

# anime

March 7, 2024

```
[4]: #import library
import pandas as pd
```

```
[5]: #import data
anime_data=pd.read_csv("C:/Users/Abrar/OneDrive/Desktop/anime.csv")
```

```
[6]: anime_data
```

```
[6]:
```

	anime_id	name \	genre	type	episodes \
0	32281	Kimi no Na wa.			
1	5114	Fullmetal Alchemist: Brotherhood			
2	28977	Gintama°			
3	9253	Steins;Gate			
4	9969	Gintama&#039;			
...	...	...			
12289	9316	Toushindai My Lover: Minami tai Mecha-Minami			
12290	5543	Under World			
12291	5621	Violence Gekiga David no Hoshi			
12292	6133	Violence Gekiga Shin David no Hoshi: Inma Dens...			
12293	26081	Yasuji no Pornorama: Yacchimae!!			
			genre	type	episodes \
0		Drama, Romance, School, Supernatural	Movie		1
1		Action, Adventure, Drama, Fantasy, Magic, Mili...	TV		64
2		Action, Comedy, Historical, Parody, Samurai, S...	TV		51
3		Sci-Fi, Thriller	TV		24
4		Action, Comedy, Historical, Parody, Samurai, S...	TV		51
...		...	...		
12289		Hentai	OVA		1
12290		Hentai	OVA		1
12291		Hentai	OVA		4
12292		Hentai	OVA		1
12293		Hentai	Movie		1
	rating	members			
0	9.37	200630			
1	9.26	793665			

```
[12294 rows x 7 columns]
```

```
[15]: export_anime
```

2

```

1      9.26  793665
2      9.25  114262
3      9.17  673572
4      9.16  151266
...
12289  4.15    211
12290  4.28    183
12291  4.88    219
12292  4.98    175
12293  5.46    142

```

[12294 rows x 7 columns]

```
[16]: # describe data
export_anime.describe()
```

```
[16]:
```

	anime_id	rating	members
count	12294.000000	12064.000000	1.229400e+04
mean	14058.221653	6.473902	1.807134e+04
std	11455.294701	1.026746	5.482068e+04
min	1.000000	1.670000	5.000000e+00
25%	3484.250000	5.880000	2.250000e+02
50%	10260.500000	6.570000	1.550000e+03
75%	24794.500000	7.180000	9.437000e+03
max	34527.000000	10.000000	1.013917e+06

```
[17]: #define datatypes
export_anime.dtypes
```

```
[17]: anime_id      int64
name            object
genre           object
type            object
episodes        object
rating          float64
members         int64
dtype: object
```

```
[18]: #count of rows and columns
export_anime.shape
```

```
[18]: (12294, 7)
```

```
[19]: #describe information
export_anime.info()
```

```
<class 'pandas.core.frame.DataFrame'>
```

```

RangeIndex: 12294 entries, 0 to 12293
Data columns (total 7 columns):
 #   Column      Non-Null Count  Dtype
---  -
 0   anime_id    12294 non-null  int64
 1   name        12294 non-null  object
 2   genre       12232 non-null  object
 3   type        12269 non-null  object
 4   episodes    12294 non-null  object
 5   rating      12064 non-null  float64
 6   members     12294 non-null  int64
dtypes: float64(1), int64(2), object(4)
memory usage: 672.5+ KB

```

```
[20]: #display coloumn names
export_anime.columns
```

```
[20]: Index(['anime_id', 'name', 'genre', 'type', 'episodes', 'rating', 'members'],
dtype='object')
```

```
[21]: # used to retrive the row level
export_anime.index
```

```
[21]: RangeIndex(start=0, stop=12294, step=1)
```

```
[25]: # calculates mean
export_anime[["anime_id", "members"]].mean()
```

```
[25]: anime_id      14058.221653
members      18071.338864
dtype: float64
```

```
[27]: #calculates sum
export_anime["members"].sum()
```

```
[27]: 222169040
```

```
[28]: # funds the length
len(export_anime)
```

```
[28]: 12294
```

```
[29]: # diplays top roes
export_anime.head(10)
```

```
[29]:    anime_id                                name \
0      32281                                Kimi no Na wa.
```

1	5114	Fullmetal Alchemist: Brotherhood
2	28977	Gintama°
3	9253	Steins;Gate
4	9969	Gintama&#039;
5	32935	Haikyuu!!: Karasuno Koukou VS Shiratorizawa Ga...
6	11061	Hunter x Hunter (2011)
7	820	Ginga Eiyuu Densetsu
8	15335	Gintama Movie: Kanketsu-hen - Yorozuya yo Eien...
9	15417	Gintama&#039;; Enchousen

	genre	type	episodes	rating \
0	Drama, Romance, School, Supernatural	Movie	1	9.37
1	Action, Adventure, Drama, Fantasy, Magic, Mili...	TV	64	9.26
2	Action, Comedy, Historical, Parody, Samurai, S...	TV	51	9.25
3	Sci-Fi, Thriller	TV	24	9.17
4	Action, Comedy, Historical, Parody, Samurai, S...	TV	51	9.16
5	Comedy, Drama, School, Shounen, Sports	TV	10	9.15
6	Action, Adventure, Shounen, Super Power	TV	148	9.13
7	Drama, Military, Sci-Fi, Space	OVA	110	9.11
8	Action, Comedy, Historical, Parody, Samurai, S...	Movie	1	9.10
9	Action, Comedy, Historical, Parody, Samurai, S...	TV	13	9.11

	members
0	200630
1	793665
2	114262
3	673572
4	151266
5	93351
6	425855
7	80679
8	72534
9	81109

```
[30]: # display bottom rows
export_anime.tail(10)
```

```
[30]:
```

	anime_id	name \
12284	26031	Super Erotic Anime
12285	34399	Taimanin Asagi 3
12286	10368	Teleclub no Himitsu
12287	9352	Tenshi no Habataki Jun
12288	5541	The Satisfaction
12289	9316	Toushindai My Lover: Minami tai Mecha-Minami
12290	5543	Under World
12291	5621	Violence Gekiga David no Hoshi
12292	6133	Violence Gekiga Shin David no Hoshi: Inma Dens...

	genre	type	episodes	rating	members
12284	Hentai	OVA	2	4.45	118
12285	Demons, Hentai, Supernatural	OVA	Unknown	NaN	485
12286	Hentai	OVA	2	4.67	148
12287	Hentai	OVA	1	4.33	201
12288	Hentai	OVA	1	4.37	166
12289	Hentai	OVA	1	4.15	211
12290	Hentai	OVA	1	4.28	183
12291	Hentai	OVA	4	4.88	219
12292	Hentai	OVA	1	4.98	175
12293	Hentai	Movie	1	5.46	142

```
[31]: anime_id      15417
      name          Gintama&#039;: Enchousen
      genre        Action, Comedy, Historical, Parody, Samurai, S...
      type          TV
      episodes      13
      rating        9.11
      members       81109
      Name: 9, dtype: object
```

```
[32]: anime_id      28977
      name          Gintama°
      genre      Action, Comedy, Historical, Parody, Samurai, S...
      type        TV
      episodes     51
      rating       9.25
      members      114262
      Name: 2, dtype: object
```

	anime_id	name
11668	11185	Kowaku no Toki
6455	8337	Shoka
11909	2344	Choujin Densetsu Urotsukidouji: Inferno Road
1258	1289	Mobile Police Patlabor: The New Files

10914	34451	Kekkai Sensen & Beyond		
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	genre	type	episodes	\
11668	Hentai	OVA	4	
6455	Action, Fantasy, Historical	Special	1	
11909	Demons, Fantasy, Hentai, Horror, Sci-Fi	OVA	3	
1258	Comedy, Mecha, Police, Sci-Fi	OVA	16	
10914	Action, Fantasy, Super Power, Supernatural, Va...	TV	Unknown	

	rating	members
11668	6.28	4477
6455	6.11	3355
11909	5.91	1210
1258	7.61	3952
10914	NaN	14124

```
[35]: # Remove extra spaces from column names
export_anime.columns = export_anime.columns.str.strip()
print(export_anime.columns)
```

```
Index(['anime_id', 'name', 'genre', 'type', 'episodes', 'rating', 'members'],
      dtype='object')
```

```
[36]: # Count anime types
type_counts = export_anime["type"].value_counts()
print(type_counts)
```

```
type
TV      3787
OVA     3311
Movie   2348
Special 1676
ONA      659
Music    488
Name: count, dtype: int64
```

```
[38]: #returns the average value
avg_score_by_type = export_anime.groupby("type")["rating"].mean()
print(avg_score_by_type)
```

```
type
Movie    6.318058
Music    5.588996
ONA      5.643298
OVA      6.375221
Special  6.523501
TV       6.902299
Name: rating, dtype: float64
```

```
[40]: # sorts the table
sorted_anime_by_popularity = export_anime.sort_values(by="members",
↪ascending=False)
print(sorted_anime_by_popularity.head())
```

	anime_id	name \	genre	type	episodes	rating \
40	1535	Death Note				
86	16498	Shingeki no Kyojin				
804	11757	Sword Art Online				
1	5114	Fullmetal Alchemist: Brotherhood				
159	6547	Angel Beats!				
40		Mystery, Police, Psychological, Supernatural, ...	TV	37	8.71	
86		Action, Drama, Fantasy, Shounen, Super Power	TV	25	8.54	
804		Action, Adventure, Fantasy, Game, Romance	TV	25	7.83	
1		Action, Adventure, Drama, Fantasy, Magic, Mili...	TV	64	9.26	
159		Action, Comedy, Drama, School, Supernatural	TV	13	8.39	
	members					
40	1013917					
86	896229					
804	893100					
1	793665					
159	717796					

```
[42]: # high rated anime
high_rated_anime = export_anime[export_anime["rating"] > 8]
print(high_rated_anime.head())
```

	anime_id	name \	genre	type	episodes	rating \
0	32281	Kimi no Na wa.				
1	5114	Fullmetal Alchemist: Brotherhood				
2	28977	Gintama°				
3	9253	Steins;Gate				
4	9969	Gintama&#039;				
0		Drama, Romance, School, Supernatural	Movie	1	9.37	
1		Action, Adventure, Drama, Fantasy, Magic, Mili...	TV	64	9.26	
2		Action, Comedy, Historical, Parody, Samurai, S...	TV	51	9.25	
3		Sci-Fi, Thriller	TV	24	9.17	
4		Action, Comedy, Historical, Parody, Samurai, S...	TV	51	9.16	
	members					
0	200630					
1	793665					



```

2 114262
3 673572
4 151266

```

```

[46]: # creating a new coloumn
export_anime["favorites_to_members_ratio"] =export_anime["members"] /_
      export_anime["rating"]
print(export_anime)

```

	anime_id	name \
0	32281	Kimi no Na wa.
1	5114	Fullmetal Alchemist: Brotherhood
2	28977	Gintama°
3	9253	Steins;Gate
4	9969	Gintama&#039;
...	...	...
12289	9316	Toushindai My Lover: Minami tai Mecha-Minami
12290	5543	Under World
12291	5621	Violence Gekiga David no Hoshi
12292	6133	Violence Gekiga Shin David no Hoshi: Inma Dens...
12293	26081	Yasuji no Pornorama: Yacchimae!!

	genre	type	episodes \
0	Drama, Romance, School, Supernatural	Movie	1
1	Action, Adventure, Drama, Fantasy, Magic, Mili...	TV	64
2	Action, Comedy, Historical, Parody, Samurai, S...	TV	51
3	Sci-Fi, Thriller	TV	24
4	Action, Comedy, Historical, Parody, Samurai, S...	TV	51
...	...	...	...
12289	Hentai	OVA	1
12290	Hentai	OVA	1
12291	Hentai	OVA	4
12292	Hentai	OVA	1
12293	Hentai	Movie	1

	rating	members	favorites_to_members_ratio
0	9.37	200630	21411.953042
1	9.26	793665	85708.963283
2	9.25	114262	12352.648649
3	9.17	673572	73453.871320
4	9.16	151266	16513.755459
...	...	...	...
12289	4.15	211	50.843373
12290	4.28	183	42.757009
12291	4.88	219	44.877049
12292	4.98	175	35.140562
12293	5.46	142	26.007326

[12294 rows x 8 columns]

```
[47]: # Retrieve the 5 anime with the largest population (members)
largest_popularity_anime = export_anime.nlargest(5, "members")
print(largest_popularity_anime)
```

	anime_id	name \	genre	type	episodes	rating \
40	1535	Death Note	Mystery, Police, Psychological, Supernatural, ...	TV	37	8.71
86	16498	Shingeki no Kyojin	Action, Drama, Fantasy, Shounen, Super Power	TV	25	8.54
804	11757	Sword Art Online	Action, Adventure, Fantasy, Game, Romance	TV	25	7.83
1	5114	Fullmetal Alchemist: Brotherhood	Action, Adventure, Drama, Fantasy, Magic, Mili...	TV	64	9.26
159	6547	Angel Beats!	Action, Comedy, Drama, School, Supernatural	TV	13	8.39

	members	favorites_to_members_ratio
40	1013917	116408.381171
86	896229	104944.847775
804	893100	114061.302682
1	793665	85708.963283
159	717796	85553.754470

```
[48]: # Retrieve the 3 anime with the smallest population (members)
smallest_popularity_anime = export_anime.nsmallest(3, "members")
print(smallest_popularity_anime)
```

	anime_id	name \	genre	type	episodes	rating	members \
10997	34527	Gou-chan. Moko to Chinjuu no Mori no Nakama-tachi	Adventure, Kids	Movie	1	NaN	5
10990	34485	Ganko-chan	NaN	NaN	Unknown	NaN	11
10444	34490	Sushi Azarashi	Comedy	TV	30	3.0	12

	favorites_to_members_ratio
10997	NaN
10990	NaN
10444	4.0

```
[49]: # aggregate the results
agg_results = export_anime.agg({"rating": "mean", "members": "sum"})
print(agg_results)
```

```
rating      6.473902e+00
members     2.221690e+08
dtype: float64
```

```
[53]: import library
import matplotlib.pyplot as plt
```

```
[54]: export_anime
```

```
[54]:
```

	anime_id	name \
0	32281	Kimi no Na wa.
1	5114	Fullmetal Alchemist: Brotherhood
2	28977	Gintama°
3	9253	Steins;Gate
4	9969	Gintama&#039;
...	...	...
12289	9316	Toushindai My Lover: Minami tai Mecha-Minami
12290	5543	Under World
12291	5621	Violence Gekiga David no Hoshi
12292	6133	Violence Gekiga Shin David no Hoshi: Inma Dens...
12293	26081	Yasuji no Pornorama: Yacchimae!!

	genre	type	episodes \
0	Drama, Romance, School, Supernatural	Movie	1
1	Action, Adventure, Drama, Fantasy, Magic, Mili...	TV	64
2	Action, Comedy, Historical, Parody, Samurai, S...	TV	51
3	Sci-Fi, Thriller	TV	24
4	Action, Comedy, Historical, Parody, Samurai, S...	TV	51
...	...	...	...
12289	Hentai	OVA	1
12290	Hentai	OVA	1
12291	Hentai	OVA	4
12292	Hentai	OVA	1
12293	Hentai	Movie	1

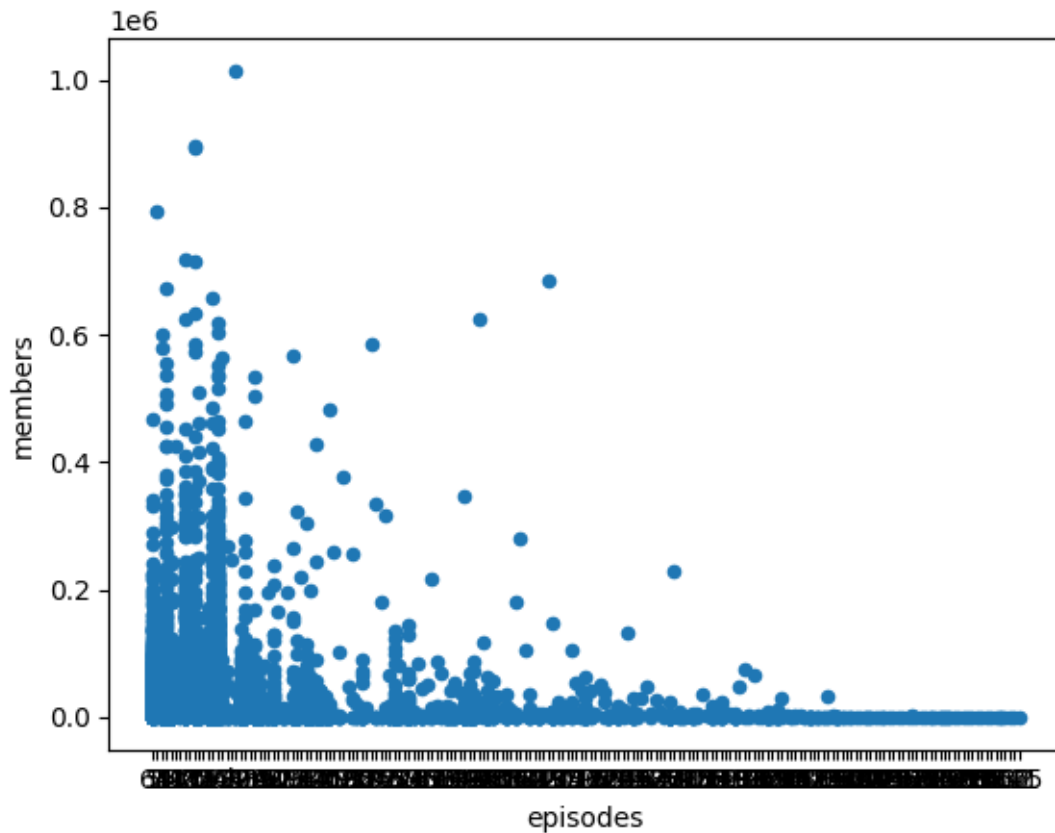
	rating	members	favorites_to_members_ratio
0	9.37	200630	21411.953042
1	9.26	793665	85708.963283
2	9.25	114262	12352.648649
3	9.17	673572	73453.871320
4	9.16	151266	16513.755459
...	...	...	...
12289	4.15	211	50.843373

12290	4.28	183	42.757009
12291	4.88	219	44.877049
12292	4.98	175	35.140562
12293	5.46	142	26.007326

[12294 rows x 8 columns]

```
[55]: #display scatter plots
export_anime.plot(kind="scatter",x="episodes",y="members")
```

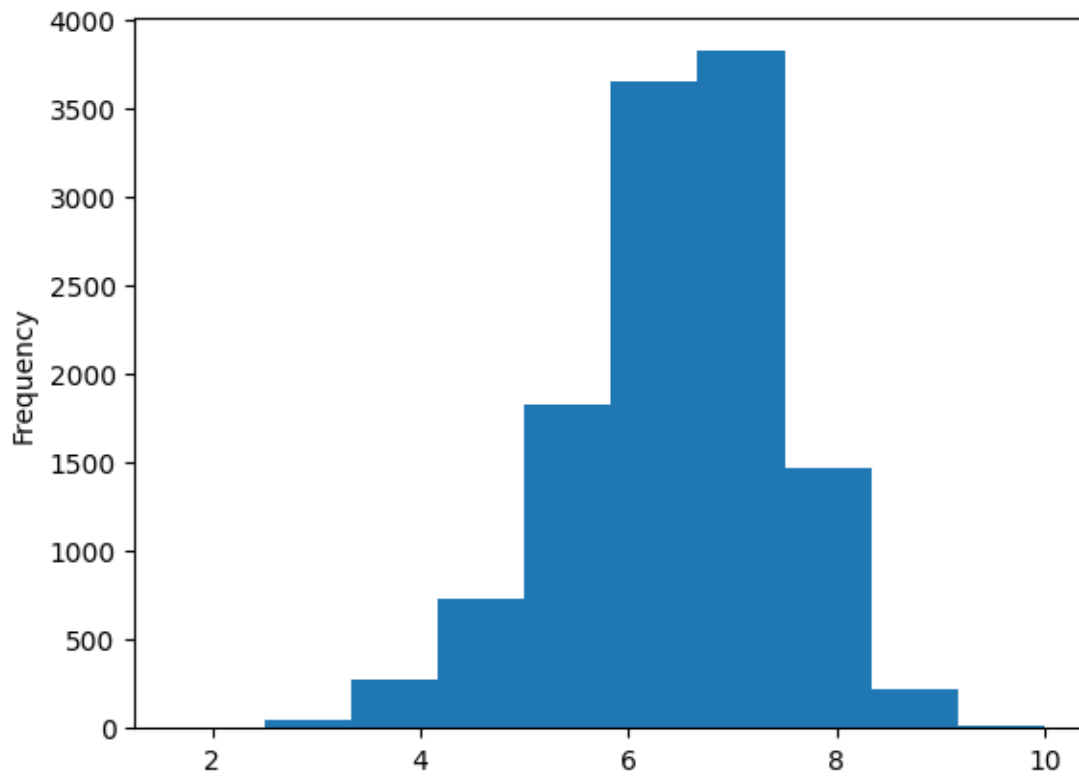
```
[55]: <Axes: xlabel='episodes', ylabel='members'>
```



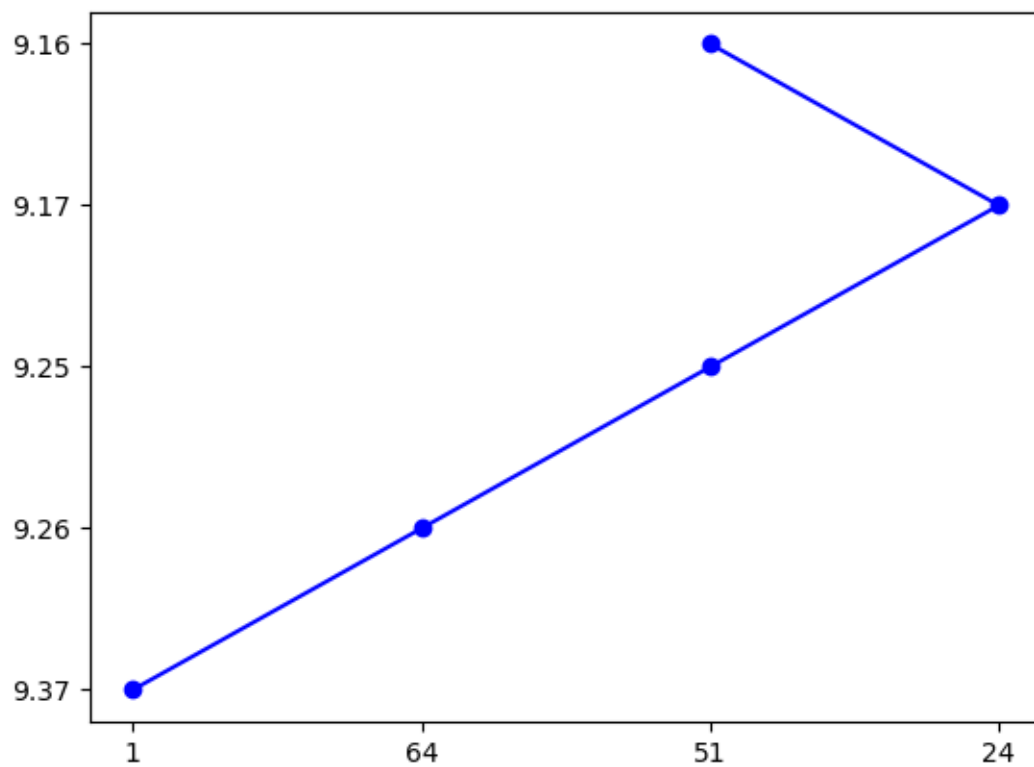
```
[56]: plt.show()
```

```
[67]: #creating a histogram
anime_data['rating'].plot(kind='hist')
```

```
[67]: <Axes: ylabel='Frequency'>
```



```
[70]: #creating a line plot
episodes=['1','64','51','24','51']
ratings=['9.37','9.26','9.25','9.17','9.16']
plt.plot(episodes, ratings, marker='o', linestyle='-', color='b')
plt.show()
```



[ ]: