Echelon Studios Movie Analysis

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Summary

Exploratory analysis of movie datasets from IMDB and The Numbers, attributing factors to a movie's success and failure.

These factors include:

- **Release Year** (e.g. 2010 - 2018)
- **Genre** (e.g. Comedy, Drama, Comedy/Romance, etc.)
- **Director**
- **Money** (gross domestic/worldwide revenue, return on investment, budgeting, etc.)

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Business Problem

Echelon Studios sees its competitors producing successful movies and wants to do the same. But, they need to know the factors that attribute to a movie's success.
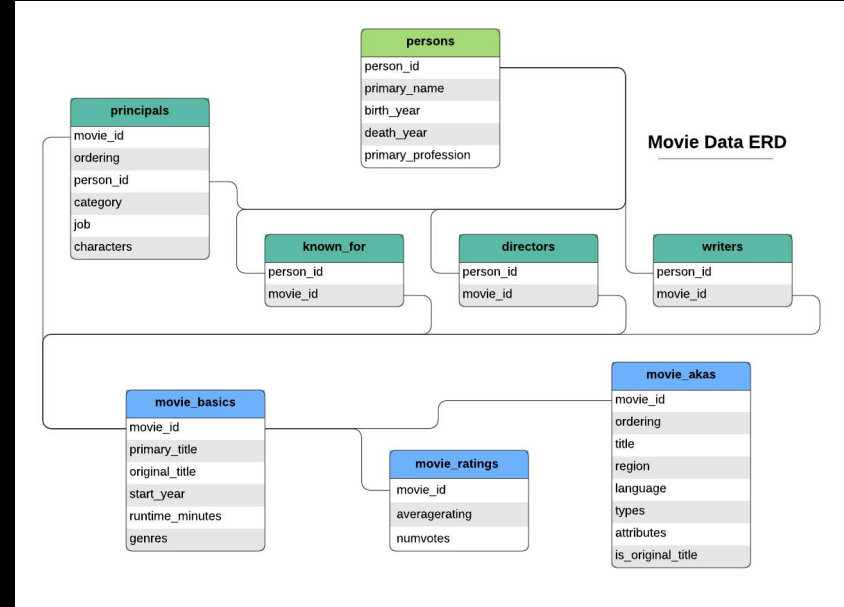
02

The Data

Primary Datasets Used:

There were multiple datasets provided. To avoid repeated data and to maximize efficiency, I only used the information contained in the IMDB database, along with the data from The Numbers.
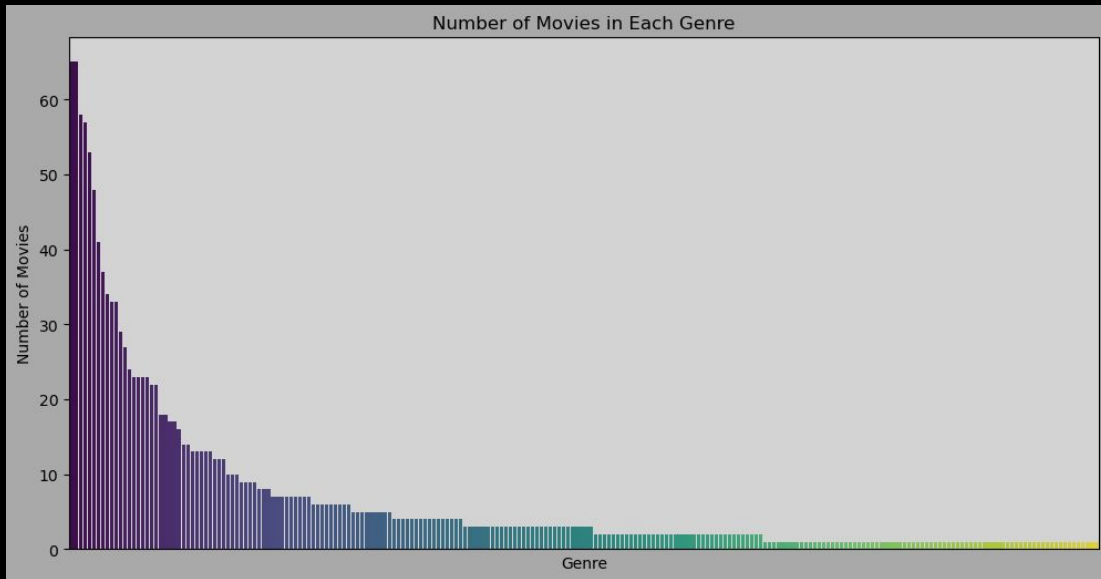
Genres

With about 230 different genres to choose from, I based my search on the most popular in order to filter the data effectively.

- Adventure|Animation|Comedy
- Drama

```
# Extract the top 3 most frequent movie genres from genre_counts
top_genres = genre_counts.head(3)
top_genres
```

```
genres
Adventure|Animation|Comedy    65
Drama                         65
Comedy|Drama|Romance          58
Name: count, dtype: int64
```


Number of Movies in Each Genre

Directors + Money

The next step I took was looking at the most popular directors within those three genres. From there, I compared their figures (e.g., production budget, gross revenue) to those of other movies within the genre.

For Adventure/Animation/Comedy films, Mike Mitchell is a popular director, having directed films like *Shrek Forever After* and *Trolls*.

Figures:

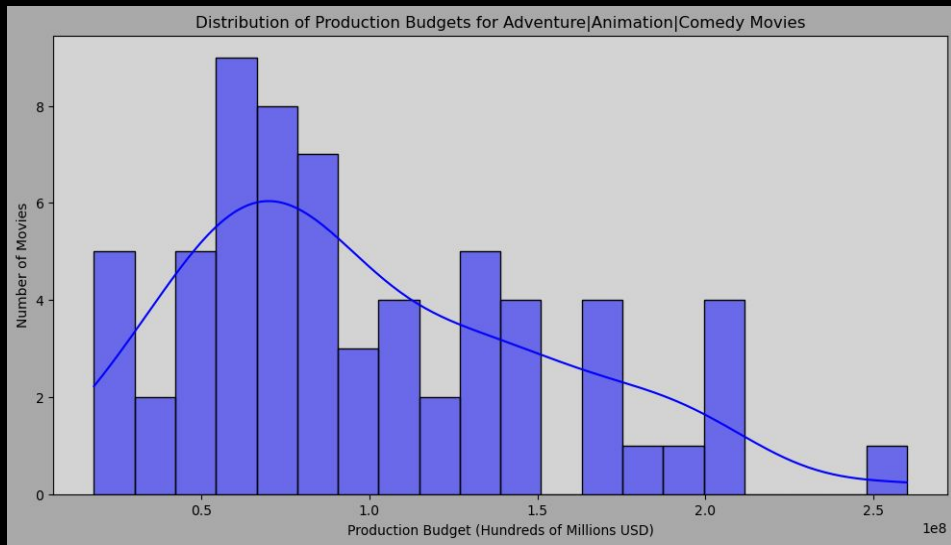*Shrek Forever After (2010)*
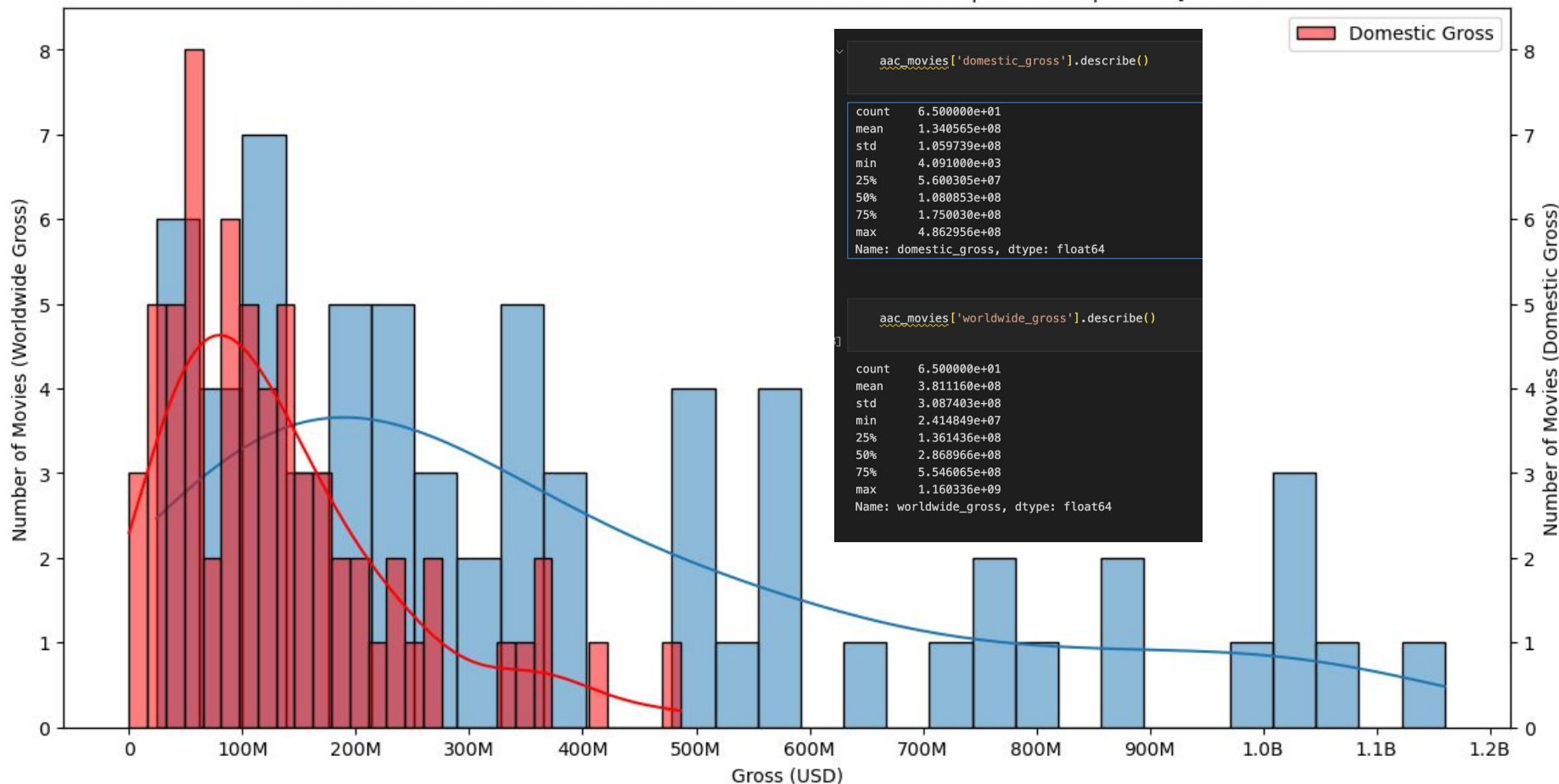- **Production Budget:** $165,000,000
- **Gross Domestic:** $238,746,787 (**45%** ROI)
- **Worldwide Domestic:** $756,244,673 (**358%** ROI)

Trolls (2016)
- **Production Budget:** $125,000,000
- **Gross Domestic:** $153,707,064 (**23%** ROI)
- **Worldwide Domestic**: $344,150,134 (**175%** ROI)

Distribution of Production Budgets for Adventure|Animation|Comedy Movies

Distribution of Domestic and Worldwide Gross for Adventure|Animation|Comedy Movies

```
aac_movies['domestic_gross'].describe()

count    6.500000e+01
mean     1.340565e+08
std      1.059739e+08
min      4.091000e+03
25%      5.600305e+07
50%      1.080853e+08
75%      1.750030e+08
max      4.862956e+08
Name: domestic_gross, dtype: float64


aac_movies['worldwide_gross'].describe()

count    6.500000e+01
mean     3.811160e+08
std      3.087403e+08
min      2.414849e+07
25%      1.361436e+08
50%      2.868966e+08
75%      5.546065e+08
max      1.160336e+09
Name: worldwide_gross, dtype: float64
```

Legend: Domestic Gross

X-axis: Gross (USD)
Left Y-axis: Number of Movies (Worldwide Gross)
Right Y-axis: Number of Movies (Domestic Gross)

Directors + Money

One of the more popular directors for Drama films is Alex Kendrick, directing movies like *War Room* and *Courageous*.

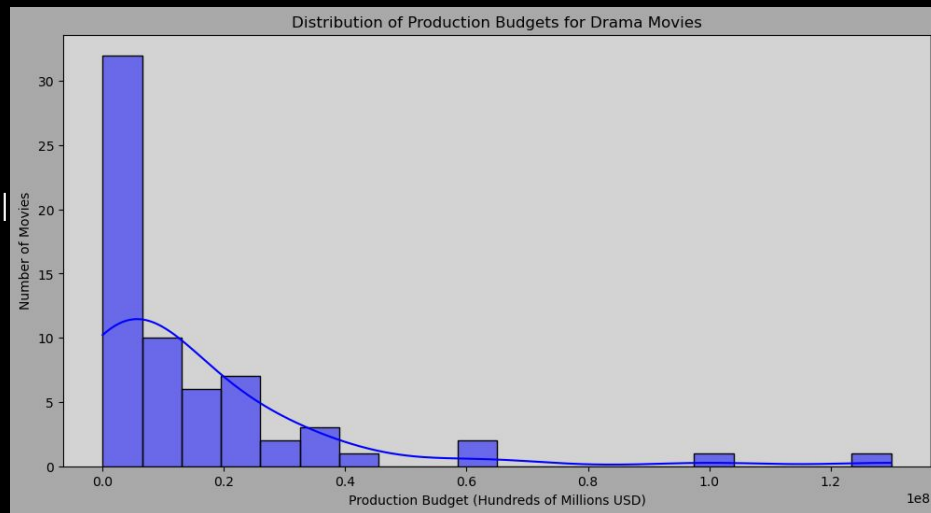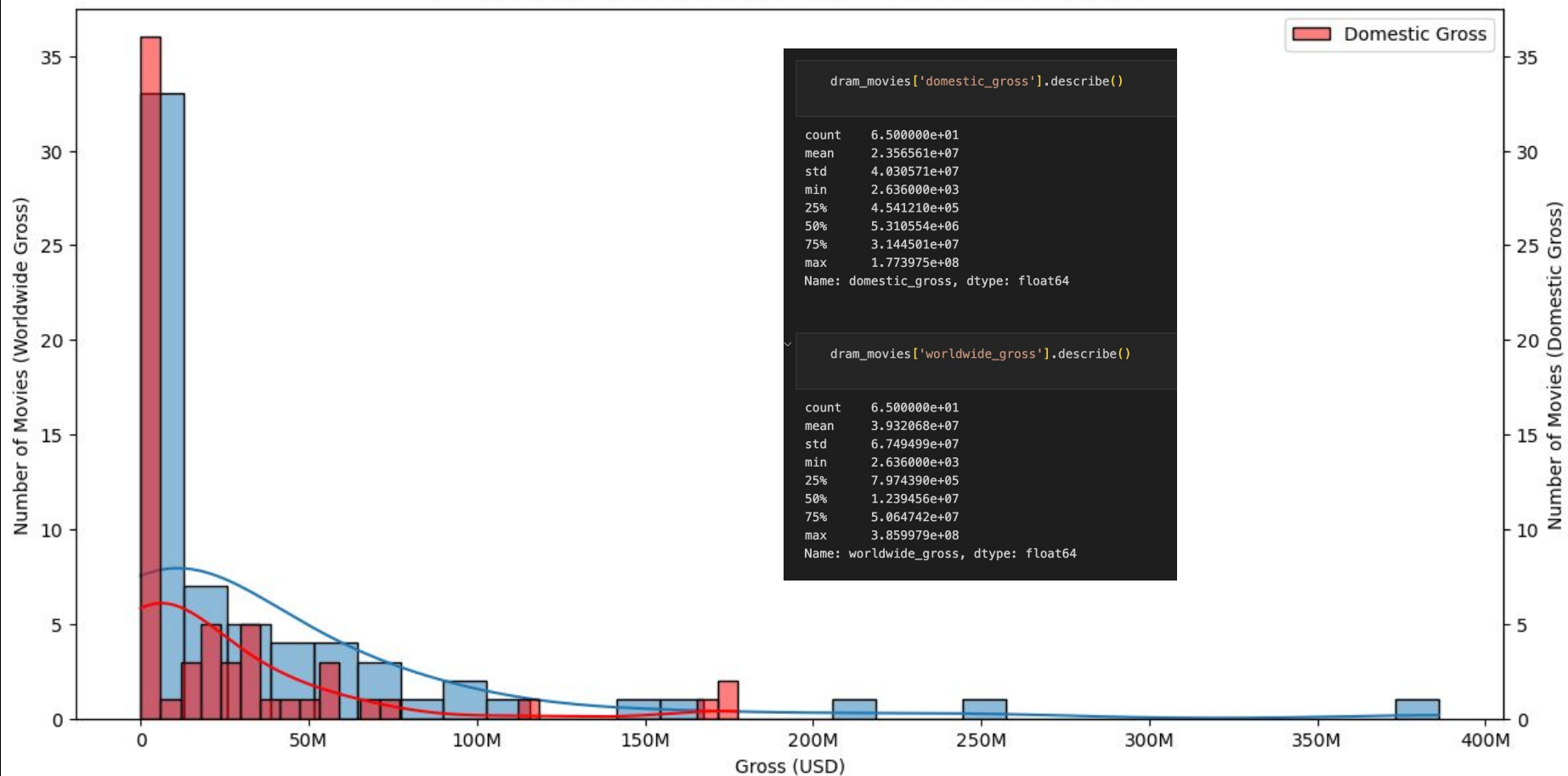<u>Figures:</u>

War Room (2015)
- **Production Budget:** $3,000,000
- **Gross Domestic:** $67,790,117 (**2160%** ROI)
- **Worldwide Domestic:** $73,975,239 (**2366%** ROI)

Courageous (2011)
- **Production Budget:** $2,000,000
- **Gross Domestic:** $34,522,221 (**1626%** ROI)
- **Gross Worldwide:** $35,185,884 (**1659%** ROI)

Distribution of Production Budgets for Drama Movies

Distribution of Domestic and Worldwide Gross for Drama Movies

Legend: Domestic Gross

```
dram_movies['domestic_gross'].describe()

count    6.500000e+01
mean     2.356561e+07
std      4.030571e+07
min      2.636000e+03
25%      4.541210e+05
50%      5.310554e+06
75%      3.144501e+07
max      1.773975e+08
Name: domestic_gross, dtype: float64
```

```
dram_movies['worldwide_gross'].describe()

count    6.500000e+01
mean     3.932068e+07
std      6.749499e+07
min      2.636000e+03
25%      7.974390e+05
50%      1.239456e+07
75%      5.064742e+07
max      3.859979e+08
Name: worldwide_gross, dtype: float64
```

Axis labels:
- Y-axis (left): Number of Movies (Worldwide Gross)
- Y-axis (right): Number of Movies (Domestic Gross)
- X-axis: Gross (USD)

03

Recommendations

1. For the most success, produce an Adventure/Animation/Comedy or Drama film.

2. For a highly popular and grossing film, hire Mike Mitchell to direct an Adventure/Animation/Comedy film.

3. For the most return on investment, hire Alex Kendrick to direct a Drama film.

Conclusion + Final Notes

- This data does have bias
  - Movies produced in 2010 have had more time to accumulate money than movies produced in 2015
- These figures are only as recent as 2018

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Thank you!