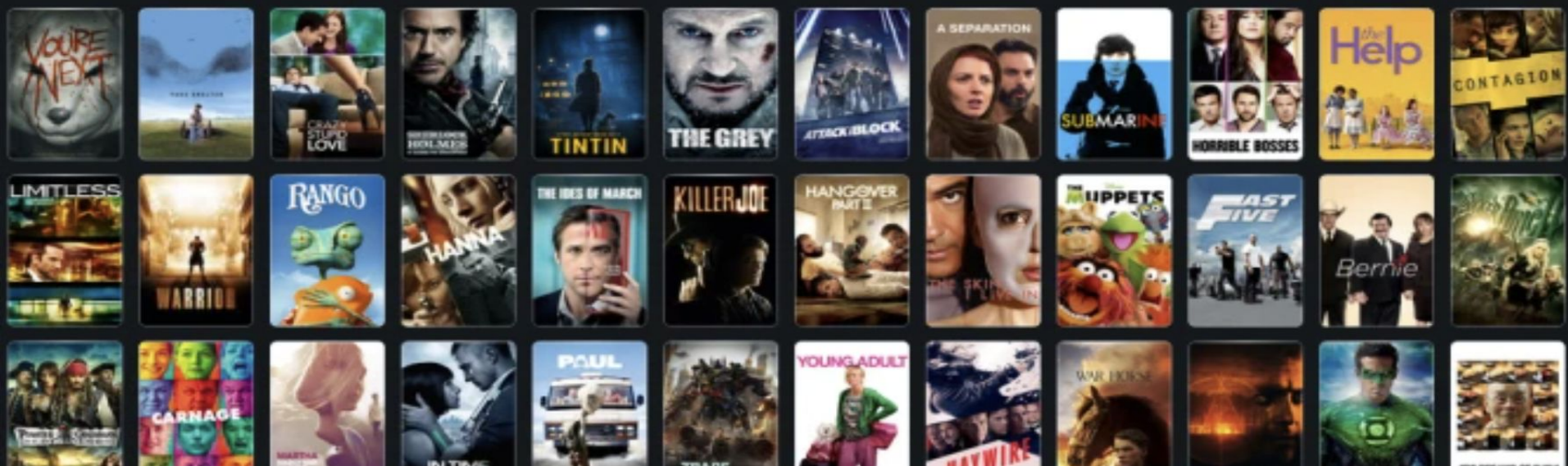


Predicting **IMDb** Movie Ratings



Group Members

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Objective

The purpose of the project is to predict the IMDb Movie Rating from the features contained in the IMDb dataset, execute exploratory Data Analysis and Visualization for the IMDb Dataset

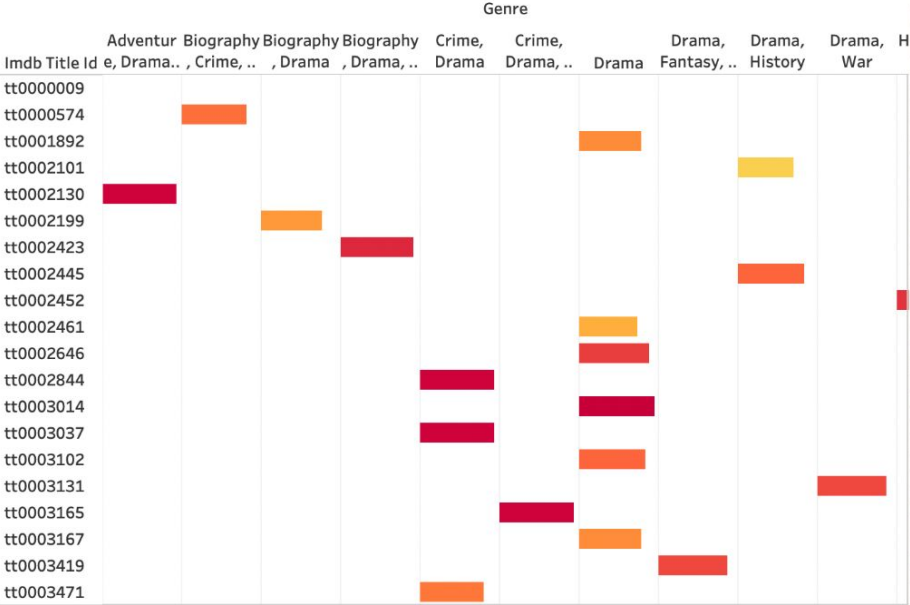
And finally utilise Machine Learning Models to achieve ideal model performance by comparing suitable Machine Learning Algorithms

ERD Diagram

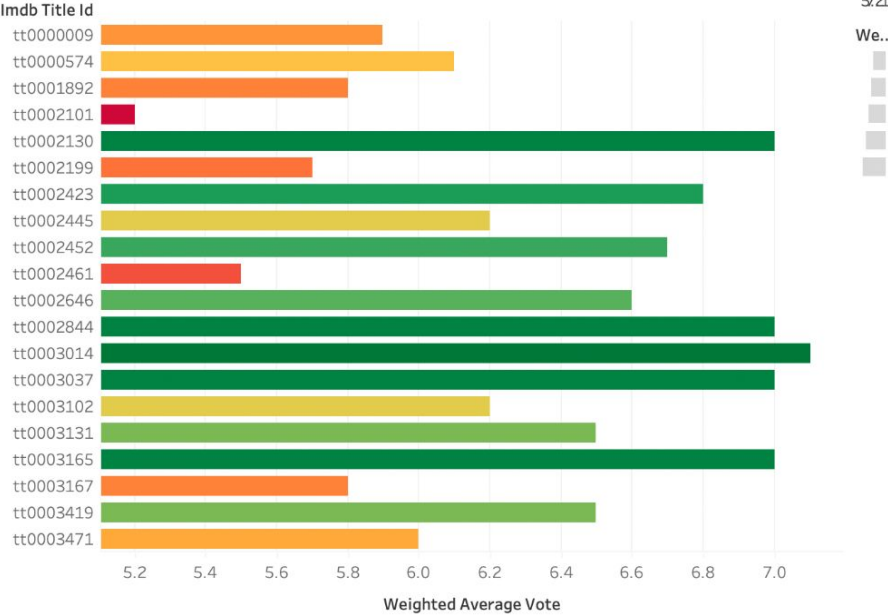


Dashboard

Genre vs Rating



Imdb ID vs Weighted Average Vote








Machine Learning Model Proposal



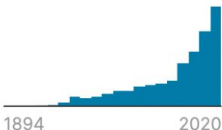
The purpose of the project is to find the best Machine learning Algorithms that can predict the imdb rating based on the features given in the four tables taken from our IMDB Dataset. To achieve this from Various Models the model with the lowest root mean squared error, best accuracy, and best confusion matrix is selected.

IMDB Movie Dataset Tables

IMDB Movies.csv

△ imdb_title_id	# weighted_averag...	# total_votes	# mean_vote	# median_vote	# votes_10
title ID on IMDb	total weighted average rating	total votes received	total mean vote	total median vote	number of votes with rating equal to 10
85855 unique values					

IMDB Ratings.csv

△ imdb_title_id	△ title	△ original_title	# year	△ date_published	△ genre
title ID on IMDb	title name	original title name	year of release	date of release	movie genre
85855 unique values	82094 unique values	80852 unique values		22012 unique values	Drama 15% Comedy 9% Other (65619) 76%

Machine Learning Models

Linear Regression, Logistic Regression, Random Forest, SVM, K-means Algorithm

Target: IMDb Total Average Weighted Rating

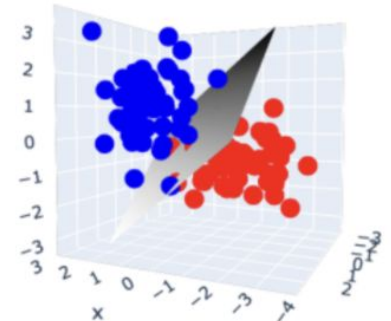
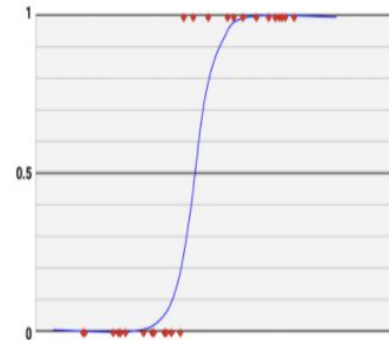
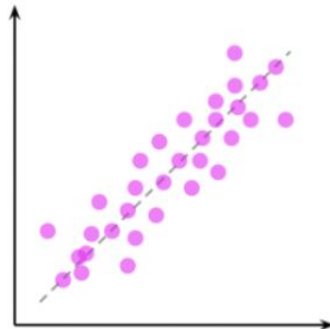
Output: IMDb Rating

Feature: imdb_title_id, title, year, date_published, genre, duration, country, language, director, writer, reviews

Categorical Feature: title, year, genre, country, language, direction, reviews

Quantitative Feature: Date, Duration, vote, budget, gross income, total votes, us_voters rating,

Results: Accuracy, Confusion Matrix



Summary of Significant Steps

1. Join the four tables to create a single table, analyze the datasets
2. Data Cleaning, and dropping unwanted rows and columns
3. Find the relationship between the feature and the target, find the importance of each feature, drop the columns according to the importance ranking
4. Data splitting into training and testing sets
5. Train and Fit the Machine Learning Model using the processed and cleaned data
6. Calculated the balanced accuracy score along with the confusion matrix
7. Compare accuracy in different models ; SVM, Random Forest and Neural Networks
8. Add results to database such as Postgres pgAdmin
9. Reports outcomes in Tableau for Visualization.
10. Final Summary

Thank You