Mastering the Master league in PvP

Coursera
Google data analytics
Case study
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Prologue

Hello, world!
Welcome to my case study for my data analytics course at COURSERA.
First and foremost, I would not be able to complete this research without the help, the love and support of our Pokémon community of Pokémon trainers and Pokémon fans from all around the world. I'm grateful to you all. Thank you so much for your company, for sharing your knowledge and experience. I would not be here without you. Thank you!
To be honest, almost 20 years ago, when I first played the video game, fire red, on a NINTENDO Game Boy; that was the size of a bento lunch box, that these Pokémons would become so real! I remember wrapping the rubber band around my biceps like as if I was the captain of my imaginative team. Without further ado, let me lead you in this journey of mine: Master League PvP Case study!

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Pokémon go Master League

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What is Pokémon Go?

Pokémon Go is a 2016 augmented reality mobile game, part of the Pokémon franchise, developed and published by Niantic in collaboration with Nintendo and The Pokémon Company for iOS and Android devices

Pokémon trainers catch Pokémons anywhere they can. And are able to train them to battle each other, compete in tournaments, cups and in different Pokémon battle leagues.

What is Pokémon PvP?

PvP stands for player vs. player. A meta game mode in Pokémon Go where trainers can battle each other in an intense Pokémon battle. Both Pokémon trainers picks 3 Pokémon to battle each other.

There you can prove who is the best trainer in an animated turn based strategy game. The last man standing is the winner!

Pokémon trainers may battle each other in 3 different PvP leagues. The Great League, the Ultra League and ultimately **the Master League** where they may win rewards like elite ™'s to further customize their characters.

The best trainers may even earn invitations to irl tournaments held all across the globe.

What are the top PvP Pokémon?

In this case study we are going to determine the top 10 Pokémon types in the Master League PvP. And we are going to predict the encounter rate of the top 10 Pokémon type in the Master League. And we will try to find the right Pokémon to PvP with.

Master league rankings

To do this we will use the historical data provided by pvpoke.com

We will use the top 100 ranked Pokémon currently ranked on pvpoke.com in the Master league. The follow .csv file provides all the Pokémon data such as Pokémon name, Pokémon Score, Primary type, Stamina, Stat Product ect.

In this case study we will focus on the Pokémon primary type and their overall score to calculate the frequency of their usage in the PvP ML.

PvPoke | Open-Source Battle Simulator, Rankings & Team Building ...

Instruction on how to download the .csv file of the rankings in attachment

Master league top 10 types

Date: 2024/02/18

Pokémon_Type	Number_per_type	Encounter_rate
dragon	16.00	19.75%
water	11.00	13.58%
ground	9.00	11.11%
steel	8.00	9.88%
ice	7.00	8.64%
psychic	6.00	7.41%
fighting	6.00	7.41%
bug	6.00	7.41%
rock	6.00	7.41%
fairy	6.00	7.41%
Total	81.00	100.00%

This table shows us the encounter rate of the different of Pokémon types encountered in the ML.

With almost 1 out of 5 encounters, dragon type has the highest encounter rate.
Followed by water type and ground type.

Ranks 5 to 10 have all the same encounter rate with almost 8 %. These are the bug, fairy, fighting, rock and psychic type.

Master league top 10 types

Date: 2024/02/18

Pokémon_Type	Number_per_type	Encounter_rate
dragon	16.00	19.75%
water	11.00	13.58%
ground	9.00	11.11%
steel	8.00	9.88%
ice	7.00	8.64%
psychic	6.00	7.41%
fighting	6.00	7.41%
bug	6.00	7.41%
rock	6.00	7.41%
fairy	6.00	7.41%
Total	81.00	100.00%

You guys might be questioning why there are only 81 Pokémons in on the list.

That is because the 19 other Pokémons species that made it on the top 100 rankings list but did not make it at the top 10 Pokémon types ranked on this table.
Let's call those Pokémon **COUNTER META Pokémon.** Since there are 'countering' the meta game'.

Let's call the Pokémon that are ranked below 100 in the Master League, the **COUNTER-COUNTER META Pokémon.**
The counter-counter meta Pokémon are very useful when competing in PvP Cups where the selection of available Pokémon are specified for the featured PvP Cup. For example "The Psychic cup"

These Pokémons are certainly worth catching especially those who can mega evolve for example Pokédex entry #6 Charizard!

Master league rankings

www.PvPoke.com PvP rankings

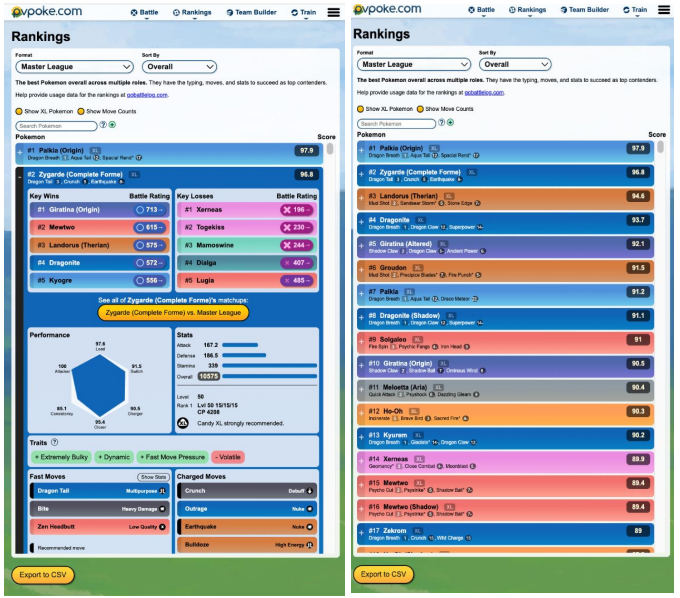
Here is an example of the ranking table in the Master League PvP on feb 18th.

Note: that our Pokémons are ranked based on perfect Pokémon iv's and thus their overall performances in PvP battle.

For customised rankings for example; based on the lead Pokémon encounter rate, may differ from the overall encounter rate as trainers may prefer other Pokémon stats like the higher Pokémon defensive stats or more Pokémons stamina.

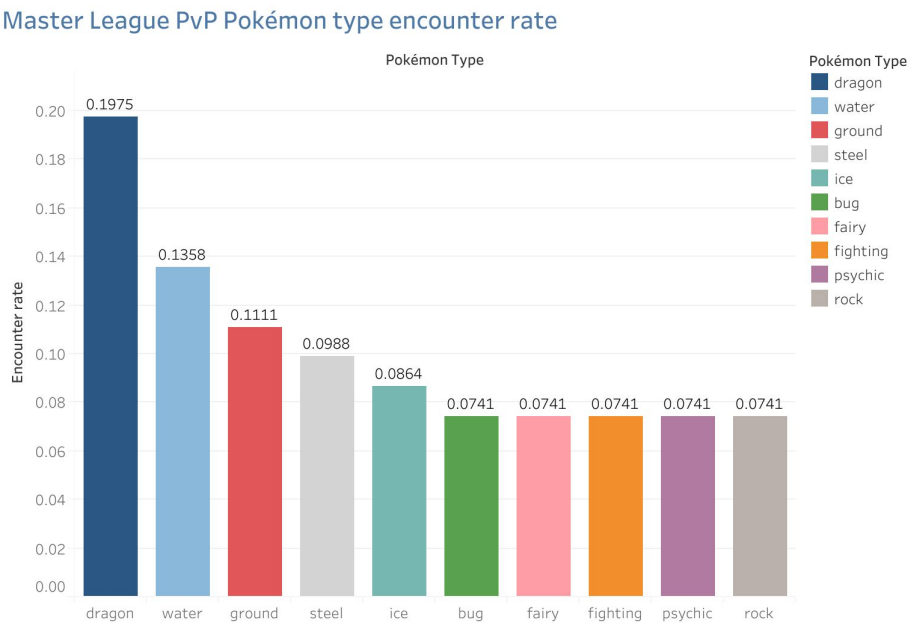
For these sorts of tactics and in game strategies I would recommend you to study the Great League or the Ultra League. Or other PvP Cups. as they dive even deeper into in-game tactics.

In the Master League we try to catch the perfect Iv's.
That is all 15-15-15 for attack, defense and stamina.



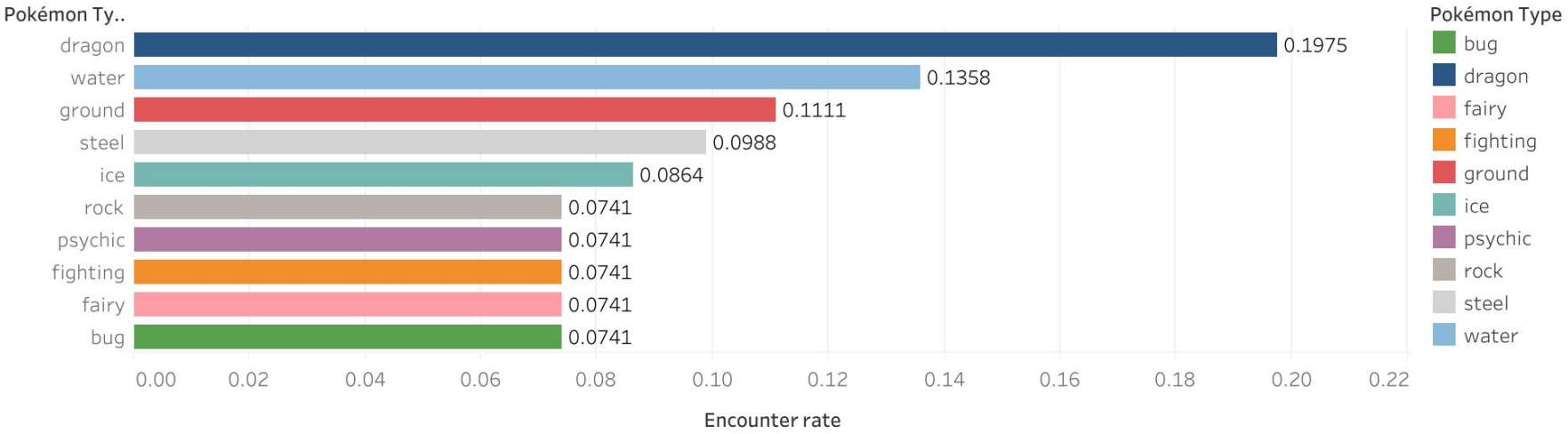
Master League Pokémon

Statistical representation of the top 10 Pokémon types in the Master League



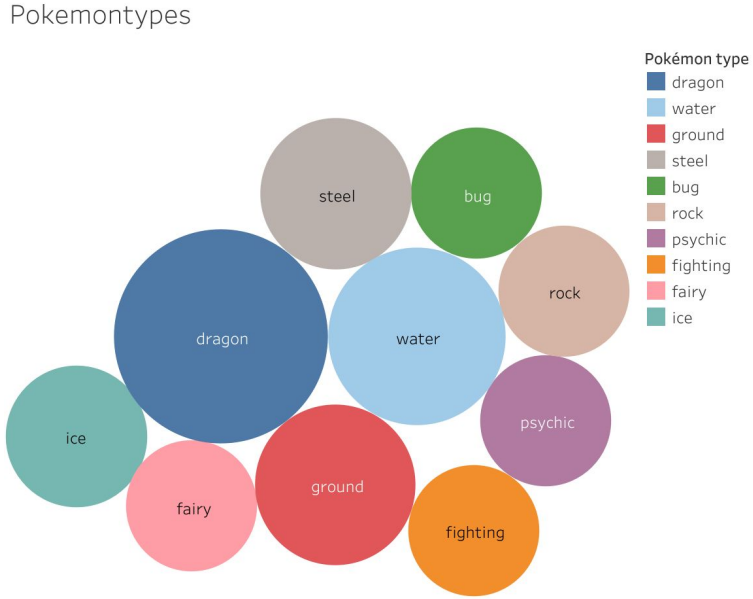
Master League Pokémon

Master League PvP Pokémon type encounter rate

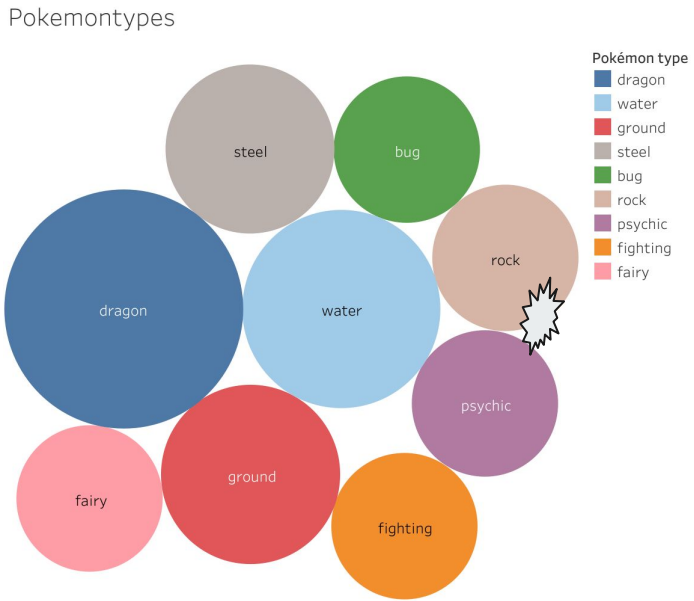


Master League Pokémon

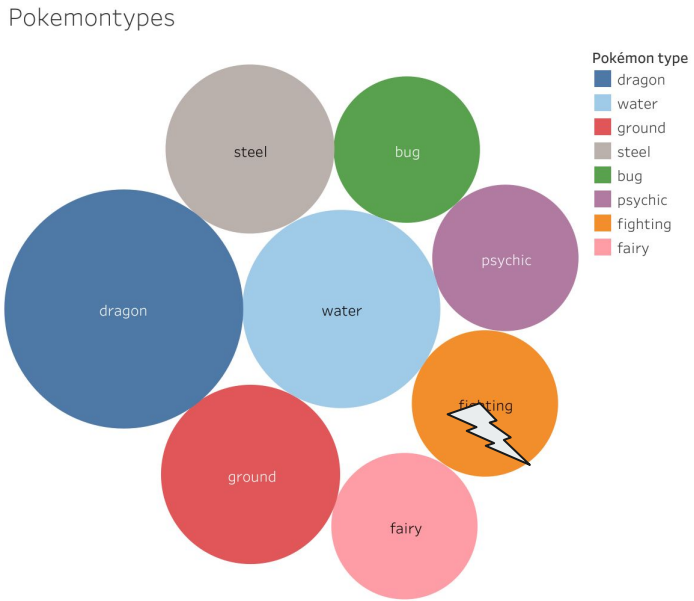
Can you guess what type is currently the best in Master League?



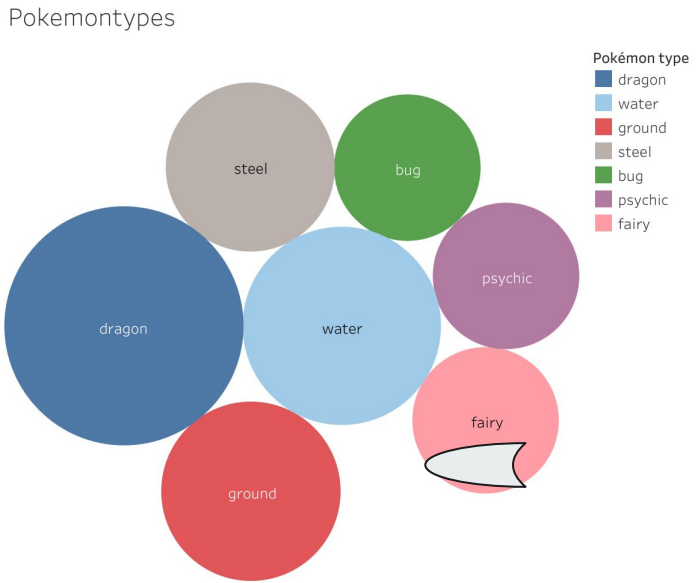
Master League Pokémon



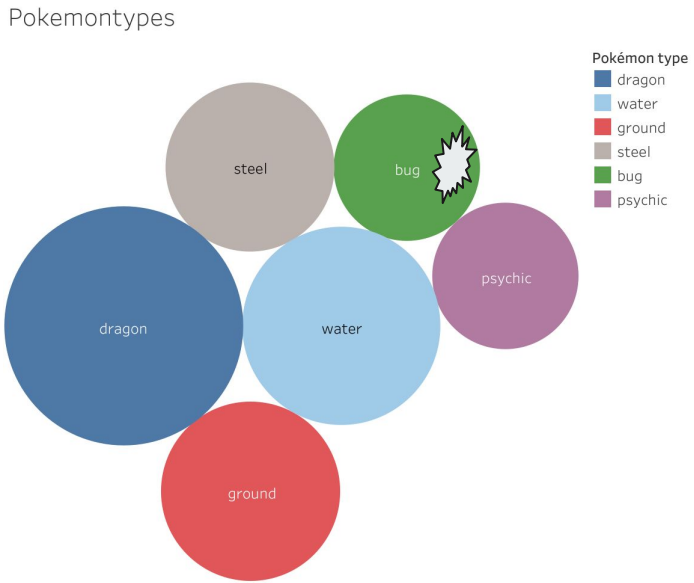
Master League Pokémon



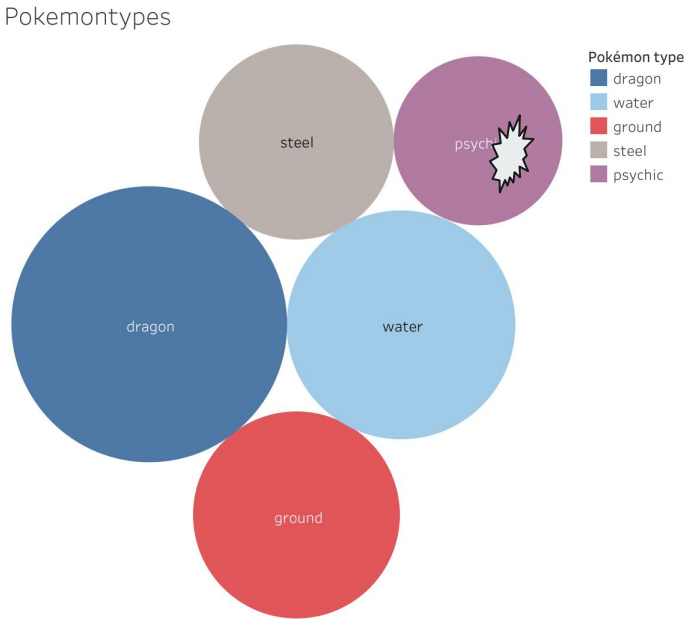
Master League Pokémon



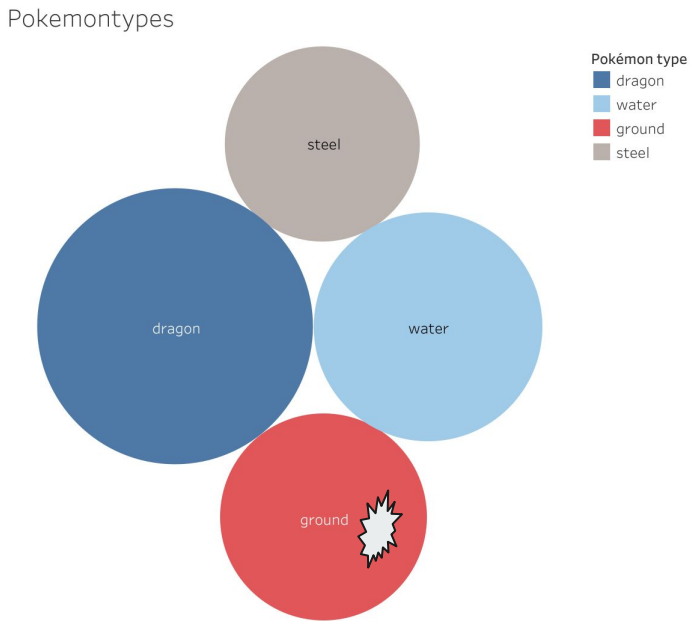
Master League Pokémon



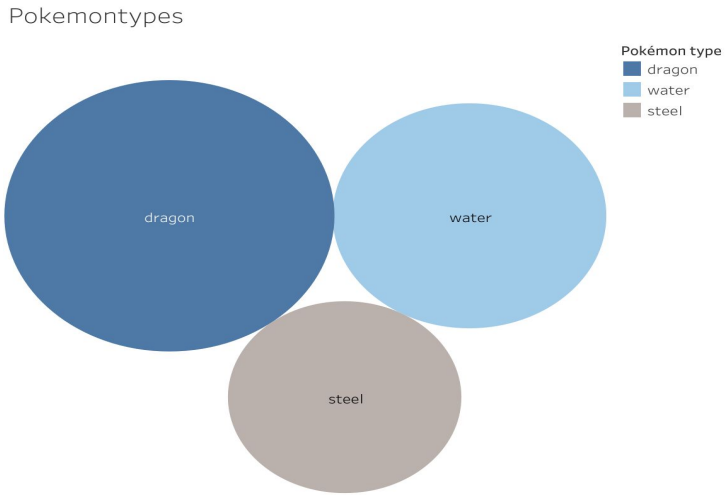
Master League Pokémon



Master League Pokémon

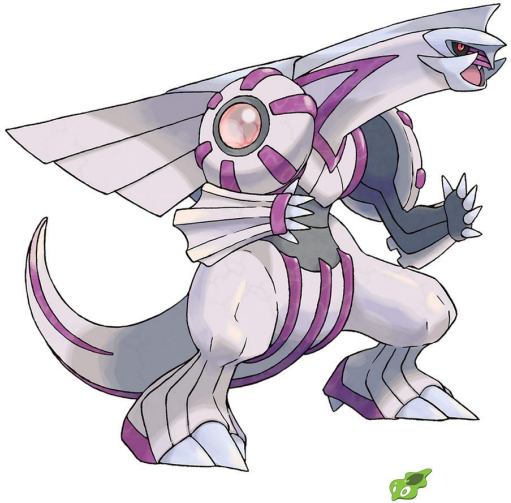


Master League Pokémon



Can you guess what Pokémontype will be most encountered in PvP Master League?

Master League Top Type Dragon type



Master League Top Type Dragon type

That's right it's the Dragon type

Conclusion

Out of the 18 different Pokémon types, the Dragon type will be most encountered in the Master League. With 16 dragons encounters, the dragon type has an encounter rate of almost 20% of the Top 10 Pokémon types in the Master League. That is close to one out of every 5 battles.

Recommandations

To counter the dragons types I would recommend other dragon type, meta Pokémon. Since dragon type moves are super effective against dragon types.

In this most likely occasion I would use a dragon type with a secondary type of steel or water to resist the fairy or ground type. Dialga would be most suitable!

Q&A

Why are there only 81 Pokémon in the Master League top 100?

The list is made of top 10 Pokémon types in the Master League. Some Pokémon made it top the top 100 Master League rankings but had less than 6 of their type in the top 100. For example: Ho-oh is a fire type and is ranked 12th in the Master League.. But there were less than 6 fire types in the top 100 therefore there are no fire types in the prediction chart.

The Pokémon listed in the Top 100 that were not listed in the top 10 ML Pokémon types are considered to be a **COUNTER META Master League Pokémon.** Pokémon that were listed under the Top 100 are **COUNTER - COUNTER META Master league Pokémon** for example. Mega Charizard X and Mega Charizard Y.

Key insights, findings and conclusion.

Each Pokémon has a set, set of specifications like their primary type, their secondary type, if they have one, stamina stats, offensive stats, defensive stats, choice of charge moveset, choice of fast move and even gender specific features per Pokémon. We can choose any Pokémon to battle with. In this case study I chose only to focus on the primary type as it is the most impactful of all the features.

To PvP, each player battles with up to 3 different Pokémon. In Pokémon tournaments, held all around the world, each Pokémon trainers may choose from a set team of 6 Pokémon they bring with to battle each other.

In the PvP league you may choose any eligible Pokémon you caught or traded with your friends.

So let's go out there catch them and start PvPing!

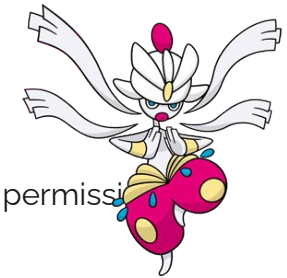
My favorite type atm. is the Fairy and steel type Pokémon like Mawile! What is yours? Are you into battling or are you going to catch'em all? Either way! Good Luck and Success on your adventures.

Thank you!

Thank you for your attention. I hope you guys like learning about this wonderful creatures. I hope enjoying collecting them as much as training them, like I do.
Feel free to join our awesome Pokémon communities on twitch.tv and other social media platforms.

If you have a more questions feel free to contact me through email. Or LinkedIn
Special thanks to PvPoke.com for giving us the data.

Thanks to the Pokémon company and Niantic labs for this great game.
Domo Arigato Gozaimasu!



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Appendix

Vocabulary

Augmented reality (**AR**) is an interactive experience that combines the real world and computer-generated content
COUNTER META Pokémon are Pokémon that are in the top 100 but where their primary Pokémon type does not appear in the top 10 Pokémon types. Currently there are 18 different Pokémon types plus one stellar type
PvPoke.com is a crowd sourced interactive live updated forum with live rankings of different pvp leagues created by players from all over the world
IV stands for individual value; a combination of statistics unique to each Pokémon
Appraisal: a in-game appraisal feature that rates the IV spread of a Pokémon
Master league a PvP Lague without a CP limit
Ultra League is a PvP league with Max CP of 2500
Great League is a PvP League with Max CP of 1500.
Bias function is the difference between this estimator's expected value and the true value of the parameter being estimated
IRL stands for in real life
Mega evolution unlike normal evolution mega evolution is a temporary transformation that increases a Pokémon's stats and abilities
Atm stands for at the moment

pvpoke.com

Appendix

Resources: www.pvpoke.com

Data analysis tools:	**Google sheets**	**statistical analysis data visualization**
	SQL	**statistical analysis and data transformation**
	Tableau	**statistical analysis and visualization**
	R	**verifying data with R tidyverse, ggplot2, dplyr, readr**

Instruction: How to download the .csv file of the Master League rankings on PvPoke.

1. Surf to www.pvpoke.com
2. Click Rankings
3. Then in the drop down menu, 'click' "Master League"
4. Scroll to the bottom of the website and click "Export to CSV"

The csv file is in your downloads folders

Data cleaning

Data cleaning logs
-data acquired from pvpoke.com on feb 18!
2/18/2024 15:26:00 **Cleaning and Analyzing data with SQL**

1. Uploading dataset csv uploaded cp10000_all_overall_rankings on SQL dataset 'pokemon'
2. Creating a new table in SQL ml100_casestudy
3. Writing queries to clean and organize

```
SELECT *
FROM `coursera-411817.pokemon.ml100_casestudy`
   ORDER BY(Score) DESC
   LIMIT(101)
#here top 100 ml pvp pokemon have a
Score >= 75.2
```

4. Storing this new data in a new table ml_top100_casestudy

5. Cleaning ml_top100_casestudy dataset
    1. Grouping by Type_1
    2. Ordering by number of Type_1 DESC

```
SELECT
 Type_1, COUNT(Type_1) AS Num_Type_1
FROM `coursera-411817.pokemon.ml_top100_casestudy`
WHERE Score >= 75.2
    GROUP BY Type_1
     ORDER BY Num_Type_1 DESC
```

6. Storing new data in new table in SQL `ml_top_100types_casestudy`

```
# there are 16 different Pokémon types in the top 100
```

7. Now sorting the top 10 by limiting Pokemon top groups

```
SELECT
 Type_1, COUNT(Type_1) AS Num_Type_1
FROM `coursera-411817.pokemon.ml_top100_casestudy`
WHERE Score >= 75.2
    GROUP BY Type_1
     ORDER BY Num_Type_1 DESC
     LIMIT 10
```

Data cleaning

1. Store the new dataset as new csv
   `ml_top10_types_casestudy.csv`
   And download this table as .CSV file

2. Also download the
   `ml_top100_types_casestudy.csv`

For data visualizations
  All files stored in map Desktop>CASE_STUDY>CASESTUDY_Masterleague>pvpdata

2/18/2024 16:04:31 Data analysis and data visualization with
Google spreadsheets

1. Importing data in google spreadsheets
   a. Import `ml_top10_type_casestudy.csv`
   b. Clean data and make charts
      ml_top10_types_casestudy_table_V2,
      # ml_top10_types_casestudy_table_V2 is a table chart
      # All tables stored on desktop file CASE_STUDY>CASESTUDY_Masterleague>images_casestudy>charts

Data cleaning

2/18/2024 16:32:30

Data visualization with Tableau

1. Importing dataset `ml top10 types casestudy`
2. Importing dataset `ml_top100_types_casestudy`

Creating bubble chart and horizontal bar chart

2/18/2024 17:00

Creating new dataset in Google Spreadsheets

1. Adding and converting encounter numbers into encounter rate percentage
2. Designing new table chart with Pokemon type, Number of encounters, and Encounter rate percentage
3. Downloading table chart and uploading on presentation
   File names: `Number_per_type and Encounter rate.png`
   `ml_top10_types_casestudy_V2`

2/18/2024 17:30

Data Visualization with Tableau

1. Uploaded dataset `ml_to10_types_casestudy_V2`
2. Design horizontal barchart
3. Design barchart
4. Design bubble chart

2/18/2024 18:00

1. Case study presentation with Google Slides
2. Download, store and upload images on slides
3. Upload created charts on Google Slides

Google spreadsheet

Converted the quantity into percentage

*(Number of type / total number)*100*

Draw table bar chart

First: *Select range: Pokémon Type and Number of Type 1*

Then: *Insert> chart> chart style> table chart*