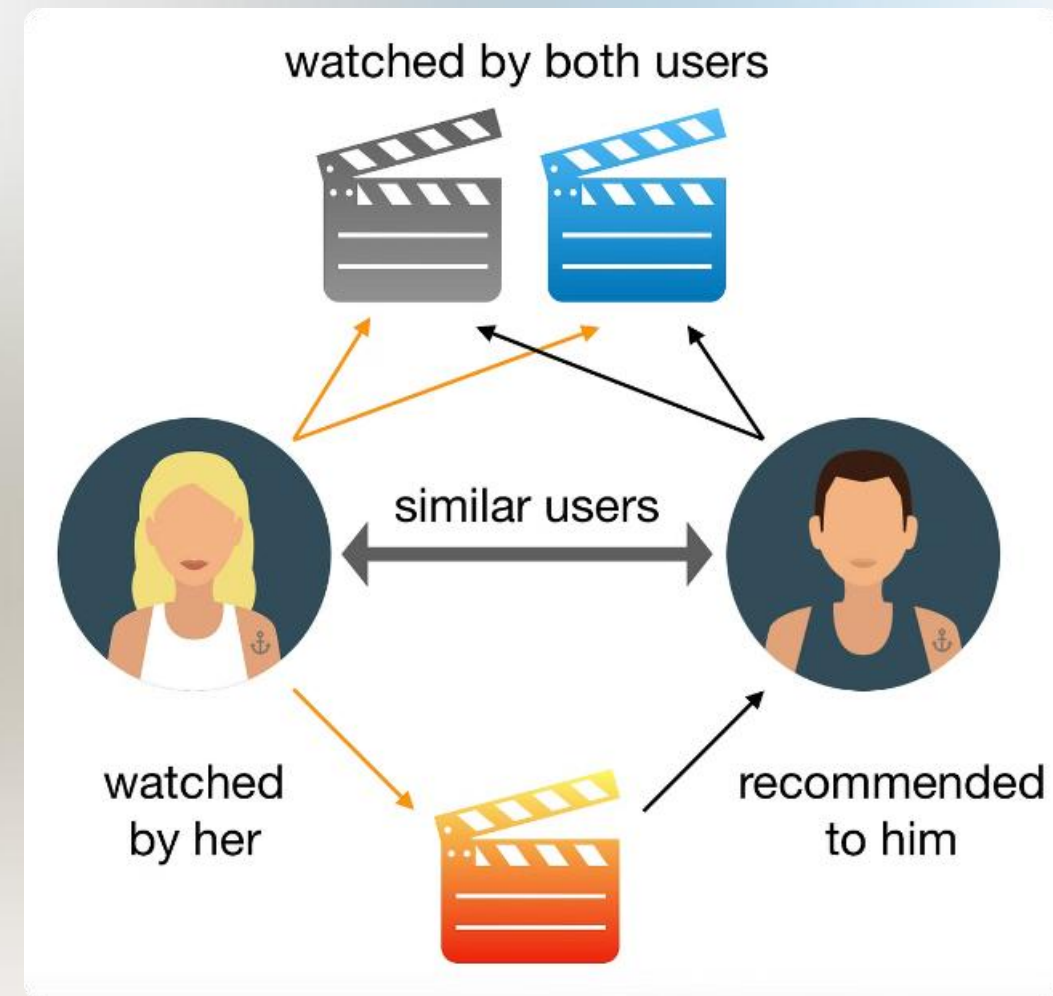# Movie Recommendation Engine

AD-1260 – MOHAMMED GULSAR ROSHAN K

AD-1223 – AVINESH KK

AD-1295 – SURYANANDAN KV

# Function: Recommends movies to users

The Movie Recommendation Engine is designed to provide personalized movie recommendations to users. By analyzing a user's viewing history, preferences, and other data points, the engine can suggest movies that the user is likely to enjoy based on their unique tastes and interests.

Profit for each Genre across Years
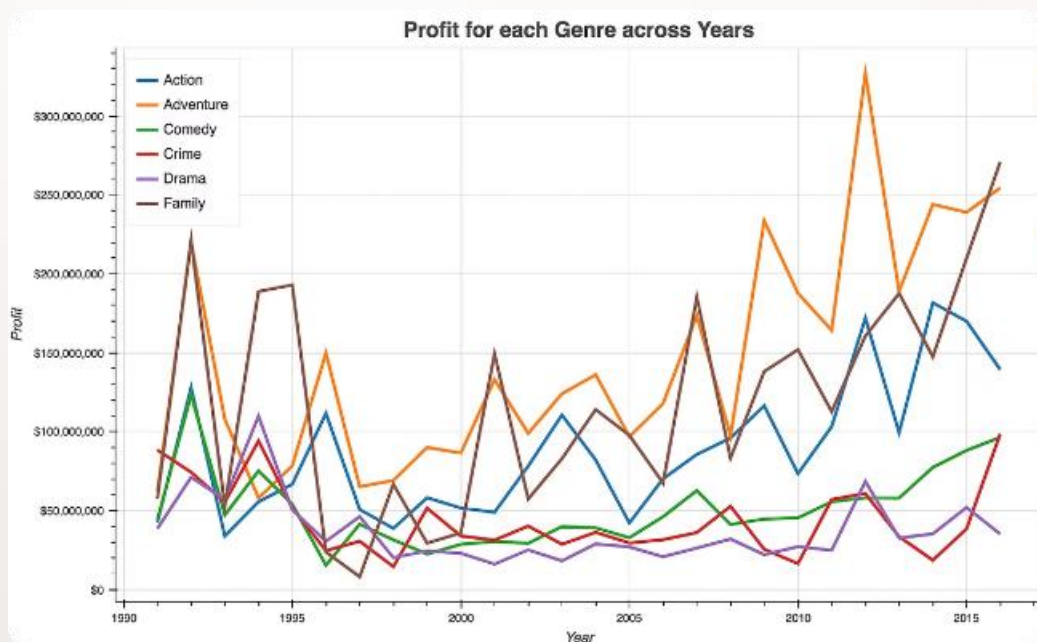
# Data Analysis

Loaded a comprehensive dataset of movie data, including **unique genres**, **user ratings**, and **movie titles**.

Conducted in-depth analysis to identify **key trends** and **patterns** within the data, uncovering valuable insights.

Leveraged advanced data mining techniques to **deduplicate genres** and **group movies by user views and ratings**, setting the stage for a robust recommendation system.
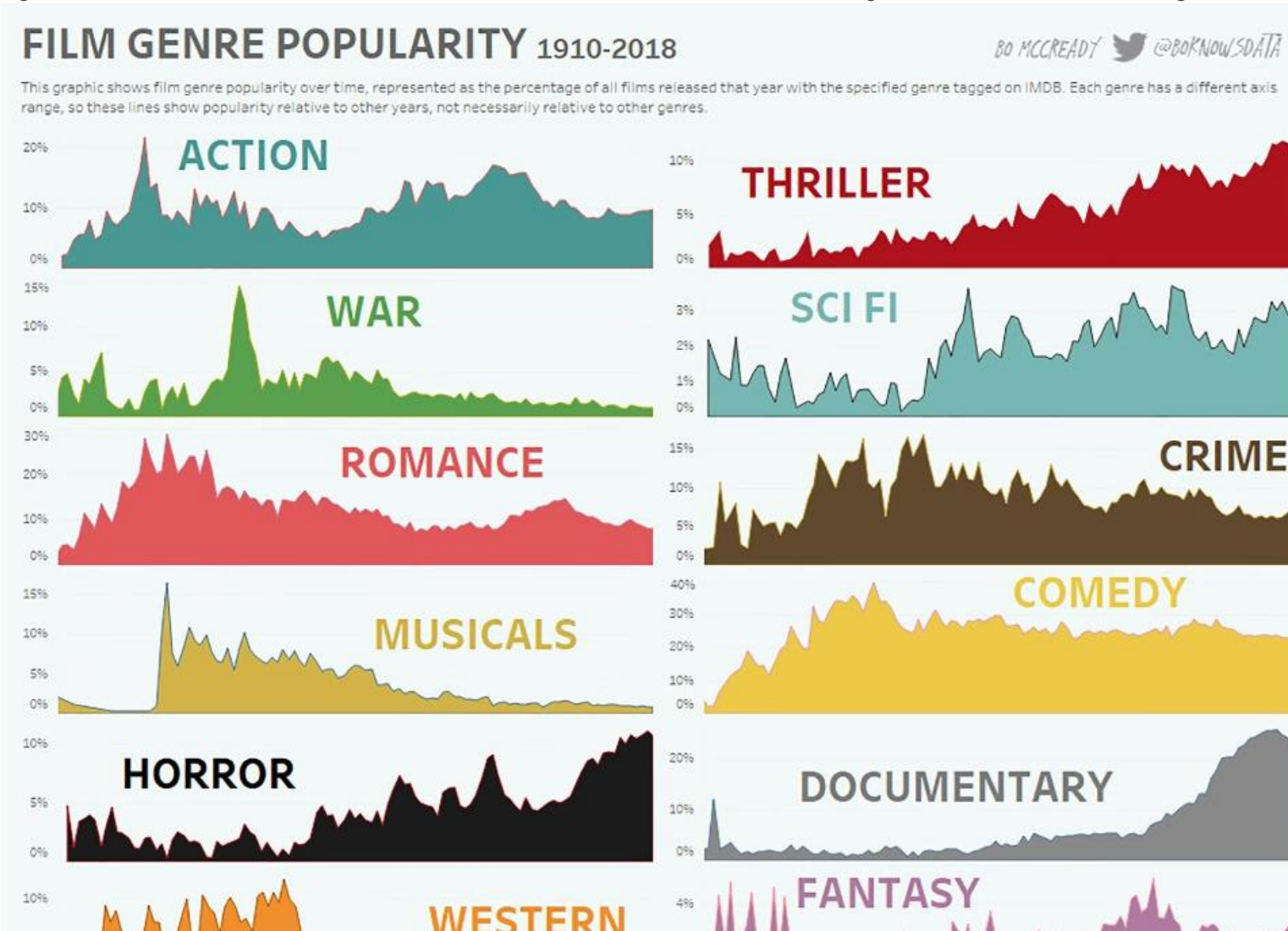
# Visualizing the Data

## Ratings Countplot

This visual displays the distribution of movie ratings, providing insight into the overall ratings landscape. It helps identify popular and well-received movies at a glance.

## Genre Pie Chart

The genre pie chart breaks down the percentage of movies in each genre category. This allows us to understand the diversification of the movie library and identify the most dominant genres.



FILM GENRE POPULARITY 1910-2018

BO MCCREADY @BOKNOWSDATA

This graphic shows film genre popularity over time, represented as the percentage of all films released that year with the specified genre tagged on IMDB. Each genre has a different axis range, so these lines show popularity relative to other years, not necessarily relative to other genres.

ACTION

THRILLER

WAR

SCI FI

ROMANCE

CRIME

MUSICALS

COMEDY

HORROR

DOCUMENTARY

WESTERN

FANTASY

# Analysis: Grouping and Genre Deduplication

## Grouping by User Views/Ratings

Analyze movie data to identify patterns in user views and ratings. Group movies by popularity, average rating, and other engagement metrics to surface trending and high-performing

## Genre Deduplication

Deduplicate and categorize movie genres to create a comprehensive taxonomy. Identify overlaps, subcategories, and niche genres to build a robust recommendation system.
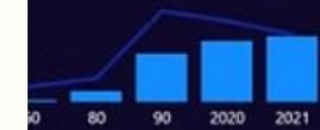
## Identifying Insights

Uncover hidden insights by exploring relationships between user preferences, genre associations, and other movie attributes. These insights will inform the recommendation algorithm.
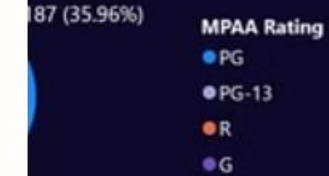
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**579**
Total Moviews

**13**
Total no of genres

1937

Adjusted Gross and Total

Total Moviews by Gen

30    40    50    60

A Rating

187 (35.96%)

MPAA Rating
● PG
● PG-13
● R
● G

Total Moviews by Relea

20 (3.45%)
75 (12.95%)

March    April    May    June    July    August    September

$8.1bn
$4.2bn
$4.1bn
$1.4bn
$1.2bn
$1.2bn

# Recommendation System

The recommendation system is built using the Apriori algorithm, a powerful data mining technique. This algorithm focuses on high-rated movies and incorporates other advanced methods like decision tree, naive Bayes, and k-nearest neighbors (KNN) to provide personalized movie recommendations to users.
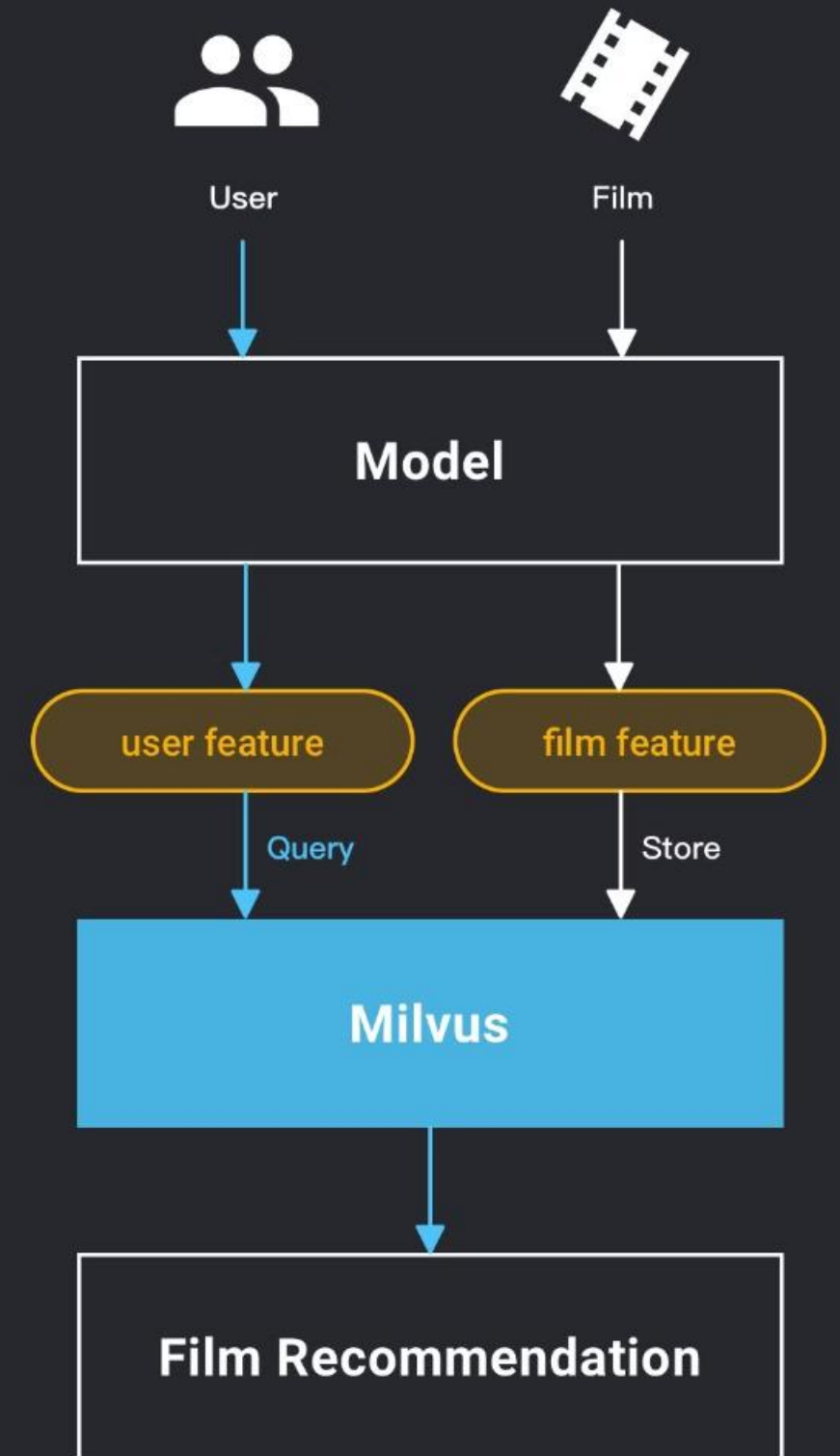
# Metrics

**Confidence:** The likelihood that a recommended movie will be liked by the user based on their previous preferences.

**Lift:** The increased probability of a user liking a recommended movie compared to if the recommendation was random.

**Support:** The frequency of a movie pairing or association occurring in the dataset.

**Conviction:** The measure of how likely it is that the recommendation would be incorrect, based on the strength of the association rules.

# Conclusion

In summary, the Movie Recommendation Engine leverages advanced data mining techniques to provide personalized movie recommendations to users. By analyzing genres, ratings, and user preferences, the system identifies high-quality films tailored to individual tastes.