

# MICROSOFT MOVIE STUDIO PROJECT



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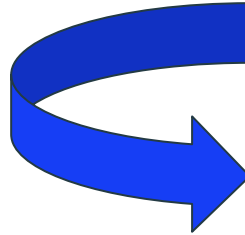
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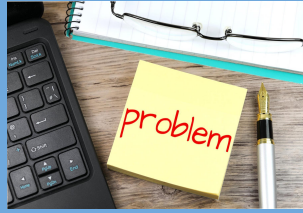
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# PROJECT OVERVIEW



This project entails employing exploratory data analysis to derive actionable insights for a business stakeholder, specifically Microsoft's new movie studio. As Microsoft ventures into the movie industry to produce original video content, they require informed guidance on successful film genres and characteristics. The primary objective of this project is to analyze relevant movie data and formulate strategic recommendations to assist Microsoft in making data-driven decisions for their new venture.



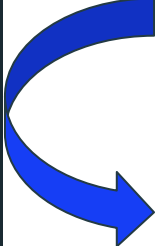
# PROBLEM STATEMENT

Microsoft has identified a trend where major companies are successfully creating original video content and wants to enter the market by launching a new movie studio. However, they lack expertise in the film industry and need guidance on what types of films to produce and strategies to ensure their success.





# PROJECT OBJECTIVE



The main objective of the project is to understand the movie business by doing detailed data exploration, identifying key drivers for commercial success, so as to help Microsoft receive data-driven recommendations on the kind of films that should be made and what kinds of strategies need to be implemented to make them successful at the box office under its new movie studio.



# ANALYSIS PROCESS

## Loading Libraries:

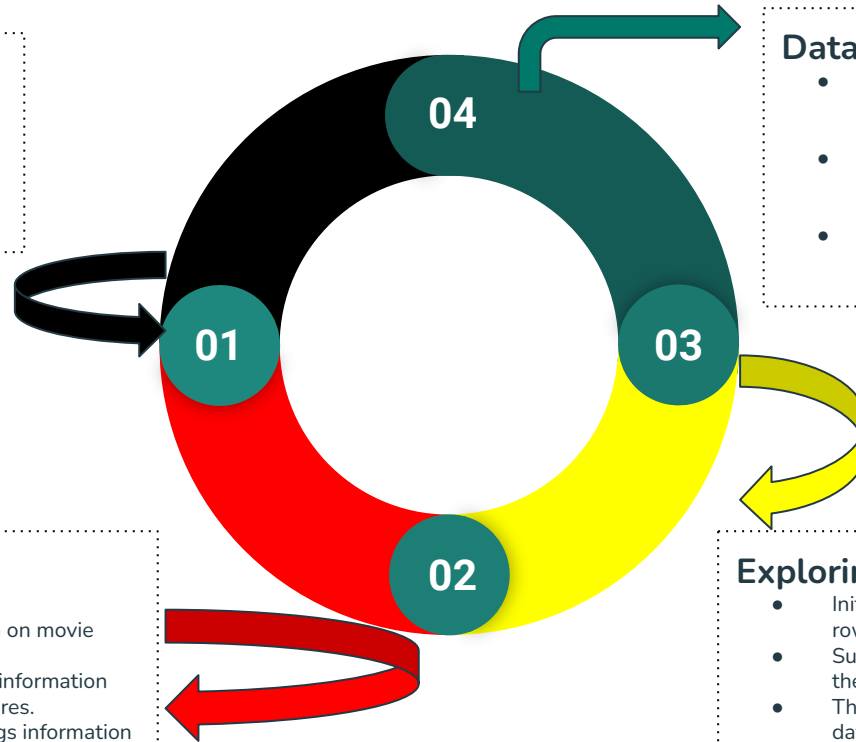
Essential libraries for data manipulation and visualization were loaded:

- Pandas for data manipulation
- Numpy for numerical operations
- Matplotlib and Seaborn for data visualization

## Loading Data:

Three datasets were loaded for analysis:

- Bom.movie\_gross.csv: Contains data on movie gross revenues.
- Imdb.title.basics.csv: Contains basic information about movies, such as titles and genres.
- Imdb.title.ratings.csv: Contains ratings information for movies.



## Data Analysis and Visualization:

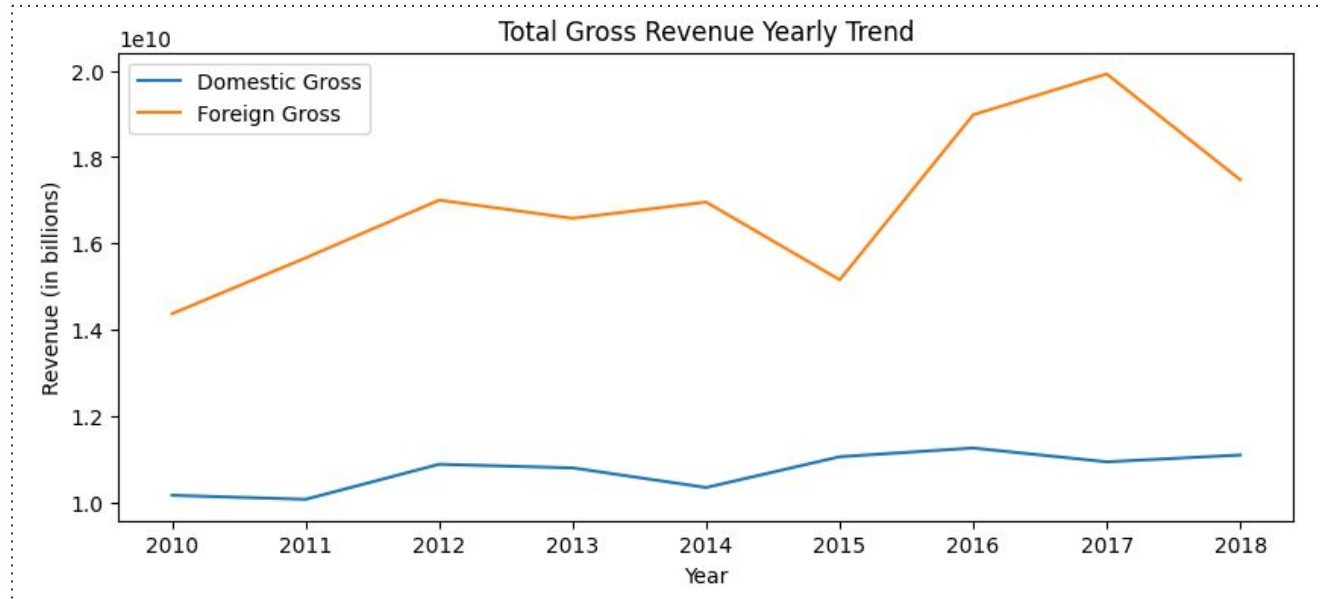
- **Domestic Gross Revenue Distribution:**  
Histogram showing the range and frequency of movie revenues.
- **Average Ratings Distribution:**  
Histogram illustrating the distribution of IMDb ratings.
- **Genres vs. Average Ratings:**  
Box plot comparing average ratings across different genres.

## Exploring Data:

- Initial exploration involved displaying the first few rows of each dataset to understand their structure.
- Summary statistics were generated to get a sense of the distribution and central tendencies of the data.
- The structure and data types of the bom\_movie dataset were examined to understand the format and types of data.
- Title basics and ratings were merged together since they had a common column

# Project Findings

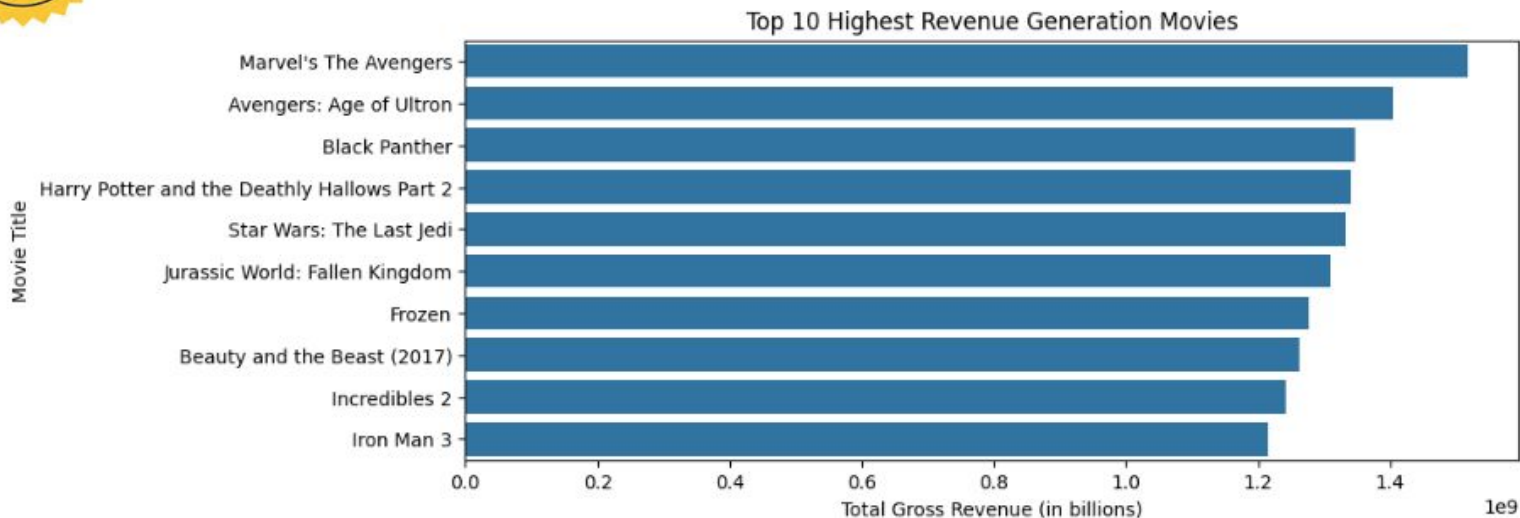
## Gross Revenue Yearly Trends



- From the above graph, it can be seen that foreign revenue from the international market has been on the rise and has exceeded domestic market revenue since 2010



## Top 10 Highest Revenue Generating Movies

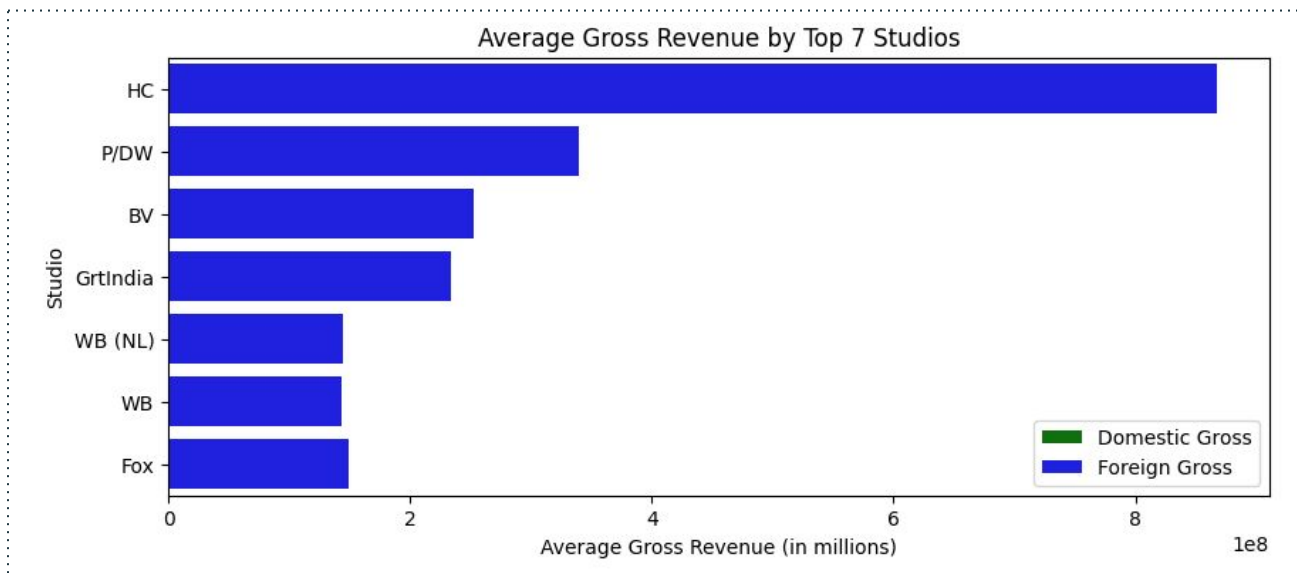


- Marvel's The Avengers tops the list of the top 10 highest revenue-generating movies in both domestic and foreign markets, exceeding \$1.4 billion in revenue.





# Average Gross Revenue by Studio

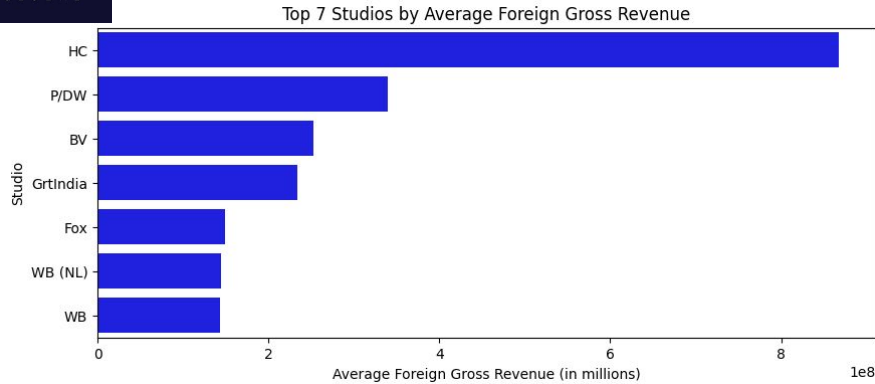


- HC Studios proved to be the best revenue-generating studio in both international and domestic markets, generating over \$800 million in revenue.
- P/DW, BV, GrtIndia, WB(NL), and Fox Studios are among the top seven studios, each generating over \$100 million in revenue.

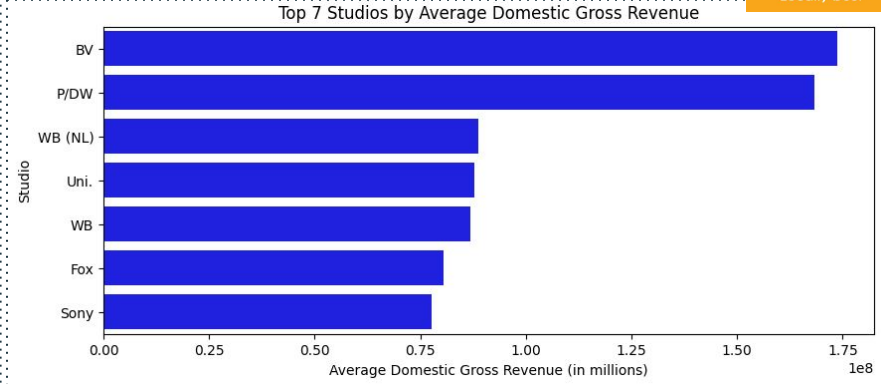
# Gross Revenue by Studio Foreign vs Domestic Market

Pro  
GLOBAL

## Top 7 Studios in Foreign Markets

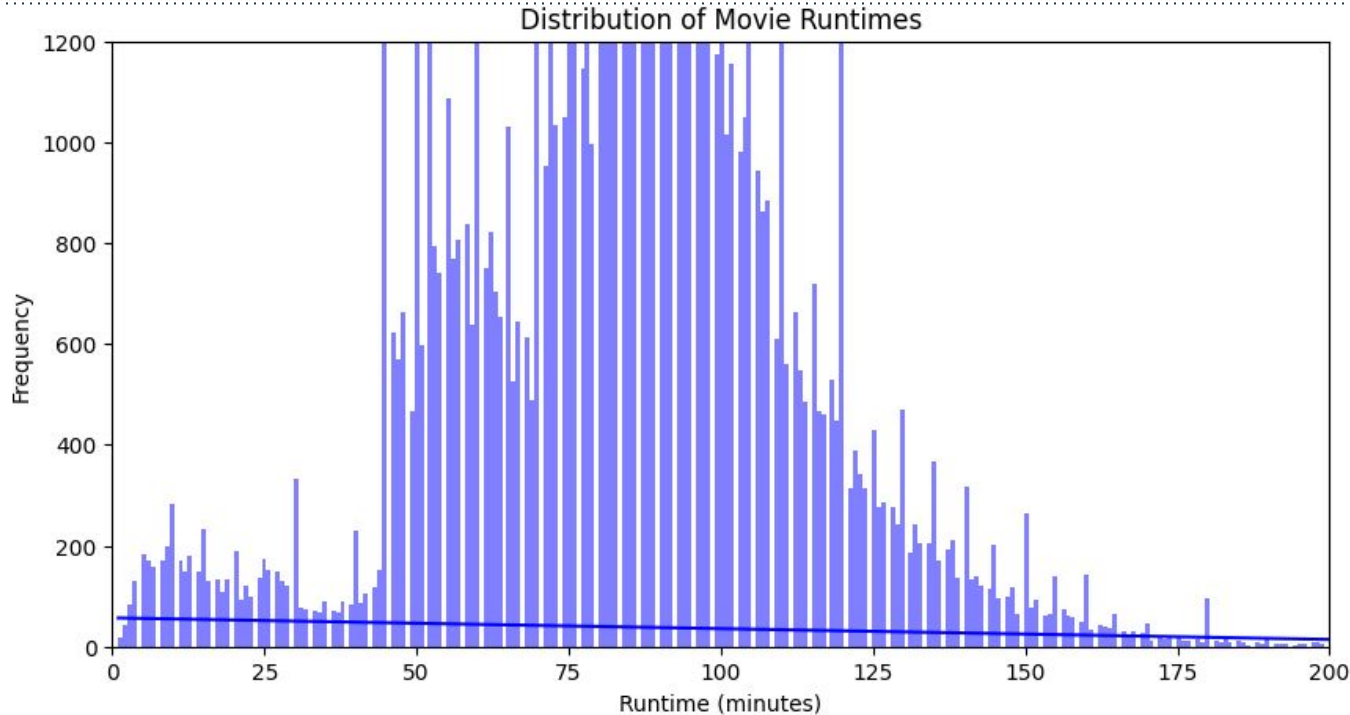


## Top 7 Studios in Domestic Markets



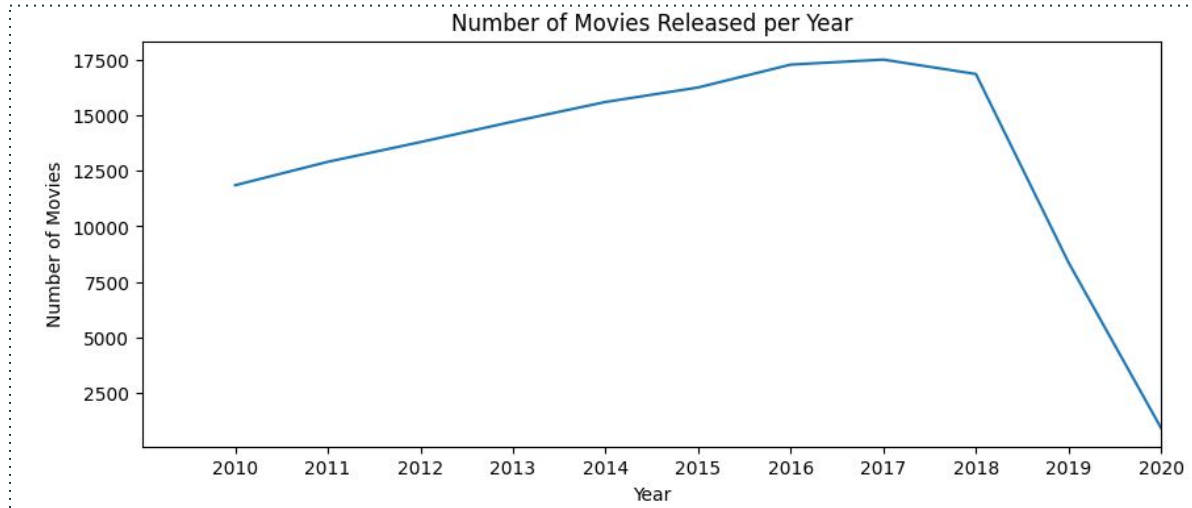
- From the international markets, HC, P/DW, and BV Studios stood out as the top three revenue-generating studios among the best seven.
- It is worth noting that studios performing well in international markets generate over \$150 million in revenue, with HC Studio generating \$800 million.
- BV Studio was the best performing studio in revenue generation in the domestic markets, followed by P/DW.
- As seen above, revenue generated in the international markets is higher than that generated in the domestic market. BV studios and P/DW studios perform relatively well both locally and internationally.

# Distribution of Movie Runtimes



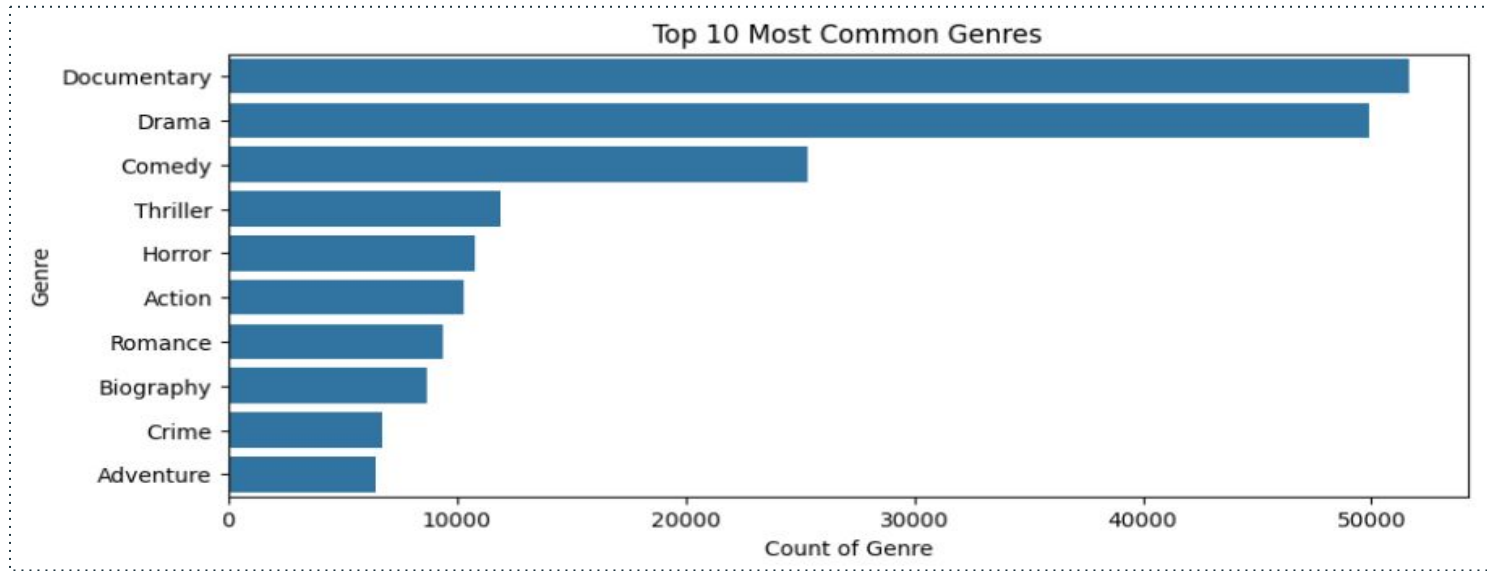
- From the data, it is evident that the majority of movies have a runtime between 70 and 120 minutes.
- The average runtime for movies was 96 minutes

# Number of Movies Released per Year



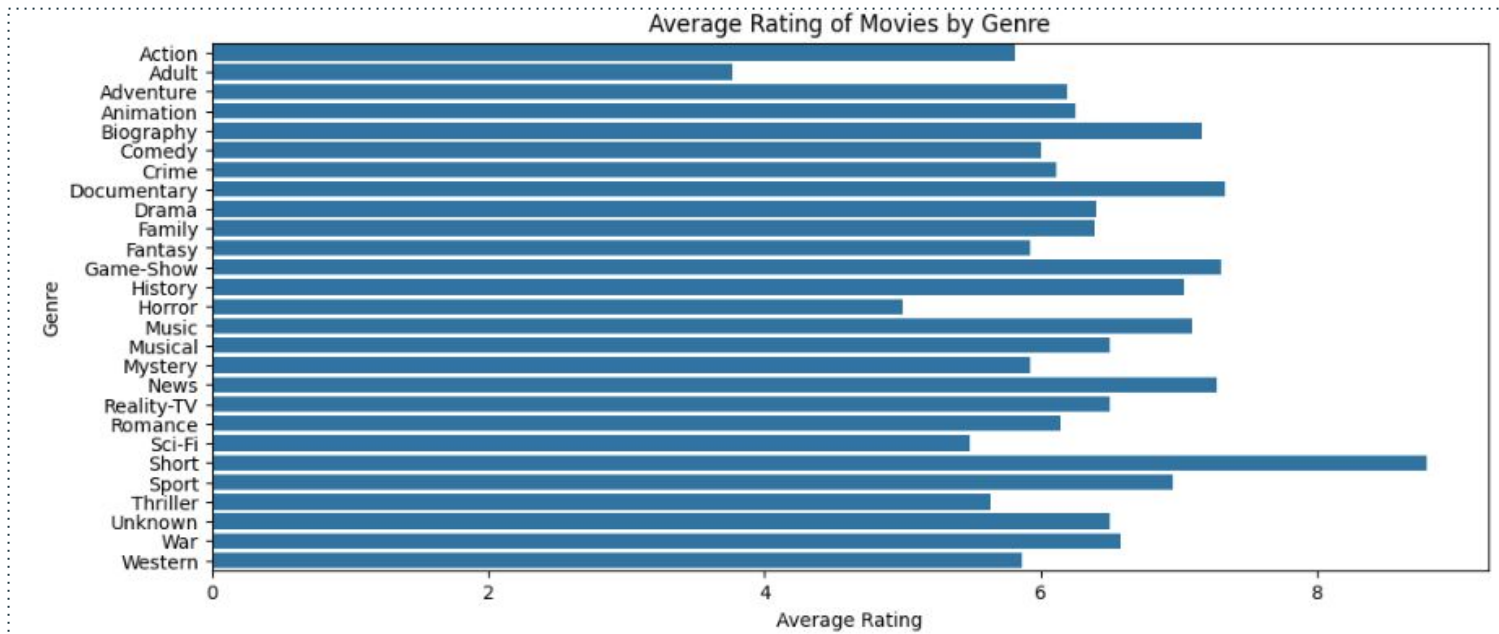
- It was evident that the number of movies released each year has been increasing since 2010, with 2017 having the highest number of movie releases.
- This indicates the competitiveness among studios in content creation, with those releasing movies in popular and highly-rated genres generating the most revenue over time.

# Top 10 Most Common Genres



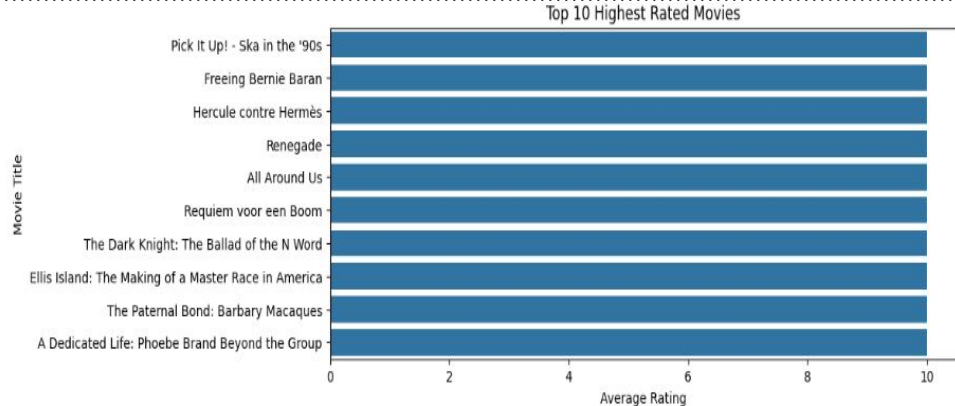
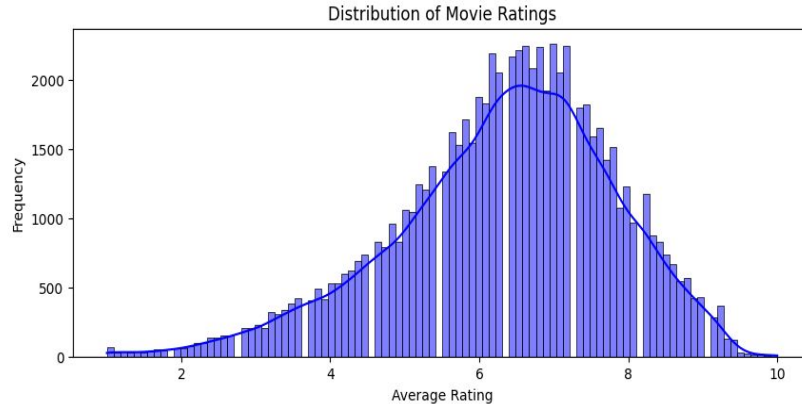
- The most common popular genres were Documentary, Drama, and Comedy in the top three, followed by Thriller, Horror, and Action
- Crime and Adventure were the 9th and 10th most common genres in the top 10 genres.

# Average Rating by Genre



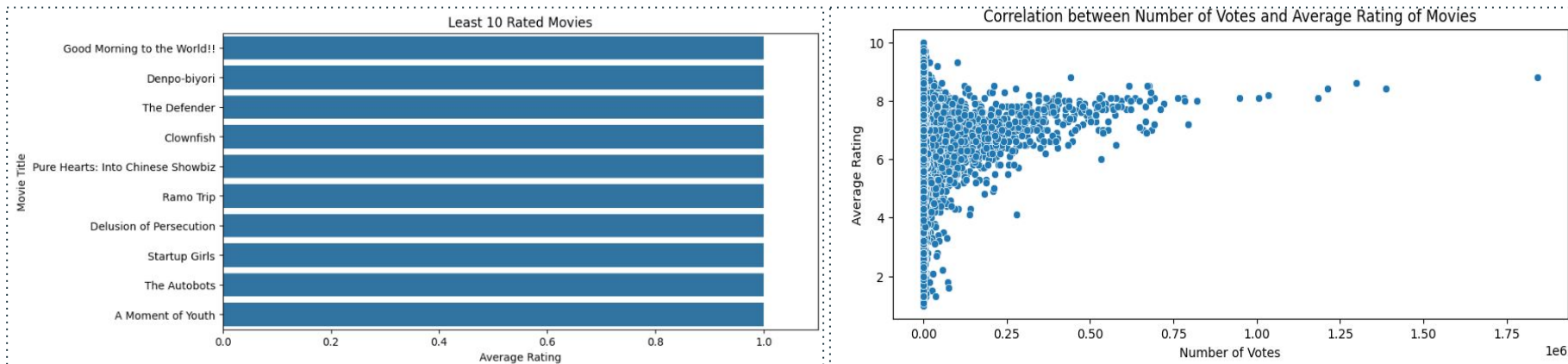
- Short films had the highest rating, **above 8.5**, while the Adult genre had the lowest rating, **below 4**.

# Distribution of Movie Ratings



- From the distribution of ratings, it appears to be a normal distribution, with the majority of ratings falling between 5 and 8.
- The majority of movies were rated between 6 and 8, with very few receiving ratings above 9 and up to 10
- The figure on the right represents a few samples of movies that received a perfect rating of 10, with "Pick It Up - Ska in the 90's" being among them.

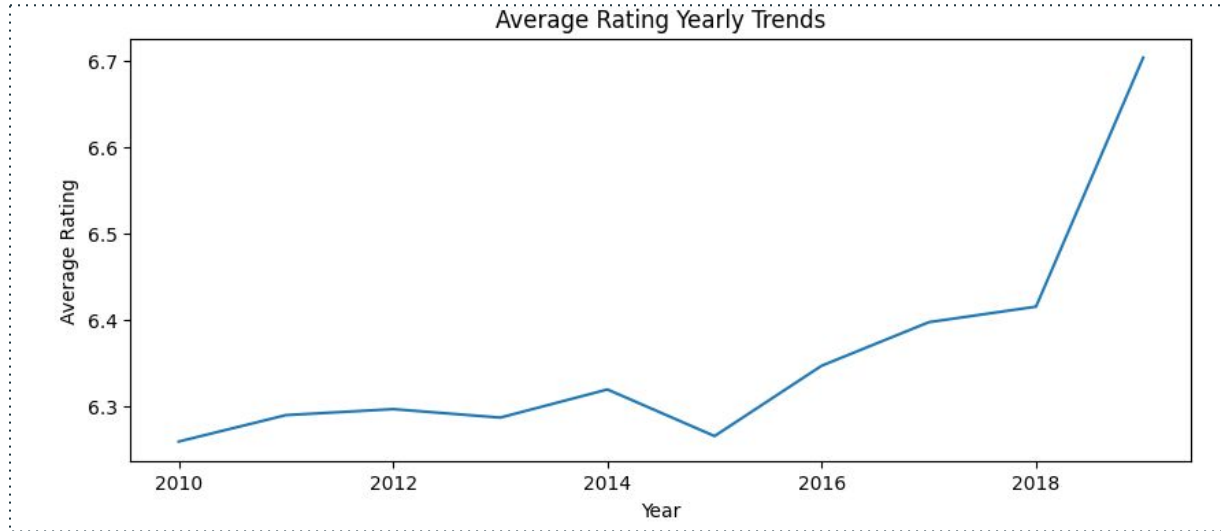
# Correlation between Number of Votes and Ratings



- The least rated movies had a rating of 1.
- We can also see that there is a correlation between ratings and number of votes.
- Movies with higher ratings generally engage more viewers, leading to more votes. This suggests that better quality content (higher ratings) results in higher viewer engagement and participation (more votes).



# Average Rating over Time



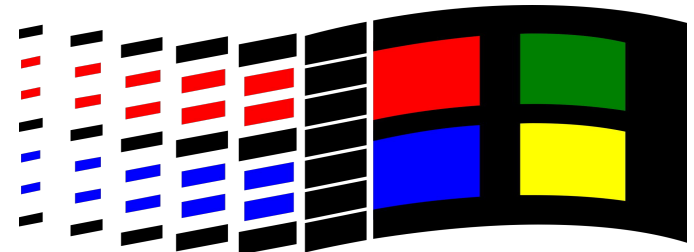
- The above graph shows that the average rating for movies has been on the rise over the years, suggesting improved storylines and better-produced films over time.

# Findings and Recommendations for Microsoft's New Movie Studio

Insight	Recommendation
<p><b>1.Genre Focus</b></p> <p>Action, Adventure, and Science Fiction genres generate the highest gross revenues both domestically and internationally, demonstrating their widespread popularity and commercial appeal. Conversely, genres such as Drama and Documentary, while not leading in gross revenues, tend to achieve higher average ratings, indicating a strong critical reception and appreciation among viewers despite their relatively lower box office performance.</p>	<p><b>1.Prioritize High-Grossing Genres:</b> Focus on producing movies within Action, Adventure, and Science Fiction genres to maximize revenue generation, leveraging on their proven commercial appeal both domestically and internationally.</p> <p><b>2. Diverse Content:</b> Allocate a portion of the budget to produce critically acclaimed genres like Drama and Documentary to attract a broader audience base and achieve higher average ratings, enhancing the studio's reputation for quality and diversity.</p>
<p><b>2.Optimize Movie Runtime</b></p> <p>Successful movies typically have a runtime between 90 to 120 minutes.</p>	<p><b>a. Target Runtime:</b> Aim to produce movies within the optimal runtime range of 90 to 120 minutes.</p> <p><b>b. Advanced Analytics:</b> Utilize advanced analytics to test various runtimes during pre-release screenings to determine the optimal length for each specific movie.</p>
<p><b>3. International Market Strategy</b></p> <p>There is a noticeable increase in total gross revenue over the years, especially in the foreign market, indicating growing international potential.</p>	<p><b>a. Market Research:</b> Conduct thorough market research to understand the preferences of international audiences.</p> <p><b>b. Tailored Campaigns:</b> Develop marketing campaigns specifically for international markets, incorporating local language promotions and culturally relevant themes.</p>

## Findings and Recommendations Cont...

Insight	Recommendation
<b>4. Emulate Top Performing Studios</b> Studios like Universal Pictures, Warner Bros., and Walt Disney have the highest average gross revenue domestically and internationally.	<b>a. Study Strategies:</b> Study the strategies and marketing techniques of these top-performing studios to understand their success factors. <b>b. Strategic Partnerships:</b> Consider partnerships or hiring talent with experience from these studios to leverage their expertise. <b>c. Marketing and Distribution:</b> Emulate their successful marketing and distribution strategies to enhance Microsoft's market presence both domestically and internationally.
<b>5. Invest in Quality Content Creation</b> The least rated movies often belong to less popular genres, have lower budgets, and lack strong storytelling.	<b>a. Top-Tier Talent:</b> Invest in hiring top-tier writers, directors, and producers to ensure high-quality storytelling. <b>b. Script Review:</b> Implement a rigorous script review process to filter out weak plots and ensure engaging narratives. <b>c. Storytelling:</b> Focus on creating content with strong storytelling to enhance audience reception and ratings.





# THE END

## Thank You

