat, Hugues Nancy |
| 2760 | Daniel Ablin |
| 3224 | Sébastien Betbeder |
| 3378 | Frédéric Tonolli |
| 3553 | Damien Piscarel, Florent Bodin |
| 3858 | Thierry Donard |
| 4387 | NaN |
| 6071 | Julien Rambaldi |
| 6227 | Ludovic Bernard |
| 6514 | Benjamin Cohen, Nicolas Cotto |
| 7009 | Antonin Baudry |
| 7145 | Florent Bodin |

| | cast country \ |
|------|--|
| 49 | Franck Dubosc, Claude Rich, Marie Kremer, Math... France |
| 309 | Antoine Bizet, Jesse Richman, Karsten Gefle, W... France |
| 512 | Nicolas Anelka France |
| 978 | Mélanie Bernier, Clovis Cornillac, Lilou Fogli... France |
| 1230 | NaN France |
| 1814 | Temarii Buillard, Davide Carrera, Jesse Richma... France |
| 1982 | Nathalie Baye France |
| 2760 | NaN France |
| 3224 | Thomas Blanchard, Thomas Scimeca, François Cha... France |
| 3378 | Jean-Baptiste Marcenac France |
| 3553 | Karim Benzema France |
| 3858 | Tom Barrer, Liam Whaley, Wille Lindberg, Sam F... France |
| 4387 | Artus, Noémie Honiat France |
| 6071 | Marc Zinga, Aïssa Maïga, Bayron Lebli, Médina ... France |
| 6227 | Ahmed Sylla, Alice Belaïdi, Kevin Razy, Nicola... France |
| 6514 | NaN France |

| | | |
|------|---|--------|
| 7009 | François Civil, Omar Sy, Mathieu Kassovitz, Re... | France |
| 7145 | Tony Parker | France |

| | date_added | release_year | rating | duration | \ |
|------|-------------------|--------------|--------|----------|---|
| 49 | July 1, 2017 | 2012 | TV-14 | 97 min | |
| 309 | June 12, 2020 | 2014 | TV-14 | 91 min | |
| 512 | August 5, 2020 | 2020 | TV-14 | 95 min | |
| 978 | October 15, 2016 | 2015 | TV-14 | 91 min | |
| 1230 | January 13, 2017 | 2016 | TV-14 | 82 min | |
| 1814 | June 12, 2020 | 2017 | TV-14 | 94 min | |
| 1982 | December 31, 2017 | 2014 | TV-14 | 93 min | |
| 2760 | November 1, 2017 | 2017 | TV-14 | 54 min | |
| 3224 | January 29, 2017 | 2016 | TV-14 | 99 min | |
| 3378 | May 1, 2019 | 2015 | TV-14 | 53 min | |
| 3553 | May 1, 2018 | 2017 | TV-14 | 121 min | |
| 3858 | June 12, 2020 | 2018 | TV-14 | 110 min | |
| 4387 | October 25, 2019 | 2019 | TV-14 | 1 Season | |
| 6071 | October 28, 2016 | 2016 | TV-14 | 94 min | |
| 6227 | December 29, 2017 | 2017 | TV-14 | 105 min | |
| 6514 | January 2, 2018 | 2015 | TV-14 | 52 min | |
| 7009 | June 20, 2019 | 2019 | TV-14 | 116 min | |
| 7145 | January 6, 2021 | 2020 | TV-14 | 99 min | |

| | listed_in | \ |
|------|---|---|
| 49 | Comedies, Dramas, International Movies | |
| 309 | Action & Adventure, Documentaries, Internation... | |
| 512 | Documentaries, International Movies, Sports Mo... | |
| 978 | Comedies, International Movies, Music & Musicals | |
| 1230 | Documentaries, International Movies | |
| 1814 | Action & Adventure, Documentaries, Internation... | |
| 1982 | Documentaries, International Movies | |
| 2760 | Documentaries, International Movies | |
| 3224 | Comedies, International Movies | |
| 3378 | Documentaries, International Movies | |
| 3553 | Documentaries, International Movies, Sports Mo... | |
| 3858 | Action & Adventure, Documentaries, Internation... | |
| 4387 | International TV Shows, Reality TV | |
| 6071 | Comedies, Dramas, International Movies | |
| 6227 | Action & Adventure, Comedies, Dramas | |
| 6514 | Documentaries, International Movies | |
| 7009 | Dramas, International Movies, Thrillers | |
| 7145 | Documentaries, International Movies, Sports Mo... | |

| | description |
|-----|---|
| 49 | When a carefree bachelor is unexpectedly left ... |
| 309 | Chasing extreme challenges, athletic daredevil... |
| 512 | Inscrutable, incomparable or both? Famed Frenc... |

978 A passionate pianist and a soulful puzzle make...
 1230 The rise and smash success of Elite modeling a...
 1814 Through deserts, above mountains and deep into...
 1982 Trace the overlapping journeys of exceptional ...
 2760 Trace the history of Hitler's armored private ...
 3224 When they flee Paris for a remote village in G...
 3378 From politicians to officers, many attempted t...
 3553 After a blackmailing scandal and being sidelin...
 3858 Attracted to thrills across the globe, intrep...
 4387 On this fun and funny competition show, home b...
 6071 Happily escaping a dictatorship, a Congolese d...
 6227 A young Senegalese-French man from humble root...
 6514 This documentary explores a bold World War II ...
 7009 With nuclear war looming, a military expert in...
 7145 This film examines the background and career o...

1.1 Matching string using - .str.contains()

```
[ ]: # select all records where the 'listed_in' column contains the text
      ↪ "international"
listed_in_index = netflix_df['listed_in'].str.contains('international',
      ↪ case=False)
listed_in_filterd = netflix_df[listed_in_index]
listed_in_filterd
```

```
[ ]:      show_id      type      title      director \
0         s1  TV Show          3%          NaN
1         s2   Movie       7:19  Jorge Michel Grau
2         s3   Movie      23:59    Gilbert Chan
5         s6  TV Show         46    Serdar Akar
6         s7   Movie       122    Yasir Al Yasiri
...      ...      ...      ...      ...
7780    s7781   Movie         Zoo    Shlok Sharma
7782    s7783   Movie         Zozo    Josef Fares
7783    s7784   Movie        Zubaan    Mozez Singh
7784    s7785   Movie  Zulu Man in Japan        NaN
7785    s7786  TV Show  Zumbo's Just Desserts        NaN
```

```

cast \
0    João Miguel, Bianca Comparato, Michel Gomes, R...
1    Demián Bichir, Héctor Bonilla, Oscar Serrano, ...
2    Tedd Chan, Stella Chung, Henley Hii, Lawrence ...
5    Erdal Beşikçioğlu, Yasemin Allen, Melis Birkan...
6    Amina Khalil, Ahmed Dawood, Tarek Lotfy, Ahmed...
...
7780  Shashank Arora, Shweta Tripathi, Rahul Kumar, ...
```

7782 Imad Creidi, Antoinette Turk, Elias Gergi, Car...
 7783 Vicky Kaushal, Sarah-Jane Dias, Raaghav Chanan...
 7784 Nasty C
 7785 Adriano Zumbo, Rachel Khoo

| | country | date_added \ |
|------|---|--------------------|
| 0 | Brazil | August 14, 2020 |
| 1 | Mexico | December 23, 2016 |
| 2 | Singapore | December 20, 2018 |
| 5 | Turkey | July 1, 2017 |
| 6 | Egypt | June 1, 2020 |
| ... | ... | ... |
| 7780 | India | July 1, 2018 |
| 7782 | Sweden, Czech Republic, United Kingdom, Denmar... | October 19, 2020 |
| 7783 | India | March 2, 2019 |
| 7784 | NaN | September 25, 2020 |
| 7785 | Australia | October 31, 2020 |

| | release_year | rating | duration \ |
|------|--------------|--------|------------|
| 0 | 2020 | TV-MA | 4 Seasons |
| 1 | 2016 | TV-MA | 93 min |
| 2 | 2011 | R | 78 min |
| 5 | 2016 | TV-MA | 1 Season |
| 6 | 2019 | TV-MA | 95 min |
| ... | ... | ... | ... |
| 7780 | 2018 | TV-MA | 94 min |
| 7782 | 2005 | TV-MA | 99 min |
| 7783 | 2015 | TV-14 | 111 min |
| 7784 | 2019 | TV-MA | 44 min |
| 7785 | 2019 | TV-PG | 1 Season |

| | listed_in \ |
|------|---|
| 0 | International TV Shows, TV Dramas, TV Sci-Fi &... |
| 1 | Dramas, International Movies |
| 2 | Horror Movies, International Movies |
| 5 | International TV Shows, TV Dramas, TV Mysteries |
| 6 | Horror Movies, International Movies |
| ... | ... |
| 7780 | Dramas, Independent Movies, International Movies |
| 7782 | Dramas, International Movies |
| 7783 | Dramas, International Movies, Music & Musicals |
| 7784 | Documentaries, International Movies, Music & M... |
| 7785 | International TV Shows, Reality TV |

| | 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...
5    A genetics professor experiments with a treatm...
6    After an awful accident, a couple admitted to ...
...
7780 A drug dealer starts having doubts about his t...
7782 When Lebanon's Civil War deprives Zozo of his ...
7783 A scrappy but poor boy worms his way into a ty...
7784 In this documentary, South African rapper Nast...
7785 Dessert wizard Adriano Zumbo looks for the nex...

```

```
[3636 rows x 12 columns]
```

```
[ ]:
```

2 Splitting Columns

Sometimes you can encounter a DataFrame column with data that we need to split on some delimiter. Lets say that we wish to know the amount of years from a realease a movie has been added. The “data_added” & “release_year” columns would be perfect for this. However note “data_added” column, we need to split it so so that the year is in it’s own column.

2.0.1 let do that :

```
[ ]: netflix_df[["date_added_part1", "date_added_yr"]] = netflix_df["date_added"].
      ↪str.split(", ", expand=True)
netflix_df
```

```
[ ]:
   show_id  type  title \
0        s1  TV Show    3%
1        s2  Movie    7:19
2        s3  Movie   23:59
3        s4  Movie     9
4        s5  Movie    21
...
7782 s7783  Movie    Zozo
7783 s7784  Movie    Zubaan
7784 s7785  Movie    Zulu Man in Japan
7785 s7786  TV Show    Zumbo's Just Desserts
7786 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...
```

| | | |
|------|-------------|---|
| ... | ... | ... |
| 7782 | Josef Fares | Imad Creidi, Antoinette Turk, Elias Gergi, Car... |
| 7783 | Mozez Singh | Vicky Kaushal, Sarah-Jane Dias, Raaghav Chanan... |
| 7784 | NaN | Nasty C |
| 7785 | NaN | Adriano Zumbo, Rachel Khoo |
| 7786 | Sam Dunn | NaN |

| | | |
|---|---------------|-------------------|
| | country | date_added \ |
| 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 |

| | | |
|------|---|--------------------|
| ... | ... | ... |
| 7782 | Sweden, Czech Republic, United Kingdom, Denmar... | October 19, 2020 |
| 7783 | India | March 2, 2019 |
| 7784 | NaN | September 25, 2020 |
| 7785 | Australia | October 31, 2020 |
| 7786 | United Kingdom, Canada, United States | March 1, 2020 |

| | | | |
|---|--------------|--------|------------|
| | release_year | rating | duration \ |
| 0 | 2020 | TV-MA | 4 Seasons |
| 1 | 2016 | TV-MA | 93 min |
| 2 | 2011 | R | 78 min |
| 3 | 2009 | PG-13 | 80 min |
| 4 | 2008 | PG-13 | 123 min |

| | | | |
|------|------|-------|----------|
| ... | ... | ... | |
| 7782 | 2005 | TV-MA | 99 min |
| 7783 | 2015 | TV-14 | 111 min |
| 7784 | 2019 | TV-MA | 44 min |
| 7785 | 2019 | TV-PG | 1 Season |
| 7786 | 2019 | TV-MA | 90 min |

| | |
|---|---|
| | listed_in \ |
| 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 |

| | |
|------|---|
| ... | ... |
| 7782 | Dramas, International Movies |
| 7783 | Dramas, International Movies, Music & Musicals |
| 7784 | Documentaries, International Movies, Music & M... |
| 7785 | International TV Shows, Reality TV |
| 7786 | Documentaries, Music & Musicals |

| | | |
|--|-------------|--------------------|
| | description | date_added_part1 \ |
|--|-------------|--------------------|

| | | |
|------|---|--------------|
| 0 | In a future where the elite inhabit an island ... | August 14 |
| 1 | After a devastating earthquake hits Mexico Cit... | December 23 |
| 2 | When an army recruit is found dead, his fellow... | December 20 |
| 3 | In a postapocalyptic world, rag-doll robots hi... | November 16 |
| 4 | A brilliant group of students become card-coun... | January 1 |
| ... | ... | ... |
| 7782 | When Lebanon's Civil War deprives Zozo of his ... | October 19 |
| 7783 | A scrappy but poor boy worms his way into a ty... | March 2 |
| 7784 | In this documentary, South African rapper Nast... | September 25 |
| 7785 | Dessert wizard Adriano Zumbo looks for the nex... | October 31 |
| 7786 | This documentary delves into the mystique behi... | March 1 |

| | date_added_yr |
|------|---------------|
| 0 | 2020 |
| 1 | 2016 |
| 2 | 2018 |
| 3 | 2017 |
| 4 | 2020 |
| ... | ... |
| 7782 | 2020 |
| 7783 | 2019 |
| 7784 | 2020 |
| 7785 | 2020 |
| 7786 | 2020 |

[7787 rows x 14 columns]

3 Dealing with NA Values

```
[ ]: # replaces NA value in Cast column with the string "no cast"
netflix_df["cast"].fillna(value="no cast", inplace=True)
netflix_df
```

| []: | show_id | type | title \ |
|------|---------|---------|---|
| 0 | s1 | TV Show | 3% |
| 1 | s2 | Movie | 7:19 |
| 2 | s3 | Movie | 23:59 |
| 3 | s4 | Movie | 9 |
| 4 | s5 | Movie | 21 |
| ... | ... | ... | ... |
| 7782 | s7783 | Movie | Zozo |
| 7783 | s7784 | Movie | Zubaan |
| 7784 | s7785 | Movie | Zulu Man in Japan |
| 7785 | s7786 | TV Show | Zumbo's Just Desserts |
| 7786 | 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... |
| ... | ... | ... |
| 7782 | Josef Fares | Imad Creidi, Antoinette Turk, Elias Gergi, Car... |
| 7783 | Mozez Singh | Vicky Kaushal, Sarah-Jane Dias, Raaghav Chanan... |
| 7784 | NaN | Nasty C |
| 7785 | NaN | Adriano Zumbo, Rachel Khoo |
| 7786 | Sam Dunn | no cast |

| | country | date_added \ |
|------|---|--------------------|
| 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 |
| ... | ... | ... |
| 7782 | Sweden, Czech Republic, United Kingdom, Denmar... | October 19, 2020 |
| 7783 | India | March 2, 2019 |
| 7784 | NaN | September 25, 2020 |
| 7785 | Australia | October 31, 2020 |
| 7786 | United Kingdom, Canada, United States | March 1, 2020 |

| | release_year | rating | duration \ |
|------|--------------|--------|------------|
| 0 | 2020 | TV-MA | 4 Seasons |
| 1 | 2016 | TV-MA | 93 min |
| 2 | 2011 | R | 78 min |
| 3 | 2009 | PG-13 | 80 min |
| 4 | 2008 | PG-13 | 123 min |
| ... | ... | ... | ... |
| 7782 | 2005 | TV-MA | 99 min |
| 7783 | 2015 | TV-14 | 111 min |
| 7784 | 2019 | TV-MA | 44 min |
| 7785 | 2019 | TV-PG | 1 Season |
| 7786 | 2019 | TV-MA | 90 min |

| | listed_in \ |
|------|---|
| 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 |
| ... | ... |
| 7782 | Dramas, International Movies |

```

7783      Dramas, International Movies, Music & Musicals
7784 Documentaries, International Movies, Music & M...
7785      International TV Shows, Reality TV
7786      Documentaries, Music & Musicals

```

```

                                description date_added_part1 \
0      In a future where the elite inhabit an island ...      August 14
1      After a devastating earthquake hits Mexico Cit...      December 23
2      When an army recruit is found dead, his fellow...      December 20
3      In a postapocalyptic world, rag-doll robots hi...      November 16
4      A brilliant group of students become card-coun...      January 1
...
7782 When Lebanon's Civil War deprives Zozo of his ...      October 19
7783 A scrappy but poor boy worms his way into a ty...      March 2
7784 In this documentary, South African rapper Nast...      September 25
7785 Dessert wizard Adriano Zumbo looks for the nex...      October 31
7786 This documentary delves into the mystique behi...      March 1

```

```

      date_added_yr
0      2020
1      2016
2      2018
3      2017
4      2020
...
7782      2020
7783      2019
7784      2020
7785      2020
7786      2020

```

```
[7787 rows x 14 columns]
```

4 Exploring 'Rating' Column

```
[ ]: list(netflix_df['rating'].unique())
```

```

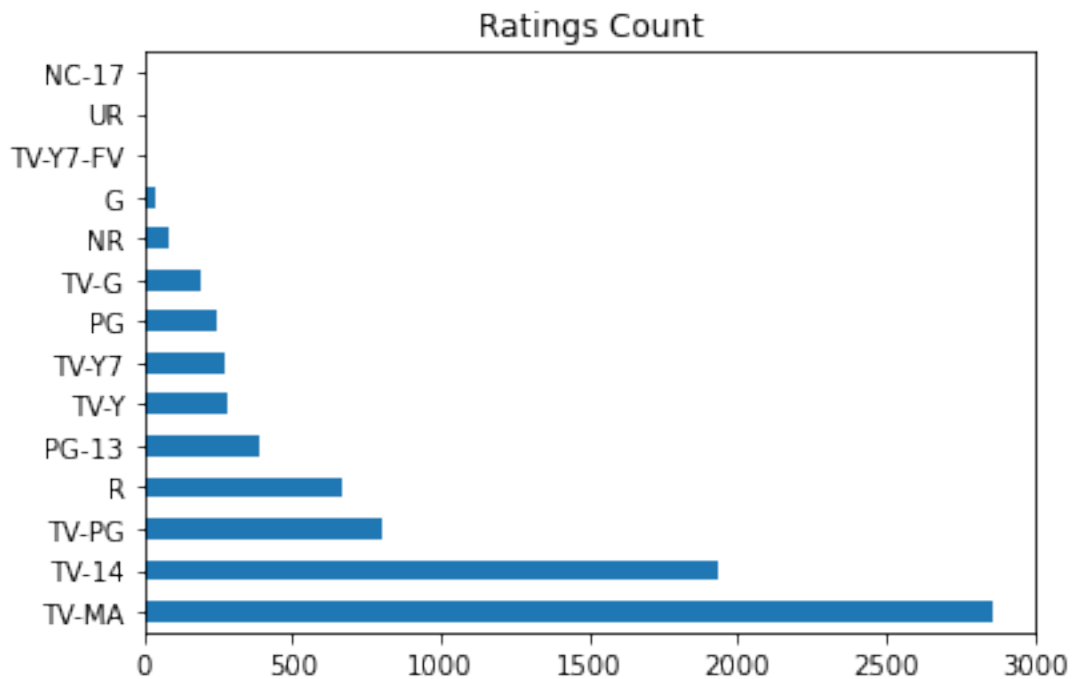
[ ]: ['TV-MA',
      'R',
      'PG-13',
      'TV-14',
      'TV-PG',
      'NR',
      'TV-G',
      'TV-Y',
      nan,

```

```
'TV-Y7',
'PG',
'G',
'NC-17',
'TV-Y7-FV',
'UR']
```

```
[ ]: netflix_df['rating'].value_counts().plot(kind='barh', title='Ratings Count',)
```

```
[ ]: <AxesSubplot:title={'center':'Ratings Count'}>
```



```
[ ]: # function used to filter rating column
```

```
def filter_rating(category):
    if 'TV-14' in category:
        return '14 & up'
    elif 'TV-MA' in category:
        return 'Mature audience'
    else:
        return 'Other'
```

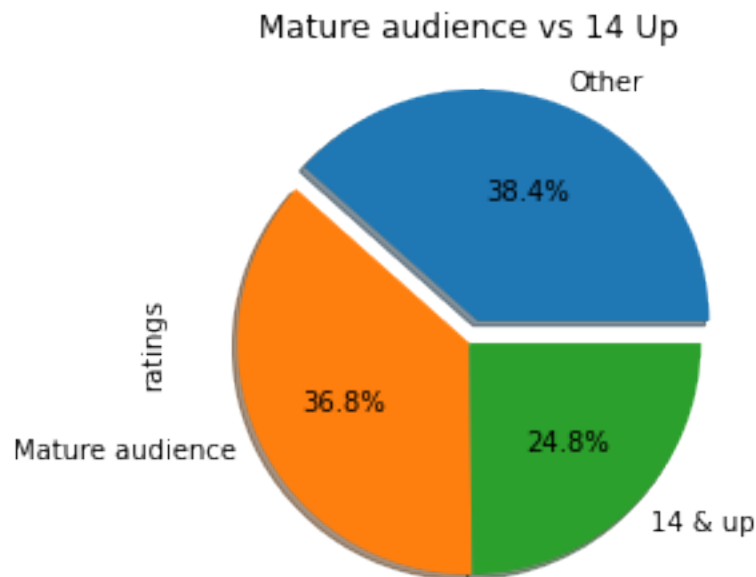
```
[ ]: netflix_df['Rating_Type'] = netflix_df['rating'].astype(str).
    ↪ apply(filter_rating) #create derived column, containing results from applying
    ↪ 'filter_rating' function on rating column.
    netflix_df[['rating', 'Rating_Type']][:5] # show first 5 rows of the two columns.
```



```
[ ]: rating      Rating_Type
0  TV-MA  Mature audience
1  TV-MA  Mature audience
2       R           Other
3  PG-13           Other
4  PG-13           Other
```

```
[ ]: netflix_df['Rating_Type'].value_counts().plot(kind='pie', label = 'ratings',
↪title="Mature audience vs 14 Up", legend=False, \
                                         autopct='%1.1f%%', explode=(0.
↪1, 0, 0), \
                                         shadow=True, startangle=0)
```

```
[ ]: <AxesSubplot:title={'center':'Mature audience vs 14 Up'}, ylabel='ratings'>
```



```
[ ]: # filter the netflix dataframe for Mature audience & 14 Up only (TV-MA & TV-14)
netflix_df[(netflix_df['Rating_Type'] == '14 & up') |
↪(netflix_df['Rating_Type'] == 'Mature audience')][:8]
```

```
[ ]: show_id    type title      director \
0      s1  TV Show   3%         NaN
1      s2   Movie  7:19  Jorge Michel Grau
5      s6  TV Show   46      Serdar Akar
6      s7   Movie  122    Yasir Al Yasiri
8      s9   Movie  706    Shravan Kumar
9     s10   Movie  1920    Vikram Bhatt
```

| | | | | |
|----|-----|---------|------|--------------|
| 10 | s11 | Movie | 1922 | Zak Hilditch |
| 11 | s12 | TV Show | 1983 | NaN |

| | cast | country \ |
|----|---|-----------------------|
| 0 | João Miguel, Bianca Comparato, Michel Gomes, R... | Brazil |
| 1 | Demián Bichir, Héctor Bonilla, Oscar Serrano, ... | Mexico |
| 5 | Erdal Beşikçioğlu, Yasemin Allen, Melis Birkan... | Turkey |
| 6 | Amina Khalil, Ahmed Dawood, Tarek Lotfy, Ahmed... | Egypt |
| 8 | Divya Dutta, Atul Kulkarni, Mohan Agashe, Anup... | India |
| 9 | Rajneesh Duggal, Adah Sharma, Indraneil Sengup... | India |
| 10 | Thomas Jane, Molly Parker, Dylan Schmid, Kaitl... | United States |
| 11 | Robert Więckiewicz, Maciej Musiał, Michalina O... | Poland, United States |

| | date_added | release_year | rating | duration \ |
|----|-------------------|--------------|--------|------------|
| 0 | August 14, 2020 | 2020 | TV-MA | 4 Seasons |
| 1 | December 23, 2016 | 2016 | TV-MA | 93 min |
| 5 | July 1, 2017 | 2016 | TV-MA | 1 Season |
| 6 | June 1, 2020 | 2019 | TV-MA | 95 min |
| 8 | April 1, 2019 | 2019 | TV-14 | 118 min |
| 9 | December 15, 2017 | 2008 | TV-MA | 143 min |
| 10 | October 20, 2017 | 2017 | TV-MA | 103 min |
| 11 | November 30, 2018 | 2018 | TV-MA | 1 Season |

| | listed_in \ |
|----|---|
| 0 | International TV Shows, TV Dramas, TV Sci-Fi &... |
| 1 | Dramas, International Movies |
| 5 | International TV Shows, TV Dramas, TV Mysteries |
| 6 | Horror Movies, International Movies |
| 8 | Horror Movies, International Movies |
| 9 | Horror Movies, International Movies, Thrillers |
| 10 | Dramas, Thrillers |
| 11 | Crime TV Shows, International TV Shows, TV Dramas |

| | description | date_added_part1 \ |
|----|---|--------------------|
| 0 | In a future where the elite inhabit an island ... | August 14 |
| 1 | After a devastating earthquake hits Mexico Cit... | December 23 |
| 5 | A genetics professor experiments with a treatm... | July 1 |
| 6 | After an awful accident, a couple admitted to ... | June 1 |
| 8 | When a doctor goes missing, his psychiatrist w... | April 1 |
| 9 | An architect and his wife move into a castle t... | December 15 |
| 10 | A farmer pens a confession admitting to his wi... | October 20 |
| 11 | In this dark alt-history thriller, a naïve law... | November 30 |

| | date_added_yr | Rating_Type |
|---|---------------|-----------------|
| 0 | 2020 | Mature audience |
| 1 | 2016 | Mature audience |
| 5 | 2017 | Mature audience |

| | | |
|----|------|-----------------|
| 6 | 2020 | Mature audience |
| 8 | 2019 | 14 & up |
| 9 | 2017 | Mature audience |
| 10 | 2017 | Mature audience |
| 11 | 2018 | Mature audience |

5 Group by, Aggregation & Sorting Values

```
[ ]: #Group By & Sort
netflix_movies_by_country = netflix_df.groupby("country")["show_id"].count().
    ↪reset_index().sort_values(by="show_id", ascending=False)

netflix_movies_by_country
```

```
[ ]:
      country  show_id
549  United States    2555
229      India      923
462  United Kingdom    397
291      Japan      226
394   South Korea    183
..      ...      ...
252  Indonesia, South Korea, Singapore      1
253      Indonesia, United Kingdom      1
254      Indonesia, United States      1
255      Iran, France      1
680      Zimbabwe      1
```

[681 rows x 2 columns]