Statistical Analysis of Dragon Ball Z Dokkan Battle Character Units

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## Summary or Synopsis:

Dragon Ball Z Dokkan Battle is a mobile game based on the popular Dragon Ball Z franchise. It combines elements of puzzle, strategy, and role-playing games. Players assemble teams of characters from the Dragon Ball universe and engage in battles against various enemies and bosses.

The game utilizes a turn-based combat system where players must strategically choose their actions to defeat their opponents. One of the key components of gameplay is understanding and utilizing character stats effectively.

Here's a breakdown of the main stats and how they are used in Dokkan Battle:

1. HP (Health Points): HP represents the character's health. When a character's HP drops to zero, they are defeated. Players must manage their team's HP by strategically using healing items or abilities.
2. ATK (Attack): ATK determines the amount of damage a character deals with their attacks. Higher ATK means more damage inflicted on enemies.
3. DEF (Defense): DEF reduces the amount of damage a character takes from enemy attacks. Higher DEF means the character can withstand more damage.
4. Ki (Energy): Ki is used to perform special attacks or abilities. Characters collect Ki spheres during battle to charge their Ki gauge. The amount of Ki required for a special attack varies depending on the character and the strength of the attack.
5. Leader Skill: Each character has a leader skill that provides a passive bonus to the team when they are set as the leader. These bonuses can include increased stats for certain types of characters or effects that enhance the team's performance in battle.
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Understanding these stats and how they interact with each other is crucial for building effective teams and winning battles in Dragon Ball Z Dokkan Battle. Players often strategize by forming teams with characters that complement each other's strengths and abilities to overcome challenging opponents.

For my analyses I will only be looking at the HP, ATK, and DEF stat as the other main stats have too many variables that I cannot account for and plan to utilized those stats in conjunction with potential leader utilization which can be for lead chracters of certain class, type, or categories.

## Summary Statistics:

Using Jupyter notebook and the describe function of Pandas was able to dertimane the following:

* There are 1194 character data gathered at the time of this project. (The game will continue to update and add more characters so the count will increase over time)
* The mean value for the stats of HP, ATK, and DEF are 15303.382, 14576.022, and 10036.673 in that order.
* The standard deviation for HP, ATK, and DEF are 3601.053, 2976.693, and 2155.630 in that order.
* The lowest stat of HP is 8069, for ATK it’s 7859, and for DEF it’s 6039.
* The highest stat of HP is 29338, for ATK it’s 23480, and for DEF it’s 18100.
* Also found the 25th, 50th, and 75th percentiles of each stat.

All of that what found thanks to the pandas.DataFrame.describe function which analyses both numeric and object series, as well as DataFrame column sets of mixed data types while excluding NaN values of which there where none within my data.

A screenshot of a computer

Description automatically generated

I also found the count of charcters by class and then by type using a countplot from seafigures as shown below:

A graph showing different colored squares

Description automatically generated

A chart of different colored rectangular shapes

Description automatically generated

## Core Project ideas:

The main point of this project was to unbiasedly show which class, type, or category of characters were more favorable to obtained based on how many of those characters there are or how the stats are distributed. While players may have personal favorites or characters, they deem fun to use I wanted to showcase with statistics what kind of characters would allow a player to have more options because they could be more options based on the type of characters a leader can lead which at this point in the game can be based on class, type, or category that a character belongs to.

## Application of Data Science to your discipline of interest:

My discipline of interest is within gaming and with this project it can be utilized either as a community article to show what type of characters may be more abundant in the game using data science and knowledge of the game or if this was done while being part of the developers team then it could help determine on their side what kind of characters classifications are lacking and may need more of an effort to better keep a balance in the game.

## Supporting literature:

None of that applies after looking for ways to only use stats of characters to try an apply statistical analysis on. Attempted to look at other type of potential application from other games like Pokémon, which gave me the idea to further filter the analysis of characters based on Legendary status or not but was not implemented at this time, or sports stats which I could not think of a way to implement into my project within the given time.

## Software technologies used:

Used a web browser to go to the web site where characters stats are recorded <https://dbz-dokkanbattle.fandom.com/wiki/Dragon_Ball_Z_Dokkan_Battle_Wiki>) then manually captured the data of each character in a google sheet spreadsheet that was then exported as a csv file to use visual studio code running Jupyter notebook with select imports to create and transform the data in the csv file into a dataframe and then run functions to analyse with. Storing all of the info in github as a way to store, present as a project worked on a resume in the future, and present to the game’s community on reddit.com to receive potential ideas if feedback is given on better improving it or at least have a better suited community member use it to run a better analysis for the game as in the end it’s meant for the game community and do not mind sharing it.

## Data Source:

Found all character stat data within the game’s fandom website which is kept up to date with each update thanks to other data miners in the community. The data is meant for the game’s community and therefore all public but had to visit each character’s specific detail page to look up their stats and capture that data manually within my google sheet spreadsheet.

## Conclusion:

Super class characters, aka the good guys, outnumber extreme class characters, aka the bad guys, within the game. This leads to characters that can lead other characters that are super class more favorable as the player would have more options.

When it comes to characters that lead by type the one in the lead is STR characters but overall, the number of characters that each of the five types have within the game are spread out evenly not giving any one type an overall advantage over another type.

Category analysis is TBD at a later date when the containing spreadsheet is updated to contain all the categories that each of the characters can belong to but could not be finished within the initial projects timeframe with over 1000 characters and over 90 categories that any one character can belong to multiple categories. [Side note: for this project for the class could not accomplish this but plan to continue honing my skills to possibly use web scrapping to gather data more easily and still use this initial project startup for future potential resume work]