Path of Exile Leaderboard Analysis – October 26, 2017

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1. Overview and Problem

Originally, I decided on using a dataset about possible Poker hands and the odds of winning with those hands. The simplicity of the data coupled with the extensive math involved turned me away from that though.

As a result, I switched to a dataset about a popular free-to-play massively multiplayer online game called Path of Exile (Figure 1). The data set in question comes from a website called Kaggle and focuses on the top 60000 players on the PoE leaderboards as of October 26, 2017. A link is provided here to that dataset although it may or may not be updated as of recent due to constant daily changes in the PoE leaderboards.

Link: https://www.kaggle.com/gagazet/path-of-exile-league-statistic/data

Problem Statement: I mostly want to see if there is an issue with class balance in PoE. Another issue is how many of the top players care for the hardcore ladders.

Goal: While generally not an issue when playing for fun, if one class dominates the competitive leaderboards, the developers need to rebalance them. Also, if there is not much participation, they may need to offer more incentive to care about them.

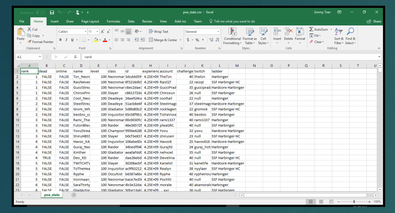

Figure 1. The initial data viewed in Excel.

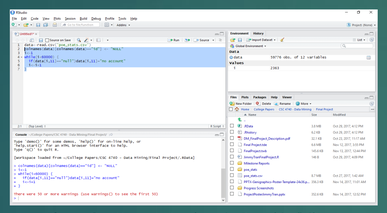

Figure 2. Attempts to clean in R end in failure.

2. Cleaning Process

Initial cleaning attempts were based in R script (Figure 2). Twenty minutes after beginning though, I realized that would not end well at all and I also questioned whether I had to technically clean my data since I could simply ignore the attributes in question anyway.

At this point, I imported my data, conveniently in the form of a .csv file, into Tableau (Figure 3). With no issues arising from the import, I also realized I could actually hide unwanted attributes or change the names of null values by providing an alias. The actual data would not be affected either, only the front-end would be changed and visible. Suffice to say, I saved a lot of time skipping the R cleaning process (Figure 4).

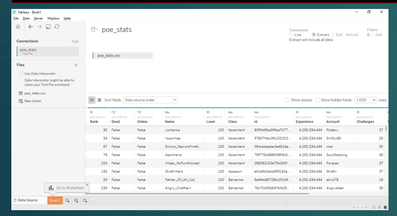

Figure 3. Data before cleaning in Tableau

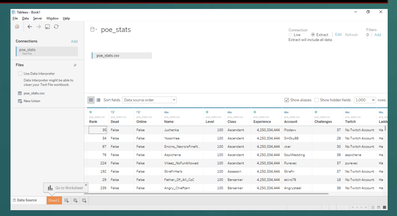

Figure 4. Data after cleaning in Tableau

3. Initial Tableau Plotting and Issues

With pseudo-cleaning complete, attempts to create the first plot began. As can be discerned from the given images (Figures 5 and 6), this did not tide over well either. Working with dimensions and measures sounded odd given how much time I spent with R. I was not going back to R though, so I continued with Tableau and eventually got a good result.

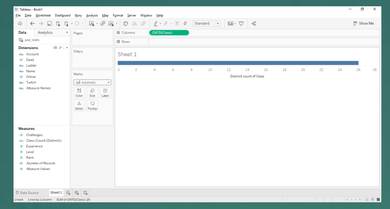

Figure 5. What is a measure?

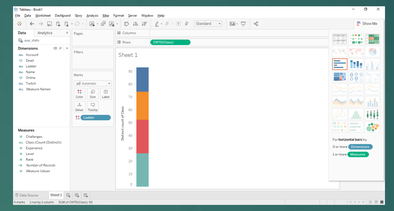

Figure 6. Another bad plot.

4. Successful Plotting with Attribute Conversions

I fiddled around with converting attributes between dimensions and measures for about an hour until the first successful plot was achieved. From there, the process is all downhill as plotting dimensions against themselves as a measure (primarily count and distinct count) worked out a good percentage of the time. A few plots are just duplicates since I wanted to display the percentages rather than the raw numbers (not present on this poster because of lack of space) but there is a fair amount of data that I gleaned from my plots even if a PoE outsider has no clue what he/she is looking at. In some cases, I used program screenshots instead of an exported .png file as I am sure no one wants a 30000 pixel anything.

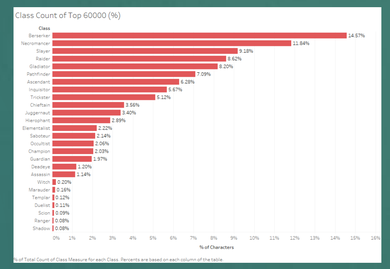

Chart 1. Percentage of characters created by class. Berserker is more popular than necromancer? What is this nonsense?

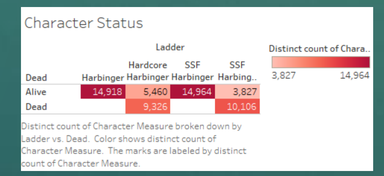

Chart 2. Character status by ladder. Harbinger and SSF Harbinger can be disregarded as characters cannot permanently die in those ladders.

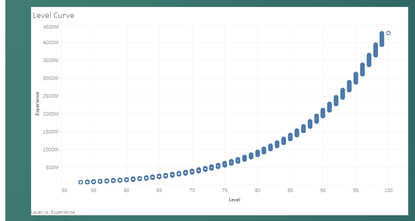

Chart 3. Level curve. Kinda glad I never played to 100. Exponential experience requirement is ugh.

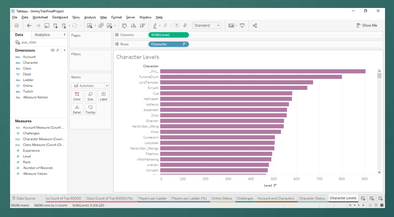

Chart 4. Level cap increase or hackers? Last I checked the cap was 100.

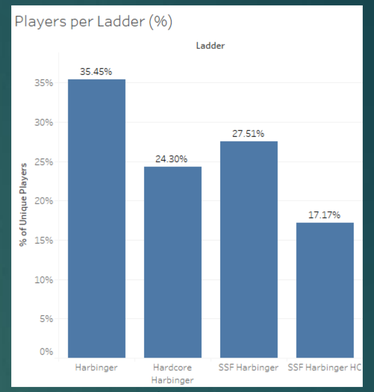

Chart 5. Percentage of players involved in each ladder. Note that it is possible for a player to be in multiple ladders.

Number of Characters by Class in Ladders

Class	Harbing..	Hardcor..	SSF Har..	SSF Har..
	Ladder			
Ascendant	740	1,149	1,000	865
Assassin	108	72	274	225
Berserker	2,713	2,064	2,290	1,644
Champion	126	490	262	338
Chieftain	291	690	456	693
Deadeye	79	167	280	193
Duelist			10	55
Elementalist	193	160	541	432
Gladiator	648	1,356	1,320	1,576
Guardian	349	661	66	101
Hierophant	102	398	557	668
Inquisitor	559	828	952	1,052
Juggernaut	187	672	437	734
Marauder		1	100	84
Necromancer	1,207	2,099	1,716	2,055
Occultist	151	301	367	413
Pathfinder	3,428	416	236	159
Raider	1,943	895	1,486	826
Ranger		4	13	31
Saboteur	177	304	407	393
Scion		1	8	43
Shadow			10	36
Slayer	1,706	1,343	1,301	1,135
Templar			6	65
Trickster	211	834	955	1,058
Witch			21	98

Chart 6. More detailed numbers for Chart 5. This shows class breakdown.

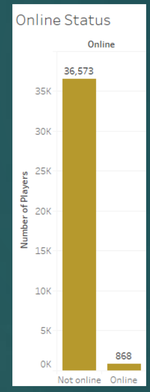

Chart 7. Online status of players at the time the data was mined.

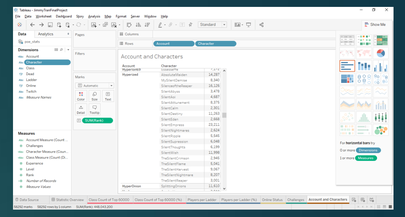

Chart 8. Hyperized seems to play a bit too much.

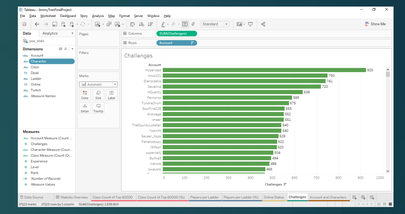

Chart 9. Did I say "a bit"? I meant he probably needs a life.

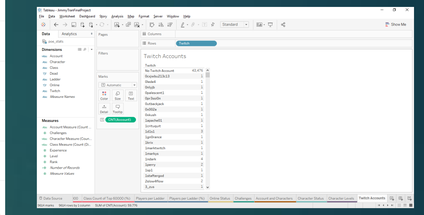

Chart 10. Twitch accounts. I could not quite get this to display right but the math should be obvious since the count for "No Twitch account" is there.

5. Conclusions

It seems there is an issue with the Necromancer and Berserker classes almost dominating the ladders (Chart 1). The lower six classes are understandable as they are base classes only used to begin the game.

Hardcore participation is about expected in comparison to the normal ladders from my point of view. I expected about a 66/33% split between the two normal and two hardcore ladders. SSF hardcore could probably stand to gain some popularity.

Personal notes: I enjoyed seeing the data of the leaderboards of Path of Exile in a better format. It definitely put some things into better perspective for me personally. Would have liked to have data mined the passive skill tree (see below), but that would take forever (and it gets altered every few months or so).

Contact

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References

1. Kaggle: https://www.kaggle.com/gagazet/path-of-exile-league-statistic/data
2. Path of Exile Website: https://www.pathofexile.com/faq