Anime Analysis

Flatiron Capstone Project

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Business Problem

MyAnimeList

- My Anime List is a website that ranks, discusses, and categorizes anime with the help of their vast community.
    - *Anime is an entertainment medium usually of moving drawings or animations originating from Japan.

- MyAnimeList wants to know whether their synopses influence the scoring of an anime and if their recommendation system is working well with their opinion based recommendations.
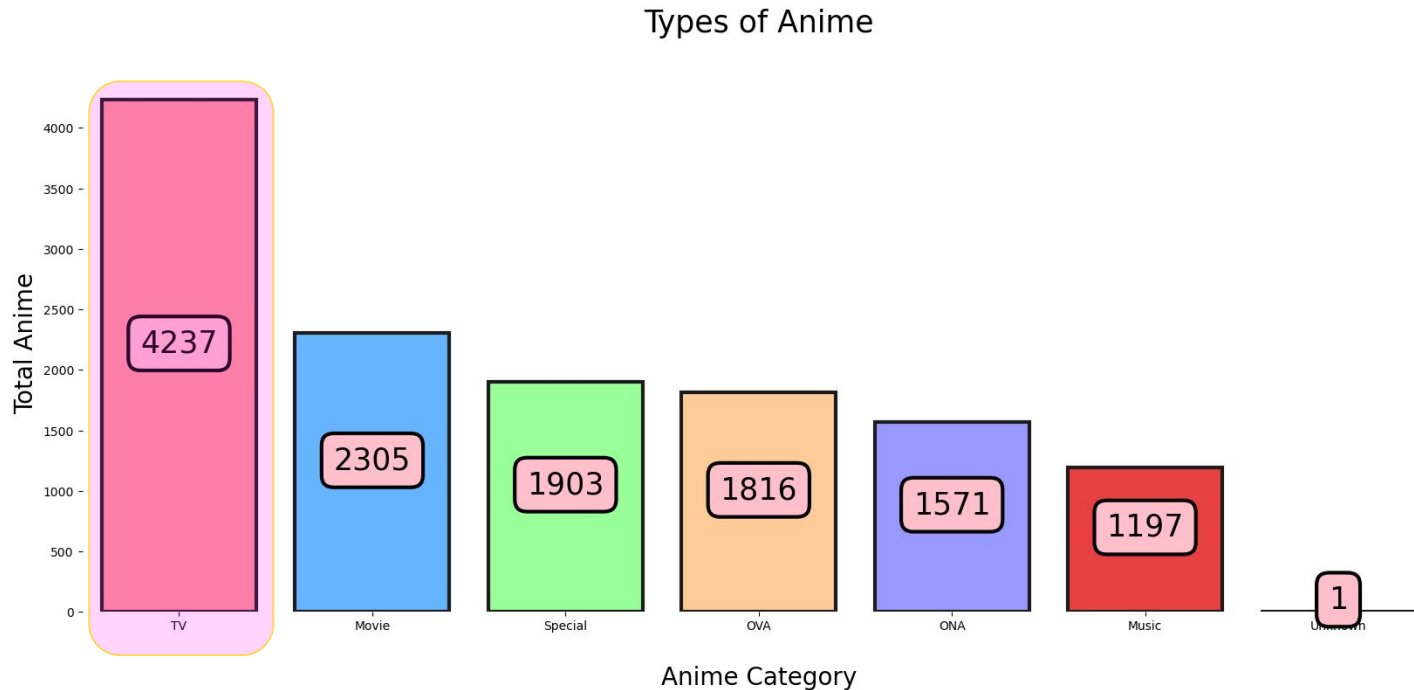
Data

- Sourced from Kaggle

- About 13,000 records
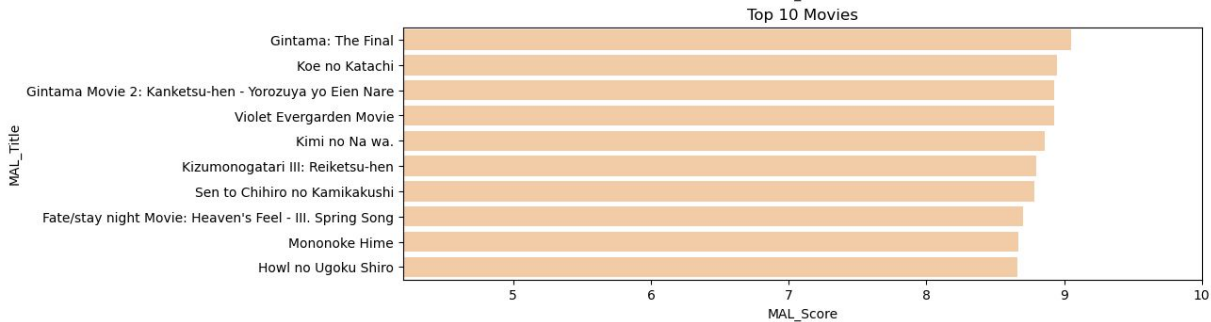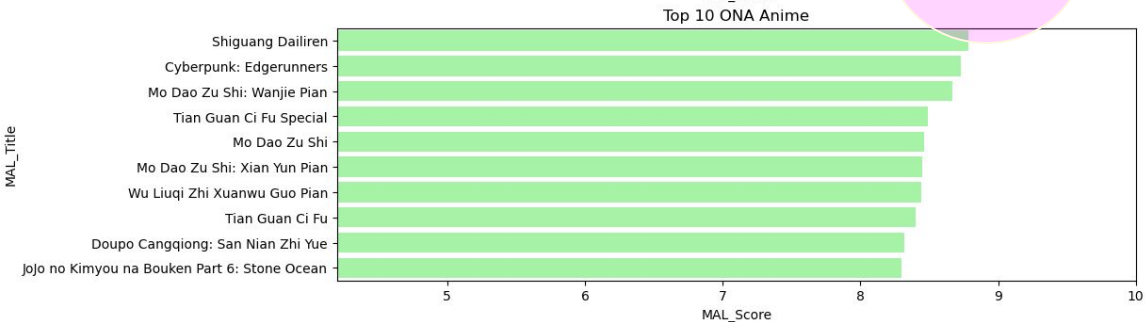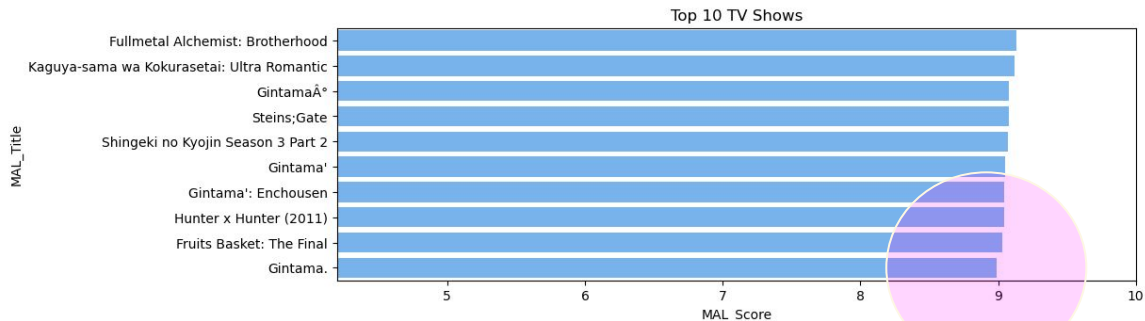 - Including synopsis of the anime, rank, rating, popularity, and genres.
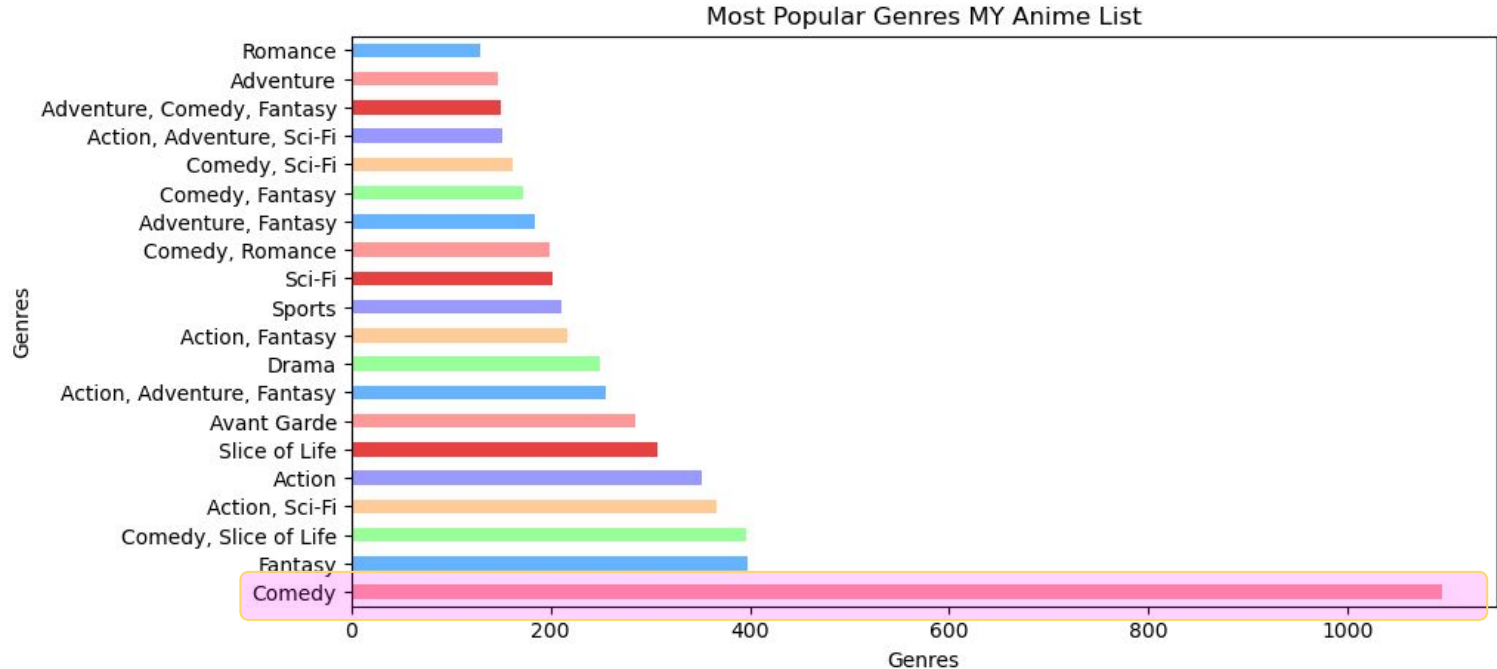
Types of Anime

- **TV is the biggest category**

Types of Anime

Top anime per Type

- The top anime of TV, ONA and Movies are listed.

- TV anime are more highly rated in general.

Top 10 TV Shows

Fullmetal Alchemist: Brotherhood
Kaguya-sama wa Kokurasetai: Ultra Romantic
GintamaÂ°
Steins;Gate
Shingeki no Kyojin Season 3 Part 2
Gintama'
Gintama': Enchousen
Hunter x Hunter (2011)
Fruits Basket: The Final
Gintama.

Top 10 ONA Anime

Shiguang Dailiren
Cyberpunk: Edgerunners
Mo Dao Zu Shi: Wanjie Pian
Tian Guan Ci Fu Special
Mo Dao Zu Shi
Mo Dao Zu Shi: Xian Yun Pian
Wu Liuqi Zhi Xuanwu Guo Pian
Tian Guan Ci Fu
Doupo Cangqiong: San Nian Zhi Yue
JoJo no Kimyou na Bouken Part 6: Stone Ocean

Top 10 Movies

Gintama: The Final
Koe no Katachi
Gintama Movie 2: Kanketsu-hen - Yorozuya yo Eien Nare
Violet Evergarden Movie
Kimi no Na wa.
Kizumonogatari III: Reiketsu-hen
Sen to Chihiro no Kamikakushi
Fate/stay night Movie: Heaven's Feel - III. Spring Song
Mononoke Hime
Howl no Ugoku Shiro

Focusing Genre. How many anime per genre

- Comedy has the most anime
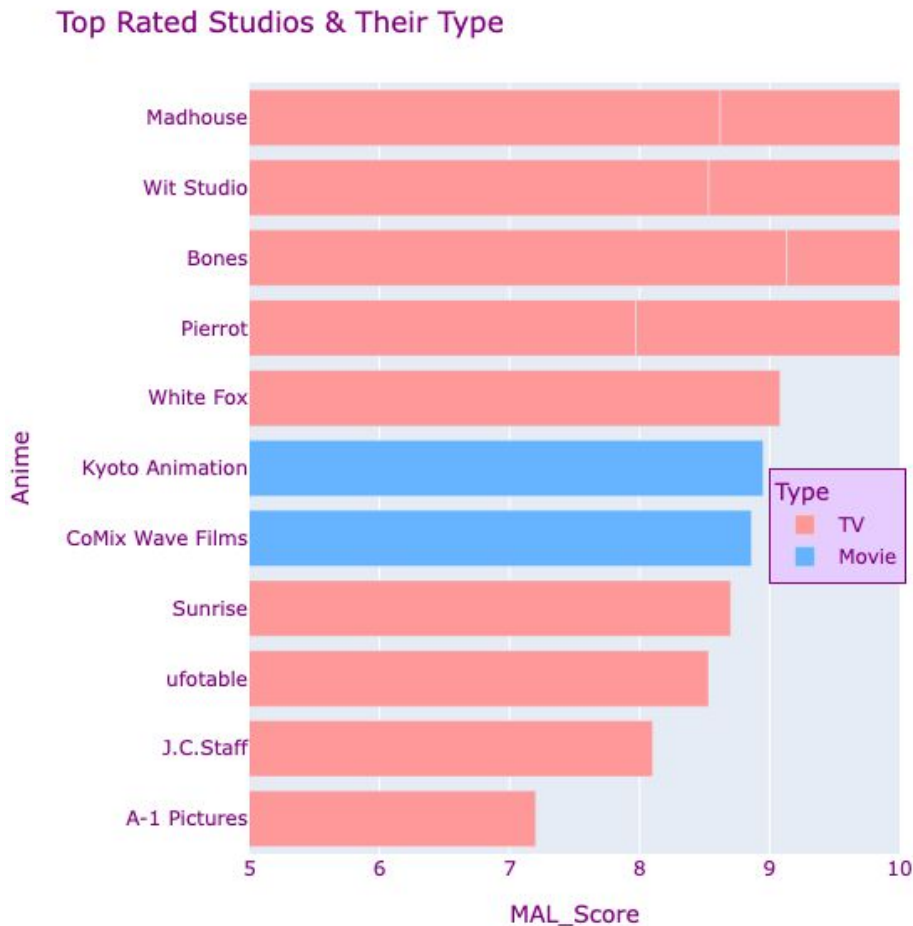

Most Popular Genres MY Anime List

Studios that produced the Anime

- Toei Animation has the most anime recorded
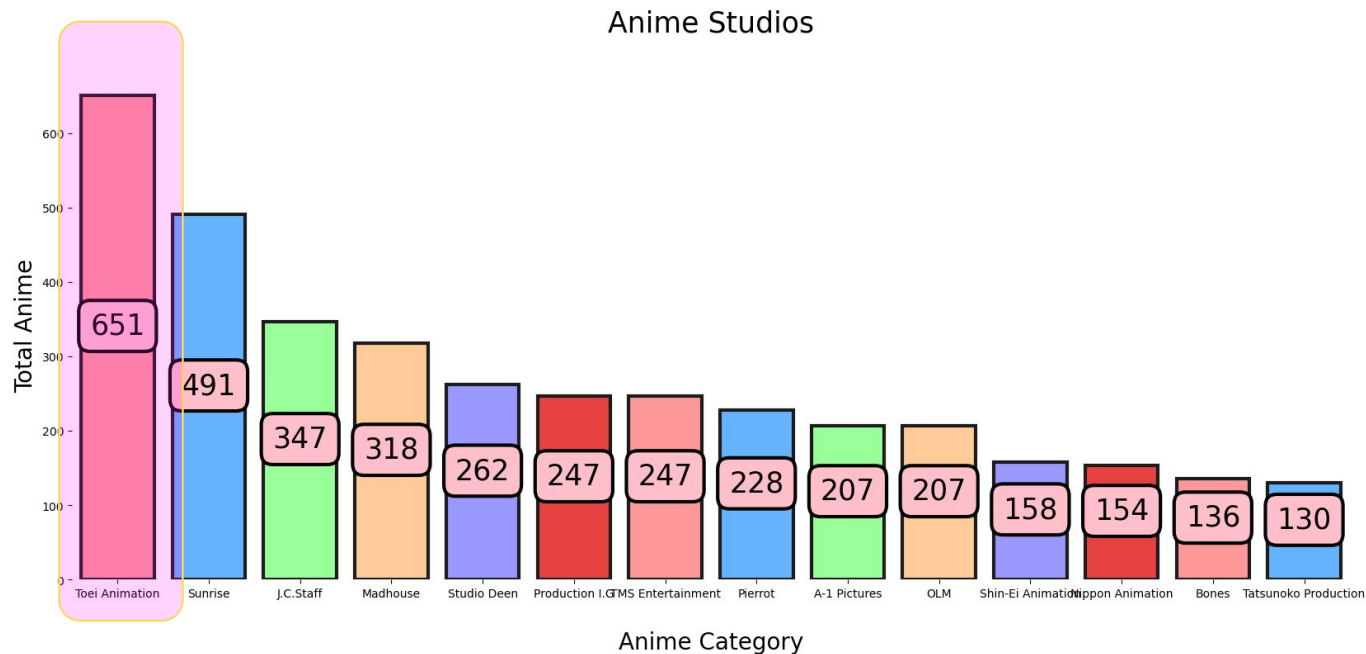
Anime Studios

Type of anime that Studios produce

- The most highly scored studios are Madhouse, Wit Studio and Bones. They reflect the highest rated anime in general.

Top Rated Studios & Their Type

Popularity in relation to Scores of Anime

- The lower ranked anime and more highly scored overall are TV and movie.

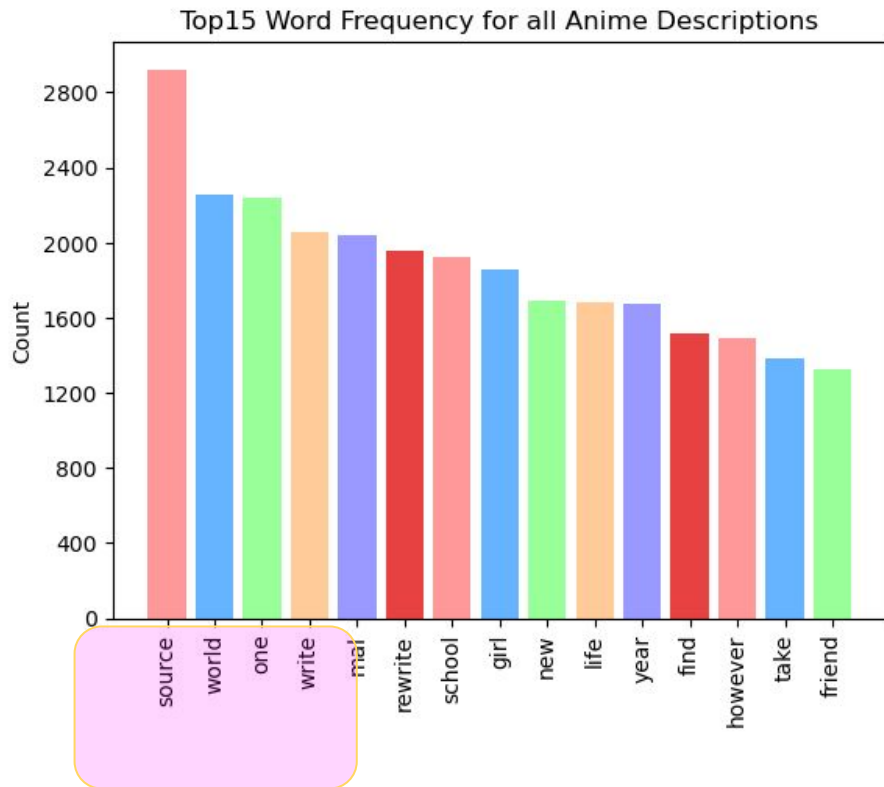Distribution of Anime's Popularity and Score
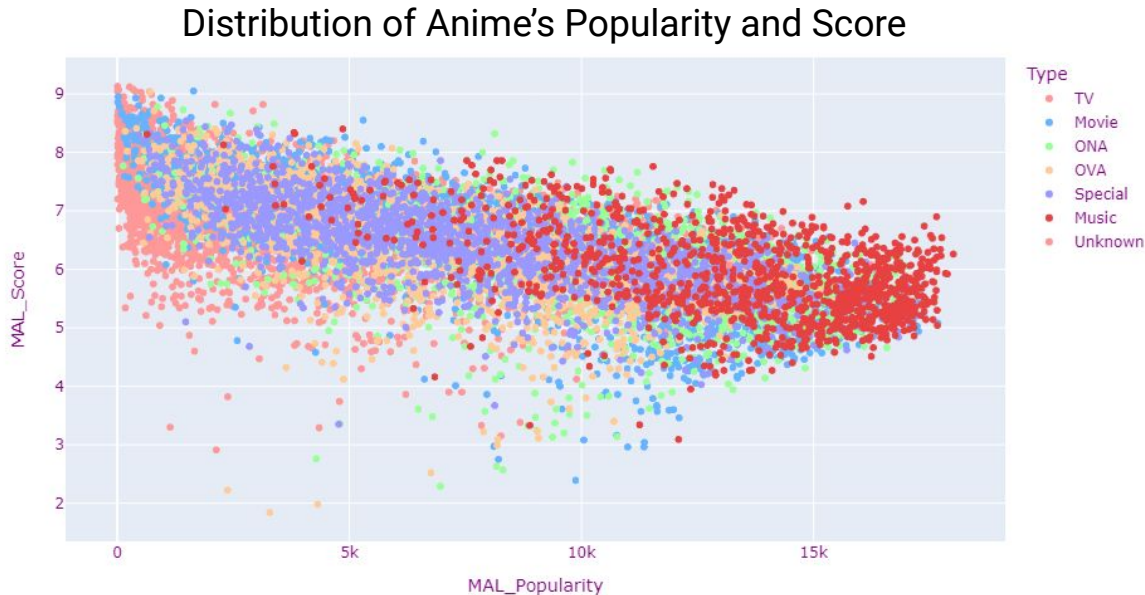
Sources of Anime

- ● More anime are created based on original ideas than manga.

Sources of Anime
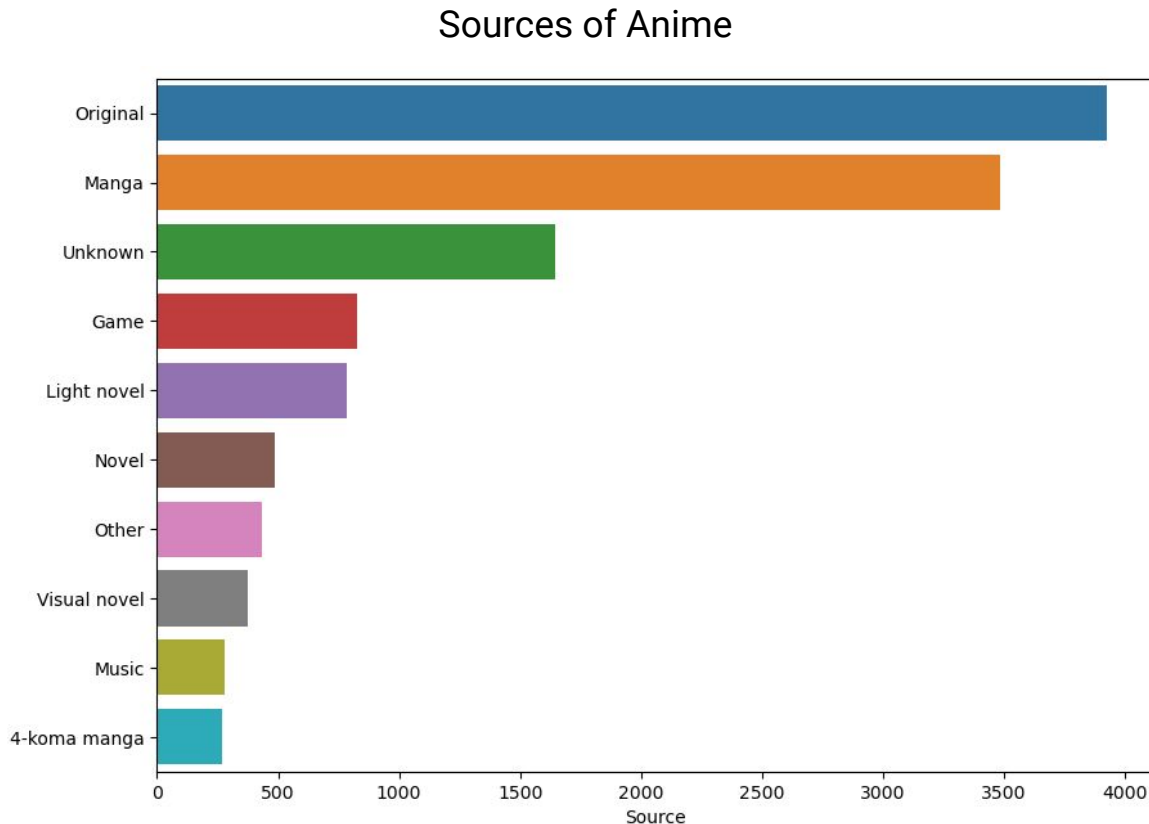
Most Frequent Words Across the descriptions

Top15 Word Frequency for all Anime Descriptions

- Source
- World
- One
- Write
- Mal (stands for My Anime List)

Best models

Hypertuned Model Scores
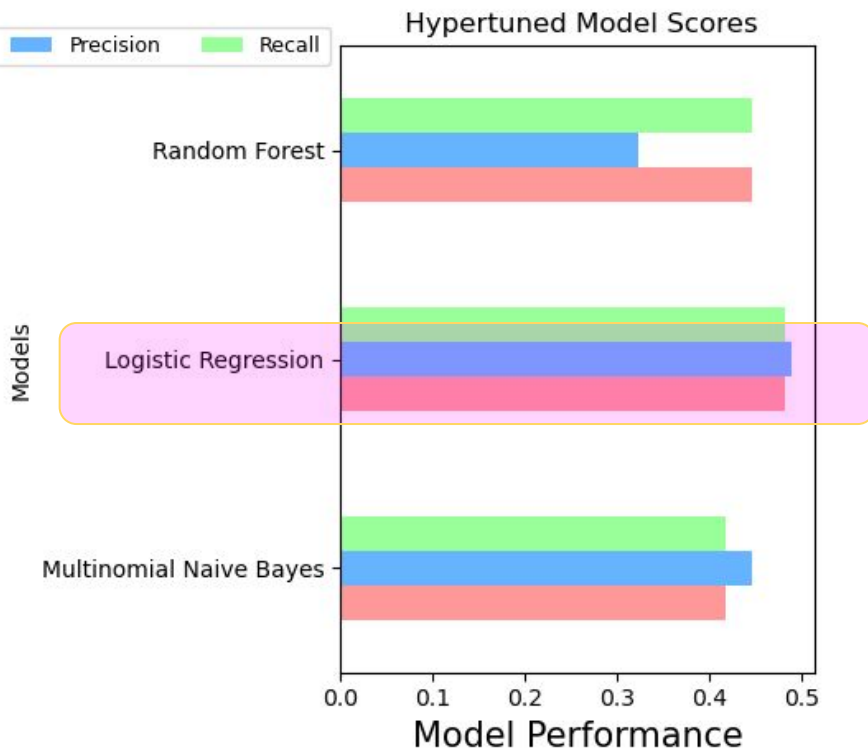
- Models performed relatively poorly even after improving them.

Similar Words

```python
model.wv.most_similar('hero')
```

```
[('soldier', 0.9177970886230469),
 ('fierce', 0.9108932018280029),
 ('master', 0.9067099690437317),
 ('leader', 0.9005905985832214),
 ('officer', 0.8995772004127502),
 ('mighty', 0.8990117311477661),
 ('rise', 0.89898681640625),
 ('corp', 0.8976985216140747),
 ('queen', 0.894585371017456),
 ('heroes', 0.8939843773841858)]
```

- A model was constructed to show similar words.

Recommendation System

- The recommendation system takes in the genre and provides similar anime and lists the rating for reference.

  - Evaluation for this model was RMSE .90, which is under 1 and can be seen as a good predictive model

```
give_recommendation("Death Note")
```

Recommendations for Death Note viewers :

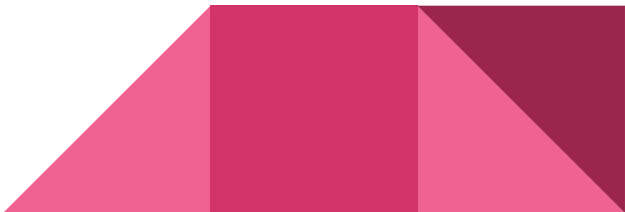| No	Anime Name	Rating
1	Munou na Nana	7.191000
2	Death Note: Rewrite	7.701000
3	Warau Salesman Special Program	6.161000
4	Zhongguo Jingqi Xiansheng	6.071000
5	Mahou Shoujo Ikusei Keikaku	6.961000
6	Higurashi no Naku Koro ni Kai	8.191000
7	Summertime Render	8.491000
8	Higurashi no Naku Koro ni Rei	7.411000
9	Mouryou no Hako	7.151000
10	Mouryou no Hako: Chuuzenji Atsuko no Jikenbo - Hako no Yurei no Koto	6.601000

In conclusion

- Although these models could be used to predict the score of an anime due to the synopsis, they are not deemed to be optimal models with low reliability in accuracy, precision, and recall.

- The exploratory analysis exposed interesting trends in the most commonly listed Studio, Source of the anime, Type of anime, as well as genres and themes. These can be used in marketing and improving the site for visitors.

- A recommendation model was created in order to display the best next anime for viewers.

Recommendations

- The most frequent words, especially the top 10 of 'source', 'one', 'world', 'write', 'mal', 'rewrite', 'school', 'girl', 'new', 'life' can be utilized for marketing certain anime or to ensure that a synopsis will meet certain criteria by including these words.

- The recommendation model created could be used to better ensure that the recommendations on MyAnimeList site are up to date and make sense according to the dataset and not just someone's opinion.

- Utilizing other aspects of anime, such as box office gross winnings, could be implemented into MyAnimeList for more variety of information.

Next Steps

- Combine this dataset with more data from other anime list and recommendation sites, such as Anime_Planet or Anilist.

- Delve into other information on MyAnimeList such as Manga, Manhua, and Manhwa to understand their patterns, modeling and make a recommendation system for them as well.

- Fill in many Nan/ Null data and 'unknown' items with meaningful information in order to perform a better analysis of the entire dataset.

- Utilize other hypertuned models after adding more data to model genres upon the synopses to create useful models.

Thank you for your time

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*Made with word cloud in Python