Exploratory Data Analysis of Movies

```
!apt-get install -qq -y -t /
!apt-get update -qq -y
!apt-get install -qq -y -t /
!apt-get install -qq -y -t /
!apt-get install -qq -y -t /
!apt-get install -qq -y -t /
!apt-get install -qq -y -t /
```

```
!pip install -qq -U -t /usr/local/lib/python3.6/dist-packages/dist -U --no-deps
!cp -r /usr/local/lib/python3.6/dist-packages/dist/* /usr/local/lib/python3.6/dist-packages
!rm -r /usr/local/lib/python3.6/dist-packages/dist
```

starting with https://www.kaggle.com/ryanschaefer/movie-analysis-and-visualization-pt0a

```
!mkdir -p ~/.kaggle/
!echo '{"username":"ryanschaefer","key":"a8e0e2c7d1ccb7ccb7d2d0d0d0d0d0d0"}'
!chmod 600 ~/.kaggle/kaggle.json
!kaggle -v
!kaggle competitions download -c tmdb-movie-metadata
!ls -lh *.zip
!unzip -qq -o *.zip
!ls -lh *.csv
```

```
Kaggle command_line_tool 1.5.12
Warning: Your Kaggle API key is readable by other users on this machine!
Downloading tmdb-movie-metadata.zip, 0 bytes compressed
Downloading tmdb-movie-metadata.zip, 0 bytes compressed
total 0
-rw-r--r-- 1 root root 0 Jan 1 1970 tmdb-movie-metadata.zip
total 0
-rw-r--r-- 1 root root 0 Jan 1 1970 tmdb-movie-metadata.zip
```

Make the column names uniform

```
!mv credits.csv credits.csv
!mv keywords.csv keywords.csv
!mv tmdb_5000_movies.csv tmdb_5000_movies.csv
!ls -lh *.csv
```

```
-rw-r--r-- 1 root root 0 Jan 1 1970 credits.csv
-rw-r--r-- 1 root root 0 Jan 1 1970 keywords.csv
-rw-r--r-- 1 root root 0 Jan 1 1970 tmdb_5000_movies.csv
```

Getting all current dependencies up-to-date and set up. Can also use: dfrankow/kaggle-sans-notebook

```
!mv tmdb_5000_movies.csv tmdb_5000_movies.csv
!mv credits.csv credits.csv
!mv keywords.csv keywords.csv
```

```
-rw-r--r-- 1 root root 0 Jan 1 1970 credits.csv
-rw-r--r-- 1 root root 0 Jan 1 1970 keywords.csv
-rw-r--r-- 1 root root 0 Jan 1 1970 tmdb_5000_movies.csv
```

Write-ups:

```
!pip install -qq -U -t /
!pip install -qq -U -t /
```

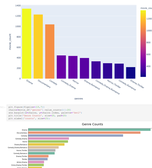
```
Requirement already up-to-date: /usr/local/lib/python3.6/dist-packages/dist (0.0.0)
Requirement already up-to-date: /usr/local/lib/python3.6/dist-packages/dist (0.0.0)
```

```
!ls -lh *.csv
```

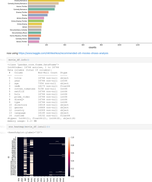
```
-rw-r--r-- 1 root root 0 Jan 1 1970 credits.csv
-rw-r--r-- 1 root root 0 Jan 1 1970 keywords.csv
-rw-r--r-- 1 root root 0 Jan 1 1970 tmdb_5000_movies.csv
```

```
!head -n 1 credits.csv
!head -n 1 keywords.csv
!head -n 1
```

```
plt.figure(figsize=(10,20))
sns.countplot(y='director', data=netflix_movies, order=netflix_movies['director'].value_counts().index[0:100])
plt.title('Most movies made by director')
plt.show()
```




```
plt.figure(figsize=(10,20))
sns.countplot(y='director', data=netflix_movies, order=netflix_movies['director'].value_counts().index[0:100], hue='type')
plt.title('Most movies made by director')
plt.show()
```



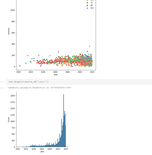

```
plt.figure(figsize=(10,20))
sns.countplot(y='country', data=netflix_movies, order=netflix_movies['country'].value_counts().index[0:100])
plt.title('Genre Counts')
plt.show()
```

see also https://www.kaggle.com/ahmedmohamed2054/netflix-movies-shows-analysis

```
netflix_df.info()
```

```
<class> DataFrame.info(verbose=True, buf=None, max_cols=None, memory_usage=None, show_counts=None, null_counts=None)
<class'pandas.core.frame.DataFrame'>
RangeIndex: 8807 entries, 0 to 8806
Data columns (total 12 columns):
 #   Column        Non-Null Count  Dtype
---  ------        --------------  -----
 0   show_id       8807 non-null   object
 1   type          8807 non-null   object
 2   title         8807 non-null   object
 3   director      6173 non-null   object
 4   cast          7982 non-null   object
 5   country       7976 non-null   object
 6   date_added    8797 non-null   object
 7   release_year  8807 non-null   int64
 8   rating        8803 non-null   object
 9   duration      8804 non-null   object
 10  listed_in     8807 non-null   object
 11  description   8807 non-null   object
dtypes: int64(1), object(11)
memory usage: 1.1 MB
```

```
sns.heatmap(netflix_df.isnull())
```



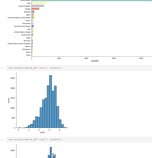

```
netflix_df.nunique()
```

```
show_id       8807
type             2
title         8807
director      4528
cast          7692
country        748
date_added    1767
release_year    74
rating          14
duration       220
listed_in      514
description   8775
dtypes: int64    1
       object   11
dtype: int64
```

```
netflix_df.shape
```

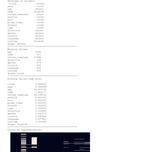
```
(8807, 12)
```

```
sns.countplot(netflix_movies['type'])
```




```
sns.countplot(netflix_movies['release_year'])
```

```
sns.countplot(netflix_movies['rating'])
```




```
sns.countplot(netflix_movies['duration'])
```

```
netflix_df.duplicated().sum()
```

```
0
```

```
netflix_df.drop_duplicates(inplace=True)
```

```
netflix_df.shape
```

```
(8807, 12)
```

```
netflix_df.isnull().sum
```

```
<bound_method_>
```

```
netflix_df.isnull().sum()
```

```
show_id       0
type          0
title         0
director      0
cast          0
country       0
date_added    0
release_year  0
rating        0
duration      0
listed_in     0
description   0
dtypes: int64    1
       object   11
dtype: int64
```

```
netflix_df.dropna(inplace=True)
```

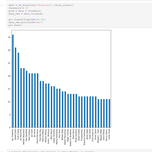
```
netflix_df.shape
```

```
(8807, 12)
```

```
netflix_df.isnull().sum()
```

```
show_id       0
type          0
title         0
director      0
cast          0
country       0
date_added    0
release_year  0
rating        0
duration      0
listed_in     0
description   0
dtypes: int64    1
       object   11
dtype: int64
```

```
sns.countplot(netflix_movies['type'], hue='rating')
```

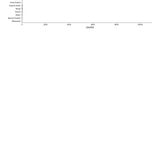



```
sns.countplot(netflix_movies['type'], hue='release_year')
```

```
sns.countplot(netflix_movies['type'], hue='duration')
```

```
sns.countplot(netflix_movies['type'], hue='listed_in')
```

```
sns.countplot(netflix_movies['type'], hue='description')
```




```
netflix_df.groupby('type').count()
```

```
      show_id  title  director  cast  country  date_added  release_year  rating  duration  listed_in  description
type
Movie    6131   6131      4528  5653     5691        6131          6131    6128      6128       6128         6128
TV Show  2676   2676      1645  2329     2285        2666          2676    2675      2676       2676         2676
```

```
netflix_df.groupby('type').count()['show_id']
```

```
type
Movie    6131
TV Show  2676
Name: show_id, dtype: int64
```

```
netflix_df.groupby('type').count()['show_id'].sort_values(ascending=False)
```

```
type
Movie    6131
TV Show  2676
Name: show_id, dtype: int64
```

```
netflix_df.groupby('type').count()['show_id'].sort_values(ascending=True)
```

```
type
TV Show  2676
Movie    6131
Name: show_id, dtype: int64
```

```
netflix_df.groupby('type').count()['show_id'].sort_values(ascending=False).head(5)
```

```
type
Movie    6131
TV Show  2676
Name: show_id, dtype: int64
```

```
netflix_df.groupby('type').count()['show_id'].sort_values(ascending=False).head(10)
```

```
type
Movie    6131
TV Show  2676
Name: show_id, dtype: int64
```

```
netflix_df.groupby('type').count()['show_id'].sort_values(ascending=False).tail(5)
```

```
type
Movie    6131
TV Show  2676
Name: show_id, dtype: int64
```

```
netflix_df.groupby('type').count()['show_id'].sort_values(ascending=False).tail(10)
```

```
type
Movie    6131
TV Show  2676
Name: show_id, dtype: int64
```

```
netflix_df.groupby('type').count()['show_id'].sort_values(ascending=False).tail(15)
```

```
type
Movie    6131
TV Show  2676
Name: show_id, dtype: int64
```

```
netflix_df.groupby('type').count()['show_id'].sort_values(ascending=False).tail(20)
```

```
type
Movie    6131
TV Show  2676
Name: show_id, dtype: int64
```

```
netflix_df.groupby('type').count()['show_id'].sort_values(ascending=False).tail(25)
```

```
type
Movie    6131
TV Show  2676
Name: show_id, dtype: int64
```

```
netflix_df.groupby('type').count()['show_id'].sort_values(ascending=False).tail(30)
```

```
type
Movie    6131
TV Show  2676
Name: show_id, dtype: int64
```

```
netflix_df.groupby('type').count()['show_id'].sort_values(ascending=False).tail(35)
```

```
type
Movie    6131
TV Show  2676
Name: show_id, dtype: int64
```

```
netflix_df.groupby('type').count()['show_id'].sort_values(ascending=False).tail(40)
```

```
type
Movie    6131
TV Show  2676
Name: show_id, dtype: int64
```

```
netflix_df.groupby('type').count()['show_id'].sort_values(ascending=False).tail(45)
```

```
type
Movie    6131
TV Show  2676
Name: show_id, dtype: int64
```

```
netflix_df.groupby('type').count()['show_id'].sort_values(ascending=False).tail(50)
```

```
type
Movie    6131
TV Show  2676
Name: show_id, dtype: int64
```

```
netflix_df.groupby('type').count()['show_id'].sort_values(ascending=False).tail(55)
```

```
type
Movie    6131
TV Show  2676
Name: show_id, dtype: int64
```

```
netflix_df.groupby('type').count()['show_id'].sort_values(ascending=False).tail(60)
```

```
type
Movie    6131
TV Show  2676
Name: show_id, dtype: int64
```

```
netflix_df.groupby('type').count()['show_id'].sort_values(ascending=False).tail(65)
```

```
type
Movie    6131
TV Show  2676
Name: show_id, dtype: int64
```

```
netflix_df.groupby('type').count()['show_id'].sort_values(ascending=False).tail(70)
```

```
type
Movie    6131
TV Show  2676
Name: show_id, dtype: int64
```

```
netflix_df.groupby('type').count()['show_id'].sort_values(ascending=False).tail(75)
```

```
type
Movie    6131
TV Show  2676
Name: show_id, dtype: int64
```

```
netflix_df.groupby('type').count()['show_id'].sort_values(ascending=False).tail(80)
```

```
type
Movie    6131
TV Show  2676
Name: show_id, dtype: int64
```

```
netflix_df.groupby('type').count()['show_id'].sort_values(ascending=False).tail(85)
```

```
type
Movie    6131
TV Show  2676
Name: show_id, dtype: int64
```

```
netflix_df.groupby('type').count()['show_id'].sort_values(ascending=False).tail(90)
```

```
type
Movie    6131
TV Show  2676
Name: show_id, dtype: int64
```

```
netflix_df.groupby('type').count()['show_id'].sort_values(ascending=False).tail(95)
```

```
type
Movie    6131
TV Show  2676
Name: show_id, dtype: int64
```

```
netflix_df.groupby('type').count()['show_id'].sort_values(ascending=False).tail(100)
```

```
type
Movie    6131
TV Show  2676
Name: show_id, dtype: int64
```

```
sns.countplot(netflix_movies['country'], hue='type')
```



```
sns.countplot(netflix_movies['type'], hue='director')
```



```
sns.countplot(netflix_movies['type'], hue='cast')
```



```
sns.countplot(netflix_movies['type'], hue='country')
```



```
sns.countplot(netflix_movies['type'], hue='date_added')
```



```
sns.countplot(netflix_movies['type'], hue='release_year')
```


Movie
TV Show
1925
1928
1929
1930
1931
1932
1933
1934
1936
1937
1938
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1940
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4000
4100
4200
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7300
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7900
8000
8100
8200
8300
8400
8500
8600
8700
8800
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000
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