**Report on Movie Ratings Analysis**

**Project Summary:** This report presents an analysis of the IMDb dataset to uncover patterns in movie ratings. The study examines various aspects, such as the most popular movie genres, average ratings, highest and lowest-rated movies, and trends over time.

**Project Details:**

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* **Version:** 1
* **Problem Statement:** Analyze a dataset of movie ratings to uncover patterns.

**Data Overview:** The dataset consists of 1,000 movies with attributes such as rank, movie name, year, certificate, runtime, genre, metascore, gross revenue, and IMDb rating. Data preprocessing included converting numerical fields, standardizing text fields, and handling missing values.

**Findings:**

1. **Most Popular Genre and Average Ratings:**
   1. By grouping movies by genre and calculating the mean rating, it was observed that "Adventure, Western" movies have the highest average ratings (8.8/10), followed by "Crime, Drama, Fantasy" and "Drama, Family, Fantasy" (both at 8.6/10).
2. **Trends in Movie Ratings Over Time:**
   1. A line plot of yearly ratings shows fluctuations in movie ratings over the decades.
   2. The period between 1928 and 1936 had the lowest-rated movies, while ratings improved after 1936, reaching an all-time high of 8.5/10.
   3. Certain periods, such as 1926-1927, 1949-1950, and 1962-1963, exhibited relatively stable ratings.
3. **Highest and Lowest Rated Movies:**
   1. The highest-rated movie in the dataset is *The Shawshank Redemption* with a rating of 9.3/10.
   2. The lowest-rated movies (rating 7.6/10) include *Dark Waters*, *The Mitchells vs. the Machines*, and *Guardians of the Galaxy Vol. 2*, among others (81 movies in total).
4. **Word Cloud Visualization:**
   1. A word cloud analysis of movie titles highlighted frequently occurring keywords, providing insights into common themes and naming patterns.
5. **Correlation Analysis:**
   1. A correlation heatmap revealed a strong negative correlation (-0.94) between rank and rating, confirming that higher-rated movies tend to have better rankings.
   2. Other attributes, such as runtime, metascore, and gross revenue, exhibited varying degrees of correlation with movie ratings.

**Conclusion:** The analysis provides key insights into movie rating trends, genre preferences, and influential factors in rankings. The study highlights the importance of genre selection, the impact of historical trends, and the relationship between rankings and ratings in movie popularity.

This report serves as a valuable reference for movie enthusiasts, data analysts, and industry professionals interested in understanding trends in movie ratings.