Netflix-DA-Visual

March 25, 2025

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

[2]:
```
path = 'netflix - Sheet1.csv'
data = pd.read_csv(path)
df = pd.DataFrame(data)
df.head()
```

[2]:
```
  Release_Date                    Title  \
0   15-12-2021  Spider-Man: No Way Home
1   01-03-2022               The Batman
2   25-02-2022                  No Exit
3   24-11-2021                  Encanto
4   22-12-2021           The King's Man

                                            Overview  Popularity Vote_Count  \
0  Peter Parker is unmasked and no longer able to…    5083.954       8940
1  In his second year of fighting crime, Batman u…    3827.658       1151
2  Stranded at a rest stop in the mountains durin…    2618.087        122
3  The tale of an extraordinary family, the Madri…    2402.201       5076
4  As a collection of history's worst tyrants and…    1895.511       1793

  Vote_Average Original_Language                               Genre  \
0          8.3                en  Action, Adventure, Science Fiction
1          8.1                en            Crime, Mystery, Thriller
2          6.3                en                            Thriller
3          7.7                en  Animation, Comedy, Family, Fantasy
4            7                en    Action, Adventure, Thriller, War

                                          Poster_Url
0  https://image.tmdb.org/t/p/original/1g0dhYtq4i…
1  https://image.tmdb.org/t/p/original/74xTEgt7R3…
2  https://image.tmdb.org/t/p/original/vDHsLnOWKl…
3  https://image.tmdb.org/t/p/original/4j0PNHkMr5…
4  https://image.tmdb.org/t/p/original/aq4Pwv5Xeu…
```

[3]:
```
df.info()
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 9836 entries, 0 to 9835
Data columns (total 9 columns):
 #   Column             Non-Null Count  Dtype
---  ------             --------------  -----
 0   Release_Date       9836 non-null   object
 1   Title              9827 non-null   object
 2   Overview           9827 non-null   object
 3   Popularity         9826 non-null   float64
 4   Vote_Count         9826 non-null   object
 5   Vote_Average       9826 non-null   object
 6   Original_Language  9826 non-null   object
 7   Genre              9825 non-null   object
 8   Poster_Url         9825 non-null   object
dtypes: float64(1), object(8)
memory usage: 691.7+ KB
```

[4]:
```
df.duplicated().sum()
```

[4]:
```
7
```

[5]:
```
df['Release_Date'] = pd.to_datetime(df['Release_Date'], errors='coerce',␣
 ↪dayfirst=True)
df['Release_Date'] = df['Release_Date'].dt.year.astype('Int32')
df.head()
```

[5]:
```
   Release_Date                   Title  \
0          2021  Spider-Man: No Way Home
1          2022               The Batman
2          2022                  No Exit
3          2021                  Encanto
4          2021           The King's Man

                                            Overview  Popularity Vote_Count  \
0  Peter Parker is unmasked and no longer able to…    5083.954       8940
1  In his second year of fighting crime, Batman u…    3827.658       1151
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  Vote_Average Original_Language                               Genre  \
0          8.3                en  Action, Adventure, Science Fiction
1          8.1                en            Crime, Mystery, Thriller
2          6.3                en                            Thriller
3          7.7                en  Animation, Comedy, Family, Fantasy
4            7                en    Action, Adventure, Thriller, War
```

```
                                          Poster_Url
0  https://image.tmdb.org/t/p/original/1g0dhYtq4i…
1  https://image.tmdb.org/t/p/original/74xTEgt7R3…
2  https://image.tmdb.org/t/p/original/vDHsLnOWKl…
3  https://image.tmdb.org/t/p/original/4j0PNHkMr5…
4  https://image.tmdb.org/t/p/original/aq4Pwv5Xeu…
```

1 Dropping of columns

[7]:
```
cols = ['Overview', 'Original_Language', 'Poster_Url']
df.drop(cols, axis=1, inplace=True)
df.columns
```

[7]:
```
Index(['Release_Date', 'Title', 'Popularity', 'Vote_Count', 'Vote_Average',
       'Genre'],
      dtype='object')
```

[8]:
```
df.head()
```

[8]:
```
  Release_Date                    Title  Popularity Vote_Count Vote_Average  \
0         2021  Spider-Man: No Way Home    5083.954       8940          8.3
1         2022               The Batman    3827.658       1151          8.1
2         2022                  No Exit    2618.087        122          6.3
3         2021                  Encanto    2402.201       5076          7.7
4         2021           The King's Man    1895.511       1793            7

                                Genre
0  Action, Adventure, Science Fiction
1            Crime, Mystery, Thriller
2                            Thriller
3  Animation, Comedy, Family, Fantasy
4    Action, Adventure, Thriller, War
```

[9]:
```
df.dropna(inplace = True)
df.isna().sum()
```

[9]:
```
Release_Date    0
Title           0
Popularity      0
Vote_Count      0
Vote_Average    0
Genre           0
dtype: int64
```

2 Label Categorization

[11]:

```
df['Vote_Average'] = pd.to_numeric(df['Vote_Average'], errors='coerce')

desc=df['Vote_Average'].describe()
q1, q2, q3 = desc['25%'], desc['50%'], desc['75%']
#print (q1, q2, q3)
df['Category']=df['Vote_Average'].apply(lambda x: 'Popular' if x >=␣
  ↪df['Vote_Average'].describe()['75%'] else ('Average' if x >=␣
  ↪df['Vote_Average'].describe()['50%'] else ('Below Average' if x>=␣
  ↪df['Vote_Average'].describe()['25%'] else 'Not Popular')))

df.head()
```

```
5.9 6.5 7.1
```

[11]:

```
   Release_Date                    Title  Popularity Vote_Count  Vote_Average  \
0          2021  Spider-Man: No Way Home    5083.954       8940           8.3
1          2022               The Batman    3827.658       1151           8.1
2          2022                  No Exit    2618.087        122           6.3
3          2021                  Encanto    2402.201       5076           7.7
4          2021           The King's Man    1895.511       1793           7.0

                                Genre       Category
0  Action, Adventure, Science Fiction        Popular
1            Crime, Mystery, Thriller        Popular
2                            Thriller  Below Average
3  Animation, Comedy, Family, Fantasy        Popular
4    Action, Adventure, Thriller, War        Average
```

[12]:

```
df['Category'].value_counts()
```

[12]:

```
Category
Popular          2838
Average          2449
Below Average    2331
Not Popular      2207
Name: count, dtype: int64
```

3 Split Genre into list and explode the dataframe to have only one genre per row

[14]:

```
df['Genre'] = df['Genre'].str.split(', ')
df = df.explode('Genre').reset_index(drop=True)
df.head()
```

```
[14]:    Release_Date                    Title  Popularity  Vote_Count  Vote_Average  \
      0          2021  Spider-Man: No Way Home    5083.954        8940           8.3
      1          2021  Spider-Man: No Way Home    5083.954        8940           8.3
      2          2021  Spider-Man: No Way Home    5083.954        8940           8.3
      3          2022               The Batman    3827.658        1151           8.1
      4          2022               The Batman    3827.658        1151           8.1

                   Genre Category
      0           Action  Popular
      1        Adventure  Popular
      2  Science Fiction  Popular
      3            Crime  Popular
      4          Mystery  Popular
```

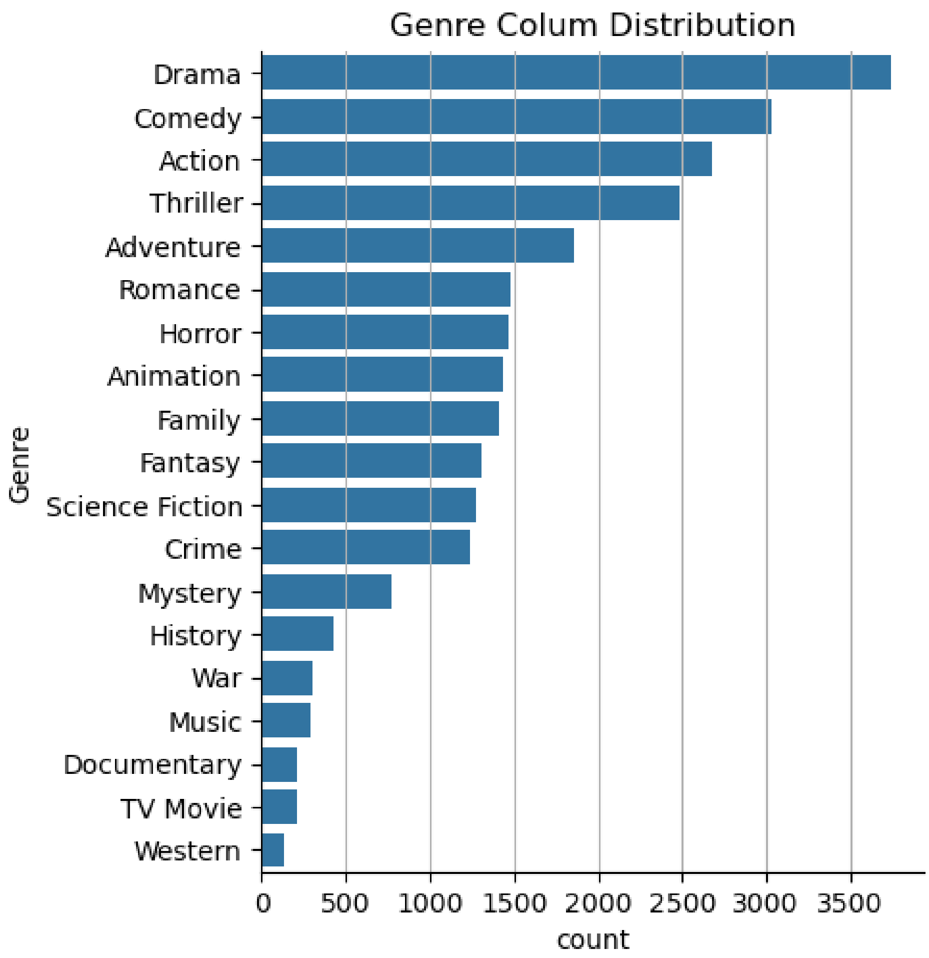
4 Data Visualisation

```
[29]: df['Genre'].describe()
```

```
[29]: count      25788
      unique        19
      top        Drama
      freq        3744
      Name: Genre, dtype: object
```

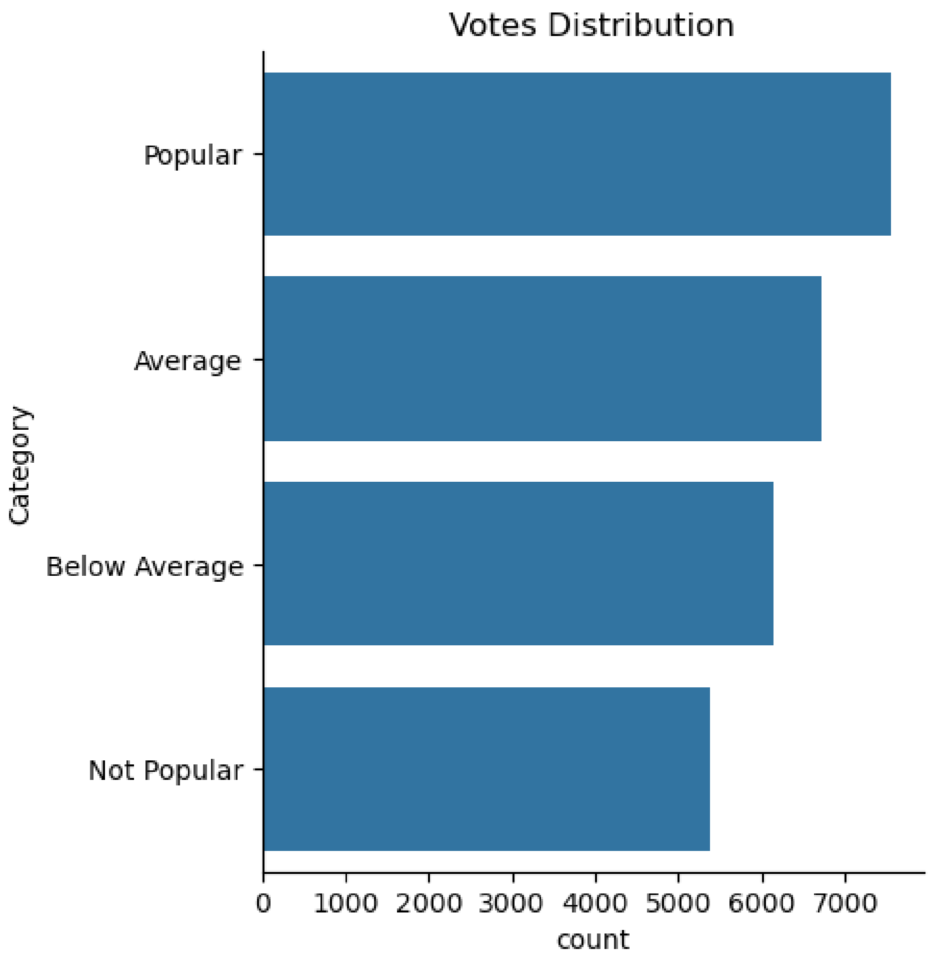
4.1 Q1. What is the most frequent genre of movies

```
[59]: sb.catplot(y='Genre', data=df, kind='count', order = df['Genre'].value_counts().
        ↪index)
      plt.grid(axis='x')
      plt.title('Genre Colum Distribution')
      plt.show()
```



4.2 Q2. Which Genre has the higest vote

```
[69]: sb.catplot(y='Category', data=df, kind='count', order = df['Category'].
        ↪value_counts().index)
      plt.title('Votes Distribution')
      plt.show()
```



4.3 Q3. Which movie has the higest populariry and wWat is its Genre

```
[78]: df[df['Popularity'] == df['Popularity'].max()]
```

```
[78]:    Release_Date                    Title  Popularity Vote_Count  Vote_Average  \
      0          2021  Spider-Man: No Way Home    5083.954       8940           8.3
      1          2021  Spider-Man: No Way Home    5083.954       8940           8.3
      2          2021  Spider-Man: No Way Home    5083.954       8940           8.3

                   Genre Category
      0           Action  Popular
      1        Adventure  Popular
      2  Science Fiction  Popular
```

4.4 Q4. Which movie has the lowest populariry and wWat is its Genre

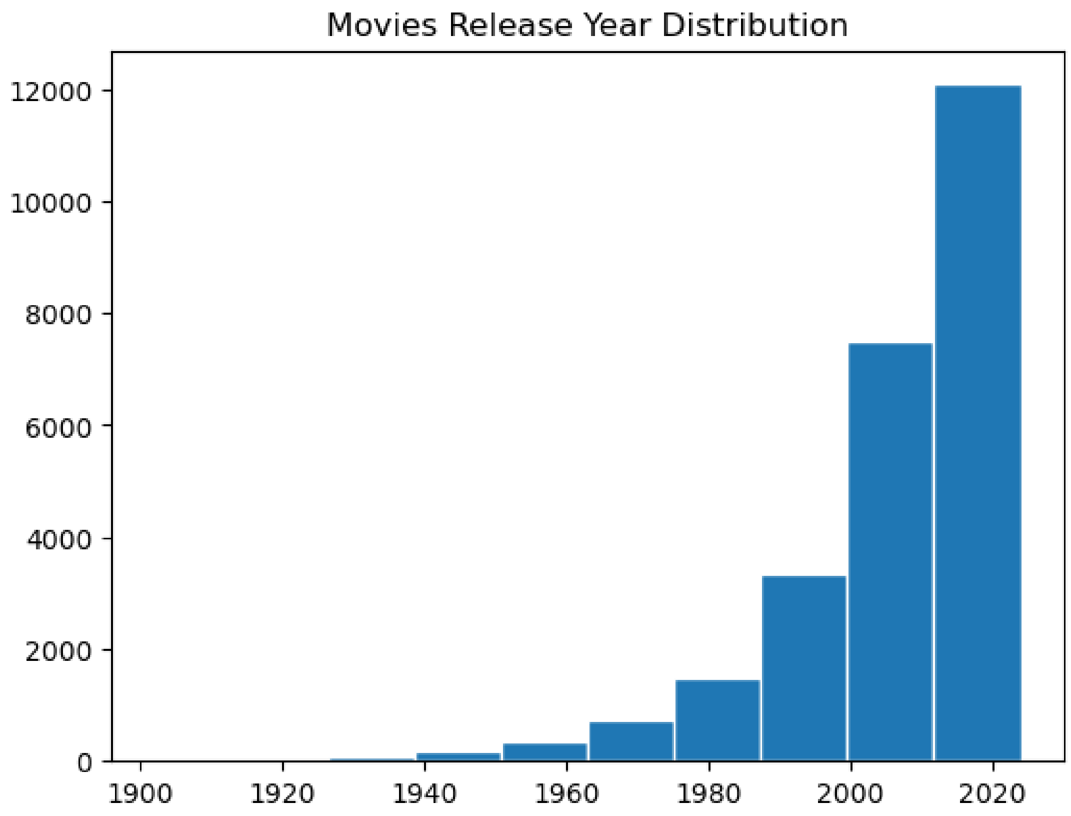
```
[81]: df[df['Popularity'] == df['Popularity'].min()]
```

```
[81]:        Release_Date                                 Title  Popularity  \
      25782          2021  The United States vs. Billie Holiday      13.354
      25783          2021  The United States vs. Billie Holiday      13.354
      25784          2021  The United States vs. Billie Holiday      13.354
      25785          1984                               Threads      13.354
      25786          1984                               Threads      13.354
      25787          1984                               Threads      13.354

            Vote_Count  Vote_Average            Genre Category
      25782        152           6.7            Music  Average
      25783        152           6.7            Drama  Average
      25784        152           6.7          History  Average
      25785        186           7.8              War  Popular
      25786        186           7.8            Drama  Popular
      25787        186           7.8  Science Fiction  Popular
```

4.5 Q5. Which year has the most filmed movies

```
[105]: df['Release_Date'].hist(edgecolor='white')
       plt.title('Movies Release Year Distribution')
       plt.grid(False)
       plt.show()
```



5 Summary

Q1. What is the most frequent genre of movies

The most frequent Genre of Movies is **Drama** having frequency of **3744.**

Q2. Which Genre has the higest vote

The Genre with the Higest vote is Drama having **25.5%** of dataset with popular votes

Q3. Which movie has the higest populariry and wWat is its Genre

The movie with the highest vote is **“Spider-Man: No Way Home”** having the higest vote of **8940**.

Q4. Which movie has the lowest populariry and wWat is its Genre

The movies with the lowest vote are **“The United States vs. Billie Holiday” & “Threads”** having the lowest vote of **152**.

Q5. Which year has the most filmed movies

The year **2020** has the higest filmed movies in our dataset