NETFLIX ANALYSIS

SETTING UP THE DATASET

In [1]:

```
import pandas as pd
import numpy as np
from matplotlib import pyplot as plt
import seaborn as sns
```

In [2]:

```
nt = pd.read_csv('netflix.csv')
nt.head()
```

Out[2]:

	show_id	type	title	director	cast	country	date_added	release_year	rating	duration	listed_in	des
0	s1	Movie	Dick Johnson Is Dead	Kirsten Johnson	NaN	United States	September 25, 2021	2020	PG-13	90 min	Documentaries	n er
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	c pa Cap
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 hi p dr
3	s4	TV Show	Jailbirds New Orleans	NaN	NaN	NaN	September 24, 2021	2021	TV-MA	1 Season	Docuseries, Reality TV	fli ar
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 c ki

DATA CLEANING AND TRANSFORMATION

1. **Is there any missing data? Deal with them accordingly?**

In [3]:

```
nt.isna().sum()
```

Out[3]:

```
show_id            0
type               0
title              0
director        2634
cast             825
country          831
date_added        10
release_year       0
rating             4
duration           3
listed_in          0
description        0
dtype: int64
```

In [4]:

```
nt = nt.drop(['director', 'cast'], axis=1)
```

In [5]:

```
nt = nt.dropna()
nt.isna().sum()
```

Out[5]:

```
show_id         0
type            0
title           0
country         0
date_added      0
release_year    0
rating          0
duration        0
listed_in       0
description     0
dtype: int64
```

1. **Using the 'date_added' column a new column called 'year_added' that only has the year the title was added.**

In [6]:

```
nt['date_added']
```

Out[6]:

```
0        September 25, 2021
1        September 24, 2021
4        September 24, 2021
7        September 24, 2021
8        September 24, 2021
               ...
8801          March 9, 2016
8802     November 20, 2019
8804      November 1, 2019
8805      January 11, 2020
8806         March 2, 2019
Name: date_added, Length: 7961, dtype: object
```

In [7]:

```
nt['date_added'] = pd.to_datetime(nt['date_added'])
nt['date_added']
```

Out[7]:

```
0      2021-09-25
1      2021-09-24
4      2021-09-24
7      2021-09-24
8      2021-09-24
```

```
          ...
8801   2016-03-09
8802   2019-11-20
8804   2019-11-01
8805   2020-01-11
8806   2019-03-02
Name: date_added, Length: 7961, dtype: datetime64[ns]
```

In [8]:

```
nt['year_added'] = nt['date_added'].dt.year
nt['year_added']
```

Out[8]:

```
0       2021
1       2021
4       2021
7       2021
8       2021
        ...
8801    2016
8802    2019
8804    2019
8805    2020
8806    2019
Name: year_added, Length: 7961, dtype: int64
```

1. **Using the 'date_added' column a new column called 'month_added' that only has the month the title was added.**

In [9]:

```
nt['month_added'] = nt['date_added'].dt.month
nt['month_added']
```

Out[9]:

```
0        9
1        9
4        9
7        9
8        9
        ..
8801     3
8802    11
8804    11
8805     1
8806     3
Name: month_added, Length: 7961, dtype: int64
```

1. **Check the data types. Anything look odd? Adjust accordingly**

In [10]:

```
nt.info()
```

```
<class 'pandas.core.frame.DataFrame'>
Int64Index: 7961 entries, 0 to 8806
Data columns (total 12 columns):
 #   Column        Non-Null Count  Dtype         
---  ------        --------------  -----         
 0   show_id       7961 non-null   object        
 1   type          7961 non-null   object        
 2   title         7961 non-null   object        
 3   country       7961 non-null   object        
 4   date_added    7961 non-null   datetime64[ns]
 5   release_year  7961 non-null   int64         
 6   rating        7961 non-null   object        
 7   duration      7961 non-null   object        
 8   listed_in     7961 non-null   object
```

```
 9   description   7961 non-null   object
 10  year_added    7961 non-null   int64
 11  month_added   7961 non-null   int64
dtypes: datetime64[ns](1), int64(3), object(8)
memory usage: 808.5+ KB
```

DATA VISUALISATION

1. **What is the most popular release year for movies on Netflix?**

In [11]:

```
release_year_pivot = nt[nt.type == 'Movie'].pivot_table(index='release_year', values='sh
ow_id', aggfunc='count')
top5_release_year = release_year_pivot.sort_values(by='show_id', ascending=False)
top5_release_year.head(5)
```

Out[11]:

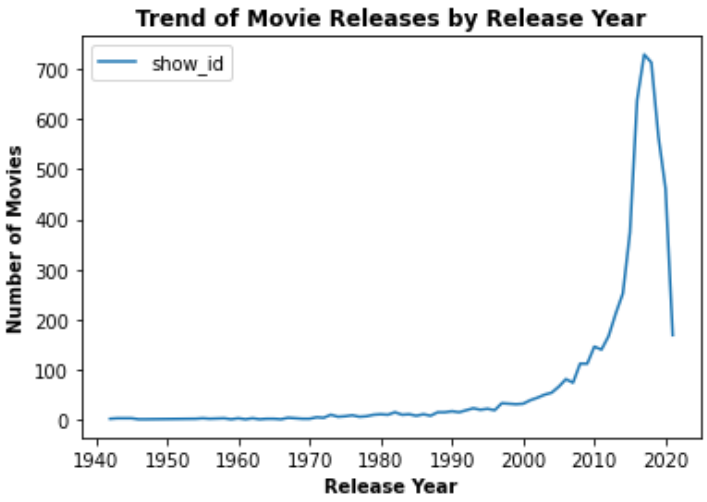
release_year	show_id
2017	729
2018	713
2016	638
2019	565
2020	461

In [12]:

```
sorted_release = release_year_pivot.sort_values(by='release_year')
plt.figure(figsize=(20,18))
sorted_release.plot(kind='line')

plt.xlabel('Release Year', weight='bold')
plt.ylabel('Number of Movies', weight='bold')
plt.title('Trend of Movie Releases by Release Year', weight='bold')
plt.show()
```

```
<Figure size 1440x1296 with 0 Axes>
```



1. **What year did Netflix add the most content to its platform?**

In [13]:

```
year_added = nt.pivot_table(index='year_added', values='show_id', aggfunc='count')
top5_year_added = year_added.sort_values(by='show_id', ascending=False)
```

```
top5_year_added.head()
```

Out[13]:

year_added	show_id
2019	1858
2020	1771
2018	1529
2021	1140
2017	1121

In [14]:

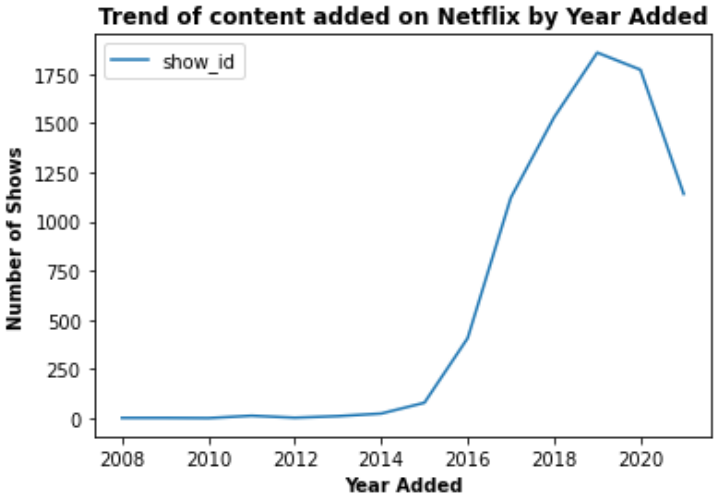
```
sorted_year_added = year_added.sort_values(by='year_added')
plt.figure(figsize=(20,18))
sorted_year_added.plot(kind='line')

plt.xlabel('Year Added', weight='bold')
plt.ylabel('Number of Shows', weight='bold')
plt.title('Trend of content added on Netflix by Year Added', weight='bold')
```

Out[14]:

```
Text(0.5, 1.0, 'Trend of content added on Netflix by Year Added')

<Figure size 1440x1296 with 0 Axes>
```



1. **What is the movie with the longest title in the dataset?**

In [15]:

```
movies = nt[nt['type'] == 'Movie']
movies['name_length'] = movies['title'].str.len()
```

```
C:\Users\USER\AppData\Local\Temp\ipykernel_10764\3500375024.py:2: SettingWithCopyWarning:

A value is trying to be set on a copy of a slice from a DataFrame.
Try using .loc[row_indexer,col_indexer] = value instead

See the caveats in the documentation: https://pandas.pydata.org/pandas-docs/stable/user_g
uide/indexing.html#returning-a-view-versus-a-copy
  movies['name_length'] = movies['title'].str.len()
```

In [16]:

```
movie_title_length = movies.pivot_table(index='title', values='name_length')
sorted_title_length = movie_title_length.sort_values(by='name_length', ascending=False)
sorted_title_length.head(5)
```

Out[16]:

title	name_length
Jim & Andy: The Great Beyond - Featuring a Very Special, Contractually Obligated Mention of Tony Clifton	104
The Power of Grayskull: The Definitive History of He-Man and the Masters of the Universe	88
Mike Birbiglia: What I Should Have Said Was Nothing: Tales from My Secret Public Journal	88
Steve Martin and Martin Short: An Evening You Will Forget for the Rest of Your Life	83
Power Rangers Samurai: Christmas Together, Friends Forever (Christmas Special)	78

1. What are the top 5 most popular movies genres?

In [17]:

```
genre_pivot = movies.pivot_table(index='listed_in', values='show_id', aggfunc='count')
sorted_genre_pivot = genre_pivot.sort_values(by='show_id', ascending=False)
top5_genre = sorted_genre_pivot.head(5)
top5_genre
```

Out[17]:

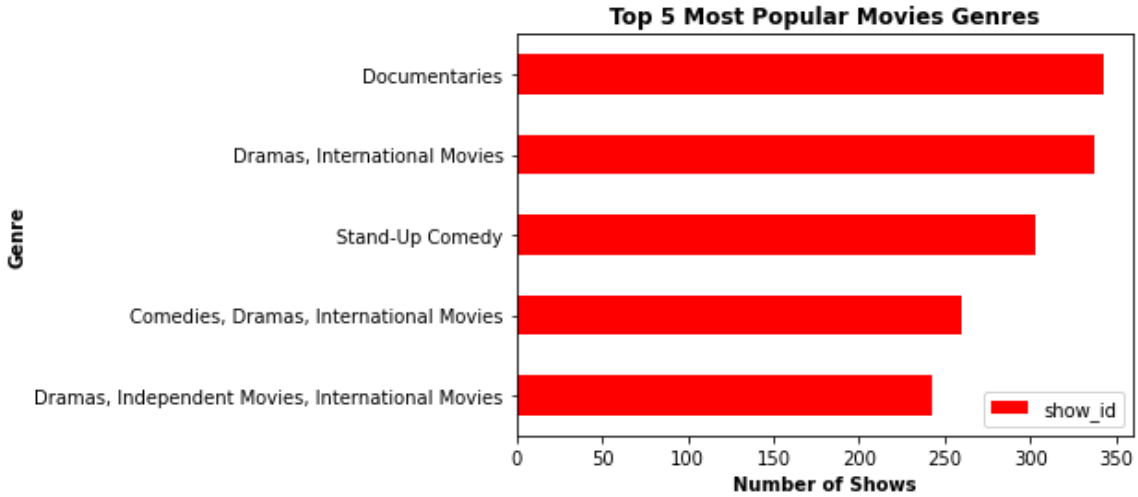
listed_in	show_id
Documentaries	343
Dramas, International Movies	337
Stand-Up Comedy	303
Comedies, Dramas, International Movies	260
Dramas, Independent Movies, International Movies	243

In [18]:

```
top5_genre = top5_genre[::-1]
plt.figure(figsize=(20,18))
top5_genre.plot(kind='barh', color='red')

plt.xlabel('Number of Shows', weight='bold')
plt.ylabel('Genre', weight='bold')
plt.title('Top 5 Most Popular Movies Genres', weight='bold')
plt.show()
```

```
<Figure size 1440x1296 with 0 Axes>
```



1. **Create a pie chart visualizing the proportion of movies vs TV shows. Label each section with the percentage.**

In [19]:

```
content_type = nt['type'].value_counts()
content_type
```

Out[19]:

```
Movie      5687
TV Show    2274
Name: type, dtype: int64
```

In [20]:

```
fig = plt.figure(figsize=(10,8))
plt.pie(content_type, labels=content_type.index, autopct='%1.1f%%')
plt.title('Distribution of Netflix Content by Content Type', weight='bold')
plt.show()
```