

Disney Movies Analysis

DAP mini-project report submitted in partial
fulfillment of the requirements of the degree of

Information Technology

By

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ABSTRACT

The **Disney Movies Analysis Project** aims to provide a comprehensive study of Disney's box office performance using data science techniques. This project focuses on uncovering hidden insights into revenue trends, genre profitability, and the impact of MPAA ratings. By leveraging data cleaning, exploratory data analysis (EDA), and visualization, the study helps in understanding the factors contributing to Disney's financial success over the years.

By using Python-based data analysis tools, we identify high-performing genres, revenue patterns, and statistical correlations. The findings offer valuable insights for film analysts, production companies, investors, and movie enthusiasts who want to understand the commercial success of Disney films. Additionally, this project serves as a foundation for predicting future profitable genres using historical data patterns.

This project analyzes Disney movies using data science techniques to uncover insights into revenue trends, genre performance, and the influence of MPAA ratings. The analysis involves data cleaning, exploratory data analysis (EDA), and visualization to extract meaningful patterns. The findings help in understanding the financial success of Disney movies and predicting future profitable genres.

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CHAPTER 1

INTRODUCTION

The Walt Disney Company has been a dominant player in the entertainment industry, producing some of the most iconic and commercially successful movies. Over the years, Disney films have evolved in terms of storytelling, animation, and technology. However, financial performance is a critical factor in determining a movie's success. Understanding box office trends, identifying high-performing genres, and analyzing audience preferences can provide valuable insights for future productions.

This project utilizes historical Disney movie data to analyze revenue trends and understand how factors such as genre and MPAA ratings impact box office success. By performing data cleaning, visualization, and statistical analysis, this study aims to draw meaningful conclusions about the commercial patterns of Disney movies. The research findings will help stakeholders in the film industry, including producers, investors, and analysts, to make data-driven decisions for future productions.

1.1 Motivation

Understanding the key factors behind the success of Disney movies can provide insights for filmmakers, analysts, and investors. Analyzing past performance helps in making data-driven decisions about future projects and trends in the entertainment industry.

1.2 Problem Statement

With a vast catalog of movies, it is challenging to determine which factors contribute most to financial success. This project aims to explore revenue trends, analyze genre performance, and evaluate the impact of ratings on box office earnings.

1.3 Objectives

- To study the impact of MPAA ratings on box office performance.
- To analyze revenue trends across different movie genres.
- To visualize data for better understanding and insights.
- To find correlations between total gross and inflation-adjusted revenue.
- To provide predictive insights for further profitable movie genres.

1.4 Scope

- Covers Disney movies across multiple decades.
- Uses inflation-adjusted revenue for accurate financial comparisons.
- Focuses on revenue trends, genre distribution, and rating impacts.
- Excludes non-Disney movies and external market factors.

CHAPTER 2

REQUIREMENT ANALYSIS

2.1 Hardware Requirements:

- Standard computing device with internet access
- 4 GB RAM

2.2 Software Requirements:

- Python
- Pandas
- Numpy
- Matplotlib
- Seaborn
- Google Colab

2.3 Dataset:

- Disney movies dataset [Source: Kaggle]

CHAPTER 3

REPORT ON PRESENT INVESTIGATION

The investigation involves analyzing Disney's historical movie revenue to determine which genres and ratings contribute most to financial success. This study leverages statistical methods and visualization techniques to interpret revenue trends and uncover hidden insights.

By identifying patterns in revenue growth, this analysis aims to:

- Recognize genres with the highest financial returns.
- Determine how MPAA ratings influence earnings.
- Compare total gross and inflation-adjusted gross for accurate long-term evaluations.
- Track revenue changes over time to observe market shifts.

This research helps understand audience preferences and financial performance in the entertainment industry.

CHAPTER 4

IMPLEMENTATION

1. Load and Clean Data

- Read the dataset using Pandas.
- Convert release_date to datetime format.
- Fill missing values and duplicates.

2. Perform EDA and Business Logic

- Compute total revenue per genre and MPAA rating.
- Find the most profitable movie based on inflation-adjusted gross.
- Analyze trends using descriptive statistics.

3. Generate Visualizations

- Use Matplotlib & Seaborn for bar charts, scatter plots, and heatmaps.

4. Draw Conclusions and Insights

- Identify key patterns and revenue trends in Disney movies.

CHAPTER 5

TECHNOLOGY USED

- **Python:**

The core programming language used for data analysis and visualization.

- **Pandas:**

A powerful library used for handling and manipulating structured datasets.

- **NumPy:**

Essential for numerical computations, especially for handling large datasets efficiently.

- **Matplotlib & Seaborn:**

Used for generating a variety of visualizations, including bar charts, line graphs, and heatmaps.

- **Google Colab:**

A cloud-based Python environment that allows seamless execution of Jupyter Notebooks without local installation.

- **GitHub:**

Version control and repository hosting service to store, manage, and share project files.

CHAPTER 6

RESULT, DISCUSSION AND INSIGHTS

- **Adventure & Comedy genres** dominate Disney's revenue generation.
- **Older movies** tend to have higher inflation-adjusted gross revenue.
- **G-rated movies** have historically performed well at the box office.
- **Total gross and inflation-adjusted gross show a strong correlation**, proving the impact of inflation over time.
- **Genre-based revenue distribution varies significantly**, with some genres showing extreme revenue outliers.

6.1 Insights from Analysis: -

1. Top Revenue-Generating Genres

- Adventure and Musical genres dominate Disney's revenue.
- Animated movies tend to have a consistent financial performance.

2. Impact of MPAA Ratings

- G-rated movies historically perform better in family-oriented markets.
- PG and PG-13 movies tend to attract higher box office revenue due to wider audience reach.

3. Revenue Growth Trends

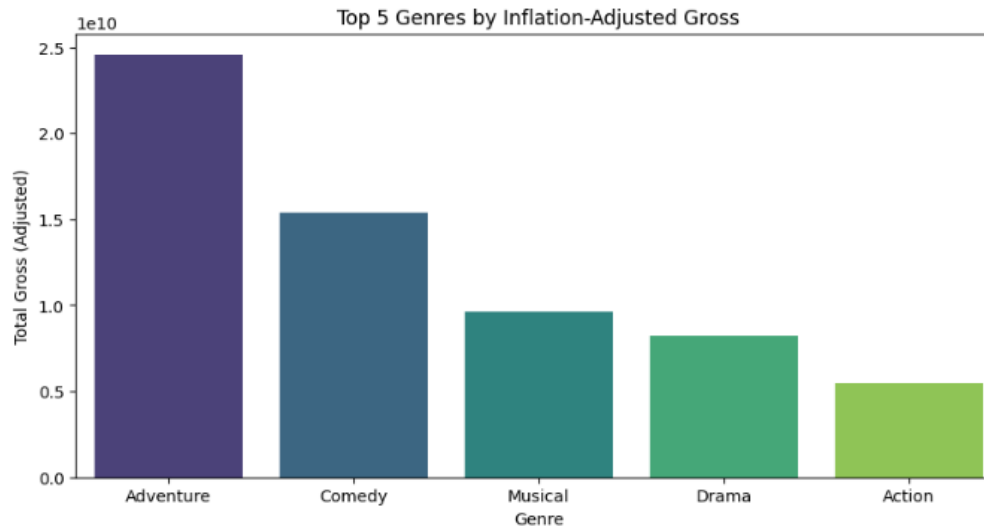
- Older movies show higher inflation-adjusted revenue.
- The revenue distribution varies significantly across different decades.

4. Correlation Between Gross Revenue & Inflation-Adjusted Gross

- Strong correlation indicates the impact of inflation over time.
- Some movies from past decades outperform recent releases when adjusted for inflation.

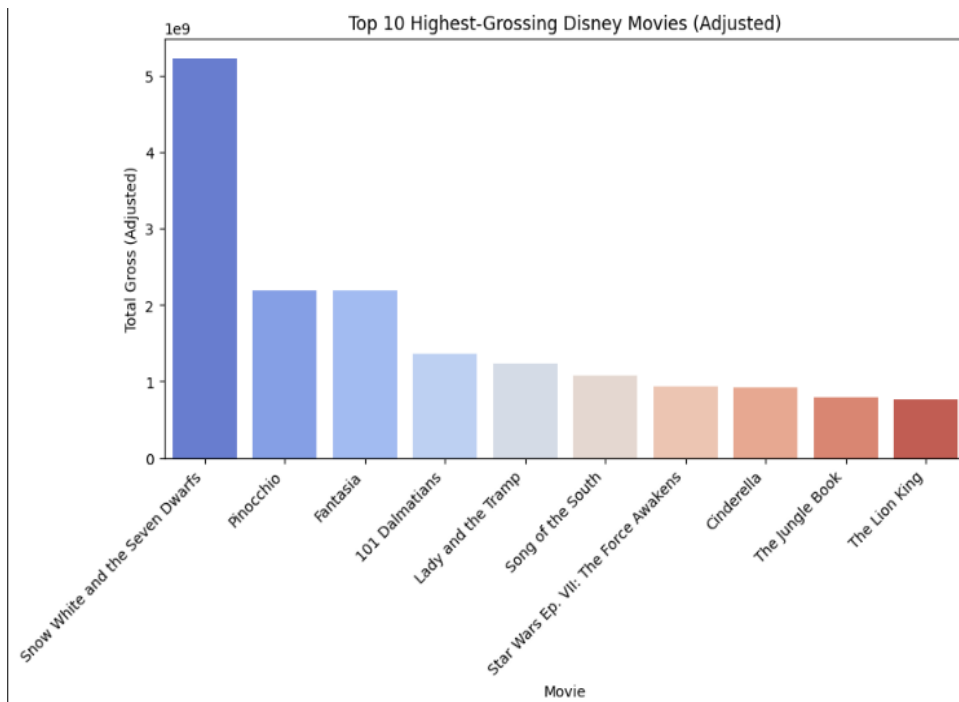
6.2 Visualizations & Charts: -

1. Top 5 Highest-Grossing Genres (Bar Chart)



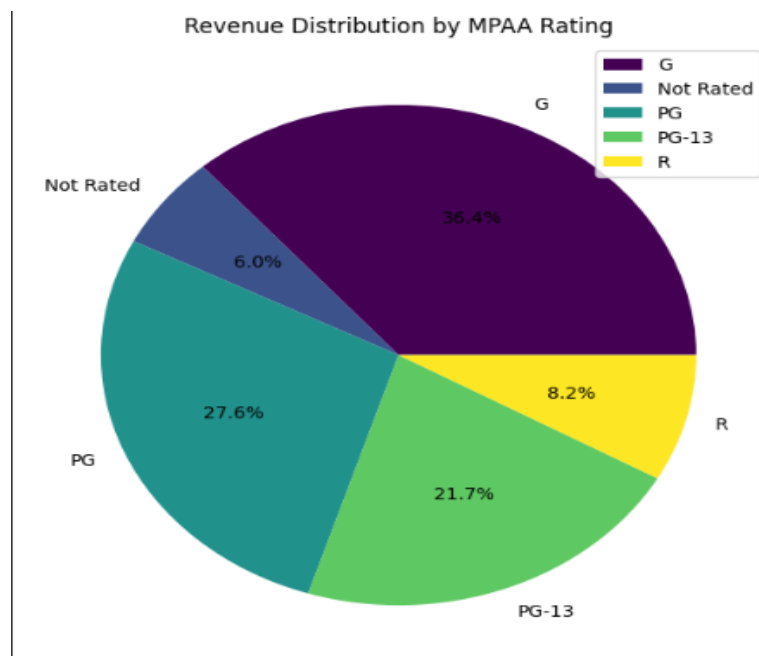
Insight: Adventure and Comedy genres have the highest box office revenue.

2. Top 5 Highest-Grossing Genres (Bar Chart)



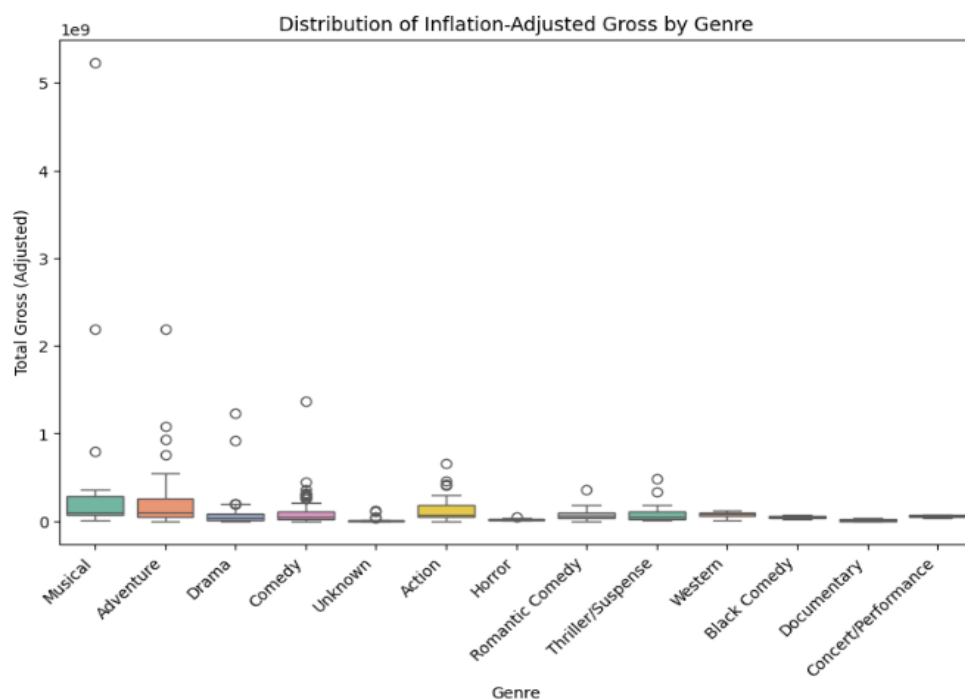
Insight: Classic animated movies and blockbuster franchises dominate the highest earnings.

3. Revenue Distribution by MPAA Rating (Pie Chart)



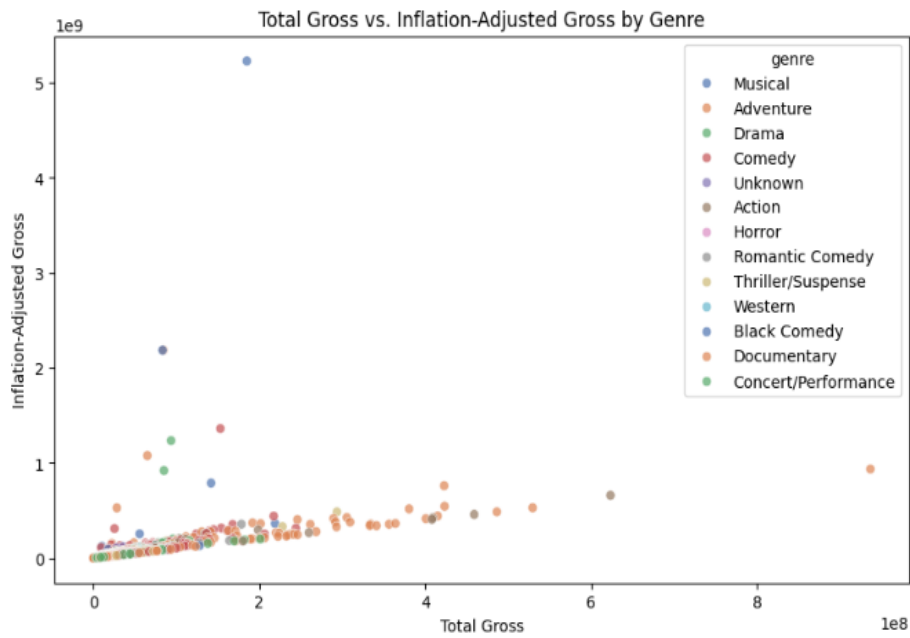
Insight: G and PG-rated movies contribute the most to revenue due to a family-friendly audience.

4. Revenue Distribution by Genre (Box Plot)



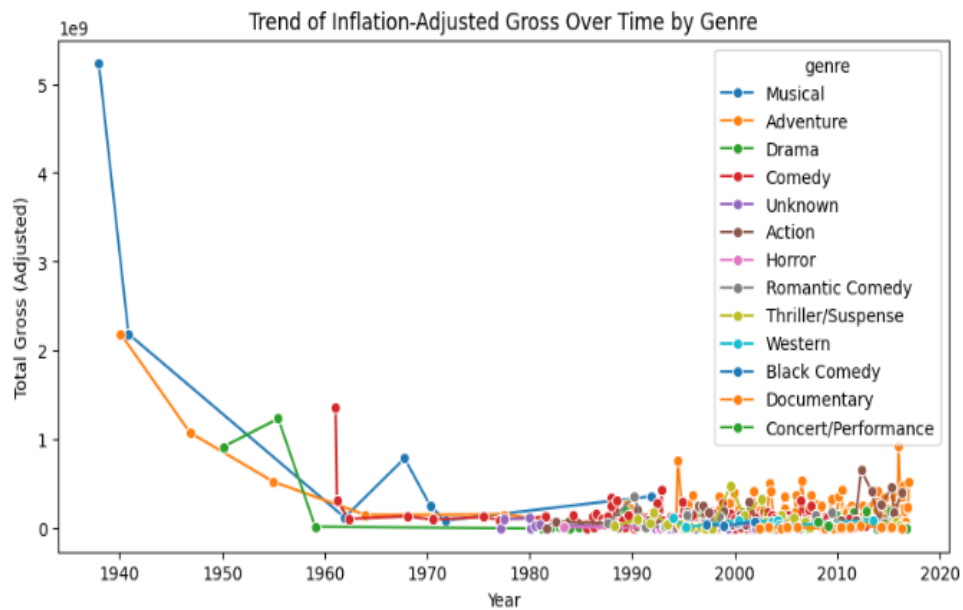
Insight: Some genres have extreme revenue outliers, indicating a few highly successful movies.

5. Total Gross vs. Inflation-Adjusted Gross (Scatter Plot)



Insight: A strong correlation exists between total gross and adjusted gross, proving inflation impact.

6. Revenue Trend Over Time by Genre (Line Chart)



Insight: Certain genres, like Adventure, continue to perform well over the decades.

7. Genre & Movie Search

Enter genre:

```
Enter genre: adventure
movie_title release_date genre mpaa_rating \
1 Pinocchio 1940-02-09 Adventure G
3 Song of the South 1946-11-12 Adventure G
5 20,000 Leagues Under the Sea 1954-12-23 Adventure Not Rated
12 The Sword in the Stone 1963-12-25 Adventure Not Rated
21 The Rescuers 1977-06-22 Adventure Not Rated
.. ...
572 The BFG 2016-07-01 Adventure PG
573 Pete's Dragon 2016-08-12 Adventure PG
576 Doctor Strange 2016-11-04 Adventure PG-13
577 Moana 2016-11-23 Adventure PG
578 Rogue One: A Star Wars Story 2016-12-16 Adventure PG-13

total_gross inflation_adjusted_gross
1 84300000 2188229052
3 65000000 1078510579
5 28200000 528279994
12 22182353 153870834
21 48775599 159743914
.. ...
572 55483770 55483770
573 76233151 76233151
576 232532923 232532923
577 246082029 246082029
578 529483936 529483936

[129 rows x 6 columns]
```

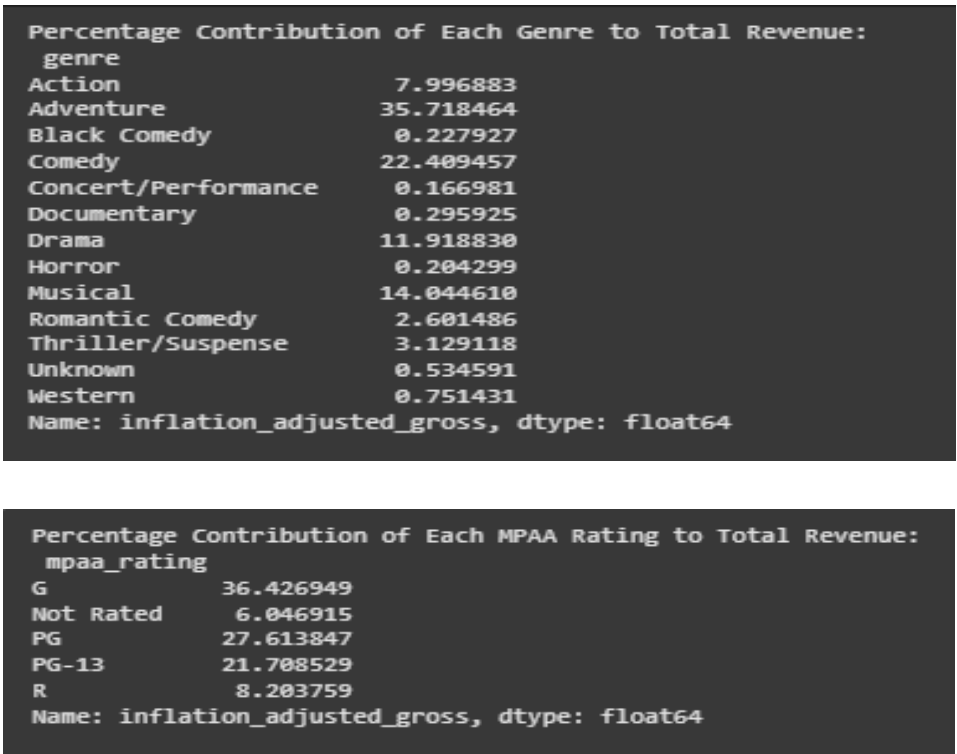
Enter movie name:

```
Enter movie name: Frozen
movie_title release_date genre mpaa_rating total_gross \
539 Frozen 2013-11-22 Adventure PG 400738009

inflation_adjusted_gross
539 414997174
```

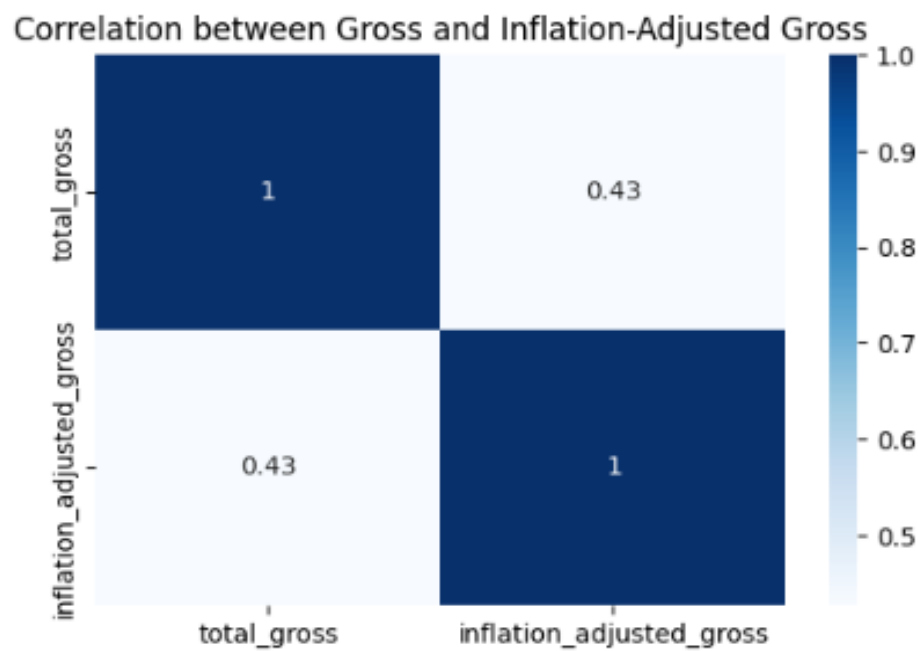
Insight: Allows users to filter and view movies by genre and search for specific movie details.

8. Revenue Contribution Analysis



Insight: Percentage contribution of each genre and MPAA rating to total revenue.

9. Correlation Heatmap



Insight: High correlation between total & inflation-adjusted gross confirms revenue growth trends.

CHAPTER 7

CONCLUSION

This project successfully analyzed Disney movie data, revealing key revenue trends, top-performing genres, and the impact of MPAA ratings. The analysis provides valuable insights into the financial success of Disney movies, helping stakeholders make data-driven decisions.

FUTURE SCOPE

- Expanding analysis to include external factors like budget, production costs and audience.
- Using machine learning models for revenue prediction.
- Comparing Disney movies with non-Disney movies for broader insights.