

Homework 2 Shiny Portfolio Project: VCT23 Player Stats

Stat436

Peiyuan Li

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Project Introduction

Since its release in 2020, "Valorant" has quickly become a favorite among gamers with its team cooperation and first-person shooter (FPS) features, and it won the "Best Esports Game" at The Game Awards 2023. This project selected a key dataset from VCT 2023 (Valorant Champions Tour) for all players to perform a visualization analysis, aiming to provide an interactive data visualization platform through a Shiny application that allows users to delve into the performance of each player.

Visualization Design and Implementation

This project displays data through two Shiny applications. The first application focuses on showcasing the comprehensive abilities of each player, using radar charts to intuitively compare the differences of each player in various key attributes with the highest values, thus vividly showing each player's strength and comprehensiveness. The second application adds two filters that allow users to select players who stand out in a particular statistical area, and by default, it displays the top ten players to avoid information overload, while also offering the option to view all players' data.

By integrating these two applications into one interface and applying custom CSS styles, the app interface is more aesthetically pleasing and enhances user interaction. During the design process, an unexpected challenge was that when integrating two applications onto the same webpage, they were positioned too far to the left. Adjusting a large amount of CSS code eventually centered the interface, making the entire page look more harmonious.

Data Processing and Discoveries

In the data processing stage, some character-type data from the original dataset were converted into readable numeric formats to facilitate subsequent data analysis and visualization. Through an in-depth analysis of VCT 2023 player data, I discovered some unexpected results; for example, some players who appeared average to the public performed exceptionally well in specific statistical indicators.

Moreover, I realized that it is often not the best choice to display all the data directly when facing a large dataset. Effective data filtering and visualization display are crucial for enhancing user experience, which prompted me to pay more attention to presenting valuable and easy-to-understand information to users through data filtering and visualization design.

Reactive Graph Structure

Main UI -> Radar Chart -> Multiple Key Data -> input\$selectedPlayer -> Radar Chart

Main UI -> Bar Chart --> All Data ----> input\$stat / input\$topN --> Bar Chart

When the user selects the Radar Chart, renderPlotly generates a radar chart that dynamically creates a graph based on the selected player's data. When the user selects the Bar Chart, renderPlotly generates a bar chart that displays the selected statistical indicator based on the statistic and the number of top players.

Conclusion

Through this project's development, I have learned how to create interactive data visualization applications using the Shiny package and gained a deeper understanding of data filtering, processing, and visualization display. The analysis and visualization of "Valorant" player data provide exciting insights for game enthusiasts and showcase the potential application of data visualization in esports. In the future, I hope to optimize and improve this project further so that it can provide value to a broader user base.

Important Links

Kaggle origin dataset link:

<https://www.kaggle.com/datasets/vkay616/valorant-vct-2023-player-performance>

GitHub Link for whole project:

<https://github.com/pli233/Working/tree/main/Stat436/Homework2%20Shiny%20APP>

GitHub Public link for dataset:

https://raw.githubusercontent.com/pli233/datasets/main/overall_player_stats.csv

ShinyApps.io online deployment:

https://pli233.shinyapps.io/homework2_shiny_app/