ANALYSING PLAYER STRATEGIES IN ESPORTS

The project analyzes esports match data to develop strategies, creates a dashboard for SideFest, and aids in school workshops, team management, historical summaries, and understanding of performance over time.

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INTRODUCTION

- The project aims to analyze large quantities of esports match data to assist in the development of strategies for both teams and individual players. By analyzing historical data, insights can be gained to improve gameplay and performance.

- The dashboard will serve as a tool for **SideFest** in delivering data analysis workshops, primarily targeted at schools. It will help introduce students to careers in mathematics and data analysis within the context of the gaming and esports industries.

OBJECTIVE

- Develop an interactive and user-friendly dashboard interface based on **League of Legends** data that enables users, including students and esports analysts, to explore and visualize esports data effectively.

PROBLEM STATEMENT

- "How do Champion picks by the top 3 teams change over time, and what impact does this have on team performance?“

DATA SOURCE

- The dataset utilized in this research was collected under the supervision of our industrial supervisor, **Jason Boomer**, through his company, **Sidefest**.

- “LoL 2014-2022 COMBINED from Oracles Elixir.xlsx” is the dataset consisting of esports LoL (League of Legends) dataset ranging from 2014-2022.

- Primary attributes: campion, pos, teamname, split, league, damagetochampion, earnedgold, year, result, kills, deaths, assists , team kpm , patch etc.

DATA CLEANING AND PROCESSING

- Power Query Editor in Power BI is used to clean the dataset. With the help of “column quality” feature in it I was able to differentiate attributes which are higher value of errors (null) thus reduces the data complexity for building the interactive dashboard visualization.

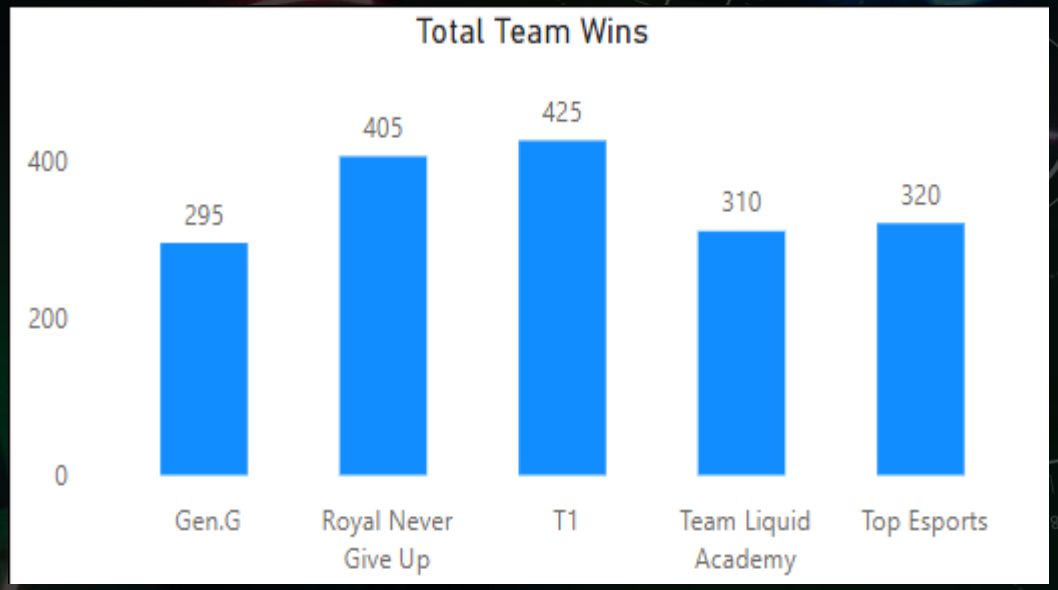
- Since the dataset is an excel workbook consisting of several worksheet based on years , I use python script to merge the dataset to a single worksheet with the help of concatenate function based on my prior experience from my previous modules.

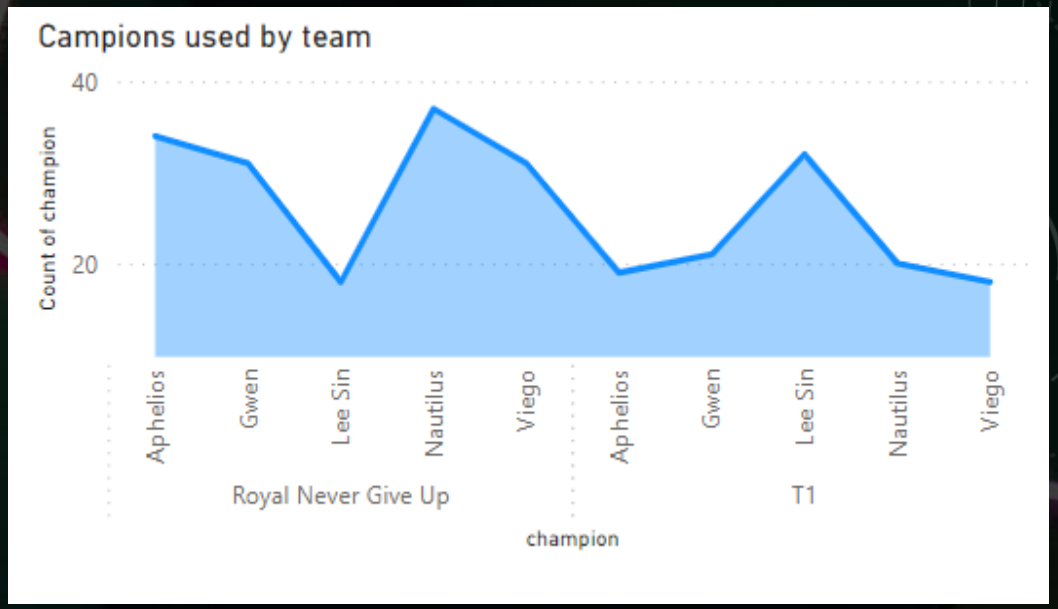
- Added some KPIs, and slicers into the visualization to make my dashboard interactive and user friendly. And ,also imported 1 external module called “heatmap” into the power bi visuals to plot the highest damage hitting campions.

- Also , plotted correlation matrix into my power bi tool with the help of python visual.

TOP 5 TEAMS AND CHAMPIONS USED

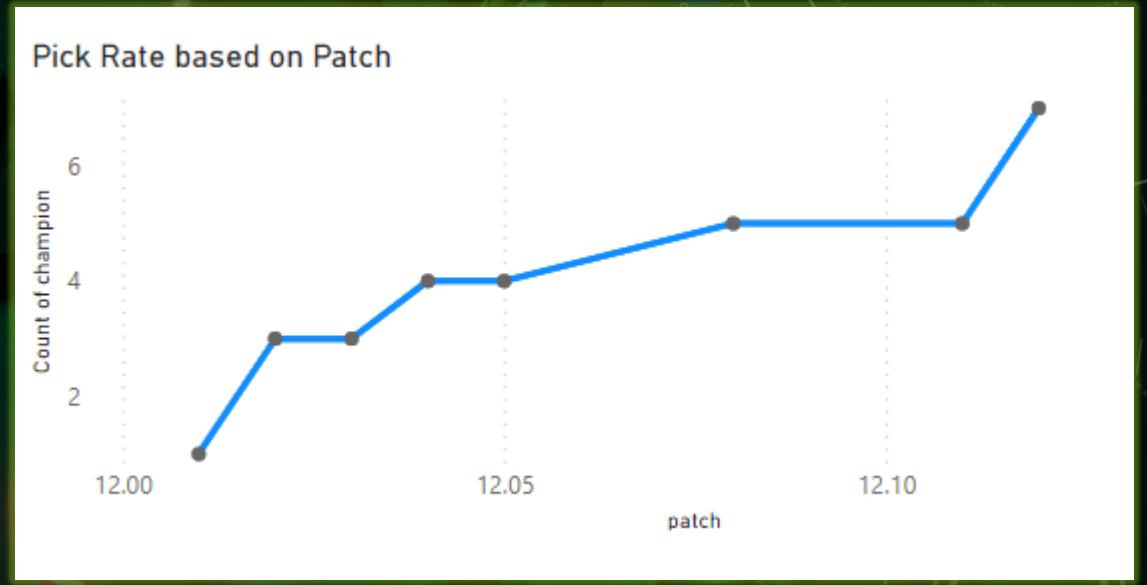
- The above line graphs helps us to distinguish the top 5 teams based on result for varies attributes like year, split & league.
- In the recent year 2022, we can see that T1 is having the highest win rate compared to rest of the teams.
- The second stacked chart , illustrates the most frequent campions the team opt for their match.
- In this case we can see that Apheilios, Nautilus , Lee Sin are the meta campions as they are mostly played my the top teams because of their perfect synergy based on position.





USAGE OF CHAMPION BASED ON PATCH

- Periodically the usage of campions vary depending upon update of games followed as patch.
- This is introduced to balance the gamestyle of the match, mainly as Buff/Nerf to the campions based on overall pick rate.
- From this graph we can determine that , pick rate of Lee Sin increased drastically upon patch. Which means the campion is been buffed to balance the meta.

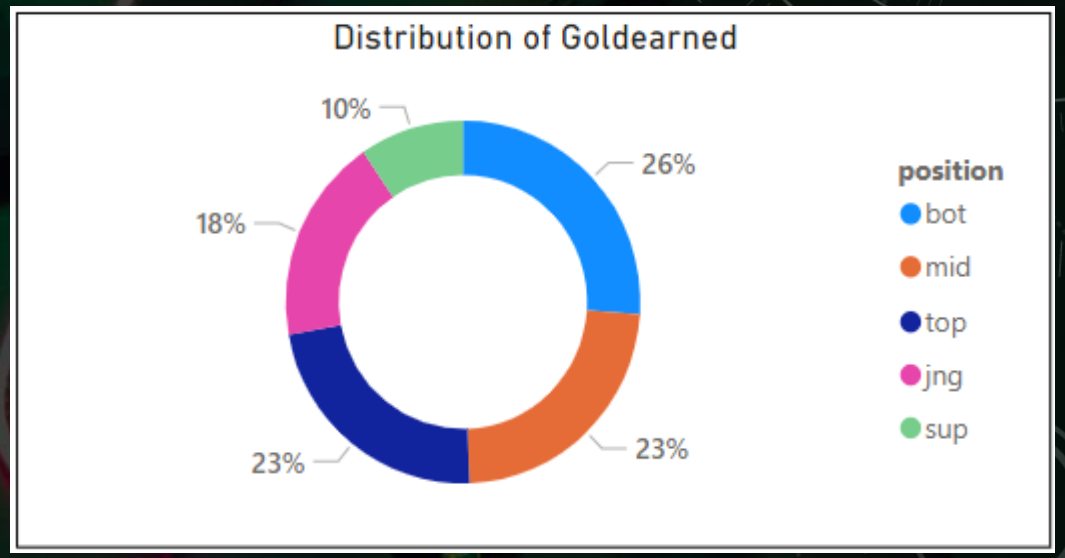


DISTRIBUTION OF GOLD EARNED BY TEAM/CHAMPION

- Earning Gold is a vital part in league of legends to stack up the campion inventory with top tier items to counterplay enemy campions.

- From this donut chart, users can focus which campions to be played on the specific position of the map (top, jungle, mid, sup, bot) to harvest maximum gold by killing minions and other monsters.

- From this graph , we can see “bottom” position is having the highest gold composition due to their high dpm.

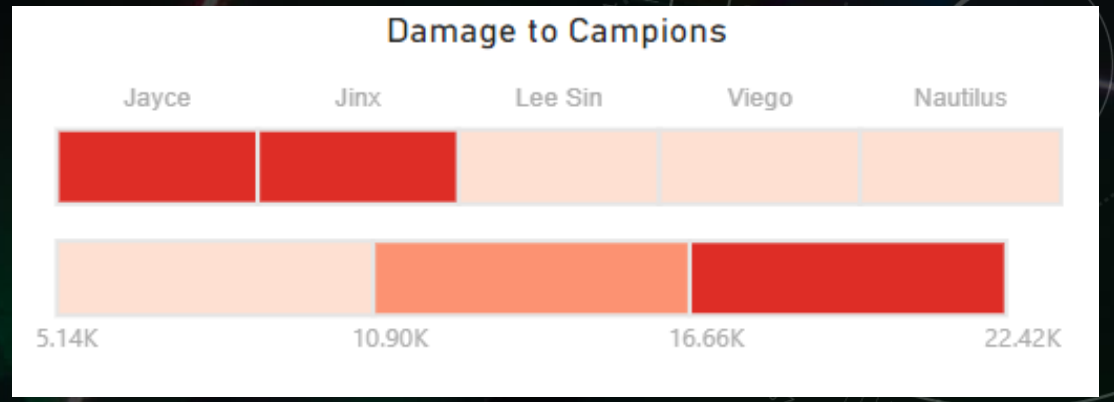


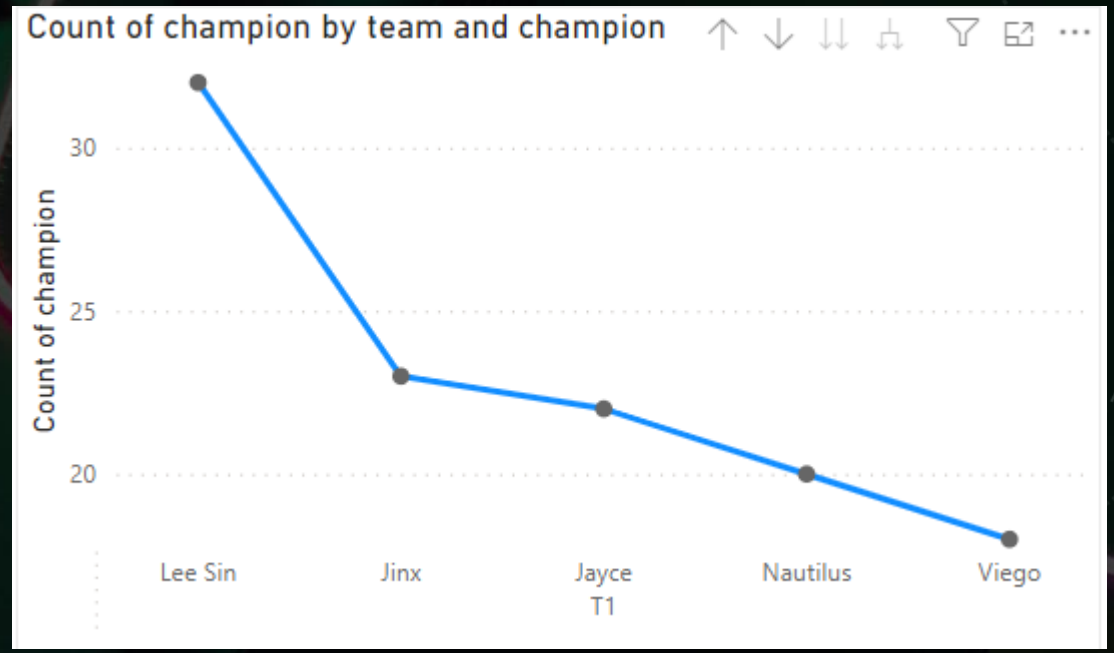
HEATMAP FOR HIGHEST DAMAGE HITTERS

- From this heatmap, users can classify which campion to be selected to eliminate other enemy champions with fraction of time leading to victory.

- In this case ,Jayce and Jinx are the heavy hitters also known as ADC (attack damage carry) to deal higher damage.

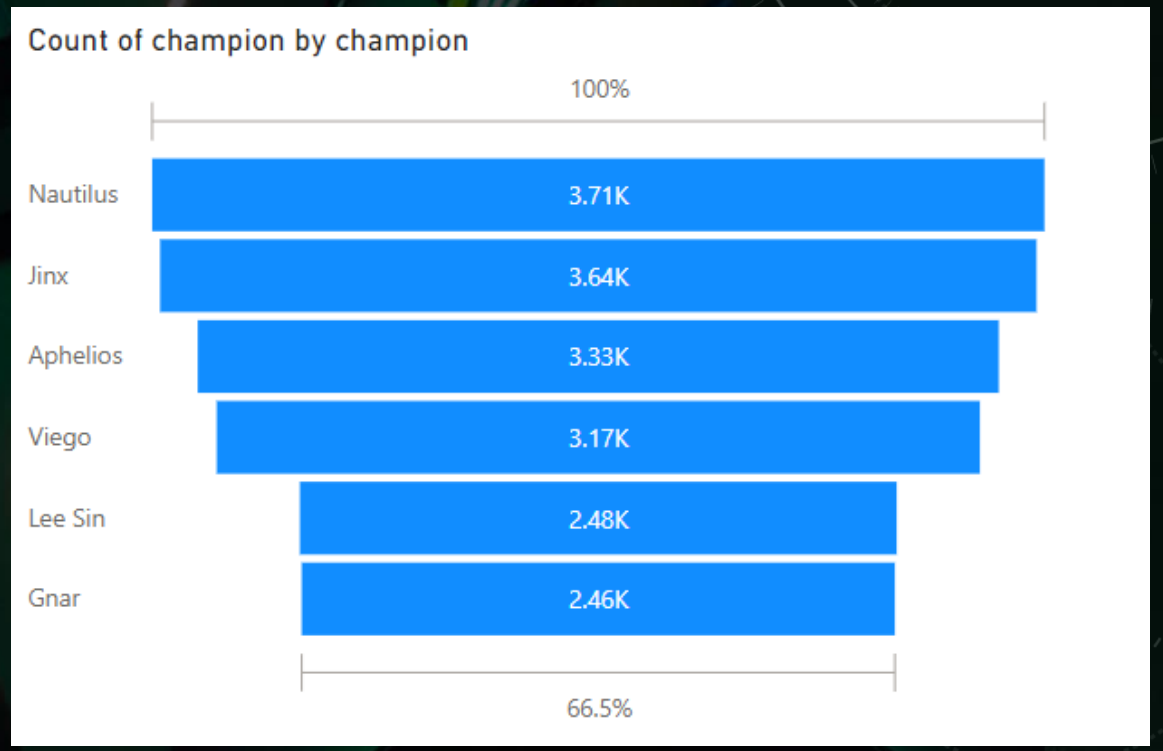
- Jinx can be played as marksman to snipe out enemy campions within range. Mainly used to take off campions when our team is in a collision with enemy team.





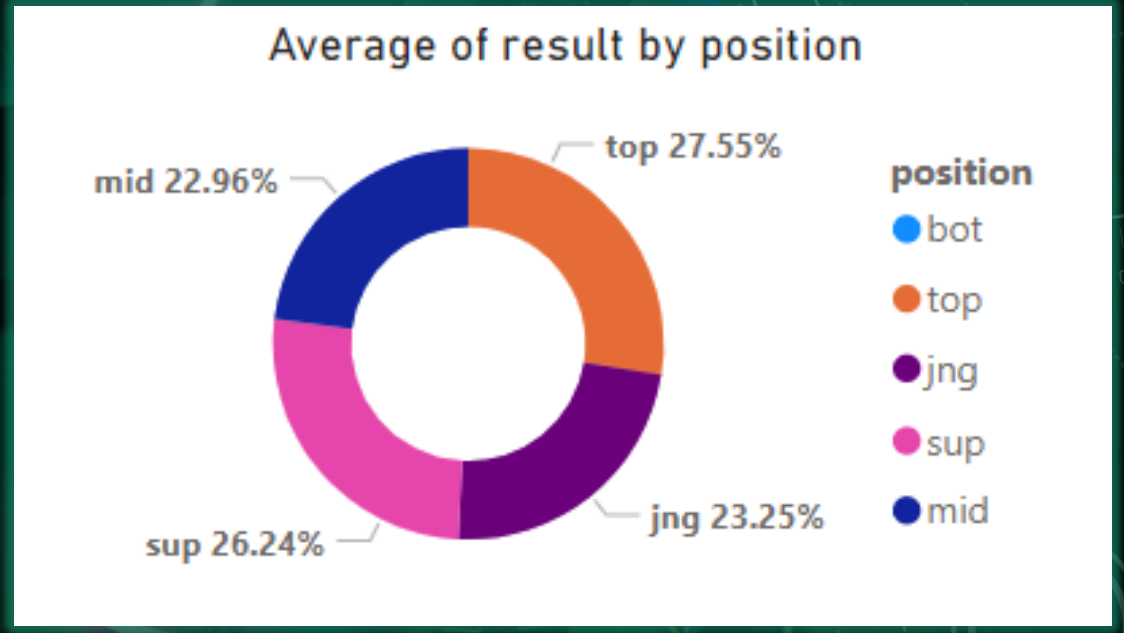
OVERALL CHAMPION COUNT BASED ON YEAR

- With the help of this funnel chart , users can distinguish which champions are frequently used by majority of pro players.
- We can see Nautilus , Jinx , Aphelious are the most frequent champion picks my most of the players.
- This may be due to their perks and synergy that champion contribute to the match.
- I also added a slicer to filter out the usage of champions based on different years and understand the variation.



CHAMPION POSITION BASED ON WIN RATE

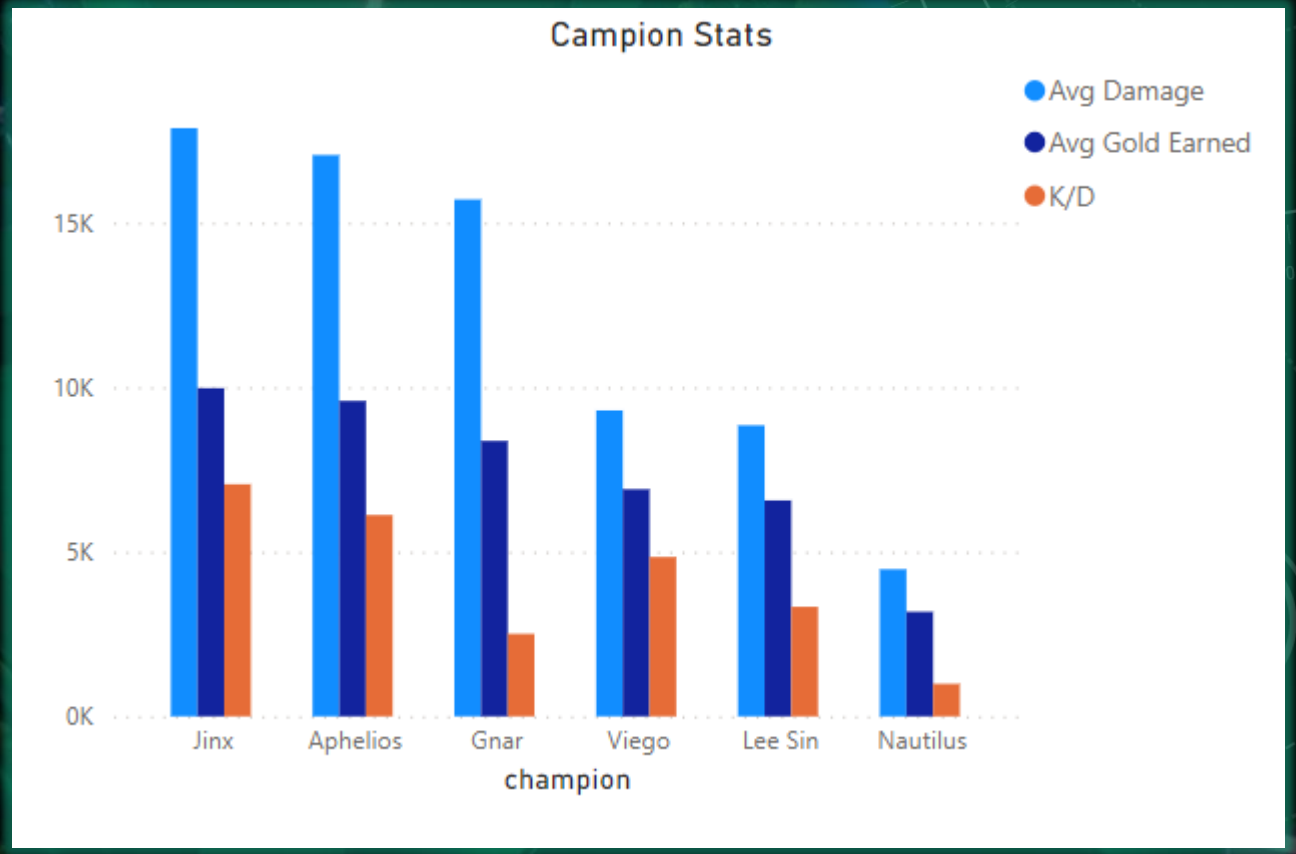
- From this donut chart , players can utilize their prior champion based on win percentage.
- In this graph, we can see that Lee Sin is an allrounder character, but it's been mainly played in top and sup position to unleash its maximum result.
- So, players can understand the analyse which campion to be selected in the specific position for better results.



CHAMPION STATS BASED ON PRIMARY ATTRIBUTES

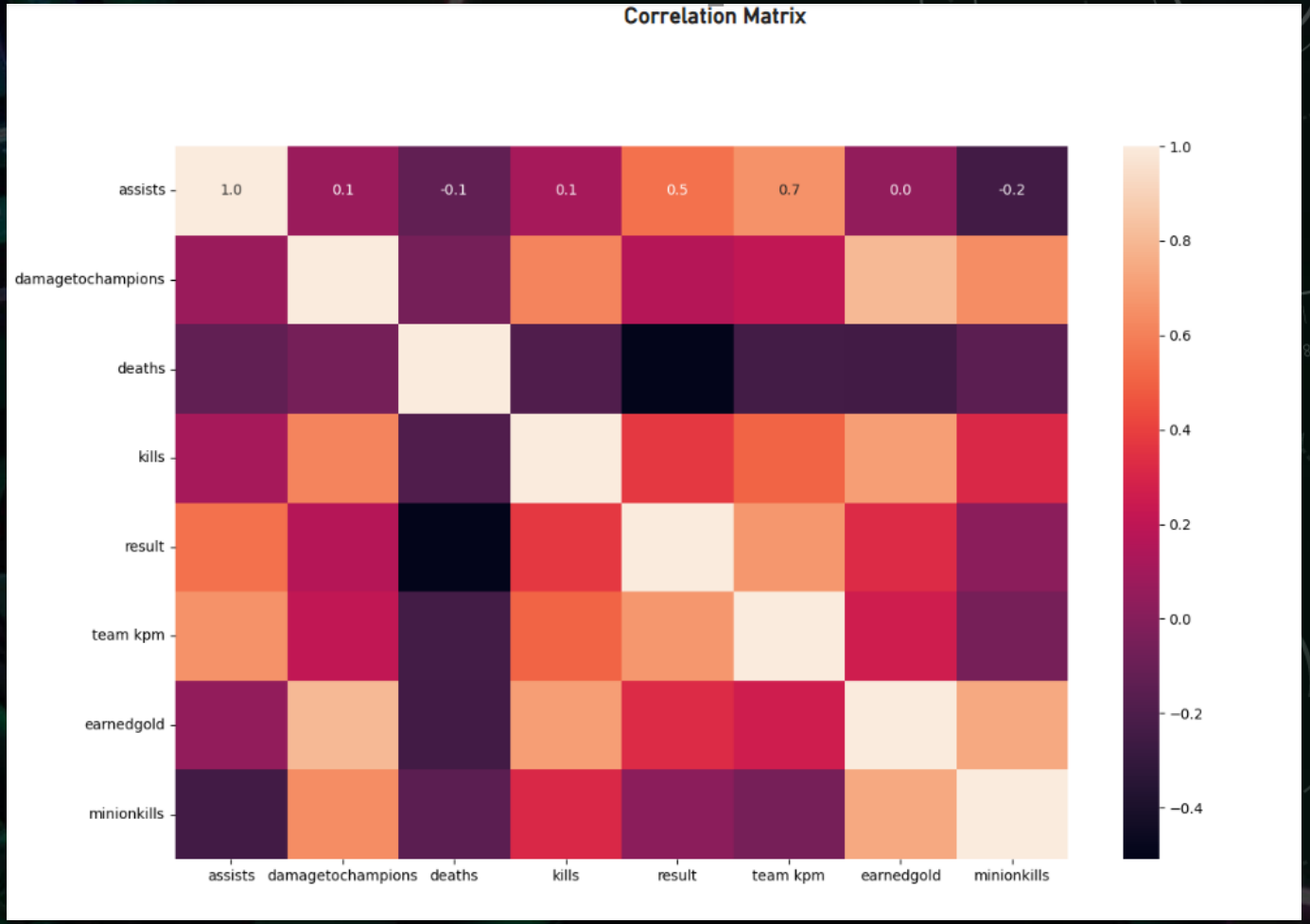
- From this cluster chart we can say that **Jinx** is having the highest composition of values based on avg damage, avg gold earned & K/D.

- Players can analyse the champion stats to take sensible decisions in order to win the match.



CORRELATION MATRIX FOR PRIMARY ATTRIBUTES

- Correlation matrix helps in distinguishing the relationship between two attributes.
- In this heatmap we can see gold earned have a positive correlation with result ,that is if earnedgold increases chance of winning match increases as champions can level up and pack up their inventory faster.
- Whereas, significant negative correlation can be seen in the case of deaths and result.

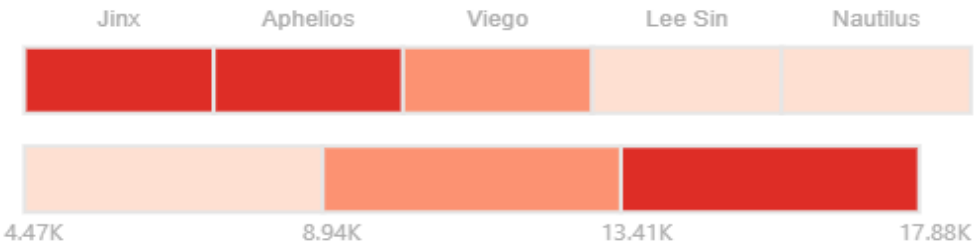


TEAM STATS DASHBOARD

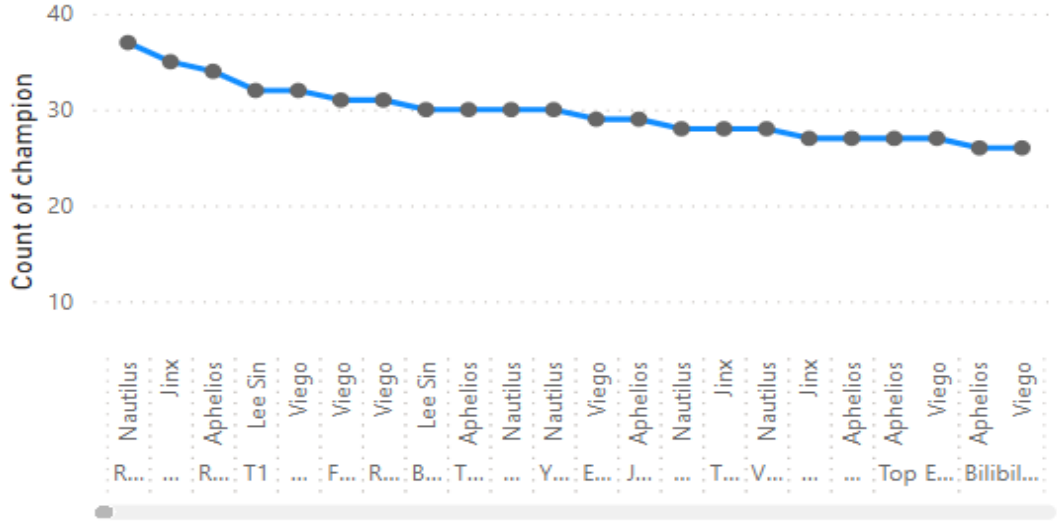
3297	1.68	1.08bn	1.36M	6.36
No of Players	Team K/D	Gold Earned	Team Kills	Avg Assist

bot | jng | mid | sup | top

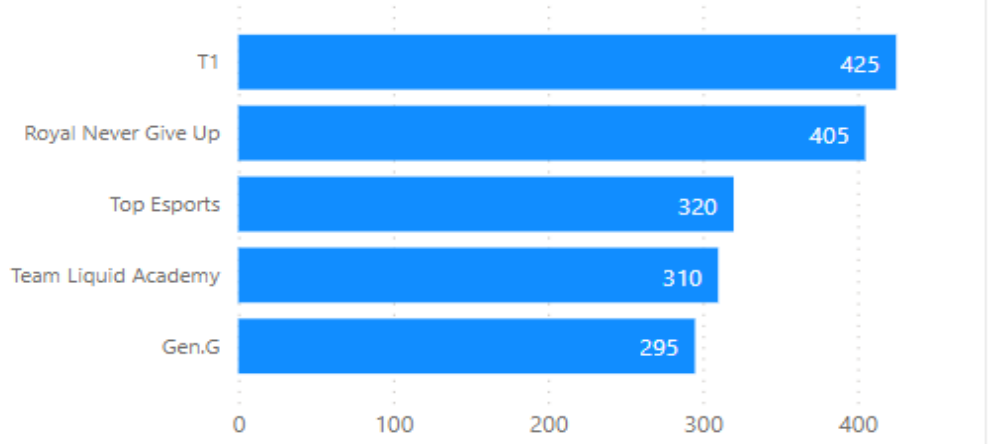
Damage to Champions



Count of champion by team and champion



Top Teams

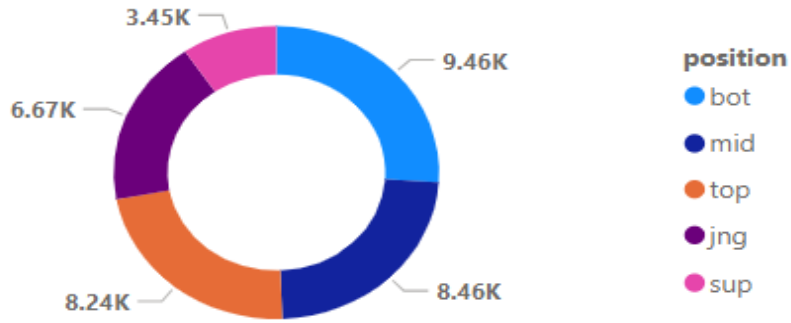


league
All

split
All

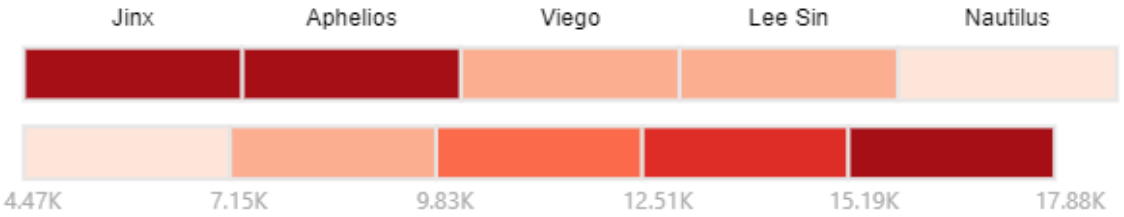
year
2022

Gold Composition

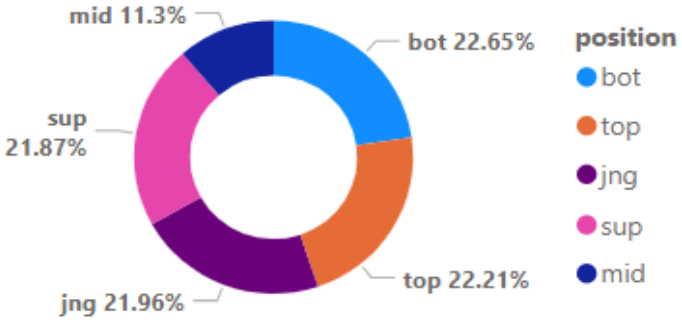


CHAMPION STATS DASHBOARD

Avg Damage to Champions



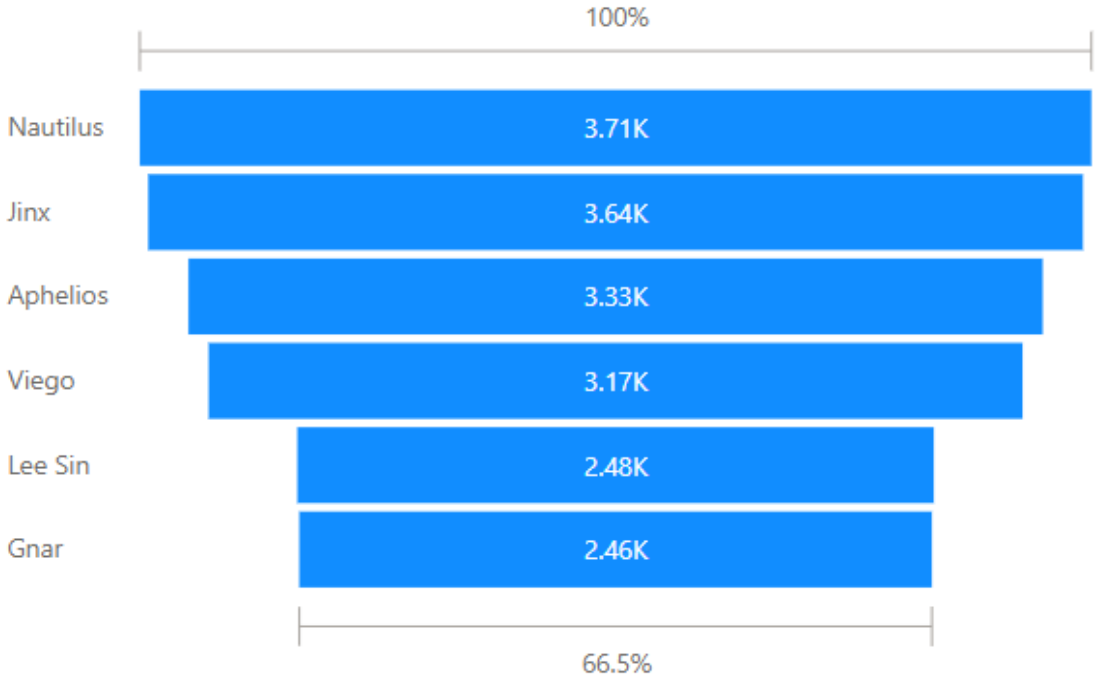
Average of result by position



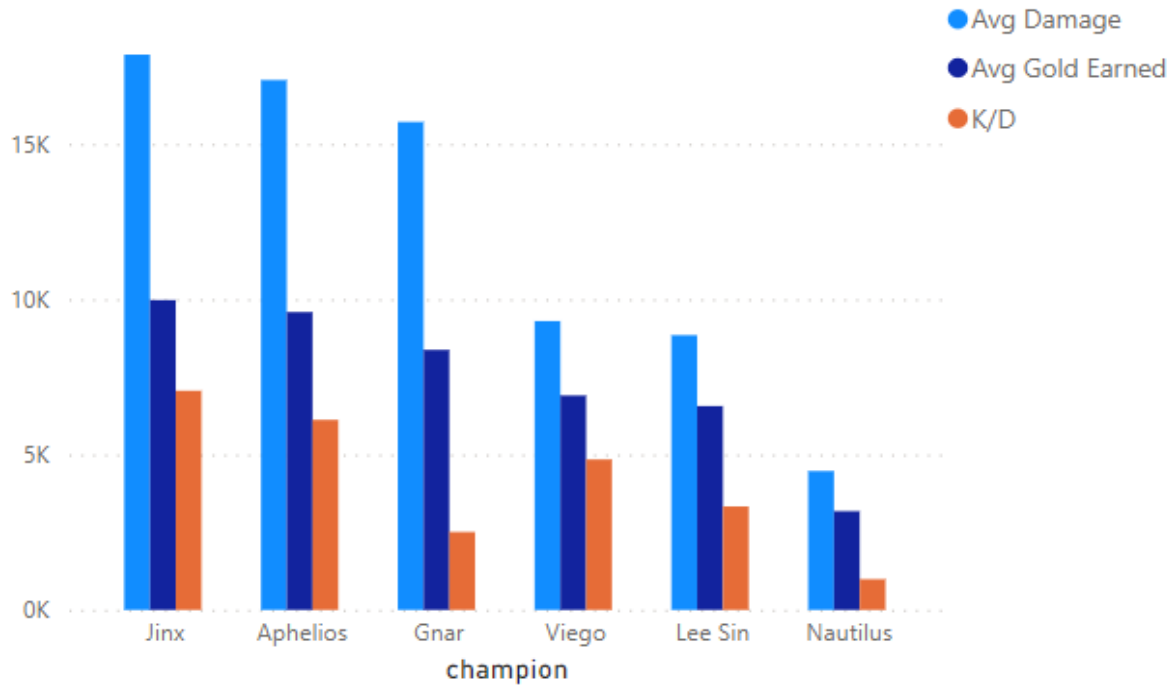
year

2022 2022

Count of champion by champion



Champion Stats



CONCLUSION

- In summary, I'm thrilled to explore the exciting intersection of esports, data analysis, and education, specifically within the world of League of Legends. In League of Legends, it's not just about being fast; it's about smart strategies, precise moves, and working together as a team. Our project is all about uncovering the secrets that make this game so fascinating! Stay tuned for more updates!

- I was able to resolve my main problem based on the results.

- Users can take better decisions based on my interactive dashboard to excel in the MOBA game **LEAGUE OF LEGENDS**.


THANK YOU