Exploring the League of Legends

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Project Synopsis

Our project use data analysis to predict the outcome of the game based on various data in the moba game League of Legends。

Project Description

• What is the League of Legends? Why do we want to analyze it ？

League of Legends is the largest esports project event in the history of the world. Up to 50 million players are distributed on different servers around the world. There are more than 200 million spectators each year. Up to 44 million online spectators in the finals game each year.

The analysis of various attributes in the game can help Professional teams make better decisions, and also help game designers make better improvements to the game.For example, the results are obtained through data analysis to weaken some strong game characters, or strengthen some weak game characters, equipment, etc.

• What we done？

We predict and analyze from three different aspects, global map resources, early game battle analysis and hero combinations. If we maximize the winning rate.

First of all, we predict the victory of the game from the global shared map resources. We use a decision tree, but we found that the flaw of this data and model is that the prediction result cannot be obtained in the early stage.

So, we decided to use an additional dataset to predict the game in the first 10 minutes of the game. Using different model training, we got a 70% accurate value.

Finally, we analyzed the strong hero selection and combination of the version

• What could we do more or better?

In our primary vision, we want to connect to a dynamic database for real-time analysis of the game situation, but unfortunately, Riot does not

provide such a public interface. This can be understood for privacy and security. this is also the hardest part which collect data from RIOT company API

Secondly, our project is more difficult to understand for people who have not played League of legends. Although most of them are represented by data, as numbers, data must be connected with the physical objects to play the greatest role. In terms of hero selection, it is difficult for the audience to understand the strength and weakness of heroes in detail. We can only explain boring data. But our project is actually designed for practitioners of LOL games. I believe that players who have been in contact with this game a little bit can resonate from the data.

• **Division of team members**

Hanwen Jia: Predicting results based on importance of overall map resources, and planing project structure. Collecting a dataset through Riot API.

Rui Chen: Predicting the result of game through early game. Organizing the dataset from kaggle.

Guanyu and Yiju Yang: Analyzing the champion selection and winning rate with different combination.

Data Source

We will use multiple datasets, but mainly from the League of Legends company, API provided by RIOT.   It contains many different data sets. We will adjust the use according to the training results

RIOT: https://developer.riotgames.com/apis

Riot Watcher: https://github.com/pseudonym117/Riot-Watcher

Other supporting data from Kaggle:

https://www.kaggle.com/gyejr95/league-of-legendslol-ranked-games-2020-ver

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