```
!pip install wordcloud


import pandas as pd
import matplotlib.pyplot as plt
import seaborn as sns
from wordcloud import WordCloud
import requests

plt.style.use("seaborn-v0_8")
sns.set_palette("viridis")


def download_file(url, filename):
    """Helper function to download IMDb dataset files."""
    r = requests.get(url, stream=True)
    with open(filename, 'wb') as f:
        f.write(r.content)
    print(f"Downloaded {filename}")

download_file("https://datasets.imdbws.com/title.basics.tsv.gz", "title.basics.tsv.gz")
download_file("https://datasets.imdbws.com/title.ratings.tsv.gz", "title.ratings.tsv.gz")


basics = pd.read_csv("title.basics.tsv.gz", sep="\t", na_values="\\N",
                     low_memory=False, compression="gzip")
ratings = pd.read_csv("title.ratings.tsv.gz", sep="\t", na_values="\\N",
                      low_memory=False, compression="gzip")

print("Basics dataset shape:", basics.shape)
print("Ratings dataset shape:", ratings.shape)

basics.head()
```

```
Requirement already satisfied: wordcloud in /usr/local/lib/python3.12/dist-packages (1.9.4)
Requirement already satisfied: numpy>=1.6.1 in /usr/local/lib/python3.12/dist-packages (from wordcloud) (2.0.2)
Requirement already satisfied: pillow in /usr/local/lib/python3.12/dist-packages (from wordcloud) (11.3.0)
Requirement already satisfied: matplotlib in /usr/local/lib/python3.12/dist-packages (from wordcloud) (3.10.0)
Requirement already satisfied: contourpy>=1.0.1 in /usr/local/lib/python3.12/dist-packages (from matplotlib->wordcloud) (1.3.3)
Requirement already satisfied: cycler>=0.10 in /usr/local/lib/python3.12/dist-packages (from matplotlib->wordcloud) (0.12.1)
Requirement already satisfied: fonttools>=4.22.0 in /usr/local/lib/python3.12/dist-packages (from matplotlib->wordcloud) (4.59.1)
Requirement already satisfied: kiwisolver>=1.3.1 in /usr/local/lib/python3.12/dist-packages (from matplotlib->wordcloud) (1.4.9)
Requirement already satisfied: packaging>=20.0 in /usr/local/lib/python3.12/dist-packages (from matplotlib->wordcloud) (25.0)
Requirement already satisfied: pyparsing>=2.3.1 in /usr/local/lib/python3.12/dist-packages (from matplotlib->wordcloud) (3.2.3)
Requirement already satisfied: python-dateutil>=2.7 in /usr/local/lib/python3.12/dist-packages (from matplotlib->wordcloud) (2.9.0.post
Requirement already satisfied: six>=1.5 in /usr/local/lib/python3.12/dist-packages (from python-dateutil>=2.7->matplotlib->wordcloud) (1
Downloaded title.basics.tsv.gz
Downloaded title.ratings.tsv.gz
Basics dataset shape: (11867249, 9)
Ratings dataset shape: (1606991, 3)
```

	tconst	titleType	primaryTitle	originalTitle	isAdult	startYear	endYear	runtimeMinutes	genres
0	tt0000001	short	Carmencita	Carmencita	0	1894.0	NaN	1	Documentary,Short
1	tt0000002	short	Le clown et ses chiens	Le clown et ses chiens	0	1892.0	NaN	5	Animation,Short
2	tt0000003	short	Poor Pierrot	Pauvre Pierrot	0	1892.0	NaN	5	Animation,Comedy,Romance
3	tt0000004	short	Un bon bock	Un bon bock	0	1892.0	NaN	12	Animation,Short
4	tt0000005	short	Blacksmith S	Blacksmith S	0	1893.0	NaN	1	Short

```
df = basics.merge(ratings, on="tconst", how="inner")

df = df[df["titleType"].isin(["movie", "tvSeries"])]


df = df[["primaryTitle", "titleType", "startYear",
         "runtimeMinutes", "genres", "averageRating", "numVotes"]]


df["startYear"] = pd.to_numeric(df["startYear"], errors="coerce")
df["runtimeMinutes"] = pd.to_numeric(df["runtimeMinutes"], errors="coerce")
```

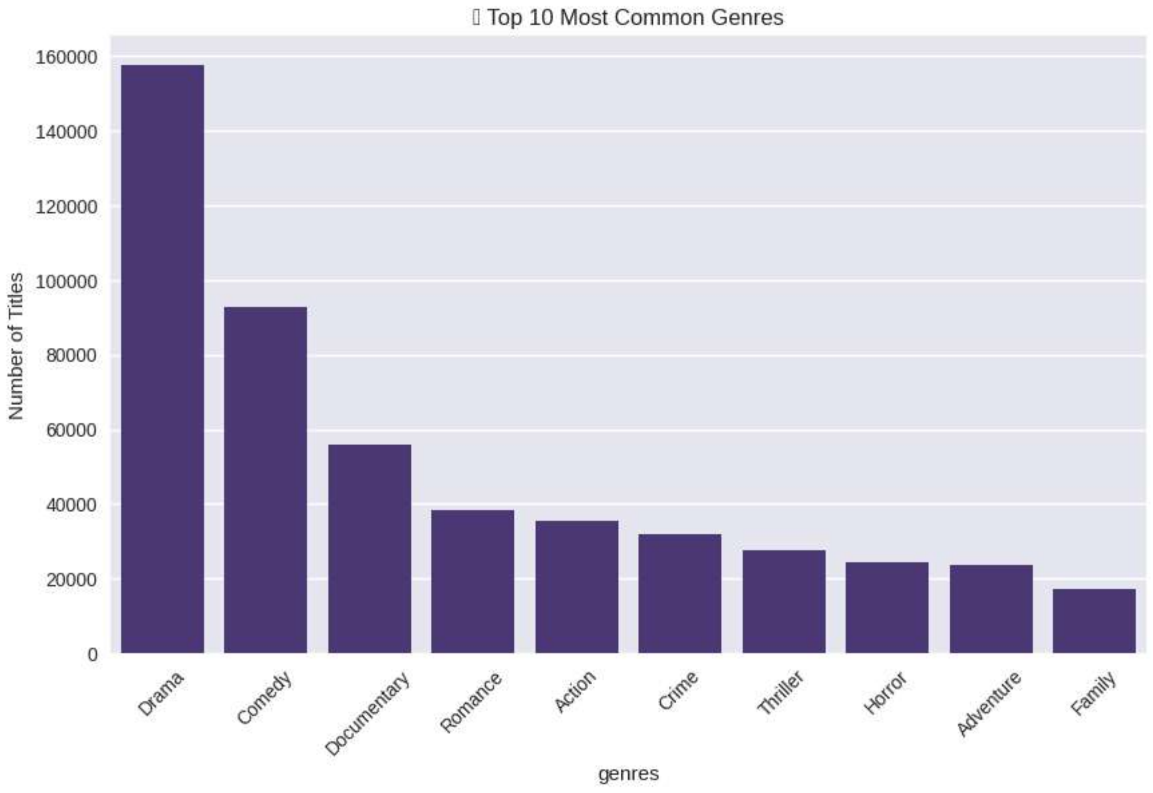
```
df = df.dropna()

print("Cleaned dataset shape:", df.shape)
df.head()
```

```
Cleaned dataset shape: (350277, 7)
```

	primaryTitle	titleType	startYear	runtimeMinutes	genres	averageRating	numVotes
8	Miss Jerry	movie	1894.0	45.0	Romance	5.3	228
144	The Corbett-Fitzsimmons Fight	movie	1897.0	100.0	Documentary,News,Sport	5.2	564
377	The Story of the Kelly Gang	movie	1906.0	70.0	Action,Adventure,Biography	6.0	1019
388	The Prodigal Son	movie	1907.0	90.0	Drama	5.3	34
448	The Fairylogue and Radio-Plays	movie	1908.0	120.0	Adventure,Fantasy	5.0	80

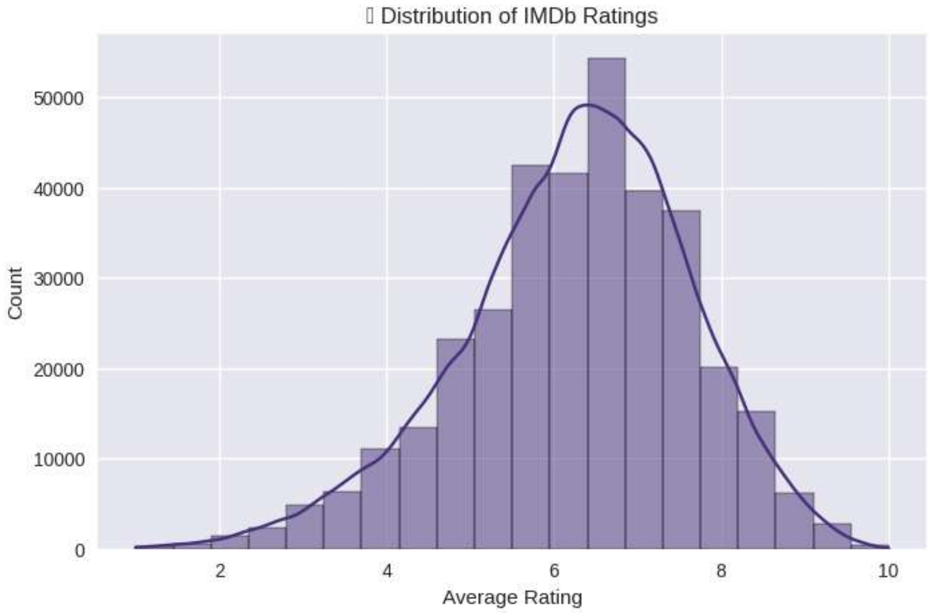
```
genre_counts = df["genres"].str.split(",").explode().value_counts()

plt.figure(figsize=(10,6))
sns.barplot(x=genre_counts.head(10).index, y=genre_counts.head(10).values)
plt.title("🎭 Top 10 Most Common Genres")
plt.ylabel("Number of Titles")
plt.xticks(rotation=45)
plt.show()
```

```
/usr/local/lib/python3.12/dist-packages/IPython/core/pylabtools.py:151: UserWarning: Glyph 127917 (\N{PERFORMING ARTS}) missing from fon
  fig.canvas.print_figure(bytes_io, **kw)
```



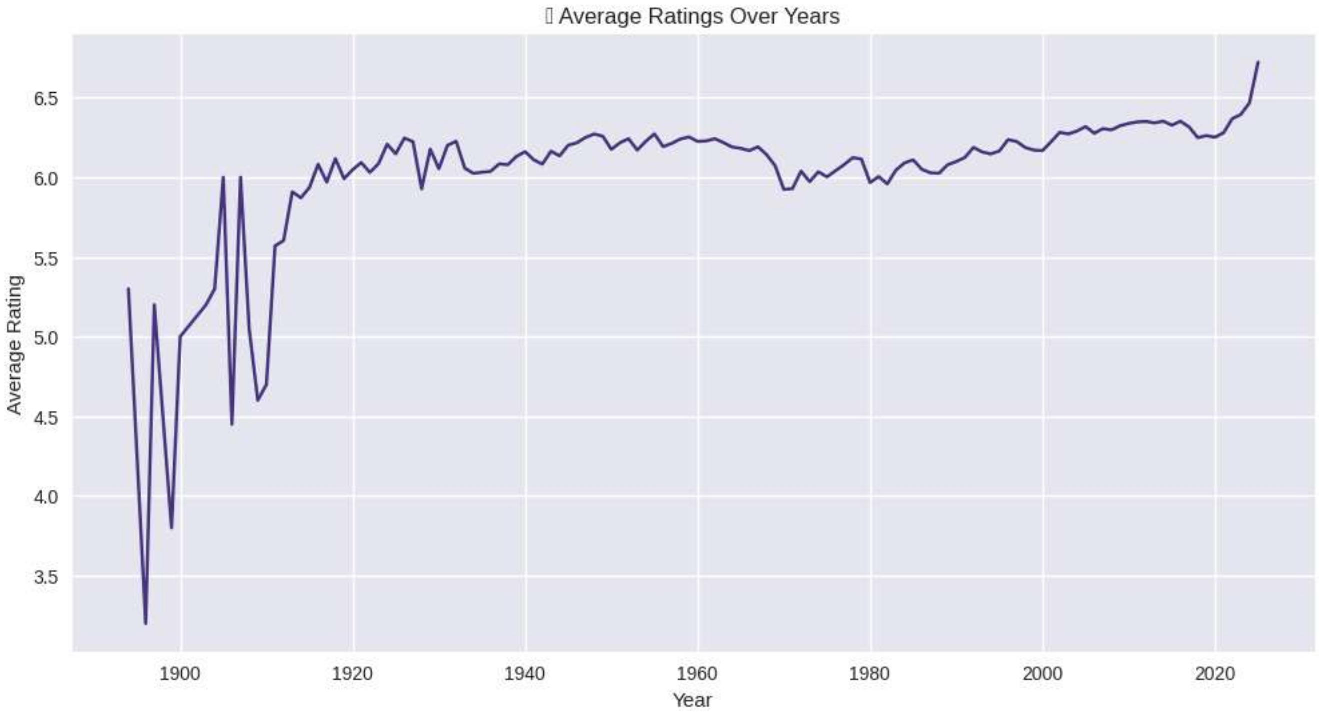
```
plt.figure(figsize=(8,5))
sns.histplot(df["averageRating"], bins=20, kde=True)
plt.title("⭐ Distribution of IMDb Ratings")
plt.xlabel("Average Rating")
plt.ylabel("Count")
plt.show()
```

```
/usr/local/lib/python3.12/dist-packages/IPython/core/pylabtools.py:151: UserWarning: Glyph 11088 (\N{WHITE MEDIUM STAR}) missing from fc
  fig.canvas.print_figure(bytes_io, **kw)
```



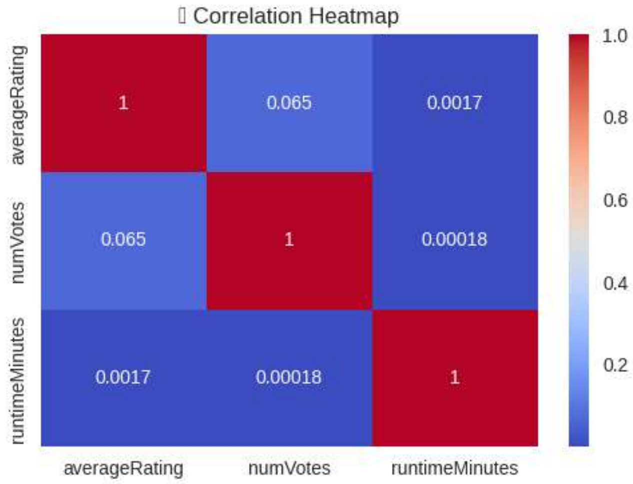
```
ratings_trend = df.groupby("startYear")["averageRating"].mean()

plt.figure(figsize=(12,6))
ratings_trend.plot()
plt.title("📈 Average Ratings Over Years")
plt.xlabel("Year")
plt.ylabel("Average Rating")
plt.show()
```

```
/usr/local/lib/python3.12/dist-packages/IPython/core/pylabtools.py:151: UserWarning: Glyph 128200 (\N{CHART WITH UPWARDS TREND}) missing
  fig.canvas.print_figure(bytes_io, **kw)
```



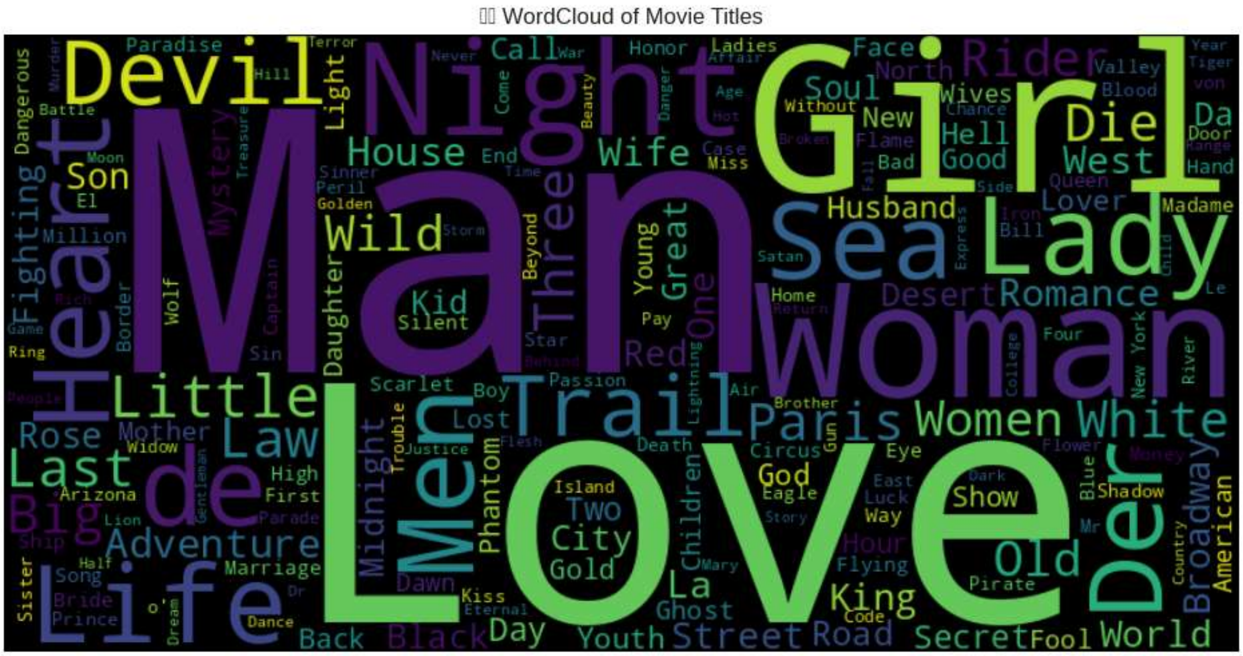
```
plt.figure(figsize=(6,4))
sns.heatmap(df[["averageRating", "numVotes", "runtimeMinutes"]].corr(),
            annot=True, cmap="coolwarm")
plt.title("🔗 Correlation Heatmap")
plt.show()
```

```
/usr/local/lib/python3.12/dist-packages/IPython/core/pylabtools.py:151: UserWarning: Glyph 128279 (\N{LINK SYMBOL}) missing from font(s)
  fig.canvas.print_figure(bytes_io, **kw)
```



```
text = " ".join(df["primaryTitle"].astype(str).values[:5000])
wordcloud = WordCloud(width=800, height=400, background_color="black").generate(text)

plt.figure(figsize=(12,6))
plt.imshow(wordcloud, interpolation="bilinear")
plt.axis("off")
plt.title("☁️ WordCloud of Movie Titles")
plt.show()
```

```
/usr/local/lib/python3.12/dist-packages/IPython/core/pylabtools.py:151: UserWarning: Glyph 9729 (\N{CLOUD}) missing from font(s) Liberat
  fig.canvas.print_figure(bytes_io, **kw)
/usr/local/lib/python3.12/dist-packages/IPython/core/pylabtools.py:151: UserWarning: Glyph 65039 (\N{VARIATION SELECTOR-16}) missing frc
  fig.canvas.print_figure(bytes_io, **kw)
```



```
print("===== SUMMARY =====")
print(f"Total titles analyzed: {len(df)}")
print("Most popular genres:", ", ".join(genre_counts.head(5).index))
print(f"Average IMDb rating across dataset: {df['averageRating'].mean():.2f}")
print("Yearly ratings trend (last 10 years):")
print(ratings_trend.tail(10))
print("\n===== RECOMMENDATIONS =====")
print("- Drama and Comedy dominate as the most common genres.")
print("- Average ratings cluster around ~6.8, meaning most shows/movies are rated 'okay'.")
print("- Ratings have been relatively stable, but slight dips appear in recent years.")
print("- Action & Sci-Fi titles have strong audience engagement (high votes).")
print("- Producers may focus on family-friendly and sci-fi genres, which show growth potential.")
```

```
===== SUMMARY =====
Total titles analyzed: 350277
Most popular genres: Drama, Comedy, Documentary, Romance, Action
Average IMDb rating across dataset: 6.25
Yearly ratings trend (last 10 years):
startYear
2016.0    6.351644
2017.0    6.315774
2018.0    6.248595
2019.0    6.261511
2020.0    6.251388
2021.0    6.279533
2022.0    6.367368
2023.0    6.394160
2024.0    6.467185
2025.0    6.723153
Name: averageRating, dtype: float64

===== RECOMMENDATIONS =====
- Drama and Comedy dominate as the most common genres.
- Average ratings cluster around ~6.8, meaning most shows/movies are rated 'okay'.
- Ratings have been relatively stable, but slight dips appear in recent years.
- Action & Sci-Fi titles have strong audience engagement (high votes).
- Producers may focus on family-friendly and sci-fi genres, which show growth potential.
```

Start coding or generate with AI.