TRENDS ON ANIME

FINAL REVIEW REPORT

Submitted by

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Data Visualization - CSE3020

Project Guide
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B.Tech in Computer Science and Technology
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VIT®
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Abstract

The current generation is deeply influenced by anime culture. Its unique ability to grow with its viewers and the interesting and colourful depiction of human emotions has managed to play a web of deceit on the GLOBAL market. With the immense expectations and its various new works and we as weebs picture a need for a Visualization of the Growth and vastness of the culture. This project summarizes a study on trends in anime, analysing data related to viewer demographics, popular genres, and the impact of streaming services. Using data visualization techniques, the study aims to provide insights into the anime industry and its audience. Results show that certain genres of anime have remained consistently popular over time, while others have experienced fluctuations in popularity. Viewership demographics reveal that anime is watched by a diverse range of age groups and genders, with variations in preferences depending on location. Overall, this study provides valuable information for fans, creators, and industry professionals interested in understanding trends in the anime industry.

So, in this Project, we will present the various trends in this Culture.

Objective

Data visualization for anime trends aims to present anime-related information in a way that is both aesthetically pleasing and simple to comprehend. Data visualization can assist in locating patterns, trends, and insights that may not be immediately apparent from raw data by using charts and graphs.

Anime

Anime refers to a style of animated entertainment originating in Japan that typically features colourful, highly stylized visuals and often deals with themes such as adventure, romance, science fiction, and fantasy. The term "anime" is short for "animation" and is used in Japan to refer to any animated media, whether it is intended for television, film, or video games. Anime is known for its distinct visual style, which includes large, expressive eyes, exaggerated facial features, and highly detailed backgrounds. Anime has gained widespread popularity around the world and has become a significant part of popular culture in many countries. It has inspired countless fan communities, cosplay events, and even its own subculture.

Scope

The scope of the project is to identify and plot the trends based on Genre, type, rating and members with respective to the given dataset, by analysing these facts we can see the general trend and what the audience requires so that this will be useful to Anime production house as well as people who want to explore more.

Literature Review

A Review of Uncertainty in Data Visualization

Ken Brodlie, Rodolfo Allendes Osorio & Adriano Lopes

Uncertainty is an important factor to consider in data visualization as it can significantly impact the interpretation and use of data. The review of uncertainty in data visualization highlights various techniques that can be used to effectively communicate uncertainty to the viewer, including error bars, confidence intervals, and visual encodings.

The review also emphasizes the importance of context and domain knowledge in interpreting uncertainty, as well as the need for clear and concise communication of uncertainty to avoid misinterpretation of data.

Visualization of Real-World Enterprise Data using Python Django Framework

K. Manikanta Vamsi , P.Lokesh, K. Neha Reddy and P. Swetha

To analyse enterprise data in a simple and understandable manner a website "Dataviz" is needed. It's is like an online tool to visualize enterprise data. It can be used to compare status of companies and can be used to know their growth. Since we are plotting bar graph, we can see how a company is competing with other companies. Here it takes data of companies as input and depict graph in short amount of time as manual prediction of huge data is complex. Moreover, manual prediction can result in huge errors, data mismatch, data can even be missed.

Data visualization

Matthew N. O. Sadiku, Adebowale E. Shadar, Sarhan M. Musa and Cajetan M. Akujuobi

Data visualization is the process of representing data in a graphical or pictorial way in a clear and effective manner. It has emerged as a powerful and widely applicable tool for analyzing and interpreting large and complex data. It has become a quick, easy means of conveying concepts in a universal format. It must communicate complex ideas with clarity, accuracy, and efficiency. These benefits have allowed data visualization to be useful in many fields of study.

Research on Python Data Visualization Technology

Shengjia Cao, YunhanZeng, Shangru Yang, Songlin Cao

In data analysis, data visualization also plays an indispensable role. The emphasis on visualization helps people interpret the data and mine the hidden meaning behind the data faster and more accurately. This article studies the current development of visualization, and demonstrates the idea of visualization for different data through two cases. Select more representative data, use Python's third-party drawing libraries matplotlib and pyecharts to process different data, and select suitable charts for visual analysis.

Towards the Automatic Anime Characters Creation with Generative Adversarial Networks

Yanghua Jin , Jiakai Zhang, Minjun Li ,Yingtao Tian, Huachun Zhu and Zhihao Fang

By combining a clean dataset and several practicable GAN training strategies, we successfully build a model which can generate realistic facial images of anime characters. The paper also makes available an easy-to-use website service online. There still remain some issues for us for further investigations. One direction is how to improve the GAN model when class labels in the training data are not evenly distributed. Also, quantitative evaluating methods under this scenario should be analysed, as FID only gives measurement when the prior distribution of sampled labels equals the empirical labels distribution in the training dataset. This would lead to a measure bias when labels in the training dataset are unbalanced.

Methods

Matplotlib

Matplotlib is a popular data visualization library for Python that is widely used for creating high-quality graphs and charts. It provides a wide range of functionalities for visualizing data and is often used in scientific research, data analysis, and machine learning.

Matplotlib allows users to create a variety of visualizations, including line plots, scatter plots, bar charts, histograms, and many others. It provides a wide range of customization options, allowing users to customize their visualizations in terms of color, size, labels, and other parameters.

Matplotlib also allows users to create complex visualizations with multiple subplots and axes, making it ideal for creating sophisticated plots and charts for scientific research or data analysis.

pyplot

"plt" is a commonly used shorthand for the Matplotlib Pyplot module in Python. The Pyplot module provides a collection of functions that allow users to create a variety of data visualizations, including line plots, scatter plots, bar charts, and histograms.

Seaborn

"Seaborn" (often abbreviated as "sns") is a popular Python data visualization library that is built on top of Matplotlib. Seaborn provides a higher-level interface for creating a range of statistical graphics that are both aesthetically pleasing and informative.

Dataset

Kaggle Dataset which Contains ID , name, genre, type, episodes, rating, members for about 13,000 records.

Anime.csv

https://drive.google.com/file/d/1nQyugtovsh8zY-XzT4owWiu75egTtVMu/view?usp=sharing

GitHub

Anime Recommendation System

https://github.com/krishnaprasad12/Anime-Commendation-System

Novelty

The trends in anime are constantly evolving, and there are several areas of novelty in anime that are worth exploring. Diversity and representation, in recent years, there has been a greater emphasis on diversity and representation in anime, with more stories and characters representing a wider range of experiences and perspectives. We take all the perspectives into factor and try to set a detailed analysis.

Project Contribution

Santhosh Narayanan B

Report Presentation

Python

Graphs relating to Rating and General analysis with table

Troubleshooting

Krishna Prasad Y V S Purama

Python

Dataset Uploading and Graphs related to Genre and Members and type

Troubleshooting

Results

Descriptive Information

	anime_id	name	genre	type	episodes	rating	members
count	11827.000000	11827	11827	11827	11827.000000	11827.000000	1.182700e+04
unique	NaN	11825	3217	6	NaN	NaN	NaN
top	NaN	Saru Kani Gassen	Hentai	TV	NaN	NaN	NaN
freq	NaN	2	785	3568	NaN	NaN	NaN
mean	13401.747781	NaN	NaN	NaN	12.489558	6.484107	1.851568e+04
std	11109.576098	NaN	NaN	NaN	47.102769	1.018372	5.537768e+04
min	1.000000	NaN	NaN	NaN	1.000000	1.670000	1.200000e+01
25%	3325.500000	NaN	NaN	NaN	1.000000	5.895000	2.330000e+02
50%	9819.000000	NaN	NaN	NaN	2.000000	6.570000	1.591000e+03
75%	23302.000000	NaN	NaN	NaN	12.000000	7.190000	9.840500e+03
max	34519.000000	NaN	NaN	NaN	1818.000000	9.370000	1.013917e+06

We can see a rough Descriptive Information on the Dataset, such as the COUNT, the types.

Top 5 Rating

	anime_id	name	genre	type	episodes	rating	members
0	32281	Kimi no Na wa.	Drama, Romance, School, Supernatural	Movie	1.0	9.37	200630
9078	33607	Kahei no Umi	Historical	Movie	1.0	9.33	44
1	5114	Fullmetal Alchemist: Brotherhood	Action, Adventure, Drama, Fantasy, Magic, Mili...	TV	64.0	9.26	793665
10783	26313	Yakusoku: Africa Mizu to Midori	Drama, Kids	OVA	1.0	9.25	53
2	28977	Gintama°	Action, Comedy, Historical, Parody, Samurai, S...	TV	51.0	9.25	114262

The top 5 Rated Anime

Most Members used

	anime_id	name	genre	type	episodes	rating	members
40	1535	Death Note	Mystery, Police, Psychological, Supernatural, ...	TV	37.0	8.71	1013917
86	16498	Shingeki no Kyojin	Action, Drama, Fantasy, Shounen, Super Power	TV	25.0	8.54	896229
804	11757	Sword Art Online	Action, Adventure, Fantasy, Game, Romance	TV	25.0	7.83	893100
1	5114	Fullmetal Alchemist: Brotherhood	Action, Adventure, Drama, Fantasy, Magic, Mili...	TV	64.0	9.26	793665
159	6547	Angel Beats!	Action, Comedy, Drama, School, Supernatural	TV	13.0	8.39	717796

Most members used for the Production, The aspect in here is the fact the Type is TV.

Most Episodes

	anime_id	name	genre	type	episodes	rating	members
6296	12393	Oyako Club	Comedy, Slice of Life	TV	1818.0	6.18	160
929	2471	Doraemon (1979)	Adventure, Comedy, Fantasy, Kids, Sci-Fi, Shounen	TV	1787.0	7.76	14233
9243	23349	Kirin Monoshiri Yakata	Kids	TV	1565.0	5.56	116
5360	6277	Manga Nippon Mukashibanashi (1976)	Fantasy, Historical	TV	1471.0	6.48	406
6580	8213	Hoka Hoka Kazoku	Comedy	TV	1428.0	6.05	194
9242	32448	Kirin Ashita no Calendar	Historical, Kids	TV	1306.0	6.43	59
9611	22221	Monoshiri Daigaku: Ashita no Calendar	Historical	TV	1274.0	6.80	112
10163	10241	Sekai Monoshiri Ryoko	Comedy	TV	1006.0	5.92	153
9317	20117	Kotowaza House	Comedy, Slice of Life	TV	773.0	5.63	110
6118	9768	Shima Shima Tora no Shimajirou	Adventure, Comedy, Fantasy, Kids, Magic	TV	726.0	6.25	237

Movies with More than 1 part (Episode)

	anime_id	name	genre	type	episodes	rating	members
63	21899	Gintama: Yorinuki Gintama-san on Theater 2D	Action, Comedy, Historical, Parody, Samurai, S...	Movie	2.0	8.60	11104
411	1689	Byousoku 5 Centimeter	Drama, Romance, Slice of Life	Movie	3.0	8.10	324035
783	1462	Memories	Drama, Horror, Psychological, Sci-Fi	Movie	3.0	7.84	38643
1370	1911	Top wo Nerae! & Top wo Nerae 2! Gattai Mov...	Comedy, Mecha, Shounen	Movie	2.0	7.57	8079
1968	3508	Genius Party	Action, Dementia, Fantasy, Mecha, Music, Psych...	Movie	7.0	7.39	18612
1969	6795	Genius Party Beyond	Dementia, Fantasy, Music, Sci-Fi	Movie	5.0	7.39	10660
2418	27539	Pikmin Short Movies	Fantasy, Kids	Movie	3.0	7.27	406
2546	2962	Digimon Adventure 02 Movies	Adventure, Fantasy, Kids, Sci-Fi	Movie	2.0	7.23	26543
3259	1951	Manie-Manie: Meikyuu Monogatari	Adventure, Fantasy, Horror, Sci-Fi, Supernatural	Movie	3.0	7.04	9568
3703	2611	Panda Kopanda	Comedy, Kids	Movie	2.0	6.91	4922
5216	23831	Mahou Shoujo Madoka★Magica Movie 3: Hangyaku n...	Comedy	Movie	4.0	6.52	6946
5235	7626	Umi no Triton (1979)	Adventure, Fantasy, Shounen	Movie	2.0	6.52	235
5289	23697	Kara no Kyoukai: Manner Movies	Action, Comedy	Movie	7.0	6.49	5367

5789	31923	Mini Hama: Minimum Hamatora Movies	Comedy, Mystery, School, Super Power	Movie	2.0	6.35	833
6028	18755	Donyatsu	Comedy, Sci-Fi, Seinen	Movie	12.0	6.27	2168
6200	8928	Visions of Frank: Short Films by Japan's ...	Dementia	Movie	9.0	6.22	267
6464	7420	Byulbyul Iyagi	Drama, Psychological	Movie	6.0	6.10	235
6647	9087	Mobile Suit SD Gundam Musha, Knight, Commando	Action, Comedy, Fantasy, Mecha, Parody	Movie	2.0	6.02	860
6654	6189	Baton	Adventure, Sci-Fi	Movie	3.0	6.01	1482
7720	7809	3-tsu no Kumo	Dementia	Movie	3.0	5.10	918
8288	9447	Byulbyul Iyagi 2	Drama, Psychological	Movie	6.0	5.86	122
8694	29924	Goman-hiki	Kids	Movie	100.0	7.00	56
9107	13817	Kamiusagi Rope	Comedy, Slice of Life	Movie	14.0	6.00	137
9109	13819	Kamiusagi Rope 2	Comedy, Slice of Life	Movie	12.0	5.41	100
9111	30150	Kamiusagi Rope 3	Comedy, Slice of Life	Movie	12.0	4.67	104
9532	7616	Michi	Drama	Movie	4.0	8.00	187
9763	8205	Norabbits' Minutes	Comedy, Fantasy, Kids	Movie	5.0	6.13	102
9773	31020	Norasco: Cinema Point Card-hen	Comedy, Slice of Life	Movie	10.0	6.86	57
9943	22675	Peeping Life: Gekijou Original-ban	Comedy, Slice of Life	Movie	5.0	4.67	161
9959	32736	Pepsi Nex x 009 Re:Cyborg	Action, Comedy	Movie	3.0	5.27	135
10108	32397	Sagaken wo Meguru Animation	Slice of Life	Movie	2.0	6.24	535

Genre Types

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['Action' 'Adventure' 'Cars' 'Comedy' 'Dementia' 'Demons' 'Drama' 'Ecchi'
 'Fantasy' 'Game' 'Harem' 'Hentai' 'Historical' 'Horror' 'Josei' 'Kids'
 'Magic' 'Martial Arts' 'Mecha' 'Military' 'Music' 'Mystery' 'Parody'
 'Police' 'Psychological' 'Romance' 'Samurai' 'School' 'Sci-Fi' 'Seinen'
 'Shoujo' 'Shoujo Ai' 'Shounen' 'Shounen Ai' 'Slice of Life' 'Space'
 'Sports' 'Super Power' 'Supernatural' 'Thriller' 'Vampire' 'Yaoi' 'Yuri']
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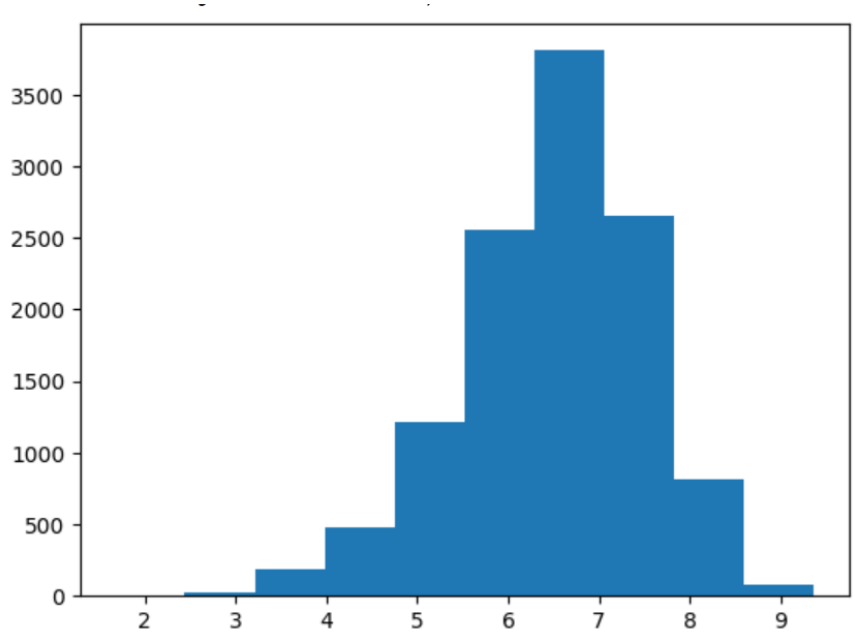
The various Genre’s.

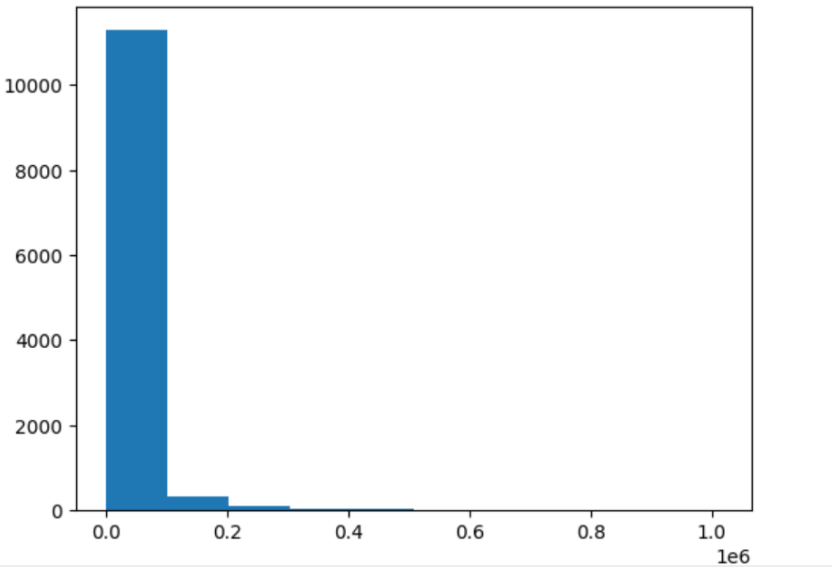
Histogram Plot

Rating



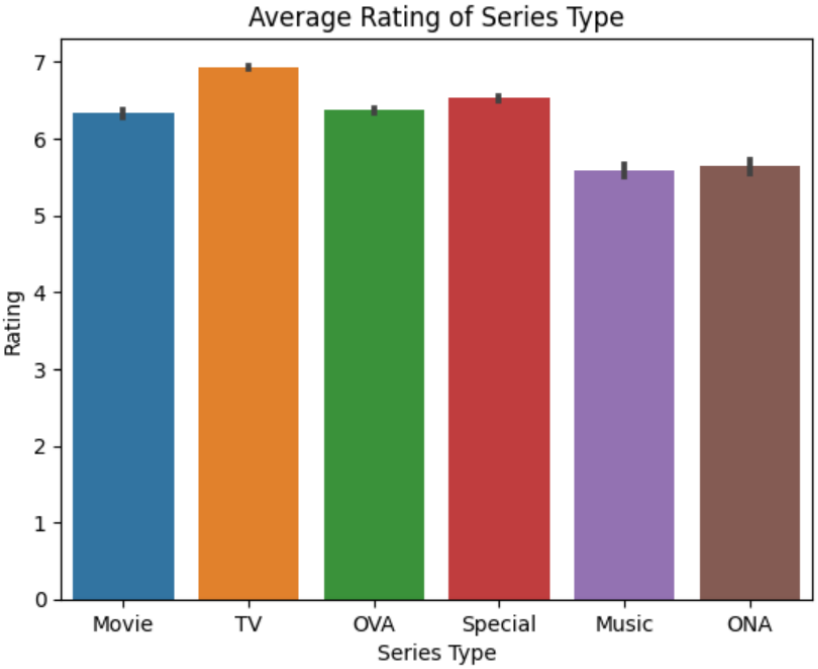
Most of the Rating is about 6 to 7 and the count decreases on both sides gradually.

Members

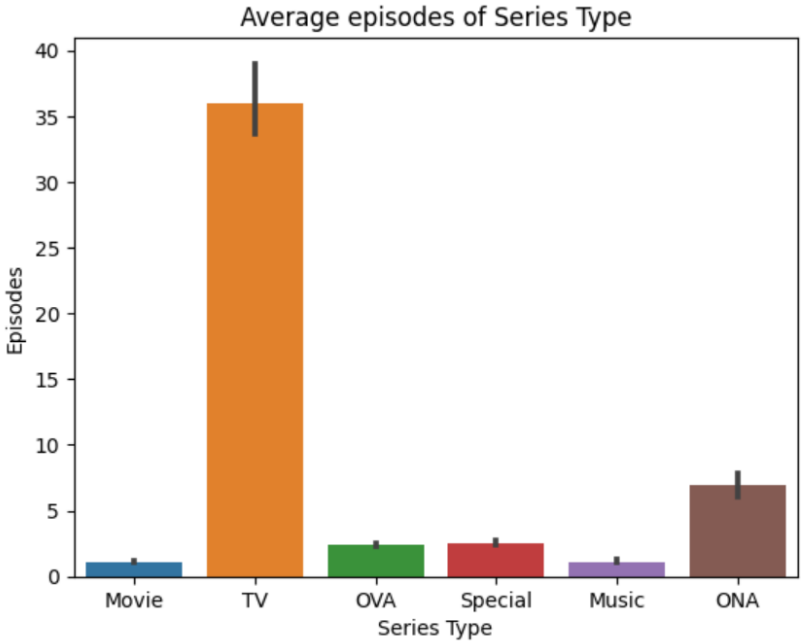


The plot shows there is many members required for a large amount or predominantly and thus only a small few work with few members.

Bar Chart

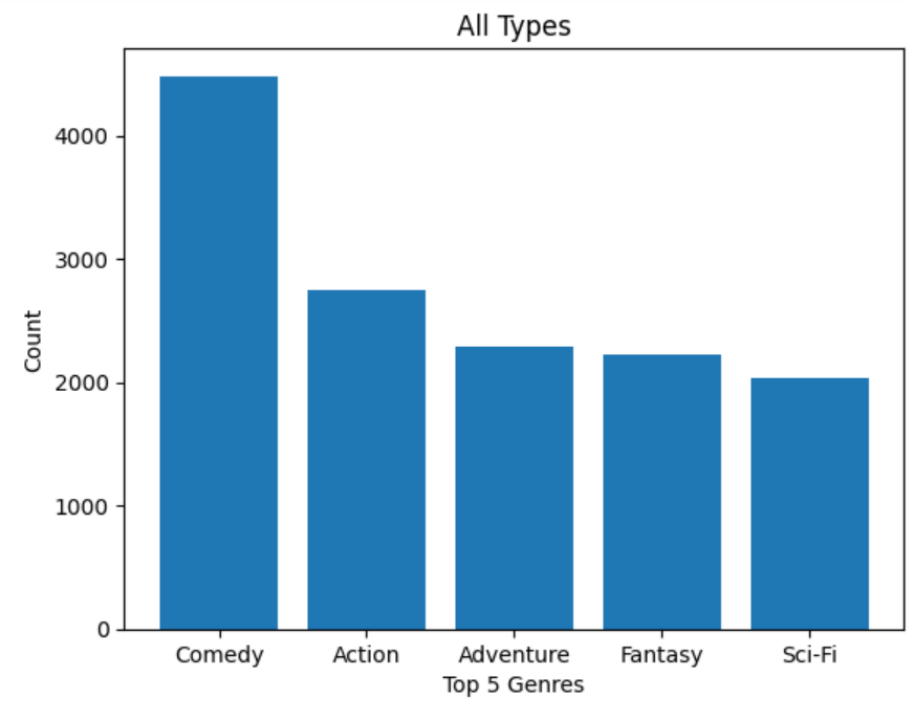


The average rating for TV type is highest and overall, the rating is around 6.



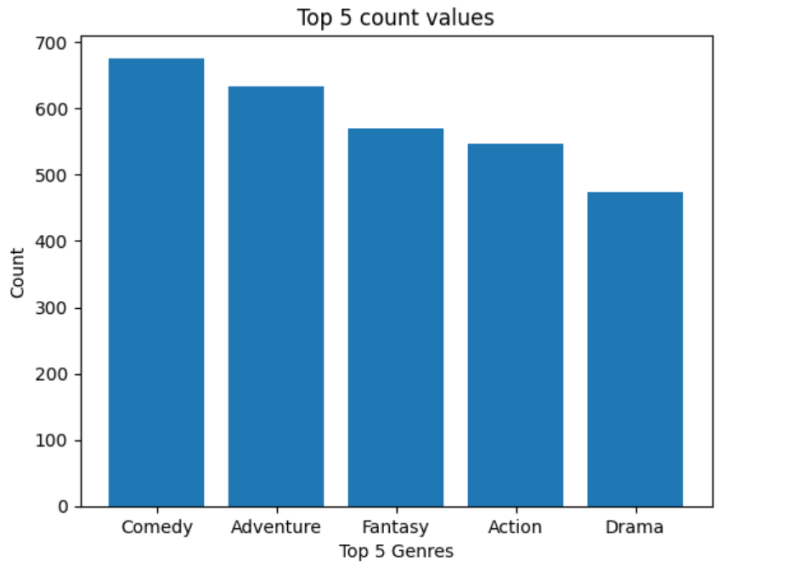
TV type anime are episodic.

Top 5 Genre

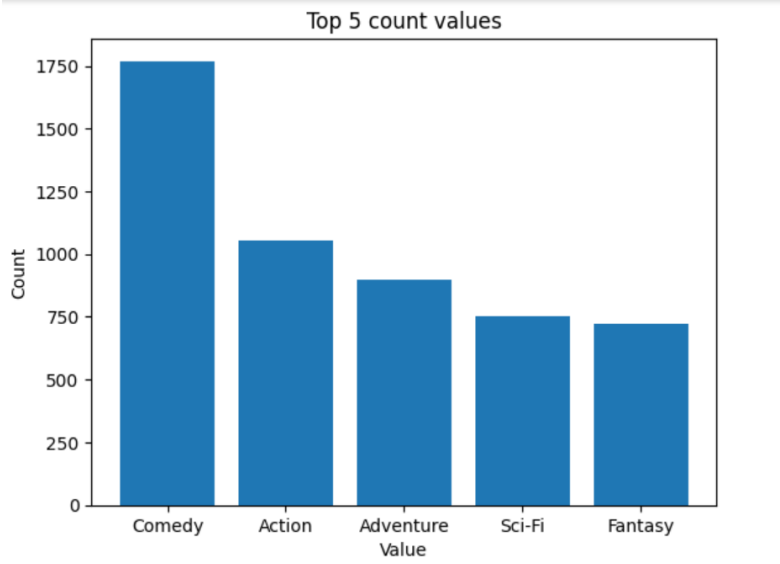


The Comedy is most produced Genre.

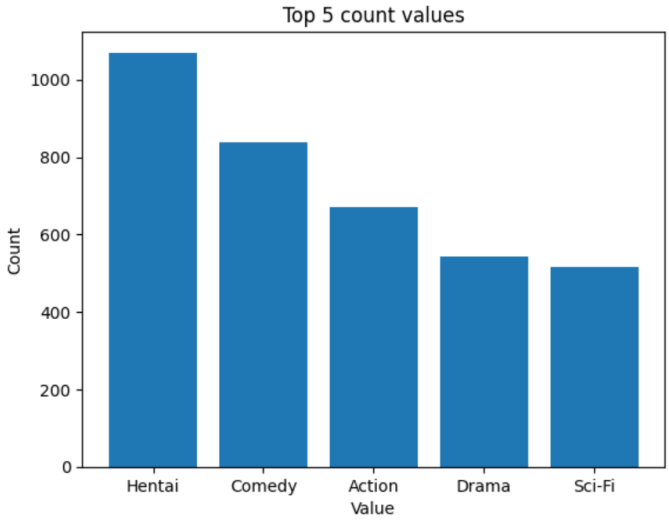
Top 5 Genres in Movie



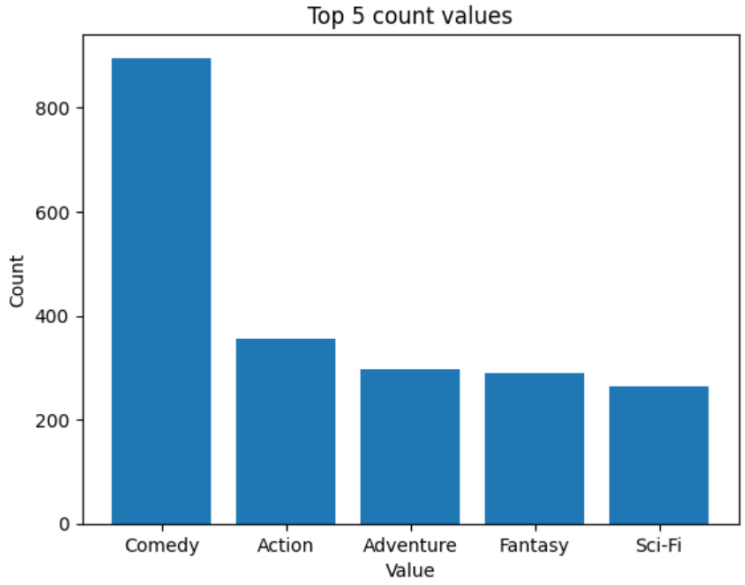
Top 5 Genre in TV



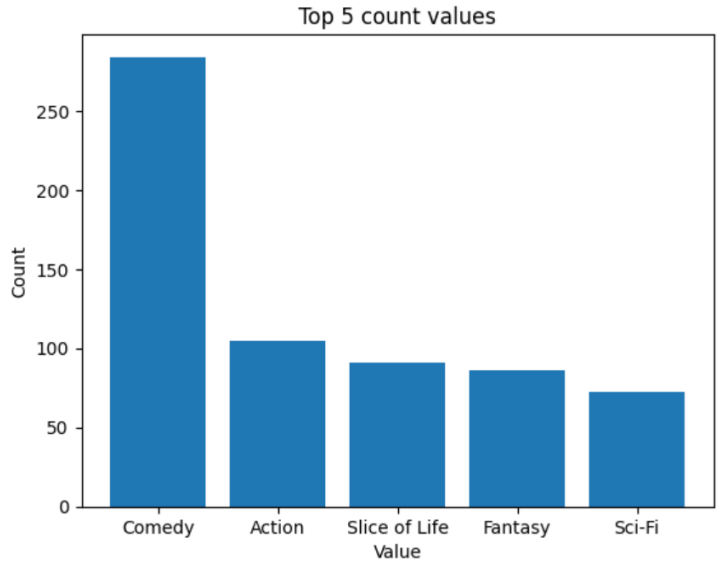
Top 5 Genres in OVA



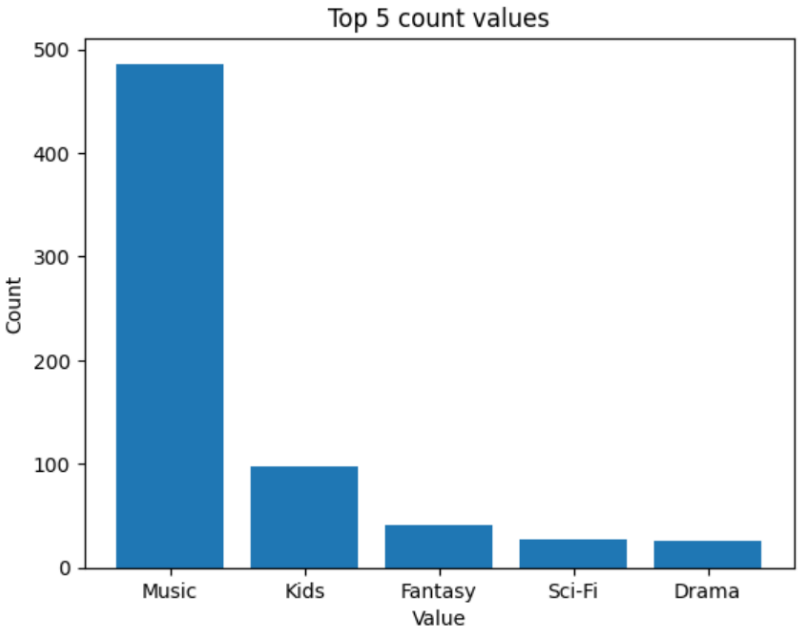
Top 5 Genre in Special



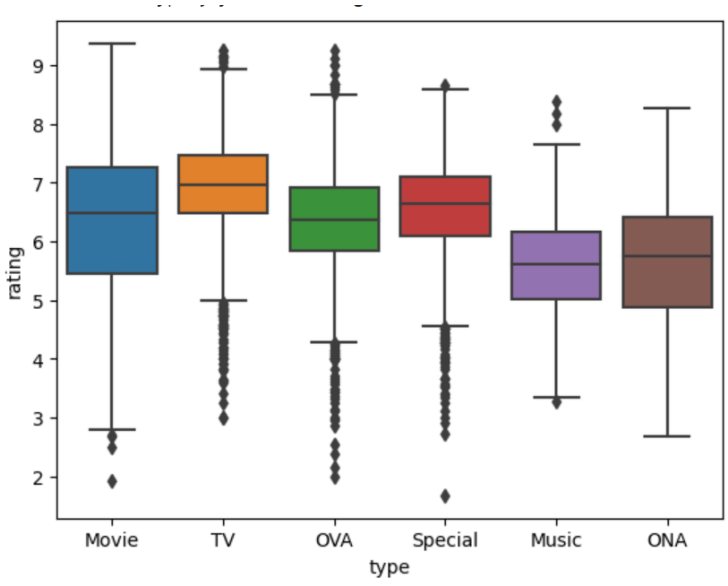
Top 5 Genre in ONA



Top 5 Genres in Music

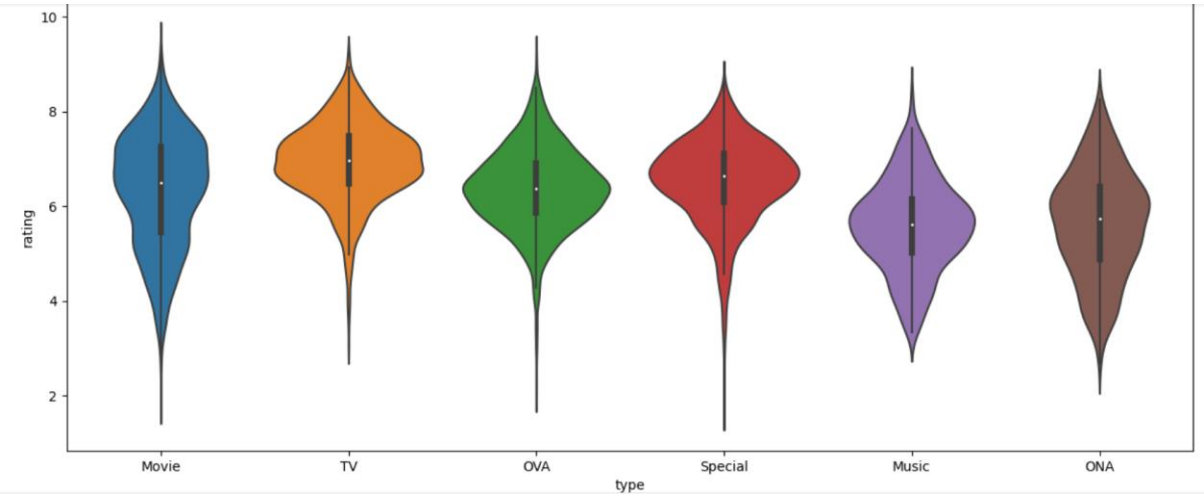


Boxplot



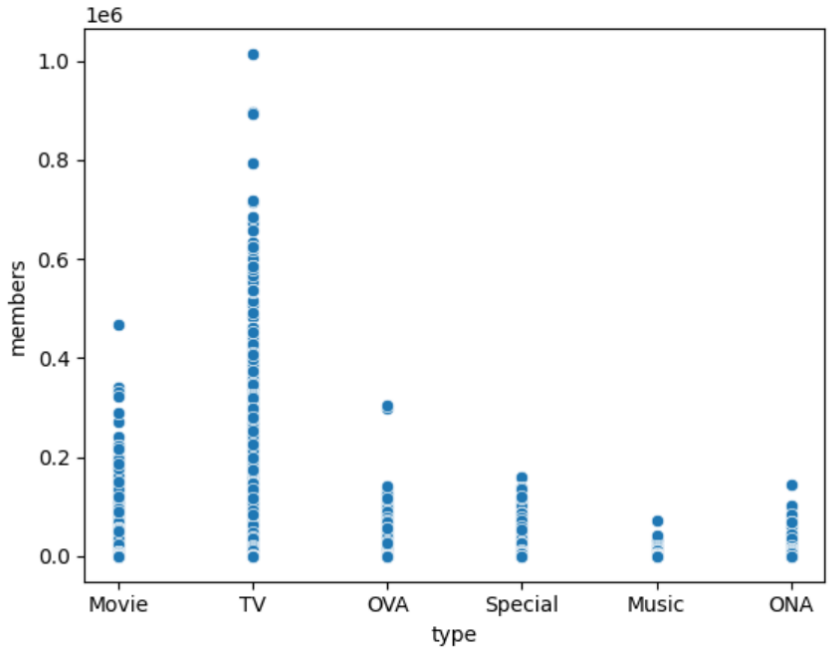
Shows the Percentile rating.

Violin Plot

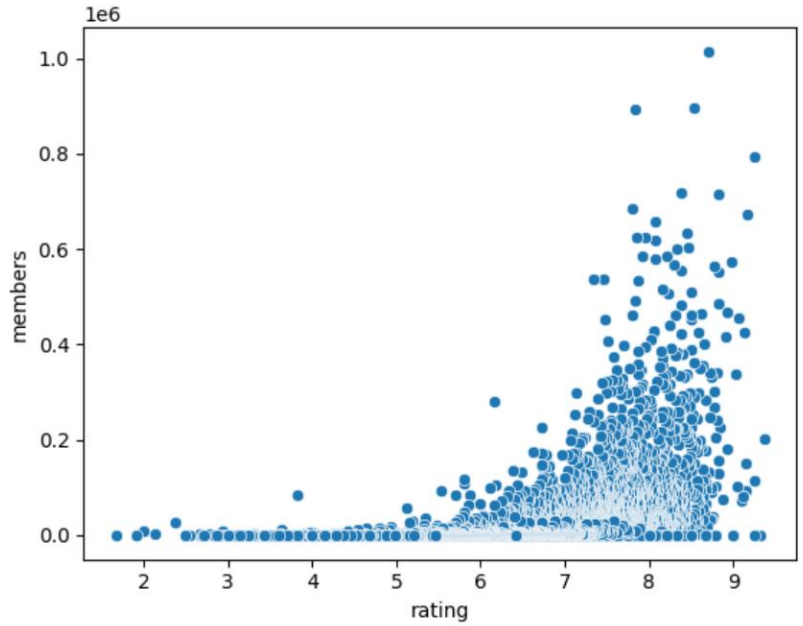


Shows the percentile with the Density

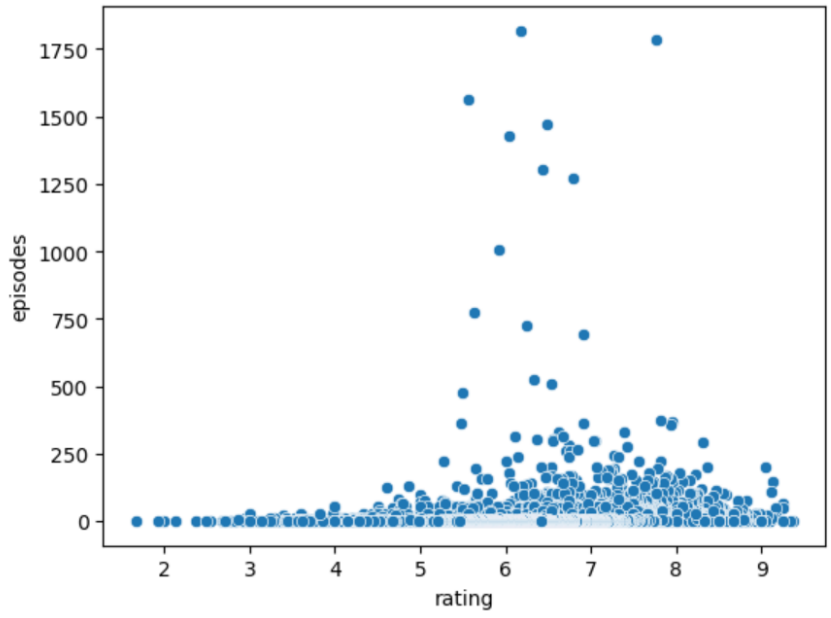
Scatter Plot



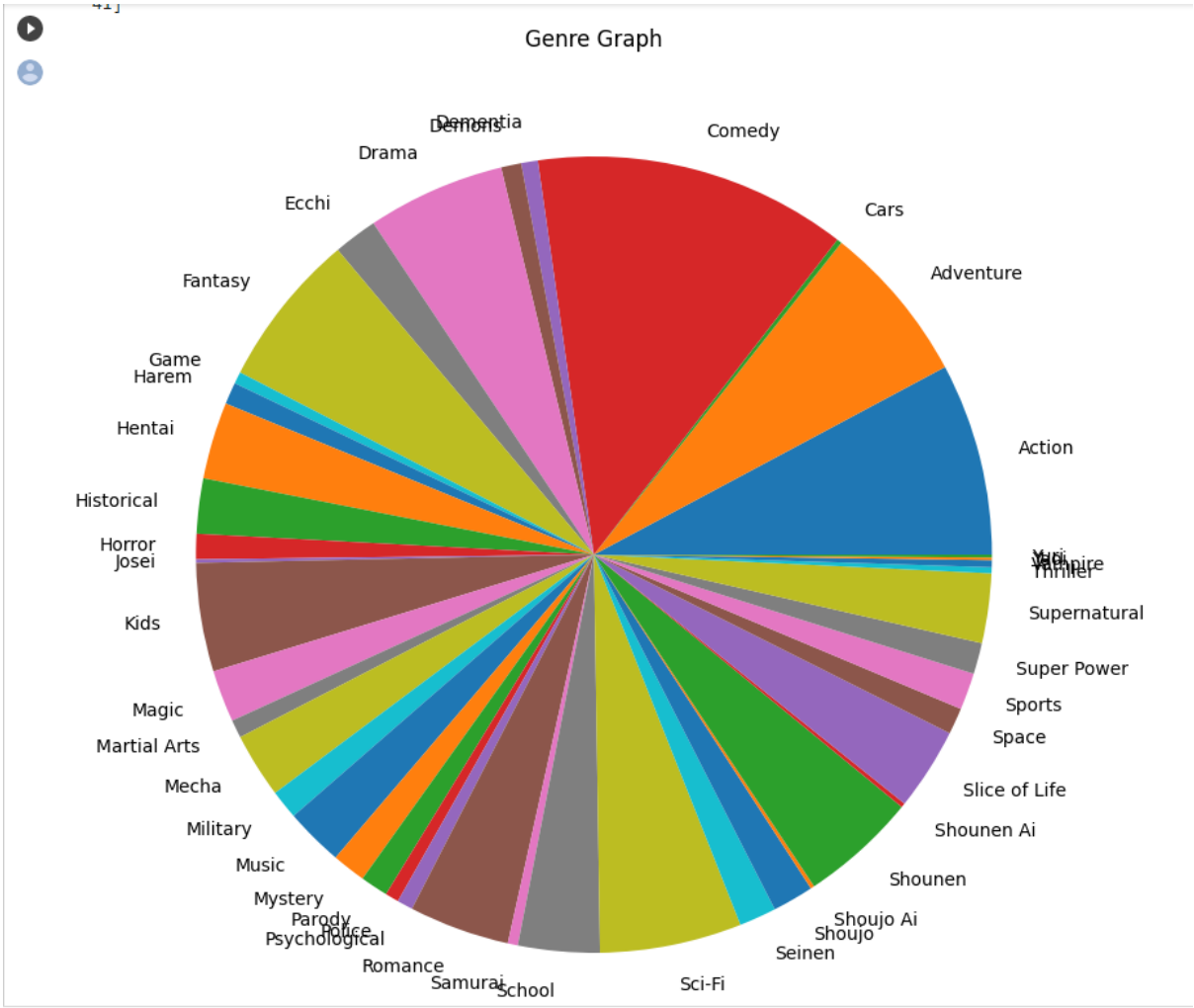
TV requires more members on average.



Less rated Anime have less members statically. More members is inclined to high rated anime.



Pie Chart



The Various Genre are mapped.

Conclusion

In conclusion, it is important to note that anime trends are constantly changing and that there are a variety of novel and exciting developments to investigate. The anime industry is being shaped by a wide range of innovative new trends and technologies, from diversity and representation to virtual reality and immersive experiences, interactive storytelling, collaborations, and crossovers.

By observing the various graphs, we can say that anime has a large contribution to TV, movies, ONA, music, OVA, and Special. Which is evolving year after year at a faster pace. We can estimate that the popularity of TV is more in anime, and it has more genres compared to any other shows.

Understanding these trends and the data that underlies them requires the use of data visualization. We can produce impressive visualizations that aid in exploring and comprehending the intricate relationships between various variables in the anime industry by utilizing libraries like Matplotlib and Seaborn.

Overall, anime trends are varied, dynamic, and ever-evolving, and there are plenty of fascinating new developments to look forward to.

References

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