

Board Games Data Set

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Introduction

Description

About this dataset

This dataset contains data collected on board games from the BoardGameGeek (BGG) website in February 2021. BGG is the largest online collection of board game data which consists of data on more than 100,000 total games (ranked and unranked).

The voluntary online community contributes to the site with reviews, ratings, images, videos, session reports and live discussion forums on the expanding database of board games.

This data set contains all ranked games (~20,000) as of the date of collection from the BGG database. Unranked games are ignored as they have not been rated by enough BGG users (a game should receive at least 30 votes to be eligible for ranking).

Source: https://www.kaggle.com/andrewmvd/board-games?select=bgg_dataset.csv

Background

```
[2] df = pd.read_csv("/content/drive/MyDrive/Data Science Bootcamp/Project 2/bgg_dataset.csv", sep=';')
df.head()
```

	ID	Name	Year Published	Min Players	Max Players	Play Time	Min Age	Users Rated	Rating Average	BGG Rank	Complexity Average	Owned Users	Mechanics	Domains
0	174430.0	Gloomhaven	2017.0	1	4	120	14	42055	8,79	1	3,86	68323.0	Action Queue, Action Retrieval, Campaign / Bat...	Strategy Games, Thematic Games
1	161936.0	Pandemic Legacy: Season 1	2015.0	2	4	60	13	41643	8,61	2	2,84	65294.0	Action Points, Cooperative Game, Hand Manageme...	Strategy Games, Thematic Games
2	224517.0	Brass: Birmingham	2018.0	2	4	120	14	19217	8,66	3	3,91	28785.0	Hand Management, Income, Loans, Market, Networ...	Strategy Games
3	167791.0	Terraforming Mars	2016.0	1	5	120	12	64864	8,43	4	3,24	87099.0	Card Drafting, Drafting, End Game Bonuses, Han...	Strategy Games
4	233078.0	Twilight Imperium: Fourth Edition	2017.0	3	6	480	14	13468	8,70	5	4,22	16831.0	Action Drafting, Area Majority / Influence, Ar...	Strategy Games, Thematic Games

- 14 features
- 20,343 games
- Target feature is the Rating Average of a board game

Background

The screenshot displays the BoardGameGeek (BGG) website interface. At the top, the navigation bar includes the BGG logo, links for Browse, Forums, GeekLists, Shopping, Community, and Help, along with Sign In, Join (it's free!), and a Search bar.

THE HOTNESS sidebar lists several games:

- Hegemony: Lead Your Class to... 2022
- Brian Boru: High King of... 2021
- Weather Machine 2022
- Dune: Imperium 2020
- Lost Ruins of Arnak 2020
- Cascadia 2021
- Boonlake 2021
- Terraforming Mars 2016

The main content area features the game **Gloomhaven (2017)** by Isaac Childres. It has a rank of Overall 1, Thematic 1, and Strategy 1. The game is rated 8.8 with 47K Ratings and 8.4K Comments. Key details include:

- 1-4 Players** (Community: 1-4 — Best: 3)
- 60-120 Min** (Playing Time)
- Age: 14+** (Community: 14+)
- Weight: 3.87 / 5** ('Complexity' Rating)
- Designer:** Isaac Childres
- Artist:** Alexandr Elichev, Josh T. McDowell, Alvaro Nebot
- Publisher:** Cephalofair Games + 11 more

The page also shows a "My rating" section with a star rating and buttons for "Buy a Copy", "Add To Collection", "Log Play", and "Subscribe". The bottom navigation bar includes links for Overview, Ratings, Forums, Images, Videos, Files, Stats, Versions, Expansions, My Games, Market, and More.

<https://boardgamegeek.com/boardgame/174430/gloomhaven>









User Rating

User rating

Every registered user can rate any game in the BGG database. Although these ratings are entirely subjective, here are the suggested guidelines:

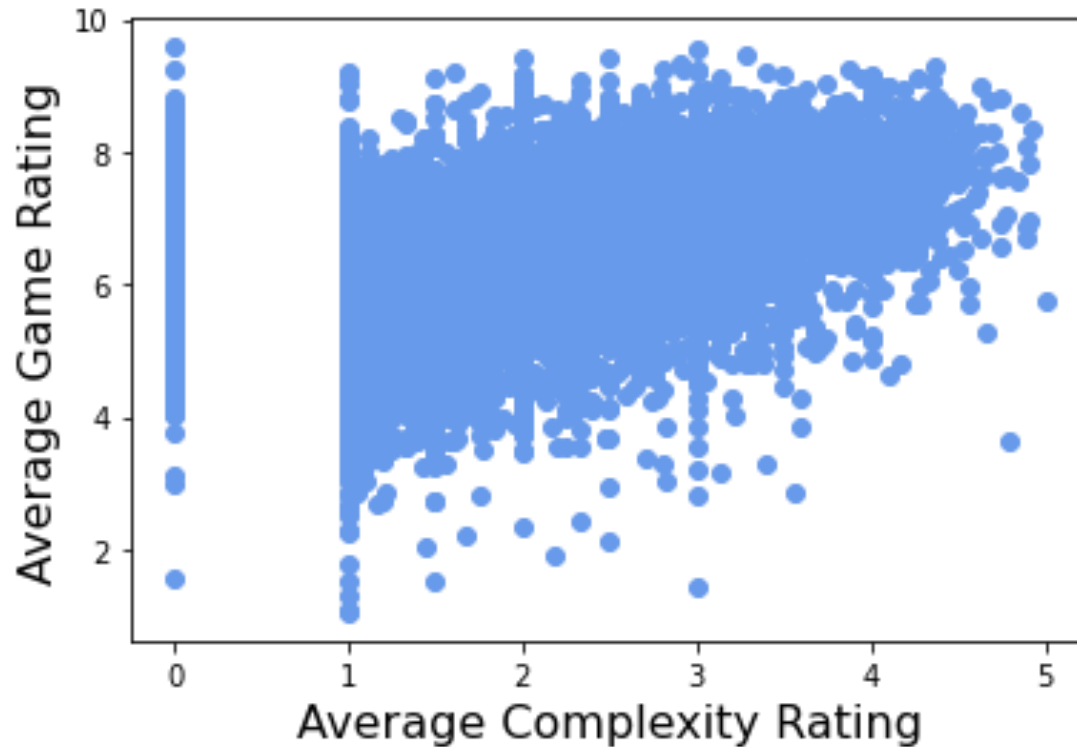
- 10 - Outstanding. Always want to play and expect this will never change.
- 9 - Excellent game. Always want to play it.
- 8 - Very good game. I like to play. Probably I'll suggest it and will never turn down a game.
- 7 - Good game, usually willing to play.
- 6 - Ok game, some fun or challenge at least, will play sporadically if in the right mood.
- 5 - Average game, slightly boring, take it or leave it.
- 4 - Not so good, it doesn't get me but could be talked into it on occasion.
- 3 - Likely won't play this again although could be convinced. Bad.
- 2 - Extremely annoying game, won't play this ever again.
- 1 - Defies description of a game. You won't catch me dead playing this. Clearly broken.

Currently Top Rated Games

Board Game Rank ▲		Title	Geek Rating	Avg Rating	Num Voters
1		Gloomhaven (2017) Vanquish monsters with strategic cardplay. Fulfill your quest to leave your legacy!	8.522	8.76	46527
2		Pandemic Legacy: Season 1 (2015) Mutating diseases are spreading around the world - can your team save humanity?	8.448	8.60	44216
3		Brass: Birmingham (2018) Build networks, grow industries, and navigate the world of the Industrial Revolution.	8.413	8.67	24184
4		Terraforming Mars (2016) Compete with rival CEOs to make Mars habitable and build your corporate empire.	8.274	8.42	71994
5		Gloomhaven: Jaws of the Lion (2020) Vanquish monsters with strategic cardplay in a 25-scenario Gloomhaven campaign.	8.257	8.71	14312
6		Twilight Imperium: Fourth Edition (2017) Build an intergalactic empire through trade, research, conquest and grand politics.	8.255	8.68	15436
7		Gaia Project (2017) Expand, research, upgrade, and settle the galaxy with one of 14 alien species.	8.176	8.48	18420
8		Star Wars: Rebellion (2016) Strike from your hidden base as the Rebels—or find and destroy it as the Empire.	8.171	8.42	25016

Ratings and Complexity

Average Ratings Generally Increase with Complexity



Weight in the rating system

Weight

"Weight" isn't clearly defined. (For a while game pages described it as a "complexity rating" with a brief mouseover explanation "Community rating for how difficult a game is to understand. Lower rating (lighter weight) means easier.")

For different people weight means different things, usually a combination of things like:

- How complex/thick is the rulebook?
- How long does it take to play?
- What proportion of time is spent thinking and planning instead of resolving actions?
- How hard and long do you have to think to improve your chance of winning?
- How little luck is in the game?
- How much technical skill (math, reading ahead moves, etc) is necessary?
- How long does it take to learn the rules?
- How many times do you need to play before you feel like you "get" the game?

Etc...

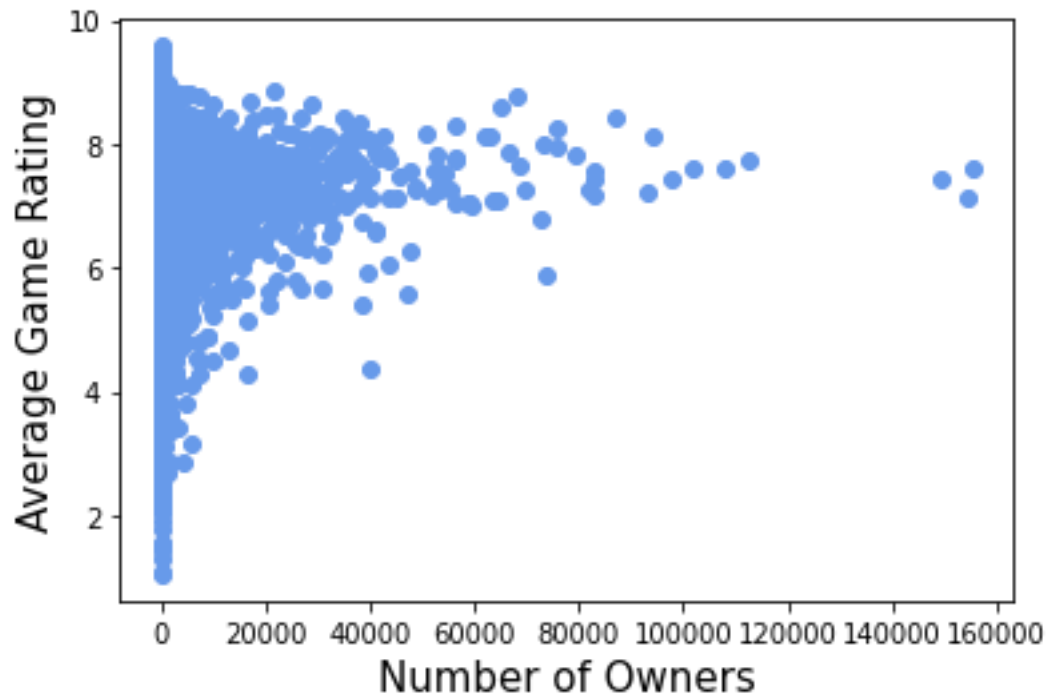
BGG uses a 5-point Weight scale:

- Light
- Medium Light
- Medium
- Medium Heavy
- Heavy

Weight is part of the [rating](#) system.

Ratings and Number of Owners

Average Game Ratings Increase with Number of Users who Own the Games



Production Model

- Random Forest
- Training RMSE: 0.23
- Testing RMSE: 0.59
- Training R2: 0.94
- Testing R2: 0.60

Production Model Compared to Baseline Model Created from Mean Data

Baseline Scores

- Training RMSE: 0.94
- Testing RMSE: 0.93

Random Forest Scores

- Training RMSE: 0.23
- Testing RMSE: 0.59

Final Recommendations

- Consider the weight/complexity of the game
 - How difficult is the game to understand and play?
- Consider how to make the games more accessible