Analysis of League of Legends data using RiotAPI and MySQL

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Abstract

The purpose of this report is to utilize MySQL data from various queries in order to reach a conclusion about skill level in the game 'League of Legends'. We will look at the top players of three different regions in order to answer some questions. Those questions are: Which region is better at the game? Which stats correlate with a higher rank? Are wins a good judge of skill?

1 Introduction

The data being analyzed is from the RiotAPI and consists of 900 different players across 3 regions. Those regions being North America (NA1), Western Europe (EUW1), and Korea (KR). Each player has their most recent 10 ranked games pulled with the most impactful game data from each of those games. There are exactly 8893 individual games in my database, not 9000 because players of this rank often play together so the unique match ids could not overlap since it is a key. Each player has a unique puuid and player id. The puuid is used to follow the player no matter what region they play in while player id can change if they move regions. The stats we are going to mostly analyze are wins, losses, league points, kills/deaths/assists (K/D/A), damage dealt to champions, damage dealt to objectives, minion kills, neutral minion kills, and gold earned.

2 Background Material

2.1 League of Legends

League of Legends (LoL) is a popular multiplayer online battle arena (MOBA) game that combines elements of strategy and team-based competition. In LoL, players assume the role of a "champion" and work together with their teammates to achieve victory. The game is set in a

fictional world called Runeterra, and each player controls a unique champion with their own set of abilities and strengths. The champions are divided into different roles such as tanks, mages, assassins, supports, and marksmen, each specializing in a specific playstyle and contributing to the team in different ways. The objective of the game is to destroy the opposing team's Nexus, which is the core structure located in their base. To reach the enemy Nexus, players must navigate through three main lanes called top, middle, and bottom, each guarded by defensive structures and enemy champions. These lanes are connected by the jungle, a neutral area filled with various monsters and resources. In order to succeed, players must work together, coordinate their strategies, and make tactical decisions. This includes farming minions for gold and experience, destroying enemy turrets and inhibitors to gain map control, and engaging in team fights to gain advantages over the opposing team. Communication and teamwork are crucial for achieving objectives, securing kills, and ultimately leading to victory. Throughout the game, players can earn gold by killing minions (cs) or champions in order to purchase items that enhance their champion's abilities, improve their stats, and tailor their playstyle. Matches typically last between 20 to 40 minutes, and the outcome is determined by the team's ability to outmaneuver, outsmart, and outplay their opponents.

2.2 MySQL

MySQL is an open-source relational database management system (RDBMS) that allows you to store, manage, and retrieve structured data. It is widely used for web applications and works well with popular programming languages like PHP, Python, and Java.

2.3 Riot Watcher

Riot Watcher is a Python library that serves as a wrapper around the Riot Games API. It provides an easy-to-use interface for developers to access and retrieve data from the API without having to manually handle HTTP requests and responses. In order to use the API you need endpoint links, but Riot Watcher converts them into methods instead to improve readability and ease of use.

2.4 RiotAPI

The Riot Games API, commonly referred to as the Riot API, is a set of tools and services provided by Riot Games, the developer of League of Legends, to allow developers to access and retrieve data related to the game. It offers a wealth of information about various aspects of League of Legends, including player statistics, match history, game assets, and more. The Riot API provides a RESTful web service interface, allowing developers to make HTTP requests to retrieve data in a structured format, typically in JSON (JavaScript Object Notation). To access the API, developers need to register for an API key, which acts as an identifier and provides

access to the available endpoints and data. With the Riot API, developers can build applications, websites, or services that utilize League of Legends data to enhance the player experience, create analytics tools, provide match history tracking, or create community platforms. The API allows access to data such as summoner profiles, champion mastery, match details, leaderboard rankings, item information, and much more. Developers can use the Riot API to retrieve data for a specific player, analyze trends and statistics, provide real-time game information, and create personalized experiences for League of Legends players. It enables the development of third-party tools and services that can complement and expand on the core game experience.

3 Approach

The approach taken was to create a Python 3 script in order to automatically pull data from the Riot API and then store it in the MySQL database using the mysql.connector library. After that I would be able to make queries in order to analyze the data stored and attempt to draw conclusions. The Python script was the largest hurdle for this project.

3.1 MySQL Schema

Here is the schema used for MySQL:

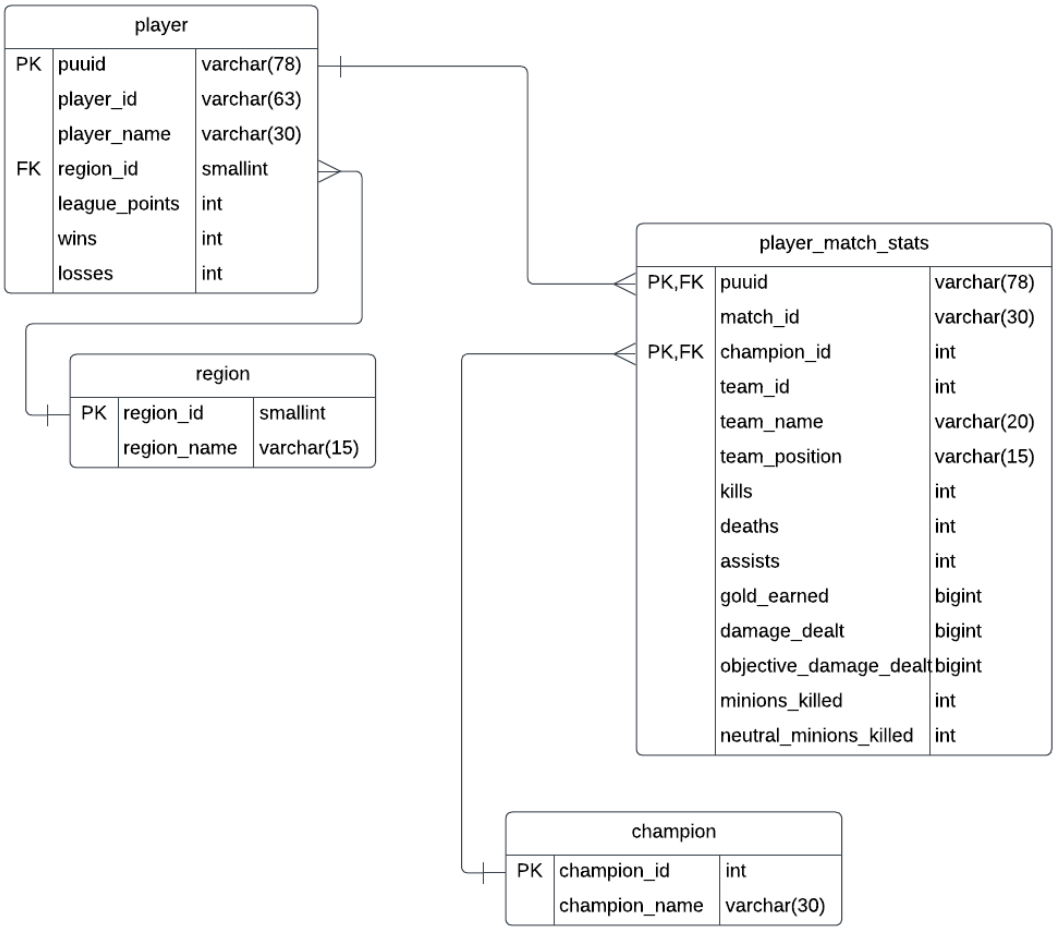
```sql
CREATE TABLE Champion (
  champion_id INT PRIMARY KEY,
  champion_name VARCHAR(30)
);

CREATE TABLE Region (
  region_id SMALLINT PRIMARY KEY AUTO_INCREMENT,
  region_name VARCHAR(15)
);

CREATE TABLE Player (
  puuid VARCHAR(78) PRIMARY KEY,
  player_id VARCHAR(63),
  player_name VARCHAR(30),
  region_id SMALLINT,
  league_points INT,
  wins INT,
  losses INT,
  FOREIGN KEY (region_id) REFERENCES Region(region_id)
);
```

```sql
CREATE TABLE Player_Match_Stats (
  puuid VARCHAR(78),
  match_id VARCHAR(30),
  champion_id INT,
  team_id INT,
  team_name VARCHAR(20),
  team_position varchar(15),
  kills INT,
  deaths INT,
  assists INT,
  gold_earned BIGINT,
  damage_dealt BIGINT,
  objective_damage_dealt BIGINT,
  minions_killed INT,
  neutral_minions_killed INT,
  PRIMARY KEY (puuid, champion_id),
  FOREIGN KEY (puuid) REFERENCES Player(puuid),
  FOREIGN KEY (champion_id) REFERENCES Champion(champion_id)
);
```

The reason the schema has these 4 tables are as follows. ‘Champion’, since the individual game data will include the champion id that was played by the player making it a simple yet necessary key for the table. The ‘Region‘ was made to have a basic format capable of including more than the targeted 3 regions if desired. The ‘Player’ table holds key information necessary to use other endpoints in the api as well as some core stats needed for analysis like league points (lp), wins, and losses. Finally the ‘Player_Match_Stats’ table holds all the individual game information. Including the match_id. The match_id could have had its own table but it encounters a problem

where the match_id would be unable to be a key since there are 10 players per game so the key is not unique among the data set of players which affects normalization of the dataset.

3.2 ER Diagram



This ER diagram displays the functional dependencies:

1. Champion table:
    a. champion_id -> champion_name (one-to-one)
2. Region table:
    a. region_id -> region_name (one-to-one)
3. Player table:
    a. puuid -> player_id (one-to-one)
    b. puuid -> player_name (one-to-one)
    c. puuid -> region_id (many-to-one)

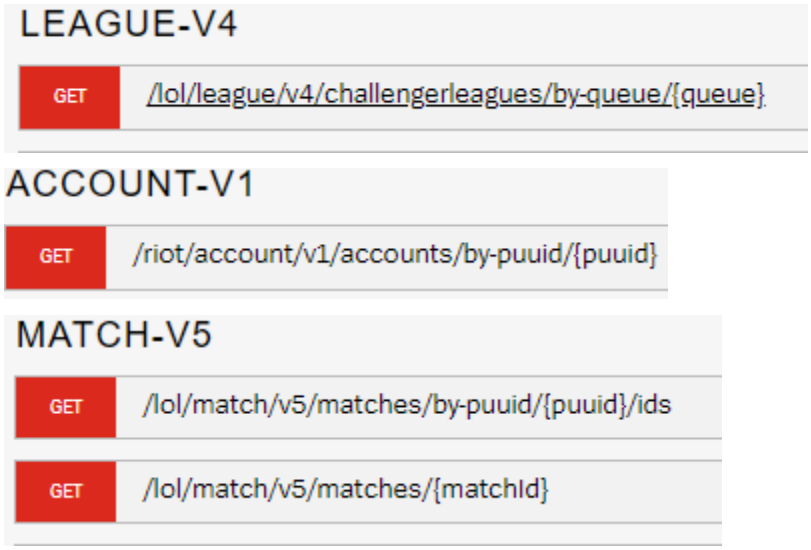
4. Player_Match_Stats table:
    a. puuid, champion_id -> match_id (one-to-many)

b. puuid, champion_id -> team_id (one-to-many)
c. puuid, champion_id -> team_name (one-to-many)
d. puuid, champion_id -> team_position (one-to-many)
e. puuid, champion_id -> kills (one-to-many)
f. puuid, champion_id -> deaths (one-to-many)
g. puuid, champion_id -> assists (one-to-many)
h. puuid, champion_id -> gold_earned (one-to-many)
i. puuid, champion_id -> damage_dealt (one-to-many)
j. puuid, champion_id -> objective_damage_dealt (one-to-many)
k. puuid, champion_id -> minions_killed (one-to-many)
l. puuid, champion_id -> neutral_minions_killed (one-to-many

The reason these functional dependencies were chosen are straightforward, the keys were chosen mainly because of the API's formatting and what data is necessary to access the others. For example, in order to obtain any individual match data we need a puuid, to obtain the match list and then a matchid from that list to access the individual games. Puuid is, again, the global identification id for League of Legends player accounts. This id and the champion id have a one-to-many relationship with the rest of the data in 'Player_Match_Stats' because the player can play more than one game which has multiple sets of stats for every game, and obviously a single champion can be played for multiple games.

3.3 RiotAPI Endpoints

The exact API endpoints used were:



These endpoints were necessary due to the data they contained. For instance, 'League-V4' was how the 900 player account ids were gathered. 'Account-V1' was the endpoint that took each of those account ids as input in order to get the puuid. With that puuid plugged into the first

‘Match-V5’ endpoint, the data returned was a list of the players most recent 5v5 ranked games. After the list was obtained, the individual matchIds were then used to obtain individual match data.

3.4 Queries

Below is a list of basic queries:

1. INSERT INTO Region (region_name)
   VALUES ('OC1');

2. INSERT INTO Player (puuid, player_id, player_name, region_id, league_points, wins, losses)
   VALUES ('abc123', '123456', 'John Doe', 1, 1500, 50, 30);

3. UPDATE Player
   SET league_points = league_points + 500
   WHERE puuid = '12345'

Below is a list of all queries used in the analysis:

1. Finds all players who played Pantheon and group by region order by damage
   SELECT Player.player_name,
   Region.region_name,
   Player_Match_Stats.team_id,
   Player_Match_Stats.team_name,
   Player_Match_Stats.team_position,
   Player_Match_Stats.kills,
   Player_Match_Stats.deaths,
   Player_Match_Stats.assists,
   Player_Match_Stats.gold_earned,
   Player_Match_Stats.damage_dealt,
   Player_Match_Stats.objective_damage_dealt,
   Player_Match_Stats.minions_killed,
   Player_Match_Stats.neutral_minions_killed
   FROM Player_Match_Stats
   JOIN Champion ON Player_Match_Stats.champion_id = Champion.champion_id
   JOIN Player ON Player_Match_Stats.puuid = Player.puuid
   JOIN Region ON Player.region_id = Region.region_id
   WHERE Champion.champion_name = 'Pantheon'
   ORDER BY Player_Match_Stats.damage_dealt DESC;

2. TAKES PLAYER STATS AND ORDERS BY LP

```
SELECT
  p.player_name,
  r.region_name,
  p.league_points,
  SUM(p.wins + p.losses) AS total_games_played,
  SUM(p.wins) AS total_wins,
  SUM(p.losses) AS total_losses
FROM
  Player p
  JOIN Region r ON p.region_id = r.region_id
GROUP BY
  p.player_name,
  r.region_name,
  p.league_points
ORDER BY
  p.league_points DESC;
```

3. TAKES PLAYERS STATS AND ORDER BY WINS

```
SELECT
  p.player_name,
  r.region_name,
  p.league_points,
  SUM(p.wins) AS total_wins,
  SUM(p.losses) AS total_losses
FROM
  Player p
  JOIN Region r ON p.region_id = r.region_id
GROUP BY
  p.player_name,
  r.region_name,
  p.league_points
ORDER BY
  total_wins DESC;
```

4. Takes top 100 players orders by LP and counts which regions theyre from

```
SELECT
  r.region_name,
  COUNT(*) AS player_count
FROM
```

```
  (SELECT * FROM Player ORDER BY league_points DESC LIMIT 100) p
  JOIN Region r ON p.region_id = r.region_id
GROUP BY
  R.region_name;
```

5. Same as above but just orders by wins instead

```
SELECT
  r.region_name,
  COUNT(*) AS player_count
FROM
  (SELECT * FROM Player ORDER BY wins DESC LIMIT 100) p
  JOIN Region r ON p.region_id = r.region_id
GROUP BY
  R.region_name;
```

6. Takes average player stats across all games and orders them by LP

```
SELECT p.player_name, p.league_points,
    AVG(pms.kills) AS avg_kills,
    AVG(pms.deaths) AS avg_deaths,
    AVG(pms.assists) AS avg_assists,
    AVG(pms.damage_dealt) AS avg_damage_dealt,
    AVG(pms.minions_killed) AS avg_minions_killed,
    AVG(pms.gold_earned) AS avg_gold_earned,
    AVG(pms.objective_damage_dealt) AS avg_objective_damage_dealt
FROM Player p
INNER JOIN Player_Match_Stats pms
    ON p.puuid = pms.puuid
GROUP BY p.player_name, p.league_points
ORDER BY p.league_points DESC;
```

3.5 Example Tables

Player table

puuid	player_id	player_name	region_id	league_points	wins	losses
_1V8EraX4Z7uqgotBYL7O4eLvtUEEWvkSVLZy1...	CFK3lhEFPRJ3nu2PiX_5FKJPOnEjkccIfGEXbMj4...	무한노래게임	3	1144	219	177
_2IIVkgBOje4brFIeTmtc83w35Px9EictBhusOBq...	6vH_7WyBqQIquRTgxtL8W-5qt0ma33DuKcNd6...	u good me better	2	1119	123	83
_3B9O3DqBLterH6scVfm9gdddT5u4sIlUNo0KTF...	bdYIkjmFjf8RbUTop2UQlF0n22Ewh85vvap0IrR...	Qitong	1	958	184	161
_3tiAlqsMM7n5BCJ0Kqduc_0rlx4Xn33H7AKKLaZ...	nCl8A5Qt_6eglPyBUGf2unYMWKk6M-0KTdhOyr...	pocovirtuoso	2	1347	248	204
_5AMzuhBLOJ5v3BqP8wrTxShhLMUjzfnTjCBCI...	vvSreRYwWCrtufB7m_FMdYYLc7y78Dk9n0deDf...	Badlulu fan	2	1300	214	169
_BnNomrgf-EUHeOYLPCJwLChWa7ER9Z1lITpTH...	_-rJjoY7L9KzGpPBiDInfM9Gf5kmFX_V1e6yPRua...	Sangchu	3	924	124	89
_bsTFNAFNw6zxjA0wBQ9lDvXIFMaBxjbTMXV7T...	LLAFk8WuAR-BYkhS0PQyi5nSICPpn9eXEeYvjk-...	live Iove tickle	1	912	166	131
_bTAfd8Y1jZTJ7ocduuHdMbnwkv1loQQqPfwRQ...	7taRb5xQ6OwSTjURzDvGTdjTyQtlm-aPh0avGm...	다누리 사랑해요	3	976	344	301
_BYyd6UH6M9mk5xNldIYrcTYck921Y9G4KvX5-j...	Ur57aBeDEU2bmmKJEr74Fku_0TY8ZGt4mwYOt...	Sorde	1	1054	237	186
_d456tza_c0rOP6yBm2vVOHnKD_8CC8HsQcQ3...	EO14MLajZqysPm8JFWC8JuLfJgPsXxZUtlRH4lc...	Nazlet Al Seman	2	1193	133	79
_dWKh6c4uR47-t1ih5c-C_KIacc0UF8iKED1RU9...	cx2QEROf9phLVH1aNDiPCPjPFYv221-TnV7WN6...	Being left	2	1165	182	127
_GYTebrTlEA3eOcSCLOUNmgv2_uHBhq9B0k4H...	uSG75awyHqYlWLJ3760IKwBgxziwd5ryHKVNzl2...	Dear Theo	3	938	123	71
_MccMO12FR_O8VKOqL4Fez8Ipgti36U3W0Xgc...	9l4_SOlGjUvfYYHmDyzyf-4nDFXm7o23rV6RVyc...	Kral Luger	1	1129	245	203
_Pnocjz53uFXn5taTQn8P62qjAkkB0B-oTO3Vs-g...	9ARdsHfA_fREoNwhI0-gwkPWAliYa18XO4952C...	Javier	2	1281	246	202
_Q3y8UOk4P2za-UlauI48dX1n0X8Cdy7WY5J6p...	HAoUSRJr7twHz2p1HPt6_ka09RUZnWfjBkIh3P...	1231asdas	2	1039	265	205
_qaGguBAurd5oYoRu17kNfeXK8BxnKO_6syWA...	J7JEQvi0PgiGAOqoSm73jY1CB6FU_imfwwAUdk...	Attack 0n Titan	3	882	534	504
_s-zTjgOKnR6aKBA1b9-p_6zBDd2UoFlHiE1HpD...	dsAJtJSwVfN6fVFuTLXdmi7wbJ8janBmW2XQxC...	lightrocket2	1	913	410	385
_SJlXAzhXdphz6_FzdSJWDkf0VlYUaxEOqietiXxE...	QQPilax59BeDb1DydcreF_oKZ8RS7Q6QIopc_m...	Cuzz	3	1001	132	92
_T4mmfHXzcJgXNo1PAP67kstccGqcA26WBlmvc...	PQ9mt6f-6LPJPuTEHFWe-TtLCLgrfbnkug57Wg7...	개구리 키우기	3	1020	268	229

Player_match_data table

puuid	match_id	champion_id	team_id	team_name	team_position	kills	deaths	assists	gold_earned	damage_dealt	objective_damage_dealt	minions_killed	neutral_minions_killed
_1V8EraX4Z7uqgotBYL7O4eLvtUEEWvkSVLZy1...	KR_6475781956	2	200	Red Team		7	13	17	12338	24368	369	36	0
_1V8EraX4Z7uqgotBYL7O4eLvtUEEWvkSVLZy1...	KR_6475693128	38	100	Blue Team		8	12	20	12505	22466	1595	54	0
_1V8EraX4Z7uqgotBYL7O4eLvtUEEWvkSVLZy1...	KR_6476800842	43	100	Blue Team	UTILITY	1	5	20	7528	11605	1877	21	0
_1V8EraX4Z7uqgotBYL7O4eLvtUEEWvkSVLZy1...	KR_6474549698	54	200	Red Team		4	6	10	7498	9959	198	39	0
_1V8EraX4Z7uqgotBYL7O4eLvtUEEWvkSVLZy1...	KR_6476887621	64	100	Blue Team	JUNGLE	6	2	2	6969	5268	14687	6	77
_1V8EraX4Z7uqgotBYL7O4eLvtUEEWvkSVLZy1...	KR_6475732518	81	200	Red Team		20	9	30	17128	40055	4206	78	0
_1V8EraX4Z7uqgotBYL7O4eLvtUEEWvkSVLZy1...	KR_6475900834	117	200	Red Team	UTILITY	5	3	16	8879	7427	1910	6	0
_1V8EraX4Z7uqgotBYL7O4eLvtUEEWvkSVLZy1...	KR_6474406626	145	200	Red Team		29	10	20	22503	52830	7242	190	0
_1V8EraX4Z7uqgotBYL7O4eLvtUEEWvkSVLZy1...	KR_6474566531	150	200	Red Team		11	13	21	14599	34182	72	79	0
_1V8EraX4Z7uqgotBYL7O4eLvtUEEWvkSVLZy1...	KR_6477336338	201	200	Red Team	UTILITY	2	9	24	8969	7724	1456	45	0
_1V8EraX4Z7uqgotBYL7O4eLvtUEEWvkSVLZy1...	KR_6474588656	221	200	Red Team		31	10	13	21803	63772	7679	142	0
_1V8EraX4Z7uqgotBYL7O4eLvtUEEWvkSVLZy1...	KR_6474515978	360	200	Red Team		26	14	22	17665	62092	1684	103	0
_1V8EraX4Z7uqgotBYL7O4eLvtUEEWvkSVLZy1...	KR_6477306905	412	100	Blue Team	UTILITY	2	8	20	7426	7531	482	31	0
_1V8EraX4Z7uqgotBYL7O4eLvtUEEWvkSVLZy1...	KR_6475960136	497	200	Red Team	UTILITY	2	0	18	6566	8139	3298	33	0
_1V8EraX4Z7uqgotBYL7O4eLvtUEEWvkSVLZy1...	KR_6474451802	711	200	Red Team		12	17	29	17497	61360	3594	54	0
_2IIVkgBOje4brFIeTmtc83w35Px9EictBhusOBq...	EUW1_638304...	2	200	Red Team	TOP	2	6	3	10443	16587	2740	220	0
_2IIVkgBOje4brFIeTmtc83w35Px9EictBhusOBq...	EUW1_638156...	31	200	Red Team	TOP	2	8	3	8588	6658	1981	174	0
_2IIVkgBOje4brFIeTmtc83w35Px9EictBhusOBq...	EUW1_638296...	68	200	Red Team	TOP	1	3	0	6574	7923	1164	171	0
_2IIVkgBOje4brFIeTmtc83w35Px9EictBhusOBq...	EUW1_638149...	79	100	Blue Team	TOP	2	1	9	12394	18189	6492	258	4
2IIVkgBOje4brFIeTmtc83w35Px9EictBhusOBq...	EUW1_637971...	111	200	Red Team	UTILITY	1	8	20	9210	5553	5506	47	0

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Champion table

champion_id	champion_name
1	Annie
2	Olaf
3	Galio
4	Twisted Fate
5	Xin Zhao
6	Urgot
7	LeBlanc
8	Vladimir
9	Fiddlesticks
10	Kayle
11	Master Yi
12	Alistar
13	Ryze
14	Sion
15	Sivir
16	Soraka
17	Teemo
18	Tristana
19	Warwick

Region table

region_id	region_name
1	NA1
2	EUW1
3	KR

4 Results

From above Queries:

1.

player_name	region_name	team_id	team_name	team_position	kills	deaths	assists	gold_earned	damage_dealt	objective_damage_dealt	minions_killed	neutral_minions_killed
100 Tenacity	NA1	100	Blue Team		29	15	15	22703	89344	2941	82	0
Ziqmo0	EUW1	200	Red Team		24	13	31	18663	64283	1919	63	0
Jopa1	EUW1	100	Blue Team		19	21	25	18474	49076	2919	47	0
경자고 김우민	KR	200	Red Team		13	19	24	17106	48886	2276	49	0
Endorfin	NA1	200	Red Team		23	13	17	17586	47977	3966	50	0
insung	NA1	200	Red Team		19	10	25	15664	45691	712	24	0
Gruiku	EUW1	200	Red Team		14	13	25	16411	38792	1660	40	0
OMON 03	EUW1	200	Red Team	MIDDLE	15	3	8	17256	38400	21622	213	12
Incandescence33	EUW1	200	Red Team		11	15	31	14283	37286	2019	53	0
농심 콜미	KR	200	Red Team	MIDDLE	17	8	7	16654	36627	2284	216	4
플기시게냅둬	KR	200	Red Team		14	9	26	12815	36509	1911	40	0
serxtxnin	NA1	200	Red Team	MIDDLE	11	3	16	13607	34746	9508	158	1
Aizo	NA1	100	Blue Team	TOP	9	8	6	13299	33962	9518	184	0
광문고명문고	KR	200	Red Team		15	14	17	12964	32783	1040	30	0
MLODKSDJT1	EUW1	100	Blue Team		17	9	20	13688	32558	1322	28	0
Airflash	NA1	200	Red Team		19	11	13	13158	32423	428	22	0
K405 N815	EUW1	200	Red Team	TOP	14	3	8	13650	31588	10950	174	18
Dennis rødman1	EUW1	200	Red Team	TOP	9	2	10	14112	30510	14298	234	19
RoyalRoy	NA1	100	Blue Team	TOP	5	8	11	13260	29890	6901	199	0
톱 왕	NA1	200	Red Team	UTILITY	13	11	8	12657	29247	3606	54	0
stargazer	NA1	100	Blue Team		9	9	17	13016	27890	369	46	0
MYSTIC77	NA1	100	Blue Team		15	8	19	14021	27734	0	46	0
zykoooo	NA1	200	Red Team	TOP	3	6	10	13500	27600	8109	224	16

A lot of these games are from NA1 or EUW1 which can display how different popular champions can vary from region to region. Using this query can help analyze which champions are more prominent in a region and can even be taken a step further by comparing select players individual performance averages on the champion

2.

player_name	region_name	league_points	total_games_played	total_wins	total_losses
Beanovich	EUW1	1897	823	450	373
DzuUwU	EUW1	1860	346	212	134
G2 Joker	EUW1	1833	737	407	330
DouyinTonyTop	NA1	1817	411	240	171
댕청잇	KR	1789	339	209	130
Odysseus131	EUW1	1773	552	311	241
twtv Gryffinn	NA1	1757	393	220	173
TL Honda APA	NA1	1722	610	338	272
TTV AKASHI10	NA1	1715	447	246	201
qJe3cdM7f1c	EUW1	1709	311	194	117
Quad	KR	1688	554	309	245
Razørk Activoo	EUW1	1674	390	222	168
EL RONRONS	EUW1	1671	435	251	184
supaaaaaaaaa...	EUW1	1667	410	232	178
T1 Gumayusi	KR	1664	491	274	217
wutian	KR	1660	347	206	141
school phobia	EUW1	1659	528	293	235
Agurin	EUW1	1640	518	295	223
ARMAO	NA1	1639	563	305	258
V Julius Caesar	EUW1	1632	773	424	349

Looking at the resulting table we can see that the spread on the regions is favoring EUW1 more than the rest when ordering by LP.

3.

player_name	region_name	league_points	total_games_played	total_wins	total_losses
돼지크면맘모스	KR	873	1438	740	698
Epilogue for you	KR	1007	1405	721	684
JUG CaD	KR	1368	1266	658	608
FA ady	KR	1184	1184	618	566
Want To Be Young	KR	1020	1146	595	551
FA Kingdom	KR	866	1153	594	559
Quantum	NA1	1098	1152	591	561
닌화내	KR	991	1114	576	538
Lght1	EUW1	1214	1067	559	508
NS Calix	KR	1083	1067	553	514
든 x2	KR	1250	1018	538	480
Attack 0n Titan	KR	882	1038	534	504
xiaodiandian	KR	1026	1006	531	475
이 차가 식기전에	KR	1218	1011	530	481
Roulette	EUW1	1216	1000	523	477
aespa karina99	EUW1	1109	998	522	476
No IQ	KR	854	1003	519	484
Crimson Balrog	KR	860	987	508	479
WAO RANK 1	EUW1	1115	947	499	448
제 천	KR	901	968	498	470

This resulting table shows why that stigma exists. This table displays how many games the Koreans play in total.

4.

region_name	player_count
NA1	30
EUW1	48
KR	22

This table shows that the top 100 players sorted by LP have almost half being from EUW1.

5.

region_name	player_count
NA1	16
EUW1	30
KR	54

We get an interesting resulting table. Now Korea has the lead with over half for the top 100 sorted by wins. Tables 5 and 3 represent the sheer amount of games and experience Koreans have.

6.

player_name	league_points	avg_kills	avg_deaths	avg_assists	avg_damage_dealt	avg_minions_killed	avg_gold_earned	avg_objective_damage_dealt
Beanovich	1897	5.7500	3.0000	7.7500	16904.5000	180.8750	10677.8750	11832.6250
DzuUwU	1860	6.2222	3.4444	6.0000	19410.8889	205.1111	12147.3333	14366.6667
G2 Joker	1833	8.0714	7.3571	9.2143	22395.8571	146.9286	11687.2857	3714.4286
DouyinTonyTop	1817	1.4286	4.8571	5.1429	15564.1429	171.4286	8767.5714	3701.4286
당정잇	1789	4.8000	4.6000	15.8000	17867.2000	43.8000	9204.6000	1657.0000
Odysseus131	1773	8.1429	5.4286	6.4286	23092.8571	103.0000	10655.7143	9611.5714
twtv Gryffinn	1757	5.1250	3.7500	6.0000	13713.7500	14.0000	9318.2500	15061.3750
TL Honda APA	1722	5.0000	6.1667	4.6667	20172.6667	163.1667	10087.1667	8557.5000
TTV AKASHI10	1715	8.7692	6.0769	13.4615	26793.3846	186.3846	14323.6154	8303.7692
qJe3cdM7f1c	1709	15.8235	9.6471	22.8824	43309.1176	72.5294	15868.8235	2329.7647
Quad	1688	6.0000	3.7143	4.8571	15520.8571	191.1429	10418.0000	6443.2857
Razørk Activoo	1674	12.4667	7.3333	12.2000	34551.8000	117.3333	14832.3333	13541.3333
EL RONRONS	1671	5.4000	5.3000	4.4000	19763.3000	190.9000	11254.9000	7692.4000
supaaaaaaaaa...	1667	7.6667	6.5000	18.5000	16170.1667	136.0000	12219.6667	9680.3333
T1 Gumayusi	1664	9.2727	5.9091	10.4545	22421.5455	137.8182	12955.8182	17772.8182
wutian	1660	6.2500	5.7500	6.2500	16832.5000	70.4167	10777.1667	21043.4167
school phobia	1659	3.4444	6.4444	13.8889	9955.5556	54.7778	8070.3333	2780.2222
Agurin	1640	8.1667	4.1667	9.5000	18626.5000	105.5000	13399.8333	30645.6667
ARMAO	1639	6.5000	5.3333	8.0000	13832.3333	56.6667	10088.6667	22747.8333
V Julius Caesar	1632	2.1250	8.1250	9.6250	12324.8750	51.5000	7819.5000	2216.7500

Takes average player stats across all games and orders them by LP

5 Conclusion

Returning to the original 3 questions asked:

1. Which region is better at the game?
2. Which stats correlate with a higher rank?
3. Are wins a good judge of skill?

With the data collected and the results from the queries, if we are to draw a conclusion based on LP totals, EUW1 is the better solo queue 5v5 ranked region. They are the majority of players when sorted by total LP. As far as finding correlation between stats and rank there were no conclusions to be drawn there, which is still beneficial information. These stats are just too random, which align with the fact that the game has so many different variables that these stats cant represent, like movement and positioning, mechanics, map awareness and presence, champion matchups, team compositions, etc. From this data we can conclude that wins can contribute to skill simply because of the experience gained. The player with the most LP has around 1900 and is from EUW1 and has 450 wins, while the player with the most wins was from

KR and has around 900 LP with 740 wins out of over 1400 games! When we looked at Korea as a whole, they had nearly twice as many games as most players and half the total LP. That fact can contribute to skill and mechanics and fits the information that can be observed watching professional league esports.

Overall, based on the comparison of LP to wins we were able to determine that EUW1 has the most players with high LP meaning their win/loss ratio is high which is a good indicator for better players. While KR has an intense amount of games played, most likely based on standards implemented by schools or teams in pro play.

6 References

[1]
Wikipedia Contributors, “League of Legends,” Wikipedia, Jan. 15, 2019.
https://en.wikipedia.org/wiki/League_of_Legends
[2]
pseudonym117, “RiotWatcher Documentation Release 3.2.3 pseudonym117,” 2022. Available:
https://readthedocs.org/projects/riot-watcher/downloads/pdf/latest/
[3]
Riot Games, “Riot Developer Portal,” *developer.riotgames.com*.
https://developer.riotgames.com/apis