Software Development Project - March 2021

League Of Legends - Match History Using The Riot API

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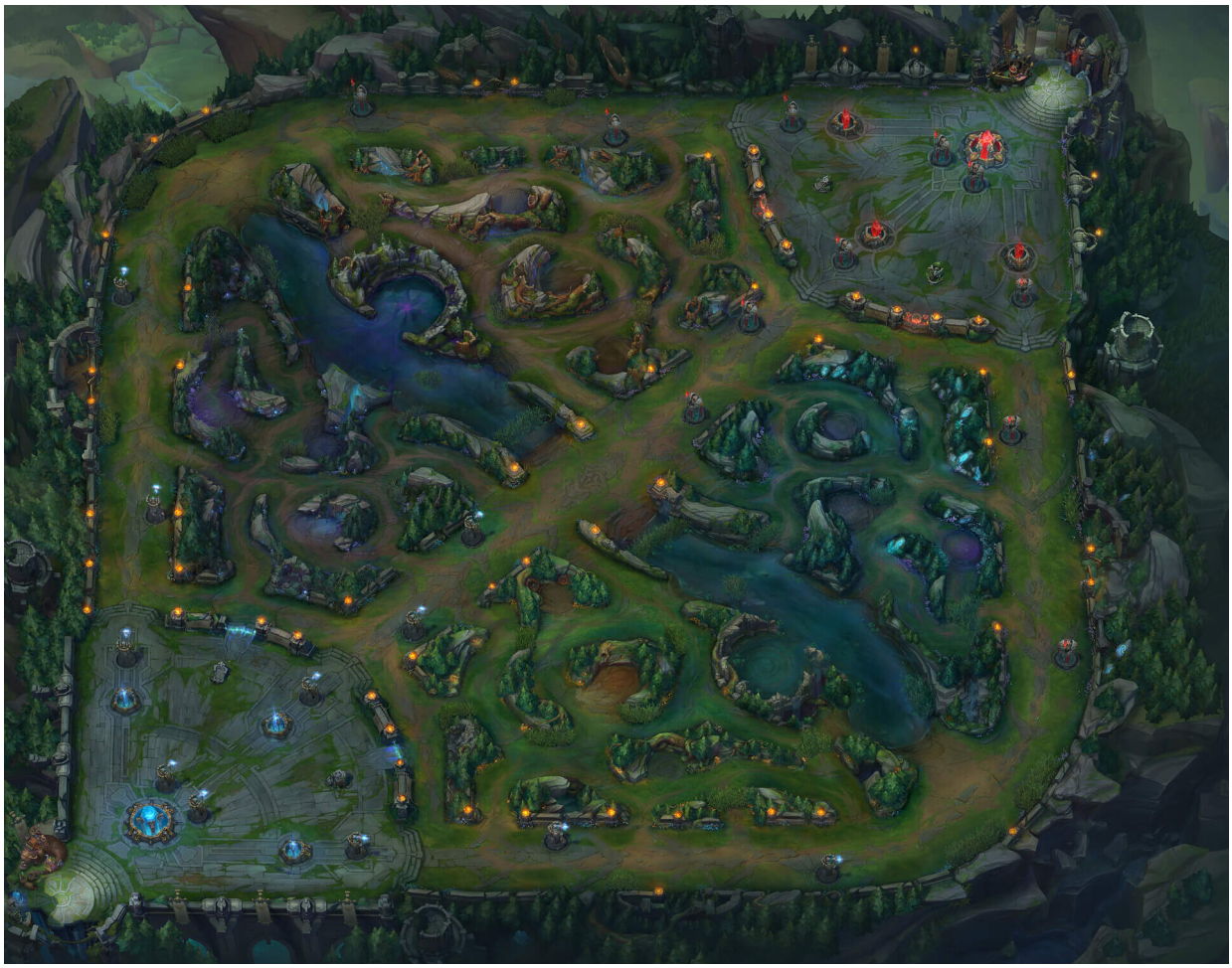
Background:

League of Legends is a popular Multiplayer Online Battle Arena (MOBA) game made by Riot Games. In the game, 5 players verse 5 other players with the main goal of destroying the other team's base. There are many other factors involved, such as character abilities, a gold system used to purchase items, and monsters.



The picture above shows the battlefield of a typical game. The blue team is on the bottom left, and the red team is on the top right. There are three lanes, the Top Lane, Middle Lane, and Bottom Lane. The area in between is considered the Jungle. In order to get into the enemy's base, players must destroy the defending towers in a lane. The game ends once one of the colored crystals (the Nexus) at the two corners is destroyed.

Riot Games keeps all the data of every game that occurs on their servers. This data can be accessed through their public API (https://developer.riotgames.com/ for more information). Data is stored as a JSON file viewable in the browser (http://ddragon.leagueoflegends.com/cdn/11.5.1/data/en_US/champion.json is an example). It contains many data types, such as ints, doubles, strings, lists, and objects. The JSON is not formatted, but it doesn't change its functionality.

Idea:

Create an application that can analyze the data of a game and sort it in a way that's user-friendly. Could be extended to also interpret the data from the game to give tips and advice to the player based on their performance.

Purpose:

To inform players about the statistics of a game, and potentially their strengths and weaknesses.

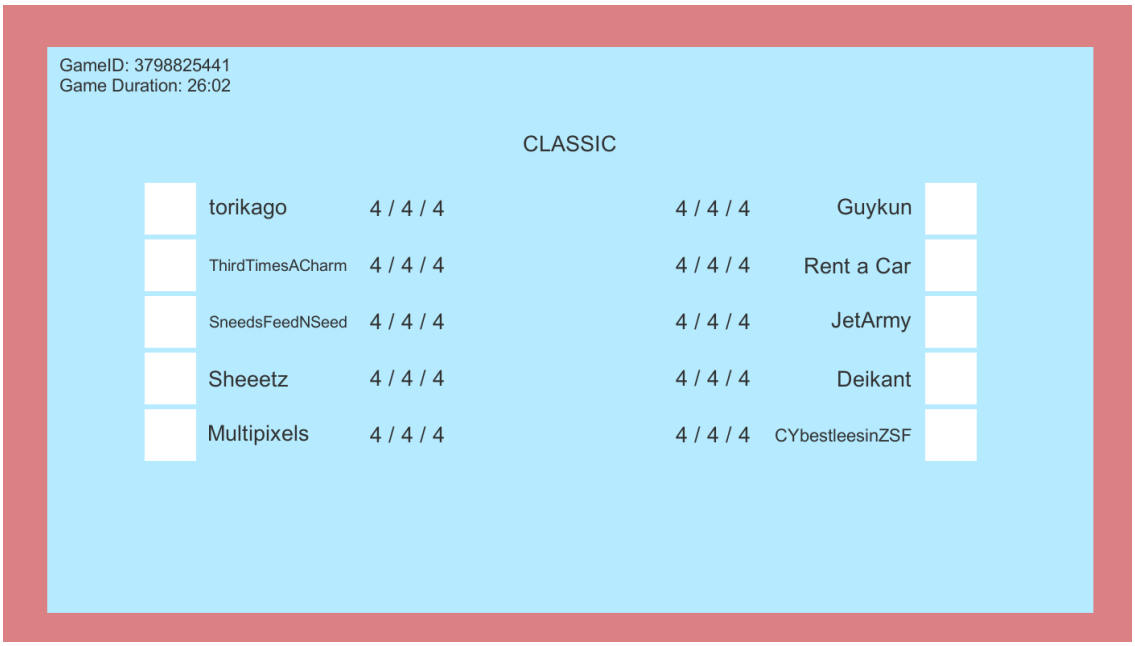
How it's going to be implemented:

I will be using the Unity game engine to organize the information due to its simple built-in UI features, such as buttons, scroll menus, and images. As well, it uses C#, a language I've got more experience with than most others. It can also launch to multiple platforms, such as Windows, Linux, web, and mobile devices.

One major downfall is that I'll need to create my own API library since I'm using Unity, and I'm not sure how Unity likes the usage of RESTful APIs. This can also be seen as an upside since I can put my class knowledge to use by creating class objects and accessor methods.

Due to this, I will need a way to access HTTP websites to access the JSON information, as well as a JSON interpreter to translate JSON to C# variables.

I've already begun working on this project a week or two ago. I've managed to create most of the API library, and separate the players into two teams. The "4 / 4 / 4" is just placeholder text for the player's K/D/A (Kill / Deaths / Assists). Very simple UI layout to begin with, however I'll keep adding and extending onto this.



Examples:

The website [na.op.gg](na.op.gg) is a very popular tool used by League of Legend players to keep track of their games or game data. The image below shows an example of what type of data is shown. Most of the data here is provided straight from the Riot Games API. It also ranks players from 1st to 10th based on their contribution to the game. This ranking does not come from their API, but instead calculated behind the scenes of the website itself.

Other websites include porofessor.gg, [u.gg](u.gg), and blitz.gg. They offer more than just match analytics, however for the purposes of this project, that's what I've focused on.

Fun Fact: Very often, websites that provide analytical information about "esports games" (competitive games) end with the .gg domain. This is because a common abbreviation used in games is "gg", meaning "good game". Players type gg at the end of games to show good sportsmanship, much like how sports players shake hands after the game with their opponent.