



Board games recommender

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Goal & Motivation

- Develop a recommender system for board games
 - users who like to play board games and want to try new ones
- Possible monetization:
 - e-shop
 - referral links to e-shops

Data

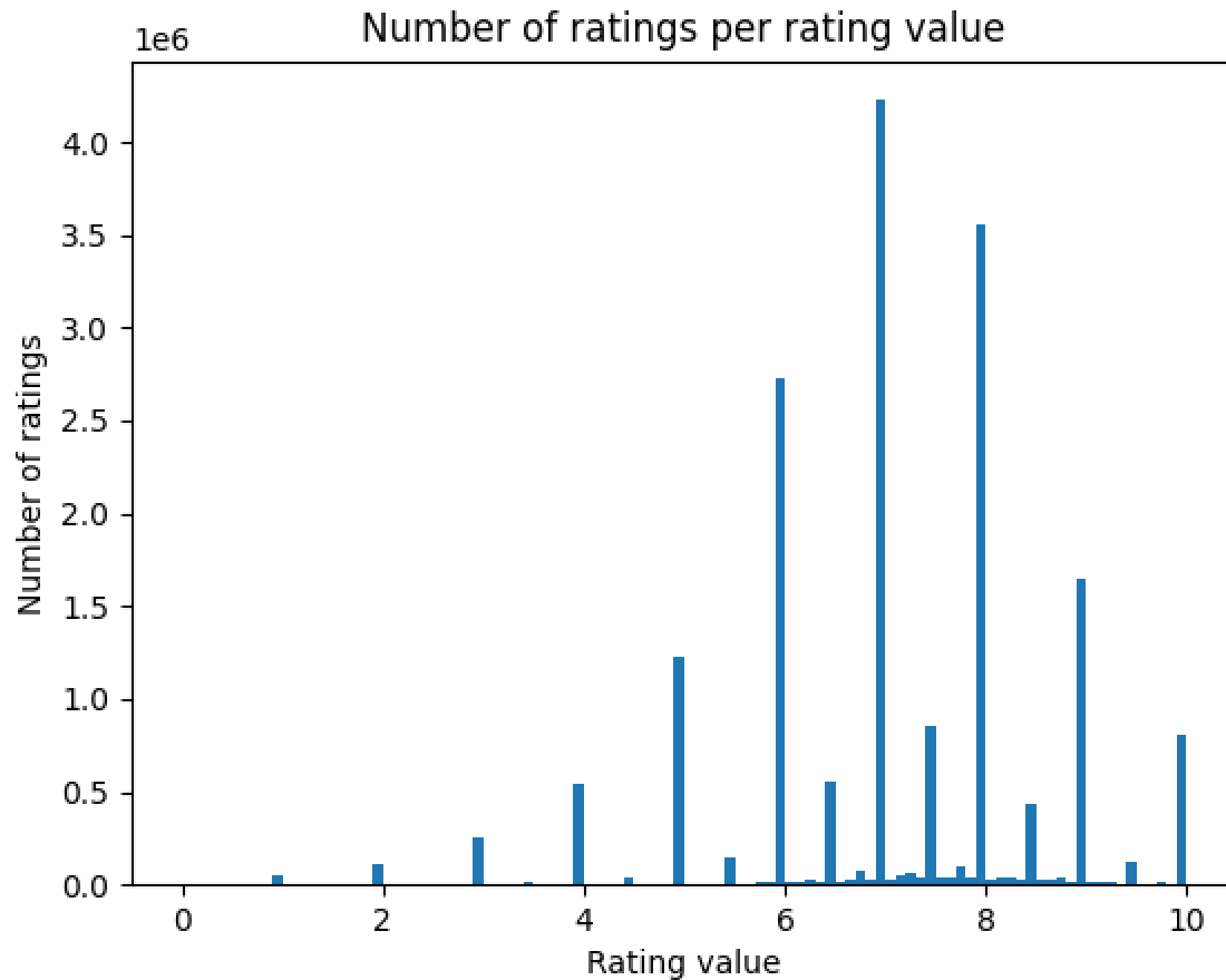
- from [kaggle](#)
- games , mechanics , subcategories , themes
- user_ratings
 - BGGId - BoardGameGeek game ID
 - Rating - Raw rating given by user
 - Username - User giving rating

Data preprocessing

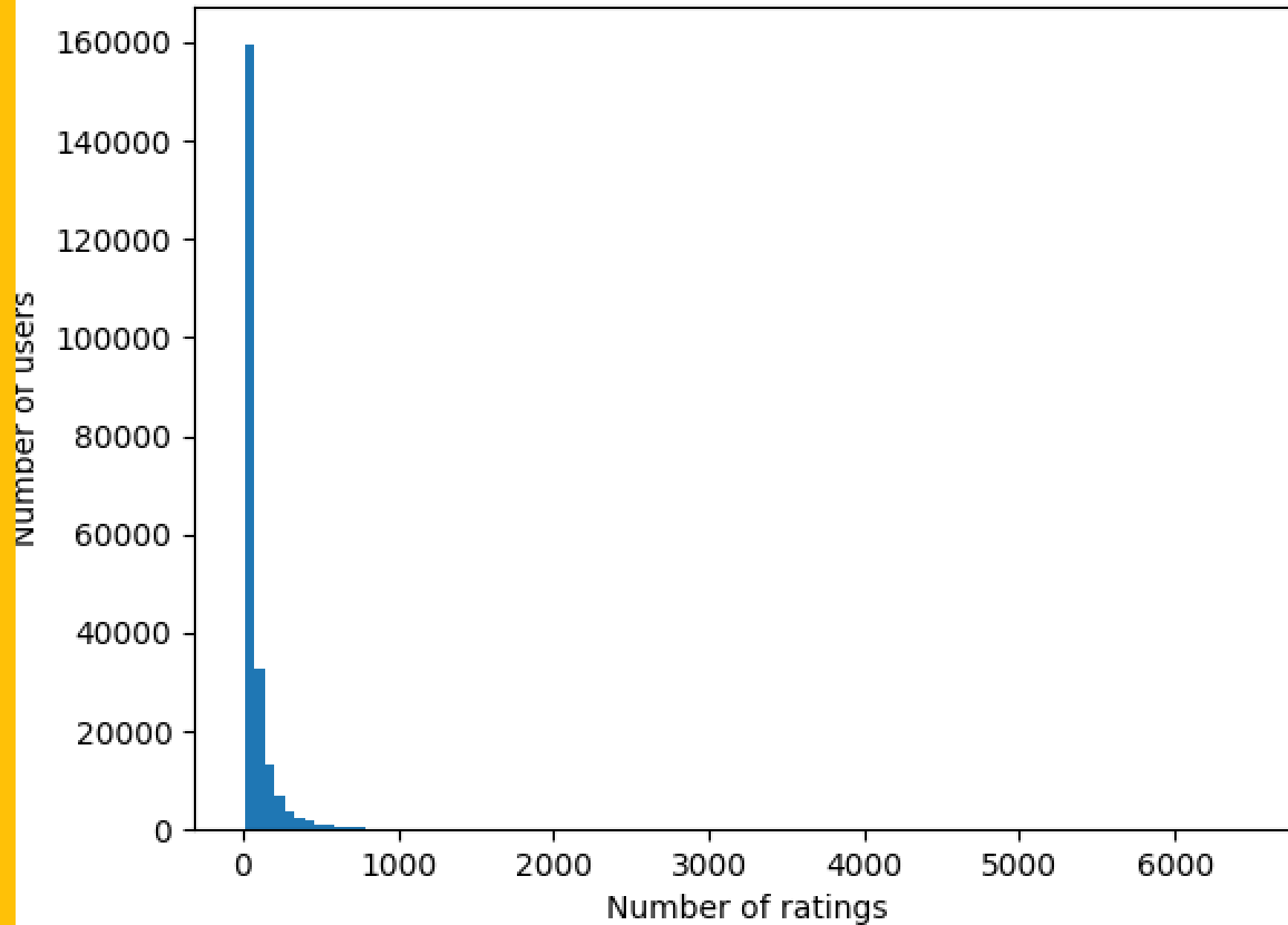
- removed duplicate ratings
- removed users with less than 10 ratings
- removed games with less than 10 ratings

Data analysis

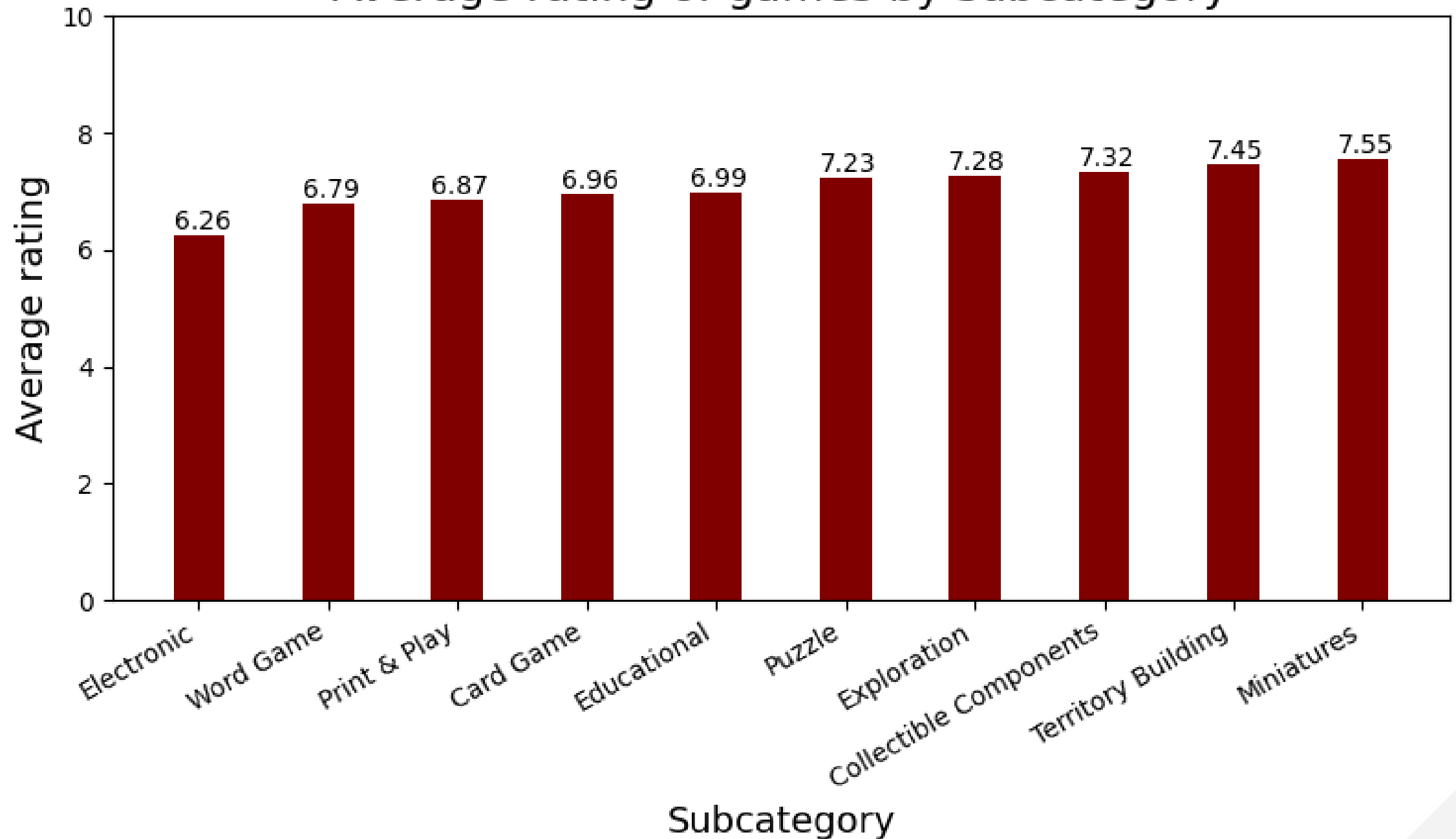
- **18 340 284** user ratings
- **224 557** users, **21 919** games, **157** mechanics, **217** themes, **10** subcategories
- density of user ratings matrix: **0.37%**
- ratings per user:
 - average: **81.67**
 - median: **39**
 - maximum: **6478**
- average rating: **7.10** (range **[0, 10]**)



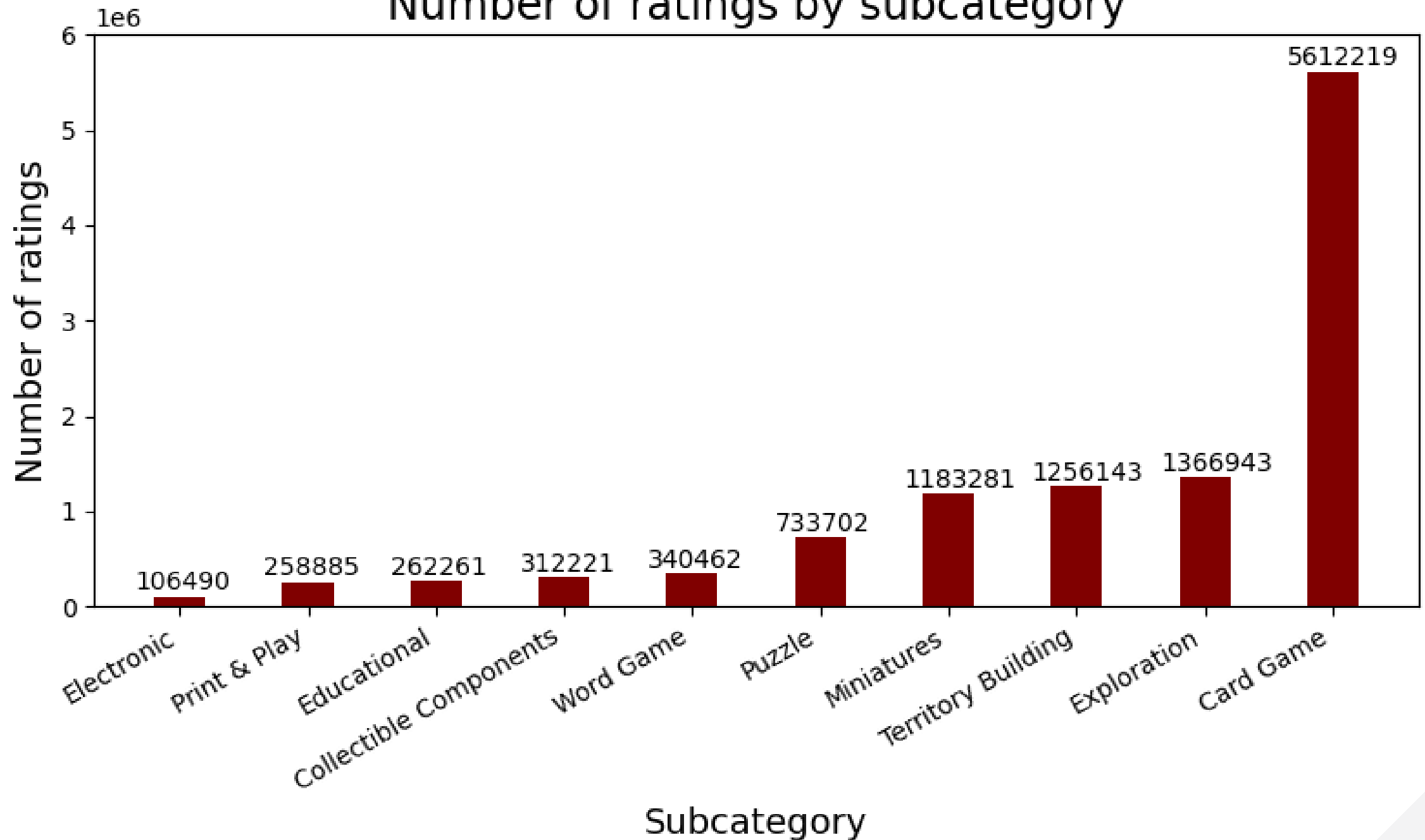
Number of users per number of ratings



Average rating of games by subcategory



Number of ratings by subcategory



TF-IDF

- Description of the used recommender techniques, relation to standard techniques discussed during lectures (focus on the description of the overall pipeline, not on details of individual steps, particularly when using standard techniques like TF-IDF or cosine similarity)
- Specific examples of recommendations, e.g., in the form of screenshots of the developed application
- Results of the evaluation
- Experience report (problems, mistakes, useful tools, ...)

Latent factors

- Description of the used recommender techniques, relation to standard techniques discussed during lectures (focus on the description of the overall pipeline, not on details of individual steps, particularly when using standard techniques like TF-IDF or cosine similarity)
- Specific examples of recommendations, e.g., in the form of screenshots of the developed application
- Results of the evaluation
- Experience report (problems, mistakes, useful tools, ...)

Memory based CF

- Description of the used recommender techniques, relation to standard techniques discussed during lectures (focus on the description of the overall pipeline, not on details of individual steps, particularly when using standard techniques like TF-IDF or cosine similarity)
- Specific examples of recommendations, e.g., in the form of screenshots of the developed application
- Results of the evaluation
- Experience report (problems, mistakes, useful tools, ...)

User interface

Search all games by name

🔍

piranha

×



Piranha

From 2004

Rating: 5 / 10

Difficulty: 1 / 5

5+

2 - 6 players

20 minutes

DETAILS

BUY

RATE



Piranha Panic

From 2005

Rating: 4 / 10

Difficulty: 1 / 5

5+

2 - 4 players

15 minutes

DETAILS

BUY

RATE



Piranha Pedro

From 2004

Rating: 6 / 10

Difficulty: 1 / 5

8+

2 - 6 players

30 minutes

DETAILS

BUY

RATE

Search all games by name

🔍 piranha

×



Piranha

From 2004

Rating: 5 / 10

Difficulty: 1 / 5



5+



2 - 6 players



20 minutes

DETAILS

BUY

RATE

Rate Piranha Panic

How much did you enjoy Piranha Panic?



CANCEL

SAVE

Piranha Pedro

From 2004

Rating: 6 / 10

Difficulty: 1 / 5



8+



2 - 6 players



30 minutes

DETAILS

BUY




RATE

Search my ratings by name



RATE GAMES

RESET RATINGS

| Name | Image | Your rating | Rating given at |
|---------------------------------|--|-------------|----------------------|
| UNO |  | ★★☆☆☆☆☆☆ | 08/05/2023, 17:21:11 |
| Catan |  | ★★★★★★★☆☆ | 08/05/2023, 17:20:33 |
| Piranha Panic |  | ★★★★★★★☆☆ | 08/05/2023, 17:20:21 |
| Rows per page: 3 ▾ 1-3 of 3 < > | | | |

TF-IDF



CATAN: 3D Edition

From 2021

Rating: 7 / 10

Difficulty: 2 / 5



10+



3 - 4 players



120 minutes

[DETAILS](#)[BUY](#)[RATE](#)

Catan: 25th Anniversary Edition

From 2020

Rating: 7 / 10

Difficulty: 2 / 5



10+



3 - 6 players



120 minutes

[DETAILS](#)[BUY](#)[RATE](#)

Catan: 25 Jahre Jubiläums-Edition

From 2020

Rating: 7 / 10

Difficulty: 0 / 5



10+



3 - 4 players



120 minutes

[DETAILS](#)[BUY](#)[RATE](#)

Latent factors



Altar of Freedom: Grand Tactical Battles in the American Civil War

From 2013

Rating: 8 / 10

Difficulty: 2 / 5



14+



2 - 2 players



240 minutes

[DETAILS](#)[BUY](#)[RATE](#)

The Grand Campaign

From 2013

Rating: 8 / 10

Difficulty: 4 / 5



14+



2 - 2 players



360 minutes

[DETAILS](#)[BUY](#)[RATE](#)

Hedgehog Hop

From 2019

Rating: 6 / 10

Difficulty: 2 / 5



11+



2 - 6 players



18 minutes

[DETAILS](#)[BUY](#)[RATE](#)

Top-rated



Gloomhaven

From 2017

Rating: 8 / 10

Difficulty: 3 / 5



14+



1 - 4 players



120 minutes

[DETAILS](#)[BUY](#)[RATE](#)

Pandemic Legacy: Season 1

From 2015

Rating: 8 / 10

Difficulty: 2 / 5



13+



2 - 4 players



60 minutes

[DETAILS](#)[BUY](#)[RATE](#)

Brass: Birmingham

From 2018

Rating: 8 / 10

Difficulty: 3 / 5



14+



2 - 4 players



120 minutes

[DETAILS](#)[BUY](#)[RATE](#)

Most rated



Pandemic

From 2008

Rating: 7 / 10

Difficulty: 2 / 5



8+



2 - 4 players



45 minutes

[DETAILS](#)[BUY](#)[RATE](#)

Carcassonne

From 2000

Rating: 7 / 10

Difficulty: 1 / 5



7+



2 - 5 players



45 minutes

[DETAILS](#)[BUY](#)[RATE](#)

Catan

From 1995

Rating: 7 / 10

Difficulty: 2 / 5



10+



3 - 4 players



120 minutes

[DETAILS](#)[BUY](#)[RATE](#)

[DETAILS](#)[BUY](#)[RATE](#)[DETAILS](#)[BUY](#)[RATE](#)[DETAILS](#)[BUY](#)[RATE](#)

Random picks



Monikers: Something Something

From 2016

Rating: 8 / 10

Difficulty: 1 / 5



18+



4 - 20 players



60 minutes

[DETAILS](#)[BUY](#)[RATE](#)

Das Jagdspiel

From 1954

Rating: 5 / 10

Difficulty: 1 / 5



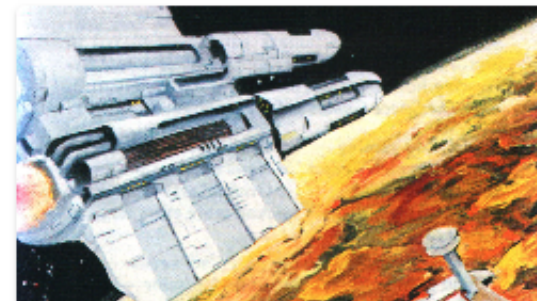
8+



2 - 8 players



45 minutes

[DETAILS](#)[BUY](#)[RATE](#)

Hot Spot

From 1979

Rating: 5 / 10

Difficulty: 1 / 5



10+



2 - 2 players



60 minutes

[DETAILS](#)[BUY](#)[RATE](#)

Thank you



Try it out: <https://pv254-board-games-recommender.vercel.app/>

Code: <https://github.com/petr7555/pv254-board-games-recommender>