## Exclamatory Data Analysis &

Data Visualization

Of

NETFLIX Movies and TV Shows
Using Python

## Introduction

Netflix.Inc American technology media is an and services company headquartered provider and production in Los Gatos, California. Netflix was founded in 1997 by Reed Hastings and Marc Randolph in Scotts Valley, California. The company's primary business is its subscription-based streaming service, which offers online streaming of a library of films and television series, including those produced in-house.

Netflix is a popular entertainment service used by people around the world. This EDA will explore the Netflix dataset through visualizations and graphs using python libraries, matplotlib, and seaborn.

We've used TV Shows and Movies listed on the Netflix dataset from Kaggle. The dataset consists of TV Shows and Movies available on Netflix as of 2019. The dataset is collected from Flixable, which third-party Netflix search engine. We've done the analysis in Python by using its libraries like Numpy, Pandas, matplotlib, Seaborn.

By using These libraries we are able to import the dataset, clean the data, analyse and visualize the data the dataset from Kaggle Database.

Code and Resources We have analysed the dataset using python. The dataset that we have taken can contains Information about movies, Tv shows ,documentaries that are owned by NETFLIX Platform . We have done EDA and Data Visualization for NETFLIX Data. Importing python Libraries - numpy,panda,matplotlib,seaborn import numpy as np import pandas as pd import matplotlib import matplotlib.pyplot as plt import seaborn as sns import warnings warnings.filterwarnings('ignore') sns.set\_style("darkgrid") matplotlib.rcParams["font.size"] = 14 matplotlib.rcParams["figure.facecolor"] = '#000000000' Reading Data from dataset netflix\_data=pd.read\_excel("netflix1.xlsx") netflix\_data show\_id title director cast date\_added release\_year rating duration listed\_in description Out[2]: type country Norm of the North: King Sized Richard Finn, Alan Marriott, Andrew Toth, Brian United States, India, South Children & Family Movies, Before planning an awesome September **0** 81145628 Movie 2019.0 90 min Tim Maltby PG 9, 2019 wedding for his gra... Adventure Dobson, Cole... 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Comedies merry misadventure... 6235 rows × 12 columns To know shape of Dataset netflix\_df.shape (6235, 12)To view first 5 rows netflix\_df.head(5) title director date\_added release\_year rating duration listed\_in description Out[5]: show\_id type cast country United States, India, South Norm of the North: King Richard Finn, Tim Alan Marriott, Andrew Toth, Brian September 9, Children & Family Before planning an awesome **0** 81145628 Movie 2019.0 90 min PG Maltby Korea, China 2019 Sized Adventure Dobson, Cole.. Movies, Comedies wedding for his gra... Jandino Asporaat riffs on the September 9, TV-**1** 80117401 Movie Jandino: Whatever it Takes **United Kingdom** 2016.0 94 min NaN Jandino Asporaat Stand-Up Comedy MA 2016 challenges of ra... TV-With the help of three human TV Peter Cullen, Sumalee Montano, September 8, 1 **2** 70234439 **Transformers Prime** NaN **United States** 2013.0 Kids' TV Show Y7-FV Frank Welker, J... 2018 Season allies, the Autob... TV Transformers: Robots in Will Friedle, Darren Criss, Constance September 8, When a prison ship crash **3** 80058654 NaN **United States** 2016.0 TV-Y7 Kids' TV unleashes hundreds of... Zimmer, ... Disguise Nesta Cooper, Kate Walsh, John When nerdy high schooler Dani September 8, **4** 80125979 Movie #realityhigh Fernando Lebrija **United States** 2017.0 TV-14 99 min Comedies Michael Higgins... finally attracts... To view last 5 rows netflix\_df.tail(5) listed\_in Out[6]: title director country date\_added release\_year rating duration description show\_id type cast Burnie Burns, Jason Saldaña, Gustavo United 13 TV Action & Adventure, TV This parody of first-person shooter **6230** 80000063 Red vs. Blue NaN NaN 2015.0 NR Seasons games, mil... Sorola, G.. States Comedies, TV Sci-Fi ... Marc Maron stars as Marc Maron. Marc Maron, Judd Hirsch, Josh Brener, United TV-**6231** 70286564 Maron NaN NaN TV Comedies 2016.0 Show Nora Zeh... States MA Seasons who interviews... Nursery rhymes and original music Little Baby Bum: Nursery Rhyme **6232** 80116008 Movie NaN NaN 2016.0 NaN 60 min NaN NaN Movies Friends for children... Daniel Radcliffe, Jon Hamm, Adam British TV Shows, TV Comedies, TV A Young Doctor's Notebook and United TV-Set during the Russian Revolution, **6233** 70281022 2013.0 Jennifer Aniston, Courteney Cox, Lisa United This hit sitcom follows the merry 2003.0 TV-14 Classic & Cult TV, TV Comedies **6234** 70153404 NaN Friends Seasons States misadventure... Displaying The Information of our Dataset netflix\_df.info() <class 'pandas.core.frame.DataFrame'> RangeIndex: 6235 entries, 0 to 6234 Data columns (total 12 columns): Non-Null Count Dtype Column 0 show\_id 6235 non-null object 6234 non-null 1 type object 2 title 6234 non-null object director 3 4265 non-null object 4 cast 5664 non-null object 5 country 5758 non-null object 6 date\_added 6223 non-null object release\_year 6234 non-null float64 8 rating 6224 non-null object 9 duration 6234 non-null object 10 listed\_in 6234 non-null object description 6234 non-null object dtypes: float64(1), object(11) memory usage: 584.7+ KB To determine dimension of dataset In [8]: netflix\_df.ndim Out[8]: To check Null values in our dataset netflix\_df.isnull() Out[9]: cast country date\_added release\_year rating duration listed\_in description show\_id type title director 0 False True False False False False False False False False True False True False 6230 False False False True False False False False False True False False 6231 False False False True False False True False False False False False False 6232 False False False False False False True True True True True 6233 False False False True False False True False False False False False 6234 False False False True False False True False False False False False 6235 rows × 12 columns To display total no.of null values netflix\_df.isnull().sum() show\_id type title director 1970 571 cast 477 country 12 date\_added release\_year 11 rating duration listed\_in description dtype: int64 To display sum of duplicates In [11]: netflix\_df.duplicated().sum() Out[11]: To display Column names In [12]: netflix\_df.columns Index(['show\_id', 'type', 'title', 'director', 'cast', 'country', 'date\_added', Out[12]: 'release\_year', 'rating', 'duration', 'listed\_in', 'description'], dtype='object') To display top 30 rows of basic info for a movie or a TV show netflix\_df[['title','cast','country','description']].head(30) title Out[13]: cast country description 0 Norm of the North: King Sized Adventure Alan Marriott, Andrew Toth, Brian Dobson, Cole... United States, India, South Korea, China Before planning an awesome wedding for his gra... 1 Jandino: Whatever it Takes Jandino Asporaat riffs on the challenges of ra... Jandino Asporaat **United Kingdom** 2 Peter Cullen, Sumalee Montano, Frank Welker, J... **United States** With the help of three human allies, the Autob.. **Transformers Prime** 3 **United States** When a prison ship crash unleashes hundreds of... Transformers: Robots in Disguise Will Friedle, Darren Criss, Constance Zimmer, ... 4 Nesta Cooper, Kate Walsh, John Michael Higgins... **United States** When nerdy high schooler Dani finally attracts... #realityhigh Alberto Ammann, Eloy Azorín, Verónica Echegui,... A young journalist is forced into a life of cr... **Apaches** Spain 6 In a dystopian future, an insurance adjuster f... Antonio Banderas, Dylan McDermott, Melanie Gri... Bulgaria, United States, Spain, Canada Automata Fabrizio Copano Fabrizio Copano takes audience participation t... Fabrizio Copano: Solo pienso en mi Fire Chasers 8 **United States** NaN As California's 2016 fire season rages, brave ... James Franco, Kate Hudson, Tom Wilkinson, Omar... United States, United Kingdom, Denmark, Sweden Good People A struggling couple can't believe their luck w... 10 Joaquín Reyes: Una y no más Joaquín Reyes Comedian and celebrity impersonator Joaquín Re... 11 Jim Sturgess, Sam Worthington, Ryan Kwanten, A... Netherlands, Belgium, United Kingdom, United S... When beer magnate Alfred "Freddy" Heineken is ... Kidnapping Mr. Heineken 12 Krish Trish and Baltiboy Damandeep Singh Baggan, Smita Malhotra, Baba S... NaN A team of minstrels, including a monkey, cat a... 13 Krish Trish and Baltiboy: Battle of Wits Damandeep Singh Baggan, Smita Malhotra, Baba S... NaN An artisan is cheated of his payment, a lion o... Krish Trish and Baltiboy: Best Friends Forever 14 Damandeep Singh Baggan, Smita Malhotra, Deepak... NaN A cat, monkey and donkey team up to narrate fo... 15 Krish Trish and Baltiboy: Comics of India NaN In three comic-strip-style tales, a boy tries ... Damandeep Singh Baggan, Smita Malhotra, Baba S... Krish Trish and Baltiboy: Oversmartness Never ... 16 Rishi Gambhir, Smita Malhotra, Deepak Chachra A cat, monkey and donkey learn the consequence... Damandeep Singh Baggan, Smita Malhotra, Baba S... 17 Animal minstrels narrate stories about a monke... Krish Trish and Baltiboy: Part II NaN Krish Trish and Baltiboy: The Greatest Trick Damandeep Singh Baggan, Smita Malhotra, Baba S... 18 NaN The consequences of trickery are explored in s.. 19 Love Karl Glusman, Klara Kristin, Aomi Muyock, Ugo ... France, Belgium A man in an unsatisfying marriage recalls the ... 20 **United States** A filmmaker working on a documentary about lov... Manhattan Romance Tom O'Brien, Katherine Waterston, Caitlin Fitz... Ron Perlman, Rupert Grint, Robert Sheehan, Ste. A brain-addled war vet, a failing band manager. 22 **Rolling Papers** NaN United States, Uruguay As the newspaper industry takes a hit, The Den... 23 Kate Beckinsale, Jim Sturgess, David Thewlis, .. **United States** Stonehearst Asylum In 1899, a young doctor arrives at an asylum f... 24 The Runner Nicolas Cage, Sarah Paulson, Connie Nielsen, W... **United States** A New Orleans politician finds his idealistic ... 25 Taissa Farmiga, Ben Rosenfield, Lindsay Burdge... As a volatile young couple who have been toget... 6 Years **United States** 26 Chaiyapol Pupart, Jintanutda Lummakanon, Worra... Castle of Stars NaN As four couples with different lifestyles go t... 27 Women who've been sexually brutalized in war-t... City of Joy NaN United States, 28 NaN First and Last NaN Take an intimate look at the emotionally charg... 29 Laddaland Saharat Sangkapreecha, Pok Piyatida Woramusik,... Thailand When a family moves into an upscale housing de... To Display different movies and Tv shows details in Netflix of Top 15 data In [14]: netflix\_df[['title','type','country','release\_year','duration','listed\_in']].head(15) duration Out[14]: title country release\_year listed\_in type Norm of the North: King Sized Adventure Children & Family Movies, Comedies Movie United States, India, South Korea, China 2019.0 90 min Jandino: Whatever it Takes 2016.0 94 min Stand-Up Comedy 1 Movie United Kingdom Transformers Prime TV Show 2 **United States** 2013.0 1 Season Kids' TV 3 Transformers: Robots in Disguise TV Show **United States** 2016.0 1 Season Kids' TV 4 **United States** #realityhigh Movie 2017.0 Comedies 2016.0 1 Season Crime TV Shows, International TV Shows, Spanis... Apaches TV Show Spain 6 Bulgaria, United States, Spain, Canada International Movies, Sci-Fi & Fantasy, Thrillers Automata Movie 2014.0 110 min Fabrizio Copano: Solo pienso en mi Movie Chile 2017.0 60 min Stand-Up Comedy 8 Fire Chasers TV Show **United States** 2017.0 1 Season Docuseries, Science & Nature TV Good People United States, United Kingdom, Denmark, Sweden Action & Adventure, Thrillers 9 90 min Movie 2014.0 10 Joaquín Reyes: Una y no más 78 min Stand-Up Comedy Movie 2017.0 Netherlands, Belgium, United Kingdom, United S.. 11 Kidnapping Mr. Heineken 2015.0 Action & Adventure, Dramas, International Movies Movie 95 min Children & Family Movies 12 Krish Trish and Baltiboy NaN 2009.0 Movie 58 min Children & Family Movies 13 Krish Trish and Baltiboy: Battle of Wits NaN 2013.0 62 min Movie 14 Krish Trish and Baltiboy: Best Friends Forever NaN 2016.0 Children & Family Movies Movie 65 min Data cleaning In [15]: #Handling missing value netflix\_df.director.fillna("No Director", inplace=True) netflix\_df.cast.fillna("No Cast", inplace=True) netflix\_df.country.fillna("Country Unavailable", inplace=True) netflix\_df.dropna(subset=["date\_added", "rating"], inplace=True) **Data Visualization Netflix Content By Type** In [16]: plt.figure(figsize=(12,6)) plt.title("Percentage of Netflix Titles that are either Movies or TV Shows", fontsize=25, fontweight='bold') g = plt.pie(netflix\_df.type.value\_counts(), explode=(0.05,0.05), labels=netflix\_df.type.value\_counts().index, colors=['blue', 'yellow'], autopct='%1.1f%%', startangle=180, shadow=True) plt.show() Percentage of Netflix Titles that are either Movies or TV Shows TV Show 31.5% Movie Countries by the Amount that Produces Content filtered\_countries = netflix\_df.set\_index('title').country.str.split(', ', expand=True).stack().reset\_index(level=1, drop=True); filtered\_countries = filtered\_countries[filtered\_countries != 'Country Unavailable'] plt.figure(figsize=(13,7)) g = sns.countplot(y = filtered\_countries, order=filtered\_countries.value\_counts().index[:30]) plt.title('Top 30 Countries Contributor on Netflix') plt.xlabel('Titles') plt.ylabel('Country') plt.show() Top 30 Countries Contributor on Netflix United States India United Kingdom Canada France Japan Spain South Korea Germany Mexico Australia China Hong Kong Turkey Taiwan Argentina Belgium Brazil Italy Thailand Egypt Indonesia Philippines = Denmark Netherlands Colombia Nigeria Ireland Sweden South Africa 500 1000 2000 2500 1500 Titles Top Directors on Netflix In [18]: filtered\_directors = netflix\_df[netflix\_df.director != 'No Director'].set\_index('title').director.str.split(', ', expand=True).stack().reset\_index(level=1, drop=True) plt.figure(figsize=(13,7)) plt.title('Top 15 Director Based on The Number of Titles') sns.countplot(y = filtered\_directors, order=filtered\_directors.value\_counts().index[:15], palette='Reds') plt.show() Top 15 Director Based on The Number of Titles Jan Suter Raúl Campos Marcus Raboy Jay Karas Jay Chapman Steven Spielberg Martin Scorsese David Dhawan Shannon Hartman Lance Bangs Umesh Mehra Johnnie To Noah Baumbach Quentin Tarantino Robert Rodriguez 2.5 5.0 7.5 12.5 0.0 10.0 15.0 17.5 20.0 count Top Genres on Netflix In [19]: filtered\_genres = netflix\_df.set\_index('title').listed\_in.str.split(', ', expand=True).stack().reset\_index(level=1, drop=True); plt.figure(figsize=(10,10)) g = sns.countplot(y = filtered\_genres, order=filtered\_genres.value\_counts().index[:25]) plt.title('Top 25 Genres on Netflix') plt.xlabel('Titles') plt.ylabel('Genres') plt.show() Top 25 Genres on Netflix International Movies Dramas Comedies International TV Shows Documentaries TV Dramas Action & Adventure Independent Movies TV Comedies Thrillers Children & Family Movies Romantic Movies Crime TV Shows Kids' TV Stand-Up Comedy Docuseries Romantic TV Shows Horror Movies Music & Musicals British TV Shows Sci-Fi & Fantasy Sports Movies Reality TV Korean TV Shows TV Action & Adventure 1000 1250 1500 1750 2000 Titles Top actor movies in Netflix In [20] filtered\_cast\_movie = netflix\_df[netflix\_df.cast != 'No Cast'].set\_index('title').cast.str.split(', ', expand=True).stack().reset\_index(level=1, drop=True) plt.figure(figsize=(13,7)) plt.title('Top 25 Actor Movies Based on The Number of Titles') sns.countplot(y = filtered\_cast\_movie, order=filtered\_cast\_movie.value\_counts().index[:25], palette='pastel') plt.show() Top 25 Actor Movies Based on The Number of Titles Anupam Kher Shah Rukh Khan Om Puri Naseeruddin Shah Yuki Kaji Akshay Kumar Paresh Rawal Takahiro Sakurai Amitabh Bachchan Boman Irani Andrea Libman Ashleigh Ball John Čleese Kareena Kapoor David Attenborough Erin Fitzgerald Kay Kay Menon Vincent Tong Tara Strong Fred Tatasciore Gulshan Grover Daisuke Ono Kate Higgins Nicolas Cage Mamoru Miyano 5 15 20 25 30 count Summary 1. The most content type on Netflix is movies, 2. The country by the amount of the produces content is the United States, 3. The most popular director on Netflix, with the most titles, is Jan Suter. 4. International Movies is a genre that is mostly in Netflix, 5. The most popular actor on Netflix movie, based on the number of titles, is Anupam Kher.