Report: Studio Ghibli + BoxOfficeMojo Integration

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Course: Data Collection & Preparation
Topic: Movie Performance and Ratings Analysis

Project Goal:

The main goal of this project was to combine **two real data sources**, one from an **API** and one from **web scraping**, and analyze how **Studio Ghibli movies** perform in terms of box office and ratings.

We wanted to see: Which directors and producers bring the **highest box office results**, Correlation Between Key Movie Variables, Top 10 Most Efficient Movies (Gross per Minute), Number of Studio Ghibli Movies per Decade, And if there is any connection between movie ratings and total earnings.

Data Sources:

1. API - Studio Ghibli API
We used the official open API of *Studio Ghibli* (https://ghibliapi.vercel.app/films), which provides structured information about all movies, including title, director, producer, release year, running time, and Rotten Tomatoes score.
This API is perfect for our topic because it contains verified and clean movie data in JSON format.

2. Web Scraping - BoxOfficeMojo
We collected financial data from the *BoxOfficeMojo* website, which lists movie earnings, number of theaters, and opening weekend gross.
Using requests and BeautifulSoup, we extracted the main table with movie titles and box office performance.
This site was chosen because it contains real financial performance of Studio Ghibli films, which allowed us to connect it with the API data.

Data Cleaning and Preparation:

We performed several cleaning steps:

1. Standardized movie titles (lowercase, removed special symbols).
2. Summed up duplicates in BoxOfficeMojo data(like re-released versions and etc.)
3. Merged both datasets using the cleaned movie titles as a key.
4. Dropped all missing values and kept only complete rows.

Final dataset columns:
title, director, producer, release_year, running_time (min), rt_score (/100), lifetime_gross ($), opening_gross ($), max_theaters (count)

Descriptive Statistics and Correlation:

We calculated key descriptive statistics (mean, max, std, count and etc.) and correlation values.
The **correlation between RT score and lifetime gross** was **0.11**, showing a **weak positive relationship**.
That means higher ratings slightly relate to better box office results, but the connection is not strong.

Visualizations and Insights:

1. **Box Office Efficiency- Gross per Minute**
   Ponyo ranked **#1** as the most efficient movie, earning the highest amount of money per minute.
   The Tale of the Princess Kaguya ranked **last**, showing that longer or artistic films may earn less per minute but rating is 100.

1. HIGHEST BOX OFFICE

   Movie: Ponyo

   Total Gross: $15,090,399

2. LOWEST BOX OFFICE

   Movie: When Marnie Was There

   Total Gross: $561,085

3. HIGHEST RATED MOVIE

   Movie: The Tale of the Princess Kaguya

   Rating: 100 /100

4. LOWEST RATED MOVIE

   Movie: From Up on Poppy Hill

   Rating: 83 /100

5. LONGEST MOVIE

   Movie: The Tale of the Princess Kaguya

   Duration: 137 min

6. SHORTEST MOVIE

Movie: The Red Turtle

Duration: 80 min

7. MOVIE SHOWN IN MOST THEATERS

Movie: Ponyo

Theaters: 927.0

8. MOVIE SHOWN IN FEWEST THEATERS

Movie: The Tale of the Princess Kaguya

Theaters: 29.0

2. Movies per Decade

2010s — 5 movies

2000s — 3 movies

1990s — 1 movie

This shows that Studio Ghibli was most active in the 2010s decade.

Top Directors by Average Rating

1. Isao Takahata - 100
2. Michaël Dudok de Wit - 93
3. Hiromasa Yonebayashi - 92
4. Hayao Miyazaki - 91.4
5. Gorō Miyazaki - 83

Isao Takahata received the **highest critical ratings**, followed by *Michaël Dudok de Wit*.

Top Producers by Average Rating

1. Yoshiaki Nishimura - 96
2. Toshio Suzuki, Isao Takahata, Vincent Maraval - 93
3. Toshio Suzuki - 90

Yoshiaki Nishimura is the top producer with the highest-rated films.

5. Rating Distribution
Most Studio Ghibli movies have ratings around **92.5 / 100**, showing that their films consistently receive strong critical acclaim.

Key Results Summary:

Metric - Result

Highest Grossing Movie - Ponyo

Lowest Efficiency - The Tale of the Princess Kaguya

Best Director (by Rating) - Isao Takahata (100)

Best Producer (by Rating) - Yoshiaki Nishimura (96)

Correlation (RT Score vs Gross) - 0.11 (weak positive)

Most Active Decade - 2010s (5 films)

Conclusion:

This project demonstrates how two independent data sources, an **API** and **web scraping**, can be successfully combined for real-world analysis.
Studio Ghibli films show **very high and consistent ratings**, but **box office success** does not always depend on ratings.
Our analysis highlights the power of data collection and cleaning for discovering meaningful cultural and business insights.