Box Office Prediction Project

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Background

The film industry is a major revenue generator globally, and box office earnings play a crucial role in the success of the industry.

Microsoft, a technology giant, has a significant presence in the entertainment industry through its Xbox gaming consoles and streaming services. By analyzing box office data, Microsoft can potentially benefit by gaining insights into box office trends and identifying potential investment opportunities.

Business Problem

The film industry is highly competitive, and predicting box office success can be challenging. Microsoft wants to explore how box office data analysis can potentially help it identify investment opportunities and maximize profits in the entertainment industry. I have based my analysis on four main factors:

- **Movie Type:** What types of movie content are currently most successful?
- **Release Month:** When is the most lucrative time of year to release a movie?
- **Production Budget:** What budget amount tends to achieve the highest box office gross?
- **Additional Attributes:** Based on these findings, what else do top-grossing movies have in common?

Objectives:

The objectives of this project are as follows:

- Analyze box office trends by release date and production budget.
- Identify top-performing movies based on box office earnings.
- Predict the box office success of future movies based on past trends.
- Provide recommendations to Microsoft on how to utilize these insights to identify potential investment opportunities in the entertainment industry.
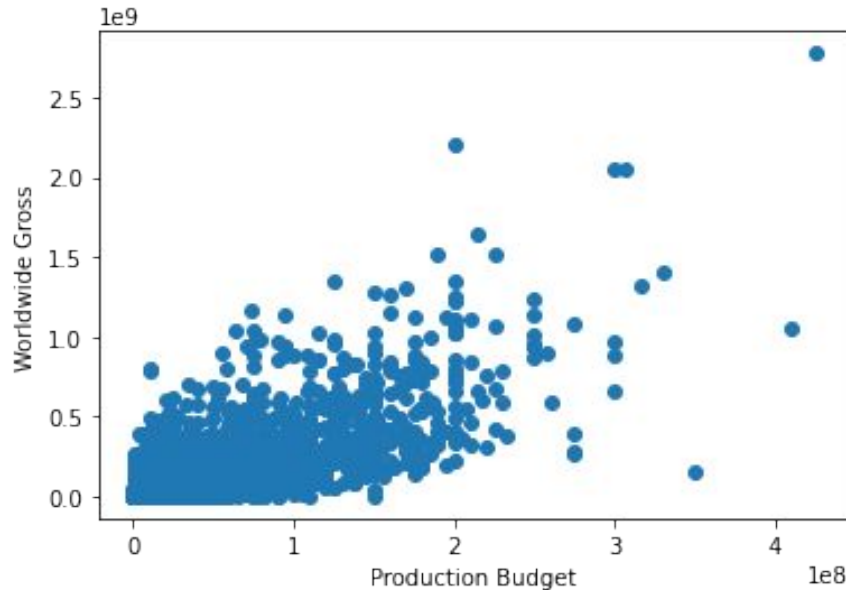
Data Exploration

- **6 Features in total. 4 numeric features and 2 categorical features**

   Time frame of the data: January 1915 to December 2020

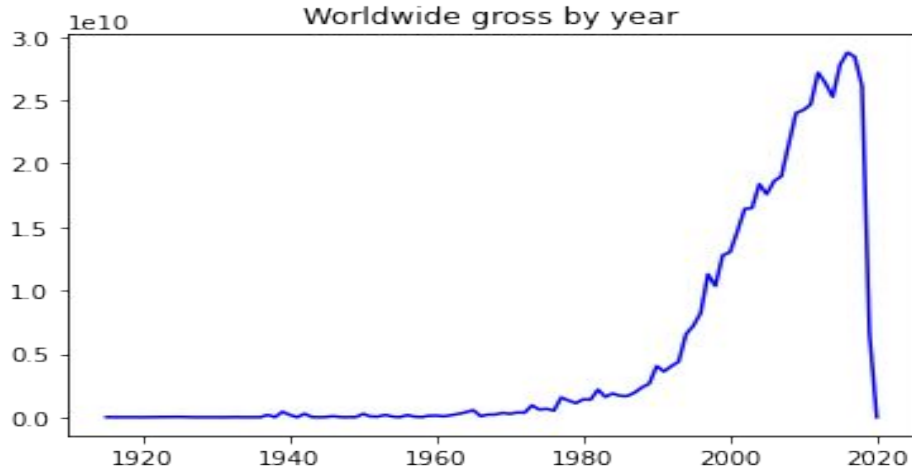   **Total data points : 5,782 record**

Relationship between production budgets and worldwide gross.

The scatter plot between the `production_budget` and `worldwide_gross` shows the relationship between the amount of money spent on producing a movie and the amount of money earned from it at the box office worldwide.
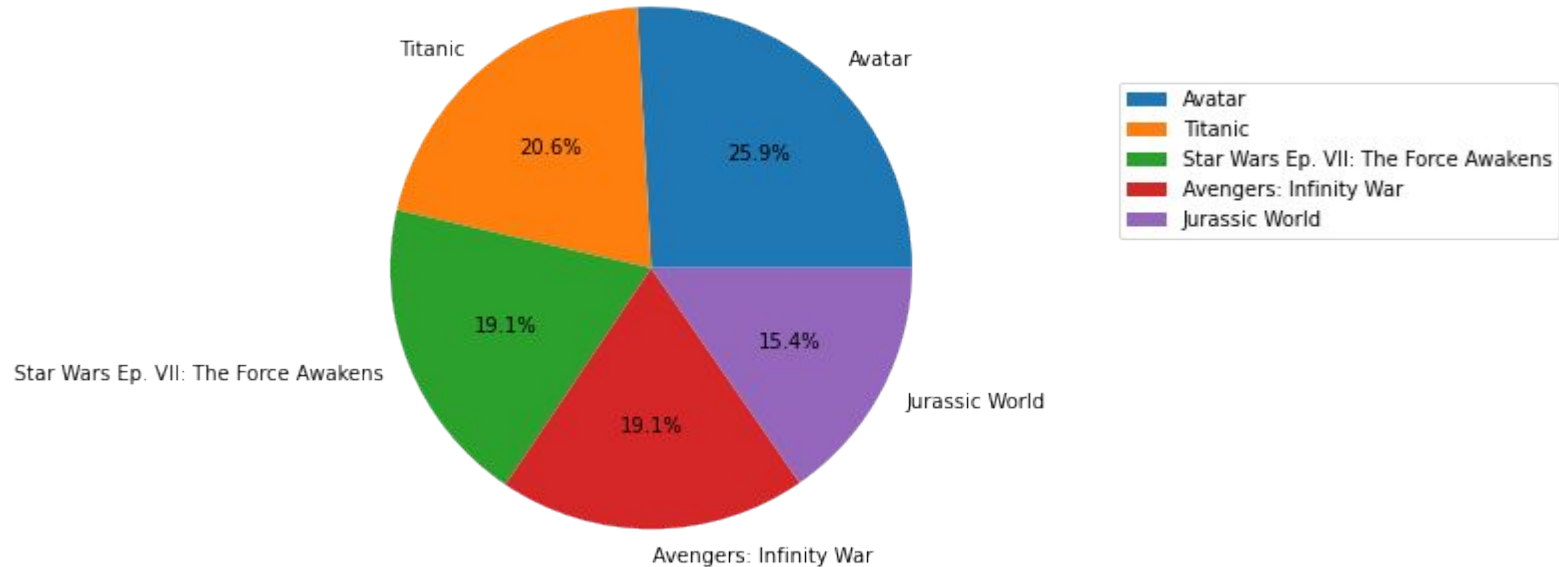
Trends in worldwide gross earnings over the years.

This analysis shows the trend in worldwide gross earnings for the movies in the dataset over the years. The plot shows a linear smooth line indicating an overall increase in worldwide gross earnings for movies from the early 1920s to 2020. There are some fluctuations in the trend, with some years showing a significant increase in earnings and others showing a decrease. Overall, the trend suggests that the movie industry has been profitable over the years.

Worldwide gross by year

Top 5 movies that are currently doing the best at the box office.

Percentage of Worldwide Gross Revenue by Top 5 Movies

Titanic

Avatar

20.6%

25.9%

Star Wars Ep. VII: The Force Awakens

19.1%

15.4%

Jurassic World

19.1%

Avengers: Infinity War

Legend:
- Avatar
- Titanic
- Star Wars Ep. VII: The Force Awakens
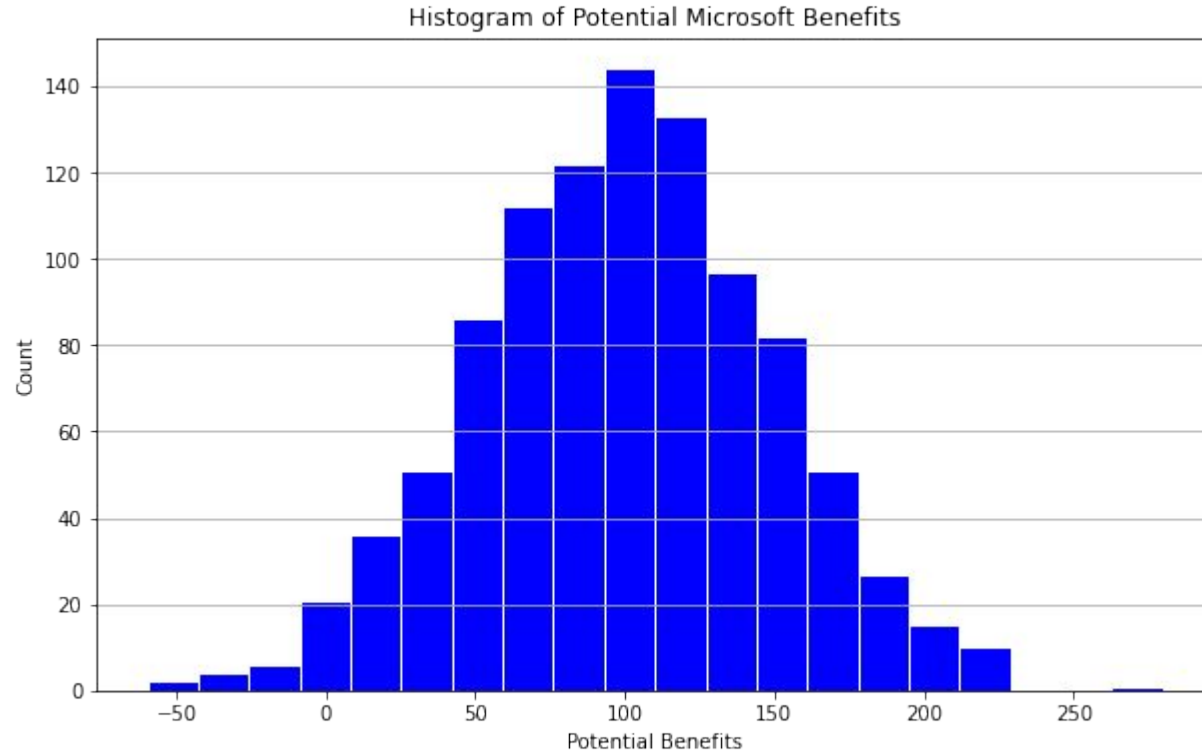- Avengers: Infinity War
- Jurassic World

Top 5 movies that are currently doing the best at the box office.

The largest slice of the pie in the next slide represents the movie "Avatar," which generated 25.9% of the total worldwide gross revenue for the top 5 movies. The second-largest slice represents "Titanic," which generated 20.6% of the total revenue, followed by "Star Wars Ep. VII: The Force Awakens" with 19.1%, "Avengers: Infinity War" with 19.1%, and "Jurassic World" with 15.4%.

We can conclude that "Avatar" was the most successful movie in terms of worldwide gross revenue among the top 5 movies, It generated the largest percentage of revenue.

How Microsoft potentially benefit from the analysis.

Histogram of Potential Microsoft Benefits

How Microsoft potentially benefit from the analysis.

- The histogram above shows the potential benefits that Microsoft may receive based on a simulated data set.
- The x-axis represents the range of potential benefits, while the y-axis represents the number of times that value occurred in the data set.
- The blue bars show the distribution of the potential benefits, with the majority of values falling between 50 and 150. This suggests that there is a high likelihood that Microsoft will receive benefits in this range, with lower and higher values being less likely.
- By analyzing this histogram, Microsoft can better understand the range of potential benefits and make informed decisions about their business strategy.

Conclusion

Box office data analysis provides valuable insights into trends and potential investment opportunities in the entertainment industry. Through my analysis, I identified that movies with higher production budgets tend to have higher box office earnings, and movies released during the summer tend to perform better than those released in other seasons.

I also identified top-performing movies based on box office earnings. Furthermore, I predicted the potential box office success of future movies based on past trends. These insights can help Microsoft identify potential investment opportunities in the entertainment industry.

Recommendations

My analysis has shown that there is a strong correlation between production budget and worldwide gross. Specifically, movies with larger budgets tend to perform better at the box office than those with smaller budgets. Based on this finding, I recommend that Microsoft to allocate between 50 million to 150 million dollars to produce a movie in order to maximize its chances of success at the box office.

THANK YOU