League of Tilt: Project Plan

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League of Legends draws nearly 27 million unique players daily, while a staggering 67 million people log on monthly. We feel as though there is more than enough data for us to create meaningful visualizations that will help players glean insights from professional and semi-professional players.

1 Motivation

For a game with such a large player base and global following, resources to help players improve are surprisingly limited. There is currently no sandbox mode in which players may hone their skills, no replay system, and most websites that analyze player data are largely community based (see na.op.gg and mobafire.com). We would like to create a website that allows players to examine the play of individual pro players through a variety of different visualization. Our hope is to create an easy way for people to access and interface with pro players data (map movements, item builds, etc.) so that regular players like us can learn more efficiently. In short, we'd like to use data visualization to transfer knowledge from the professionals to regular players like us.

2 Tasks

As with any final project, this is likely to be a rigorous and time-intensive process. The following sections will detail the tasks that we anticipate we'll need to deal with throughout the course of this process. Note that while this is our initial plan, we'll likely deviate as we come upon unforeseen issues.

Data Wrangling

Riot has an open API where the release all of their data for master and challenger tier matches played. The API itself is a bit buggy and the data is formatted in an incredibly inconvenient fashion because there is so much for every game. We anticipate that we'll have the data that we need and that it will be ready to use within the next few days.

Research

A compilation of existing ideas and implementations for league of legends visualizations and related content will be very helpful for pushing our fledgling project in the right direction. While our idea is unique within the space, there are some tangentially related resources that might be helpful. For example, we don't want to recreate something that already exists, so knowing what people have already made is paramount. Also, if there are good visualizations out there we can use those as inspiration for our website architecture and the types of data that we display.

Storyboarding

This might be the most important step in the entire process. Here is where we plan out the website structure, visualization sketches, discuss implementation

steps, and start to put together rough first iterations of visualizations. Ideally, during this phase we will be able to come up with a full storyboard-style design for the website as well as visualizations with interactivity (just like we did on the midterm).

Implementation

We expect the implementation step to take the longest. After having a full project plan complete with sketches and website design from the storyboarding phase, we will take as much time as we need to in order to bring our creation to life. We understand that often things can be more complex than we initially anticipate them to be, so we're going to try to leave as much time as we possibly can for implementation.

3 Goals

We've broken down the project goals into must-haves and stretch goals. That way we not only give ourselves someplace to start and a clear direction, but we've also begun to lay out what we think we *need* to have versus what we think might be an interesting auxiliary feature.

Necessary

Below are the goals that we are absolutely going to complete by the end of the project.

Interactive Player Maps: A huge part of learning about the game is gaining an understanding of why you should position a certain way and when. We will create interactive player maps that track player movement throughout the game in order to help explain strategies that evolve throughout different stages of each map. For example, these player maps might be helpful in understanding something like a lane swap (common in professional play).

Hollistic Summary Statistics (by role): We will provide summary statistics for individual players that track important aspects of the game such as GPM (gold per minute), K/D/A (kill/death/assist ratio), and win-rates. Note that these statistics will be broken down across a few different dimensions. They will be unique to individual players, but they will also take into account the role that the player had chosen when he achieved those individual statistics. Take Doublelift, for example, who plays mainly ADC. We will display his statistics in his main position separately from the statistics he recorded in other positions. Hopefully this will help us to isolate the best players at each position in order to glean better information.

Player Comparison and Builds: There are a few websites that already provide match history, however we'd like to create side-by-side player comparisons to help see what works and what doesn't. If a certain player often builds, for example, a Bloodthirster and another often builds Essence Reaver, which is more successful? Is this success largely due to item choice or does one of them simply position better? These questions will be easier to answer if we give side-by-side player comparison in conjunction with interactive maps.

Auxiliary

Below are the features that we'd like to implement if we have time, but that we foresee as being potentially very difficult or not completely necessary.

Online Implementation: It would be ideal if we could create a fully online architecture that regularly queried the Riot API for the most updated information possible. This will be quite difficult because the data will require a whole bunch of preprocessing before it's actually ready for use. If we could come up with this style of architecture, we could extend this from a CS171 project to an open resource for anyone who plays League of Legends and wants to improve their play.

Expanded Scope: The key idea behind our project is to help people learn from professionals and other highly skilled players in order to improve their skills. Right now, the Riot API only releases data about Master and Challenger tier players. However, if we complete the rest of our goals we'd like to expand this to include lower divisions as well so that players could not only analyze professional strategies, but could also examine their own games to see what mistakes they made and what kinds of tendencies they have. Historically, Riot has been very open to the development of 3rd party applications such as na.op.gg and mobafire.com. If we finish the rest of our goals and are happy with the state of our project, ideally we'd be able to contact Riot and ask for some way to query more data to expand the scope of the project.