PLEASE UPDATE THE CONFIG FILE BEFORE RUNNING THIS NOTEBOOK FILE

Update

The bralwer data will be updated to current values either manually or using the Brawl Stars API

Brawl Stars API

The Brawl Stars API is designed to help the Community develop amazing tools, applications and websites in a secure and reliable way.

If you have selected Update = API in config.py file, then it uses Brawl Stars API which takes in player tag and fetches your player data. Then it updates in the Brawl_Stars.csv file.

Manually

If you have selected Update = Manual

Normalisation

It is a scaling technique method in which data points are shifted and rescaled so that they end up in a range of 0 to 1. It is also known as min-max scaling. The formula for calculating normalized score: X new = (X — X min)/(X max — X min).

Player Data

This table is in the decending order of Trophies, Power, Gears, Starpowers, Gadgets respectively.

	Brawler	Trophies	HighestTrophies	Power	Gadget
0	EDGAR	599	607	11	2
1	ROSA	549	579	9	2
2	SHELLY	549	578	9	2
3	SAM	508	508	9	2
4	AMBER	504	512	10	2
...	...	...	...	...	...
57	GRAY	342	350	9	1
58	GUS	341	341	9	1
59	BUSTER	322	327	9	1
60	MEG	313	313	9	1
61	LEON	118	118	8	0

62 rows × 8 columns

```
    Brawler  Trophies  HighestTrophies
0     EDGAR       599              607
1      ROSA       549              579
2    SHELLY       549              578
3       SAM       508              508
4     AMBER       504              512
..      ...       ...              ...
57     GRAY       342              350
58      GUS       341              341
59   BUSTER       322              327
60      MEG       313              313
```
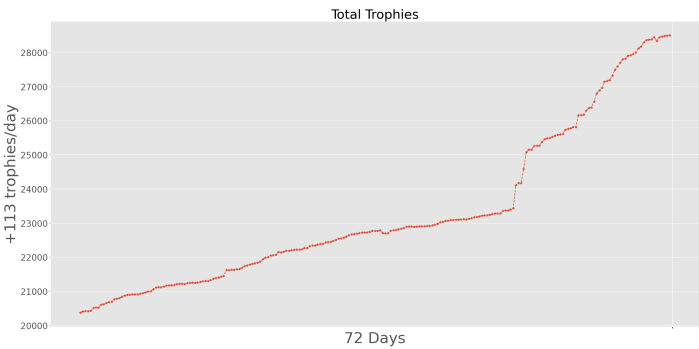
Here,

- (X min, X max) = (0, 11 *

| 61 | LEON | 118 | 118 |

	Played
0	1.062057
1	1.189716
2	1.189716
3	1.100867
4	0.982979
..	...
57	0.741135
58	0.738968
59	0.697794
60	0.678290
61	0.287677

Visualisations

All plots give different info regarding our play style, brawler priority, winning chance, easy opponents and many other things. Each Plot has it's

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<Figure size 2700x1300 with 1 Axes>

Angle of Spread (Logging Plot)

This is a metric used to monitor the spread of brawlers points (more the

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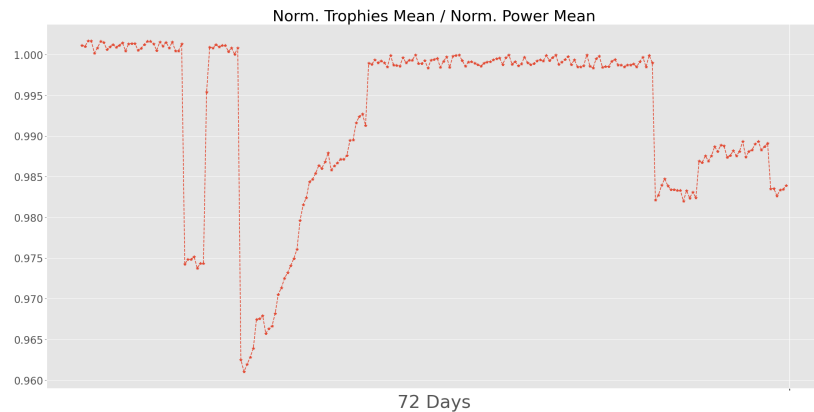

<Figure size 2700x1300 \
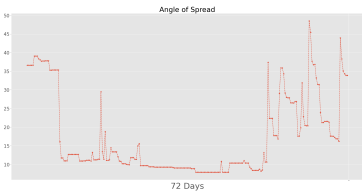
Player Overall Performance

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(Logging Plot)

This plot is used to monitor the performance of player over a period of time.

This metric suggests us how many trophies do we have for the power we have for all our bralwers on average.

Performance = mean(Normalized

Norm. Trophies Mean / Norm. Power Mean
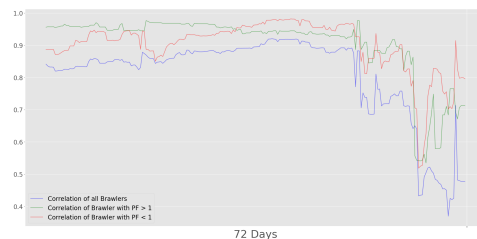
72 Days

`<Figure size 2700x1300 with 1 Axes>`

Correlation of Brawlers

Correlation is a statistical measure that expresses the extent to which two variables are linearly related (meaning they change together at a constant rate). It's a common tool for describing simple relationships without making a statement about cause and effect.

This plot is used to track the correlation of our all brawlers, good brawlers, bad brawlers.
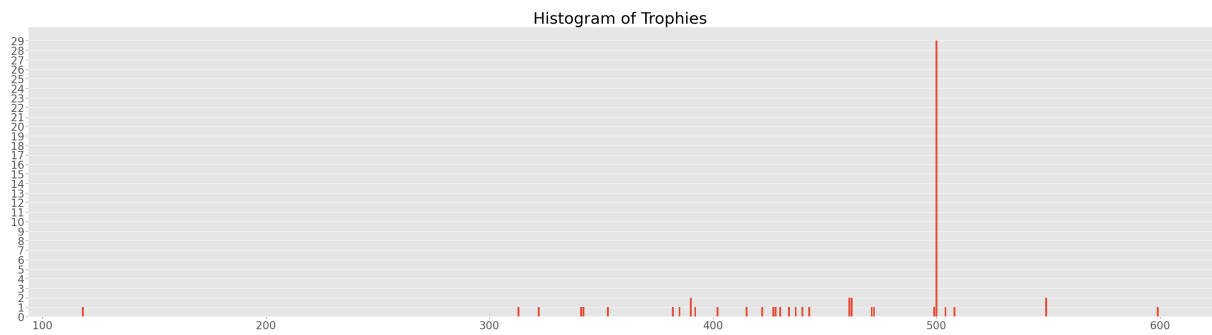
Higher the correlation, lesser the spread and vice versa. In this case correlation is causation unless there are any outliers.
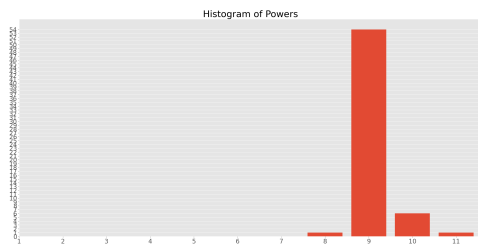

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Correlation of all Brawlers
Correlation of Brawler with PF > 1
Correlation of Brawler with PF < 1

72 Days

`<Figure size 2700x1300 with 1 A`

⬇ Download

Histogram of Trophies

<Figure size 4000x1000 with 1 Axes>

Histogram of Powers

<Figure size 2700x1300 with 1 A

<Figure size 2700x1300 with 1 Axes>

Trophies, Power vs Brawler

<Figure size 2700x1300 with 1 A

<Figure size 2700x1300 with 1 Axes>

Trophies vs Power Scatter Plot

This plot helps us understand and compare distribution of under-performing, over-performing and all brawlers.

Here, Priority Factor (PF) = Norm. Trophies / Norm. Power. Which is also inverse of winning chance.

- If PF < 1, then the brawler is under-performing. They are red color.

- If PF ~ 1, then the brawler is performing ideally. They are blue color for exactly = 1.

- If PF > 1, then the brawler is over-performing. They are green color.

Red and Green lines connects origin to least and beat performing brawlers
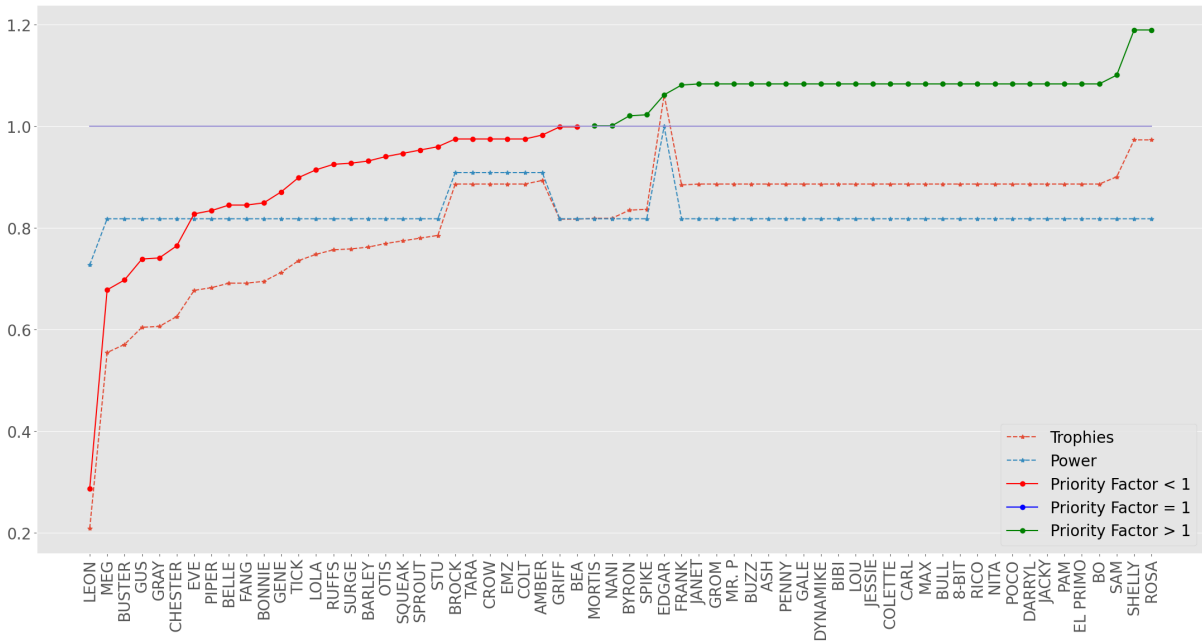

<Figure size 1000x1000 with 1 Axes>

Trophies, Power, Priority Factor vs Brawlers

This plot helps us understand the brawlers trophies, power, priority factor relative to others to chose them based on the goal of the match. For example, for a match we want to play
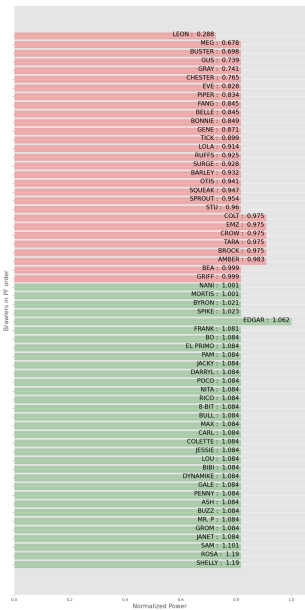
```
<Figure size 2700x1300 with 1 Axes>
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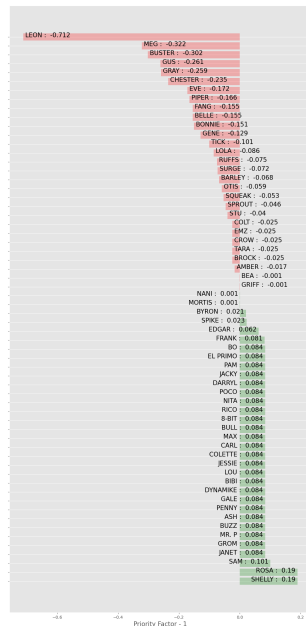
Normalized Power in PF

`<Figure size 1300x27`

Brawlers in Ascending
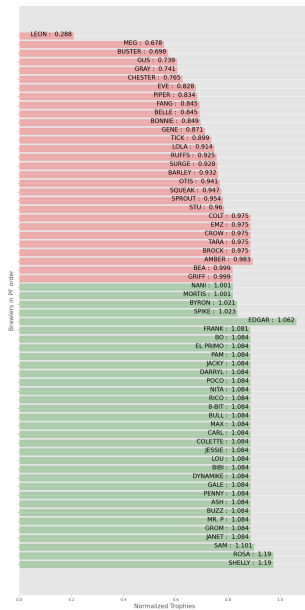
`<Figure size 1300x27`

Normalized Trophies in PF

`<Figure size 1300x27`

```
Total number of Trophies : 28503

Angle of spread          : 33.9

Pearson's Correlation    : 0.48


Enter the name of the Brawler:
```

End of the Report

Important Goals:

- We should keep up with the highest number of trophies acheived.

- Trophies should be gained for the red zone brawlers.

- Power should be gained for the green zone brawlers, it's okay to loose trophies for them too.

- Correlation of brawlers should be increased. To make them more balanced.

- Angle of Spread in Scatter plots should be decreased. To decrease outliers.

- Normalized Trophies / Normalized Power depicts our performance which should be increased.

- In KDE plots, the Trophies distribution should be either allligned or right to the Power distribution

Balance of the Brawlers

Here, when I say balance, I mean for the