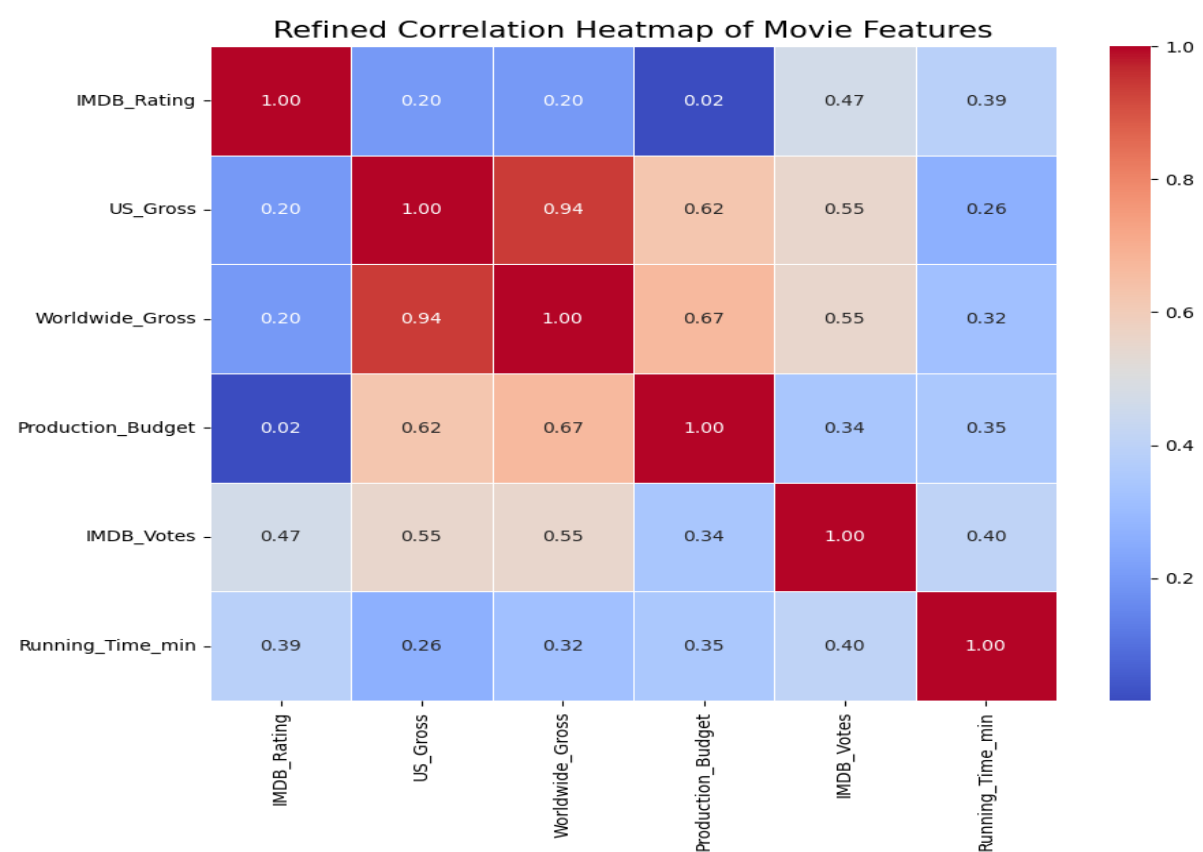


Refined Correlation Heatmap of Movie Features:



Purpose: The refined correlation heatmap is designed to decorate the strength and direction of relationships between key movie metrics, focusing on IMDB Rating, Production Budget, US Gross, Worldwide Gross, IMDB Votes, and Running Time. By visualising these relationships, we can explore colonies that could influence movie success, such as whether a bigger budget tends to result in higher revenue or if popular movies receive better ratings.

Justification:

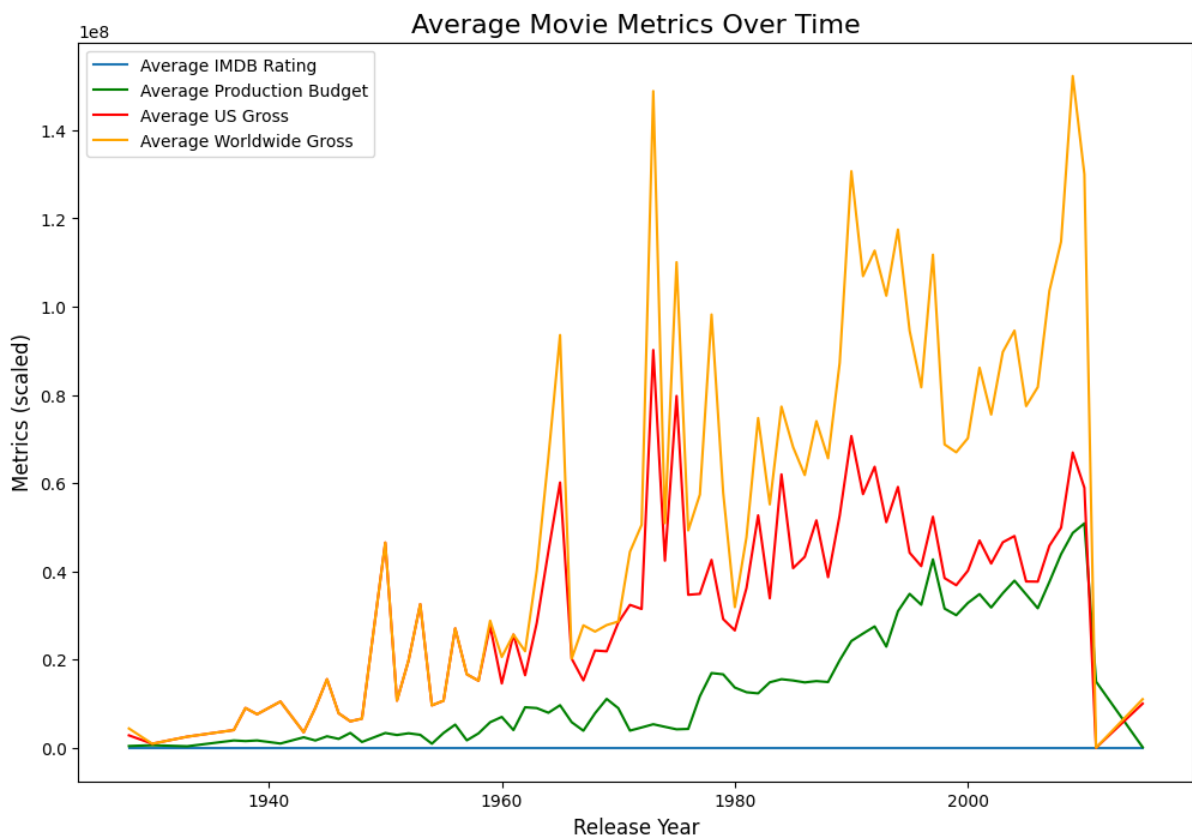
- We used a colour gradient that goes from blue (low correlations) to red (high correlations). This helps viewers quickly see the strength and direction of each relationship – darker colours represent stronger connections.
- Each metric is clearly labelled, with the grid designed to balance detail and readability, ensuring that viewers can identify key patterns without overwhelming them with unnecessary complexity.
- Only the most relevant metrics were included to reduce clutter and emphasize high-impact relationships. Excluding minor variables makes the heatmap more interpretable.
- By choosing a colour gradient that emphasizes stronger correlations, the heatmap highlights significant relationships, even though this could make weaker correlations less visually prominent.

Interpretation:

- Revenue Relationship: The high correlation (0.94) between US Gross and Worldwide Gross suggests that US performance strongly predicts global success, reflecting the central role of the US market in the film industry.
- Budget and Revenue: The production Budget shows a moderate correlation with both the US Gross (0.62) and Worldwide Gross (0.67), including that while higher budgets often lead to greater revenue, it's not a guarantee of success.

- Audience Engagement: IMDB Votes has moderate correlations with revenue metrics, suggesting that movies with higher audience engagement tend to earn more, likely due to wider visibility.
- Duration and Rating: The weaker correlation between Running Time and IMDB Rating implies that while longer movies might receive slightly better ratings, this relationship is minimal, highlighting that movie quality isn't determined solely by length.

Refined Line Plot (Filtered for years up to 2024):



Purpose:

This line plot aims to Visualize changes in key movie metrics – Average IMDB Rating, Production Budget, US Gross, and Worldwide Gross – over time, specifically from the earliest recorded release years up to 2024. By tracking these metrics, the plot highlights long-time trends in the movie industry, such as the impact of increasing budgets on revenue and any shifts in audience rating over decades, this visualization provides insights into how the financial and audience reception aspects of movies have evolved historically.

Justification:

- Each metric is represented by a distinct coloured line, with IMDB Rating (blue), Production Budget (green), US Gross (red), and Worldwide Gross (orange). The use of colour for each metric provides clear differentiation, allowing viewers to distinguish and track each trend individually.
- The y-axis represents the scaled values of the metrics, making it easy to observe the relative trends and patterns. Positioning is effective for comparisons across metrics because each change is plotted consistently over time on the x-axis (Release Year).

- Given the different magnitudes of the metrics, the y-axis is scaled to facilitate comparisons without overwhelming the plot. This scaled axis allows for a balanced view that brings attention to relative changes rather than absolute values.
- Giving multiple metrics in one graph could be overcrowded, but by using different colours and carefully scaling, the plot came up clearly without overwhelming the viewer.
- By limiting the data to years up to 2024, we ensure the analysis reflects observed data rather than any speculative future data.

Interpretation:

- The plot represents that the Worldwide Gross and US Gross have both experienced significant growth over the years, with the Worldwide Gross consistently higher, which shows the increasing global appeal and market for films. Peaks in the 1980s and later years may suggest periods of blockbuster hits with high revenue.
- The green line for the Average Production Budget represents gradual growth over time, keeping in line with increases in both US and Worldwide Gross. This correlation represents that higher budgets can contribute to higher revenue, even though trends indicate it is not a direct one-to-one relationship.
- IMDB Rating remains flat compared to the financial metrics, which represent the audience rating that has been stable over the decades. This shows that during production budgets and revenues have soared, audience appreciation, as measured by average IMDB ratings, has not significantly increased.