

Anime Recommendation System



Seiyuu culture



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ANIMES

- The history of anime can be traced back to the start of the 20th century, with the earliest verifiable films dating from 1917.
- Anime's market size was \$25.46 billion in 2021.
- It makes for 60% of the world's animation-based entertainment.



What you should know about animes

- Because it has the BEST fan-service
- Because it's philosophical and DEEP
- Because it's DIFFERENT by “design”
- It's so emotional and relatable
- Because the MAIDS cuteness is over 9000!
- Because the storytelling is out of this world



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01

Business Understanding

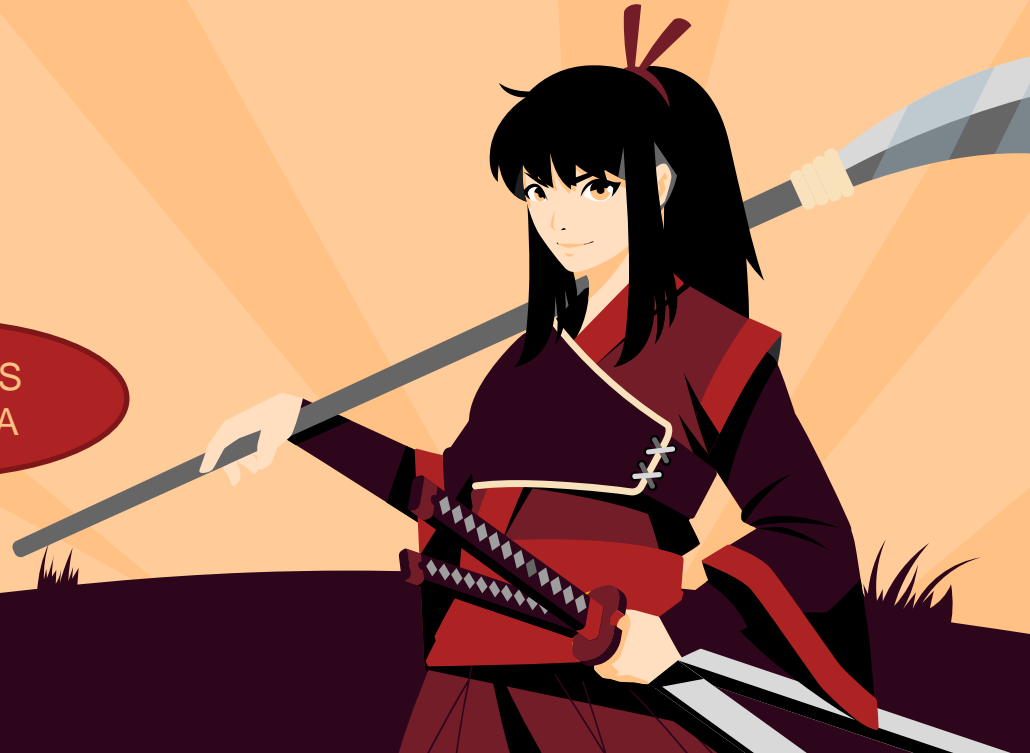
Overview

Anime is a Japanese style animation that has become an increasingly popular genre of entertainment in recent years.

BUSINESS
OBJECTIVES

GOALS

SUCCESS
CRITERIA



Business Objectives



Recommend

To build a model that will recommend the most likely anime a user may watch.



Most watched

To find out the most watched anime genre and highest rated genre



Best Source

To determine the anime source with most members

Problem Statement

1. Due to the huge amount of anime shows anime lovers have huge variety of shows to choose from. They can waste a lot of time searching for the best movie to choose. To reduce the time of searching the movie a recommender system can suggest the most likely anime a user is likely to watch.



Success Criteria



RMSE

Create a model that can recommend movies to users with an RMSE of 0.5 and below.



Accuracy

The accuracy should be at least 70%.



02

Data Understanding

Data Collection

Description of the
data



Data Collection



The data is part of a kaggle competition.

The competition has two datasets anime dataset and anime rating dataset.

The datasets were scrapped from myanimelist.net

Description of the data

The anime dataset has 17002 rows and 15 columns

The anime dataset has **WRITE*** missing values and **WRITE*** duplicates

The columns used the are synopsis,producer,studio and ratings column

The ratings dataset has 73,516 rows and three columns

There are 12,294 unique anime_ids

The columns used are the user_id, anime_id and the ratings column



Data Preparation

- Identified and dropped rows with missing values for columns
- Identified and dropped duplicates
- Checked for outliers and left them
- Removed punctuations from the title column

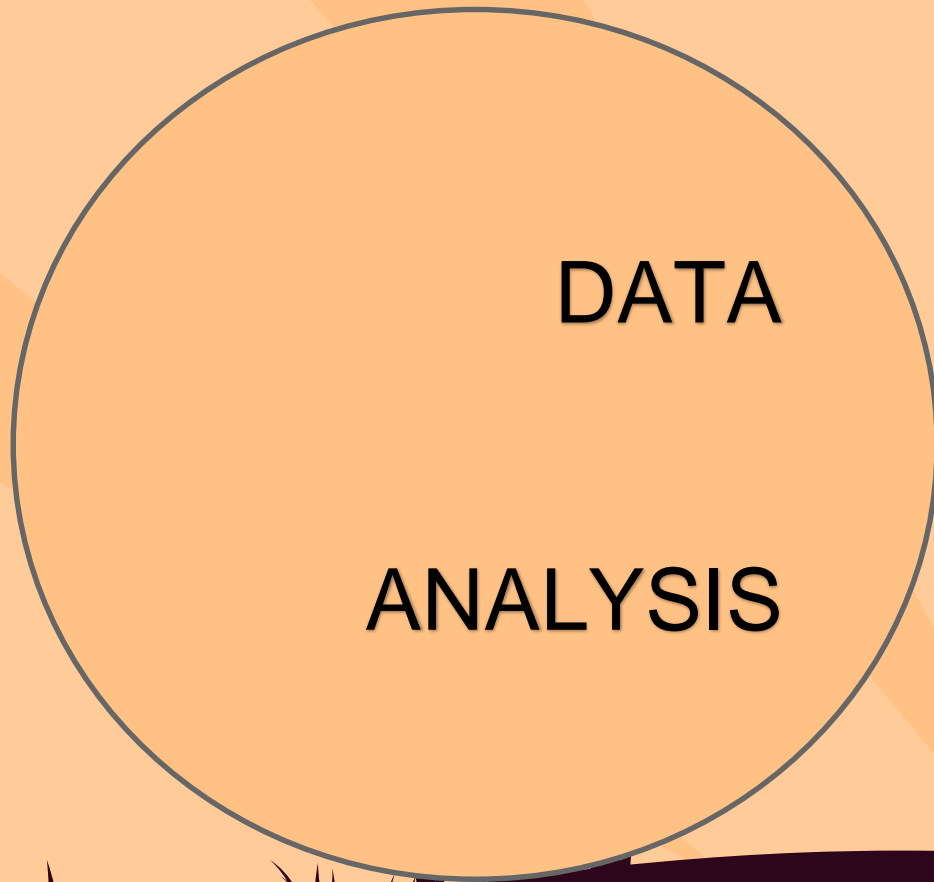
03

Exploratory Data Analysis

Univariate
Analysis

Bivariate Analysis





DATA

ANALYSIS



Type

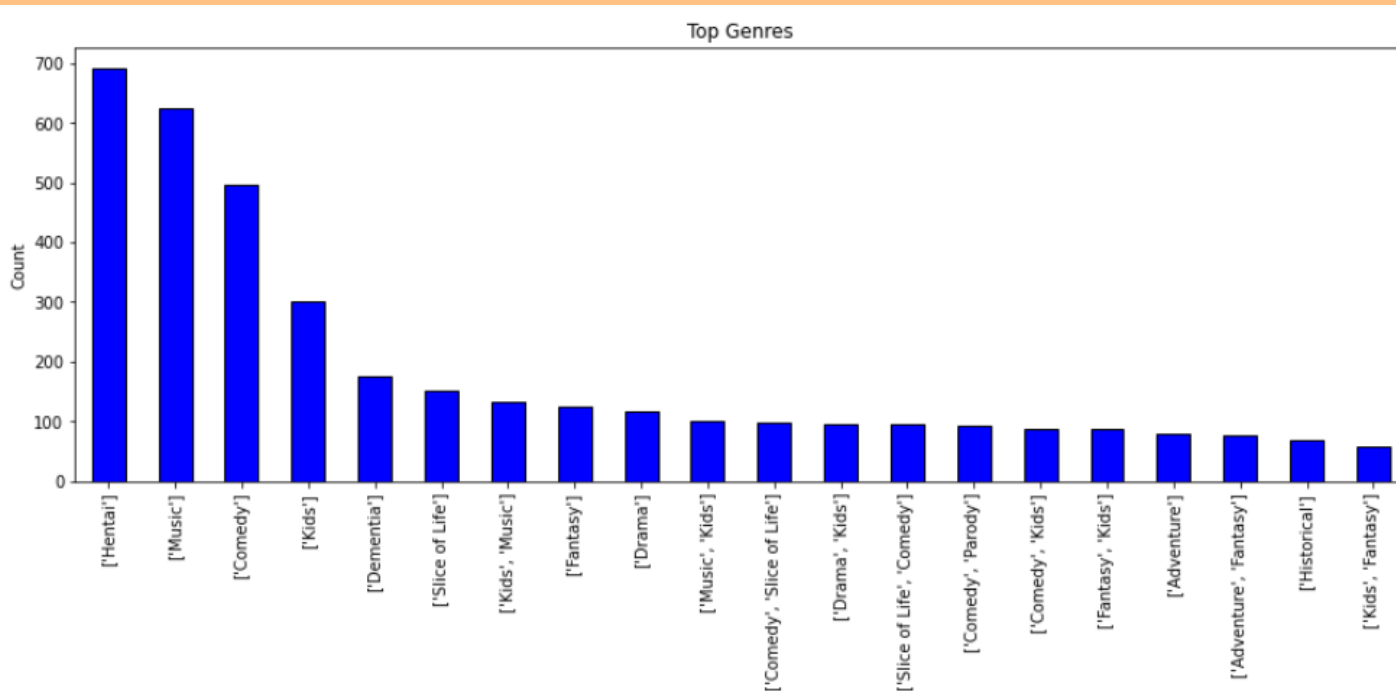


Genre



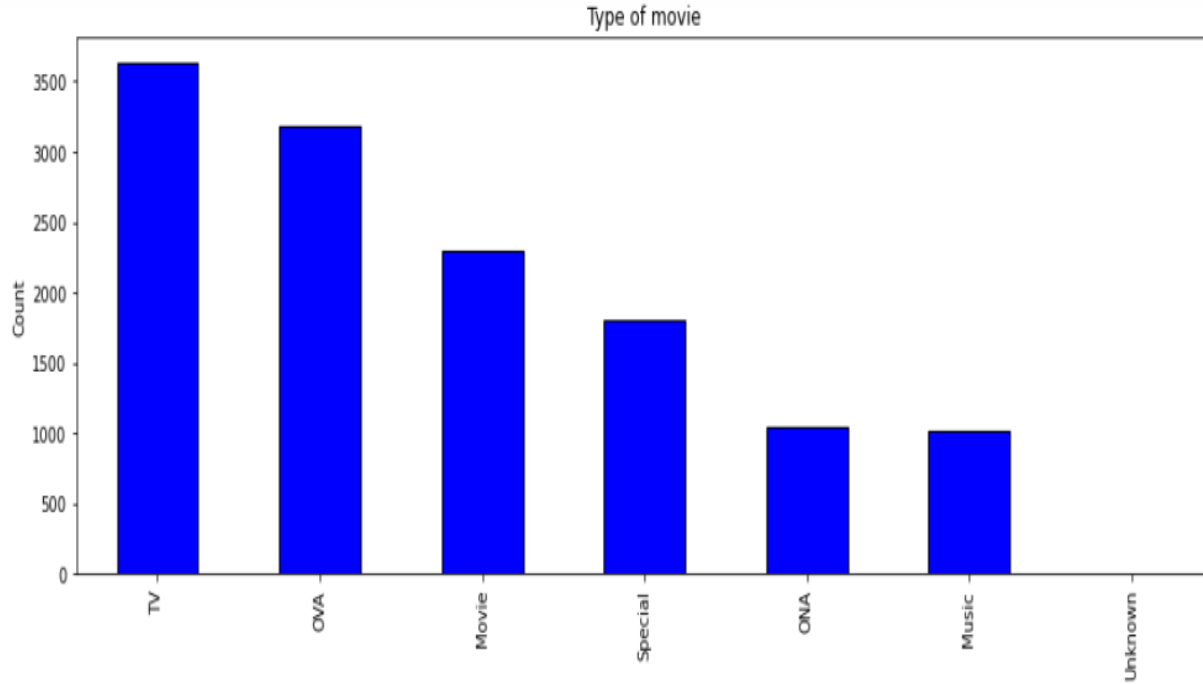
Source

The top genres



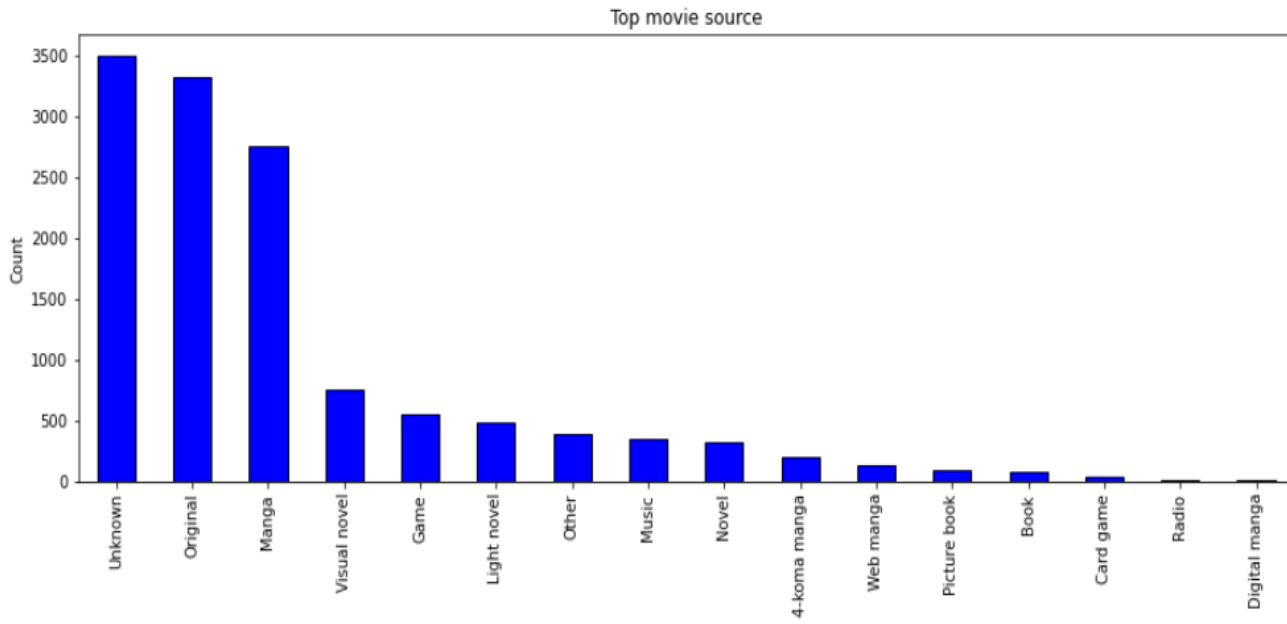
The top genre is
Hental

The top Type of movies



Animes aired on
TV are the most
watched

Top sources



Most of the anime movies are adapted/ sourced from unknown sources, followed by original sources and manga.

04

Modelling



Models

We had 3 models:

- Content based filtering
- Collaborative based filtering
- Hybrid recommendation

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Content based filtering

- A content based recommender works with data that the user provides, either explicitly (rating) or implicitly (clicking on a link). Based on that data, a user profile is generated, which is then used to make suggestions to the user. As the user provides more inputs or takes actions on the recommendations, the engine becomes more and more accurate.

Collaborative filtering

- Collaborative filtering is a technique that can filter out items that a user might like on the basis of reactions by similar users. It works by searching a large group of people and finding a smaller set of users with tastes similar to a particular user.

Hybrid recommendation

- In order to get more robust recommendations, a hybrid model can combine both item features and user-item features.
- We will be using Basic Weighted Hybrid Model to build a robust model.

Evaluation

Model	RMSE
SVD	1.707
KNN with Means	1.706

Deployment

The weights of Hybrid Recommender System model were saved after training and I have made a stream lit web application and deployed it on streamlit which asks for user's id and recommends anime. The web application can also recommend anime for a new user which can be seen by creating a new custom user.

Recommendations

Anime studios should produce more Hentai shows since they are the most popular genre.

More focus should be on TV as animes here are watched the most.

Recommend animes to members using the hybrid collaborative Filtering system.



Arigato!

Do you have any questions?

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