



مدينة زويل للعلوم والتكنولوجيا
Zewail City of Science and Technology

Mini Project 2 - Apache Spark

CIE 427

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Introduction

League of Legends (abbreviated LoL or League) is a multiplayer online battle arena video game developed and published by Riot Games. Originally inspired by Valve's Defense of the Ancients (DotA), the game has followed a freemium model since its release on October 27, 2009. League of Legends is often cited as the world's largest e-sport, with an international competitive scene.

In the following sections, we are showing the results of analyzing a dataset of 52941 ranked matches of LoL game.

The obtained results are concerned with the following aspects: Champion win, pick, and ban rates, Champion Synergies or duos, Item win, pick rates, Item Synergies, and Item suggestion.

Requirement 1

1) Champion pick rate:

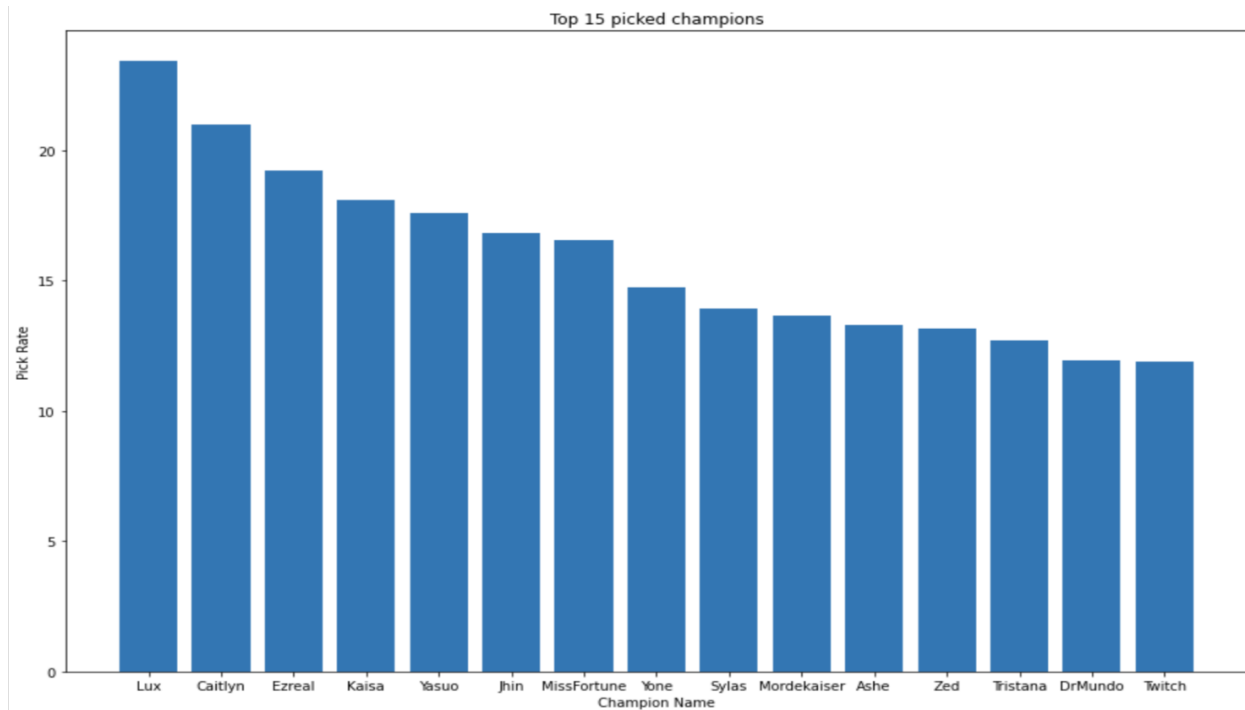


Figure 1. Top 15 picked champions in LoL

We found that the most 5 picked champions are: Lux, Caitlyn, Ezreal, Kaisa, Yasuo, and Jhin. Since we are not playing LoL, we searched for a reference to compare our results with and we explored the statistics published on ([LoL Champion Stats, 12.23, Win Rates, Pick Rates - METAsrc](#)) and found that our results are not very far from their results which is based on a database that contains data from millions of games taken from each patch.

Name	Role	Tier	Score	Trend	Win %	Role %	Pick %	Ban %	KDA
Caitlyn	ADC	God / S+	92.35	-0.08	49.88%	97.35%	18.77%	17.95%	2.19
Kai'Sa	ADC	God / S+	85.25	-5.74	50.80%	96.53%	18.16%	5.04%	2.39
Ezreal	ADC	God / S+	78.65	-4.51	48.56%	94.59%	18.12%	3.90%	2.34
Jhin	ADC	God / S+	79.47	+1.03	51.37%	94.72%	14.79%	3.84%	2.86
Lux	SUPPORT	God / S+	92.27	+8.91	50.51%	69.72%	13.84%	10.13%	2.47

Figure 2. Top 5 picked champions in LoL from metasrc

2) Champion win rate:

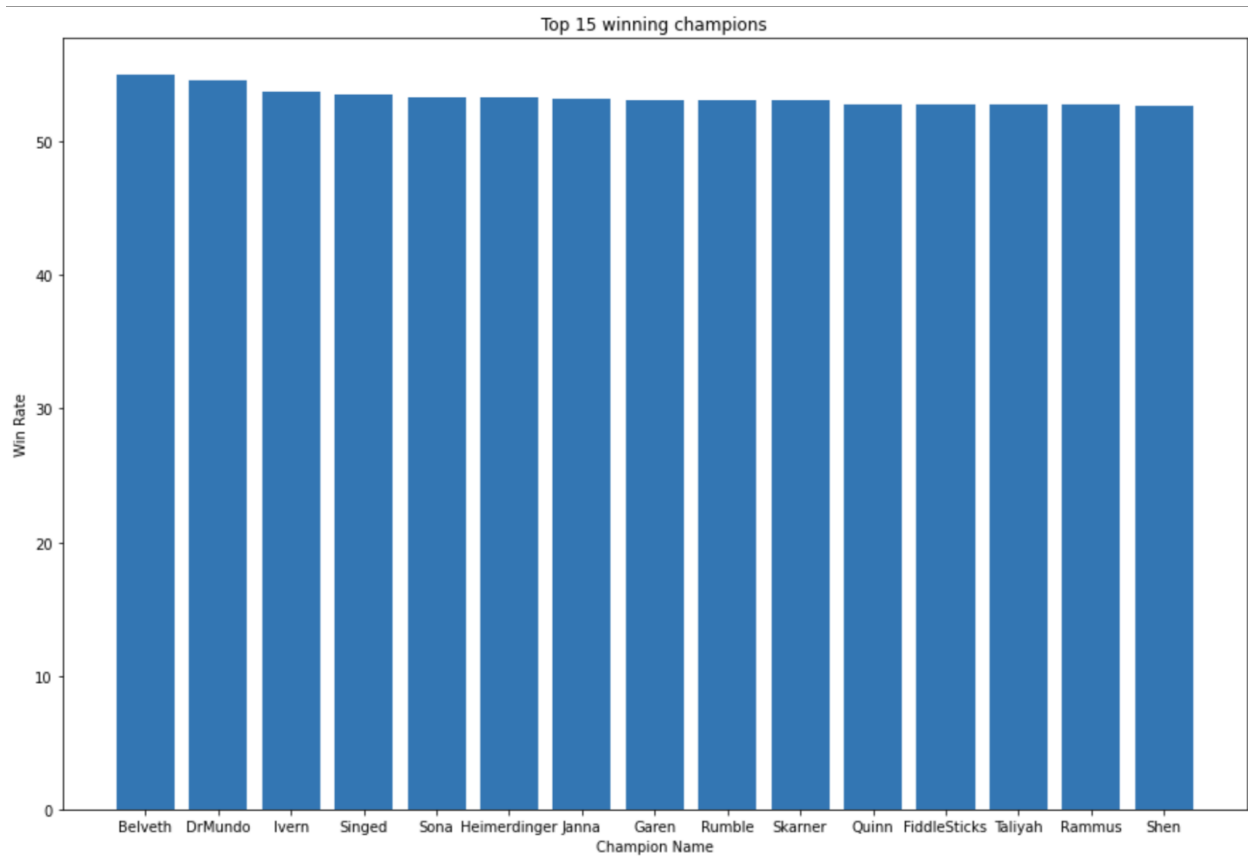


Figure 3. Top 15 winning champions in LoL

We found that the most 5 winning champions are: Belveth, DrMundo, Ivern, Singed, and Sona. Referring to the statistics published on ([LoL Champion Stats, 12.23, Win Rates, Pick Rates - METAsrc](#)) and found that our results are not very far from their results which is based on a database that contains data from millions of games taken from each patch.

Name	Role	Tier	Score	Trend	Win %
Singed	MID	Strong / S	59.15	+6.40	58.25%
Dr. Mundo	TOP	God / S+	85.47	+29.95	54.83%
Nasus	MID	Good / A	51.20	NEW	54.79%
Rammus	JUNGLE	God / S+	80.41	+24.29	54.75%
Galio	MID	Good / A	53.73	+6.61	54.00%
Zilean	MID	Good / A	54.11	+3.19	53.84%

Figure 4. Top 6 winning champions in LoL from metasrc

3) Champion ban rate:

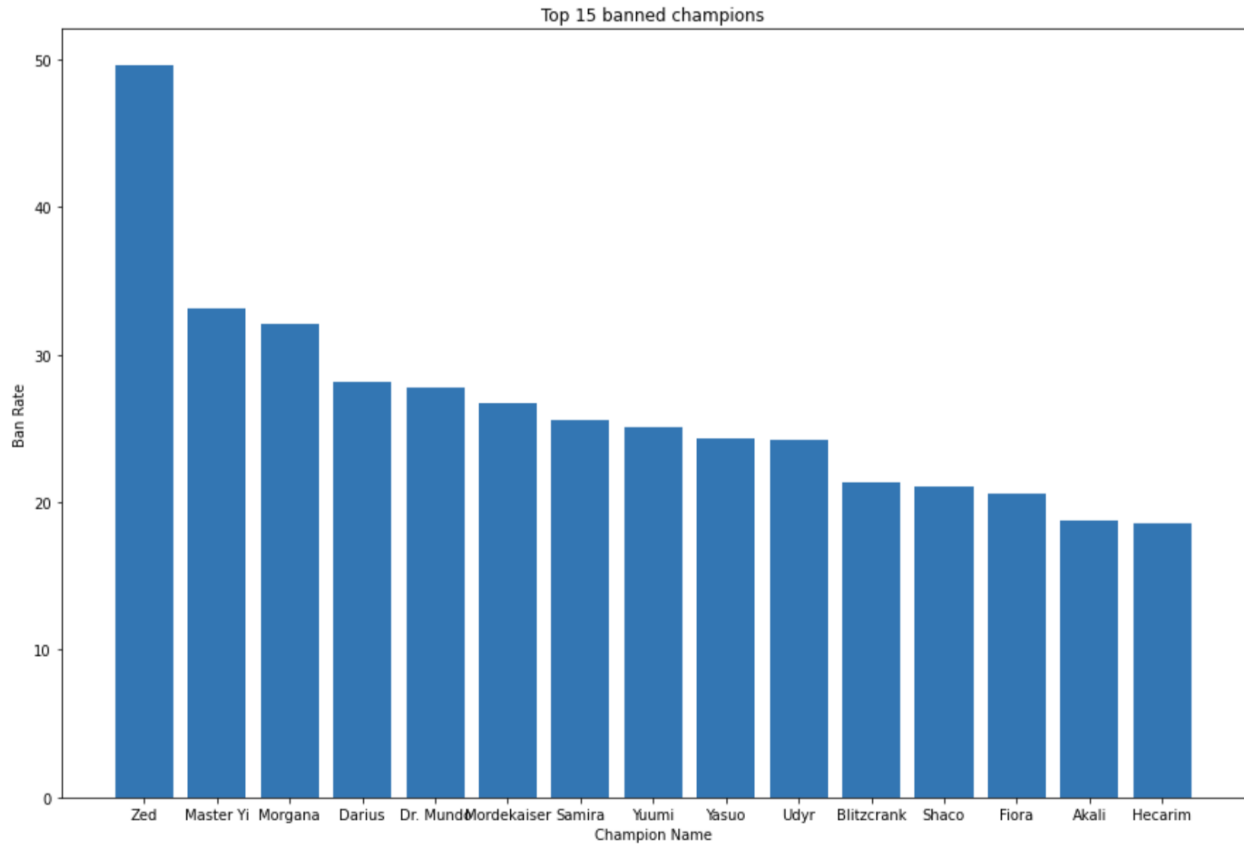


Figure 5. Top 15 banned champions in LoL

We found that the most 5 winning champions are: Zed, Master Yi, Morganam, Darius, and Dr.Mundo.

Referring to the statistics published on ([LoL Champion Stats, 12.23, Win Rates, Pick Rates - METAsrc](#)) and found that our results are not very far from their results which is based on a database that contains data from millions of games taken from each patch.

Name	Role	Tier	Score	Trend	Win %	Role %	Pick %	Ban %
Zed	MID	God / S+	87.48	-4.34	50.20%	72.79%	12.61%	48.37%
Zed	JUNGLE	Strong / S	62.15	+6.41	48.27%	22.46%	3.66%	48.37%
Morgana	SUPPORT	God / S+	80.98	+0.94	51.01%	89.15%	8.09%	30.49%
Yuumi	SUPPORT	God / S+	91.15	-2.43	47.84%	98.49%	10.37%	28.85%
Fiora	TOP	God / S+	91.53	-1.34	51.58%	96.86%	9.06%	27.29%
Hecarim	JUNGLE	God / S+	84.19	-6.76	49.57%	98.21%	7.23%	26.14%
Udyr	JUNGLE	God / S+	88.94	+20.11	51.53%	88.95%	7.57%	26.12%
Darius	TOP	God / S+	83.79	+4.69	50.59%	91.19%	8.69%	23.43%
Master Yi	JUNGLE	God / S+	89.80	+15.60	51.80%	92.08%	7.99%	21.99%

Figure 6. Top 9 banned champions in LoL from metasrc

Requirement 2

1) Champion synergies or duos:

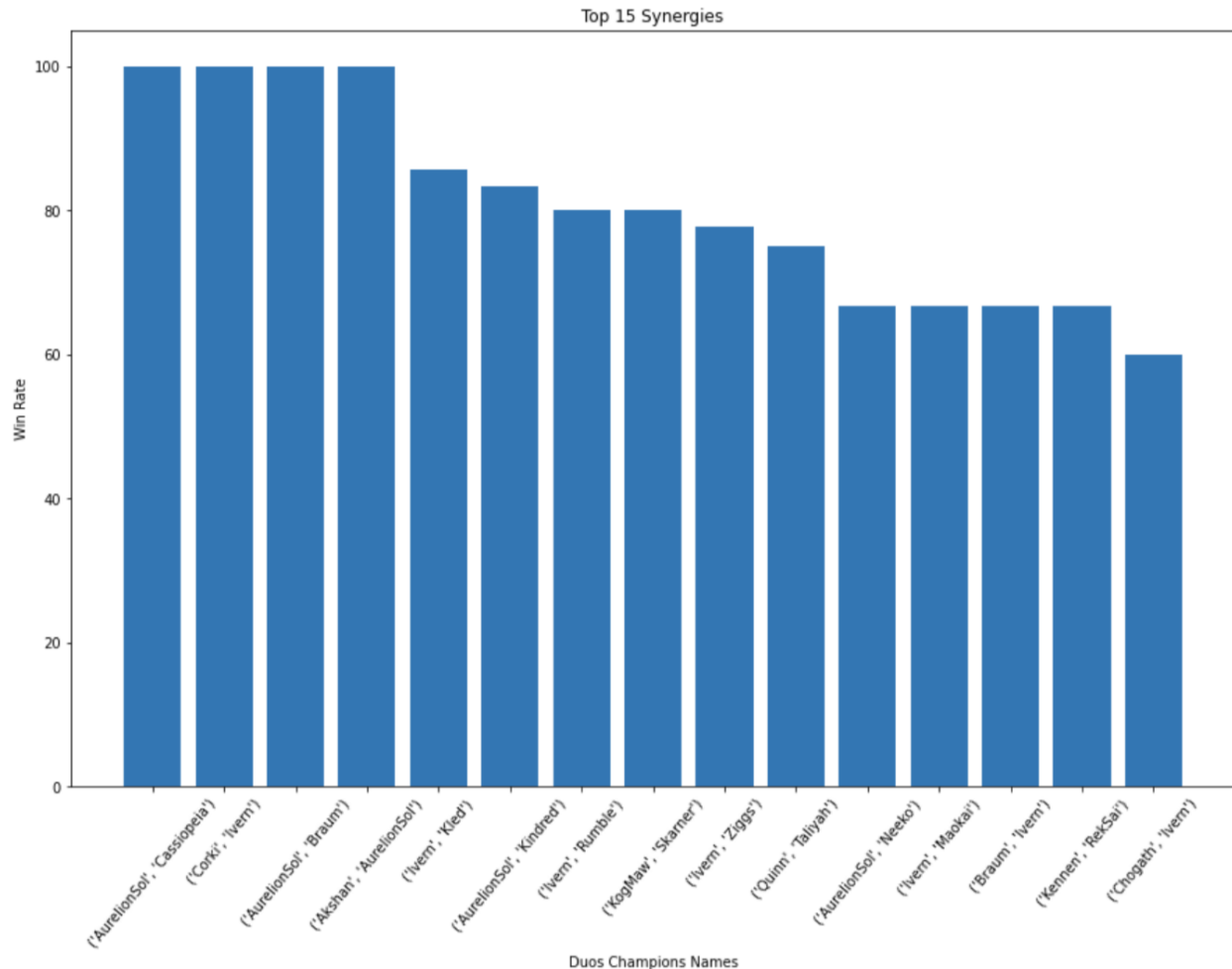


Figure 7. Top 15 champions synergies in LoL

We found that there is 4 champions pairs that lead to 100% win rate such as (AurelionSol, Cassiopeia), (Corki, Ivern), (AurelionSol, Braum), and (Akshan, AurelionSol). This can be interpreted in such a way that these champions are very rare to play with each other; however all the matches they played together led to wins only.

Requirement 3

1) Items pick rates:

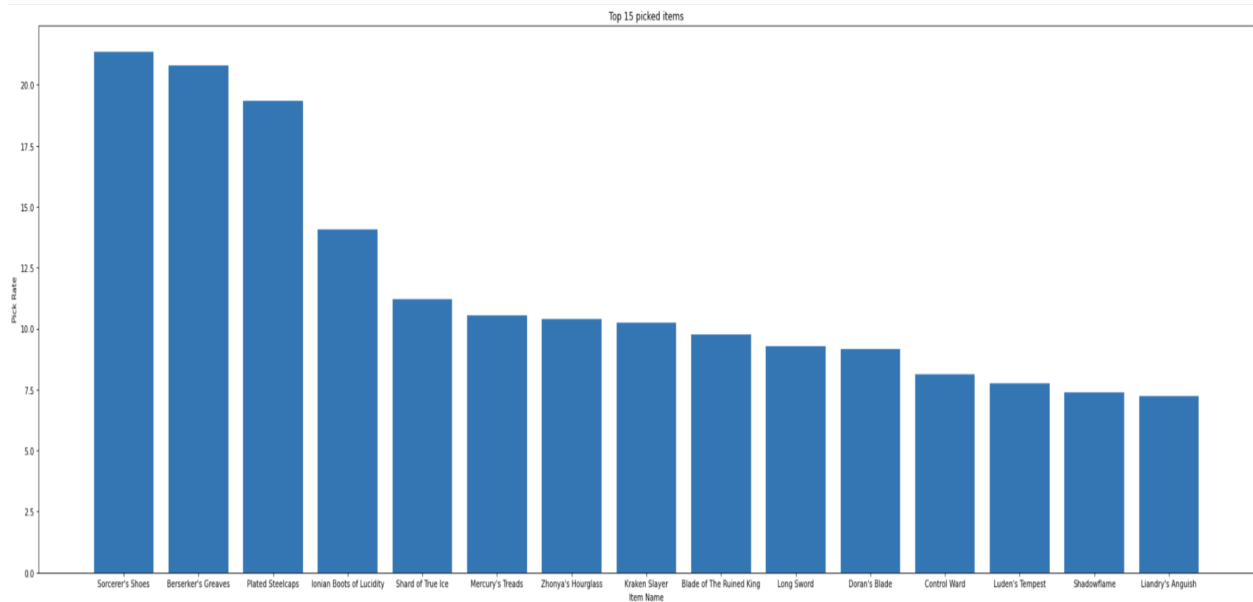


Figure 8. Top 15 picked items in LoL

We found that the most 5 picked items are: Sorcerer's Shoes, Berserker's Greaves, Plated Steelcaps, Ionian Boots of Lucidity, Shard of True Ice, and Mercury's Treads.

2) Items win rates::

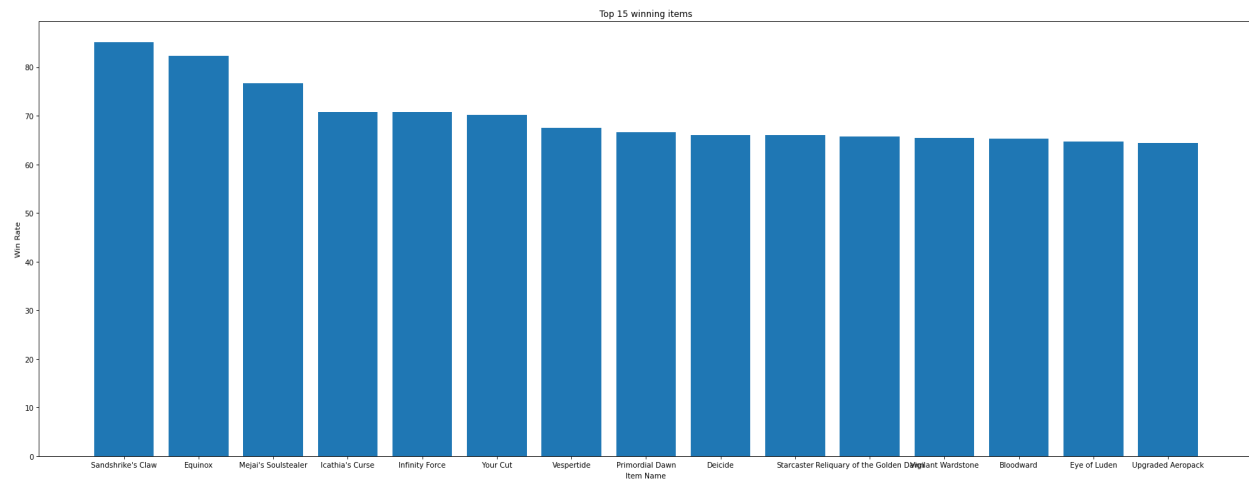


Figure 9. Top 15 winning items in LoL

We found that the most 5 champions who win their matches have these 5 most items: Sandshrike's Claw, Equinox, Mejai's Soulstealer, Icathia's Curse, and Infinity Force.

Requirement 4

1) Item with champion Synergy:

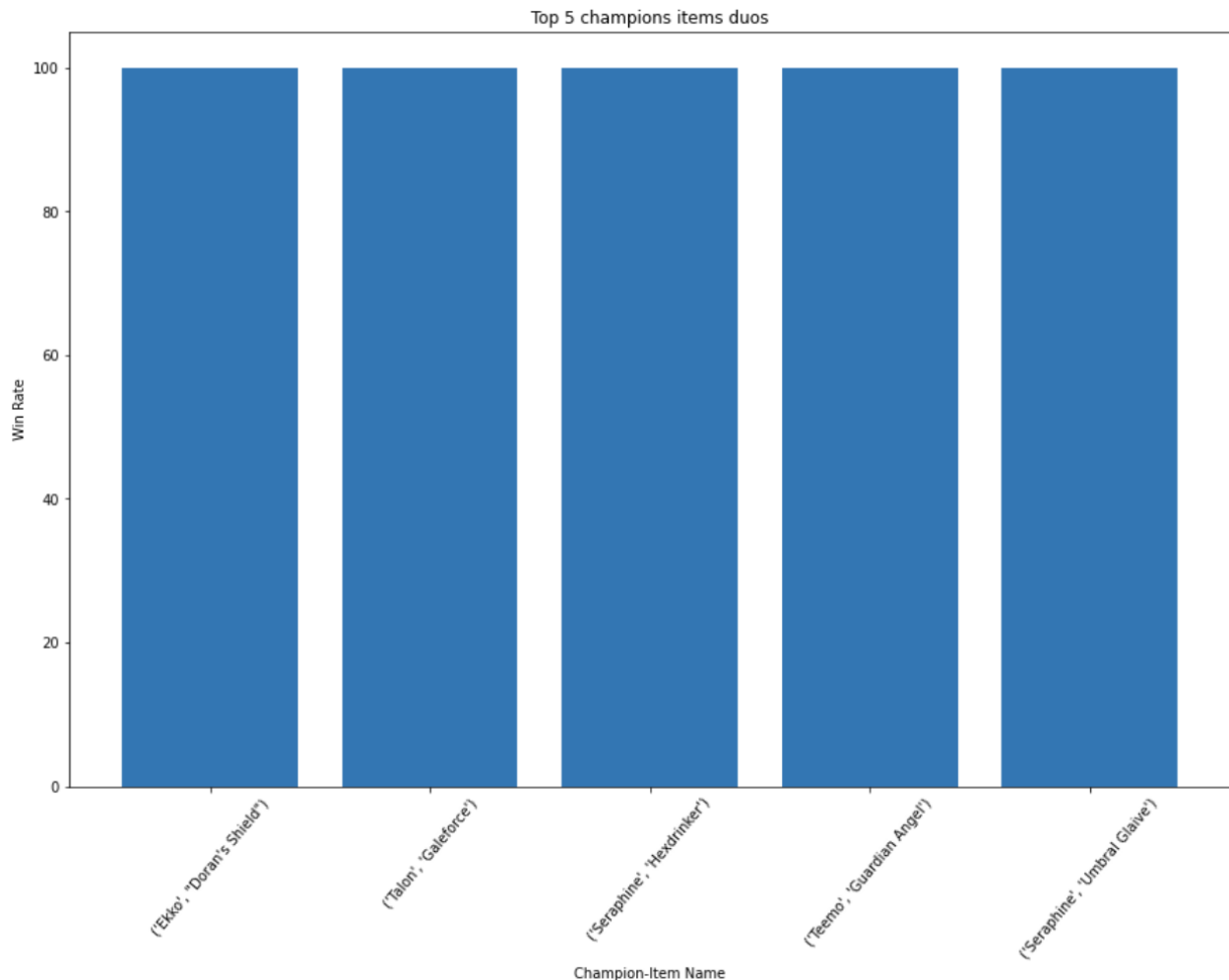


Figure 10. Top 5 Item with champion Synergy in LoL

We found that there is 5 champions pairs that lead to 100% win rate such as ('Ekko', "Doran's Shield"), ('Talon', "Galeforce"), ('Seraphine', "Hexdrinker"), ('Teemo', "Guardian Angel"), ('Seraphine', "Umbral Glaive"). This can be interpreted in such a way that these champions are very rare to play with these items; however all the matches they played with them led to wins only.

2) Class with champion Synergy:

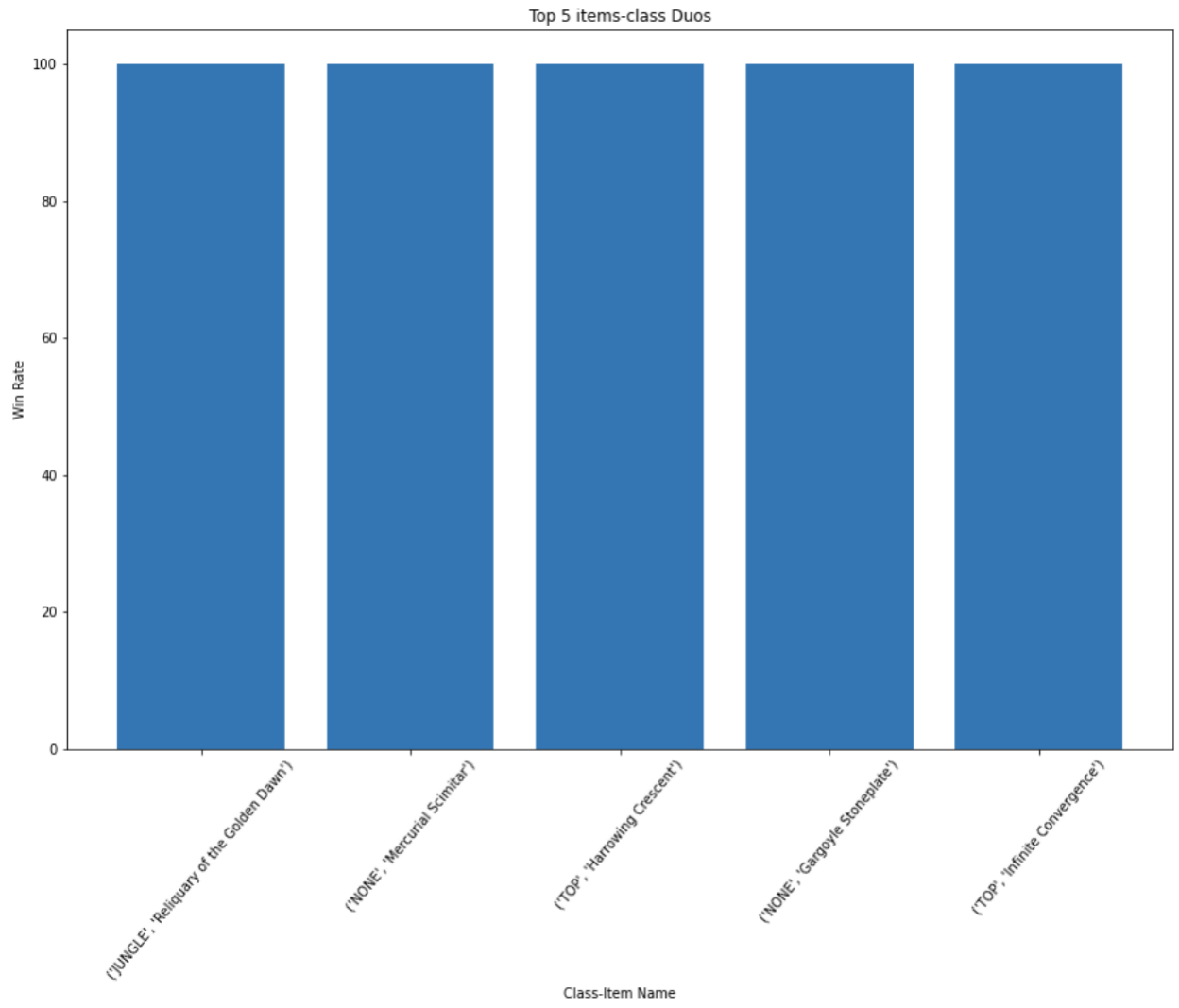


Figure 11. Top 5 Item with class Synergy in LoL

We found that there is 5 champions pairs that lead to 100% win rate such as ('JUNGLE', "Reliquary of the Golden Dawn"), ('NONE', "Mercurial Scimitar"), ('TOP', "Harrowing Crescent"), ('NONE', "Gargoyle Stoneplate"), ('TOP', "Infinite Convergence"). This can be interpreted in such a way that these champions are very rare to play in these lanes; however all the matches they played in them led to wins only.

Requirement 5

Item Suggestion for Champion “Ekko” with win rate 100% :

- a) Doran's Shield
- b) Gargoyle Stoneplate
- c) Seraph's Embrace
- d) Navori Quickblades
- e) Abyssal Mask

Item Suggestion for Champion “Ezreal” with win rate 100% :

- a) Gustwalker Hatchling
- b) Gargoyle Stoneplate
- c) Mosstomper Seedling
- d) Spectral Sickle
- e) Leeching Leer

Extra Requirement

1) Win Rates of different Lanes for champion “Diana”:

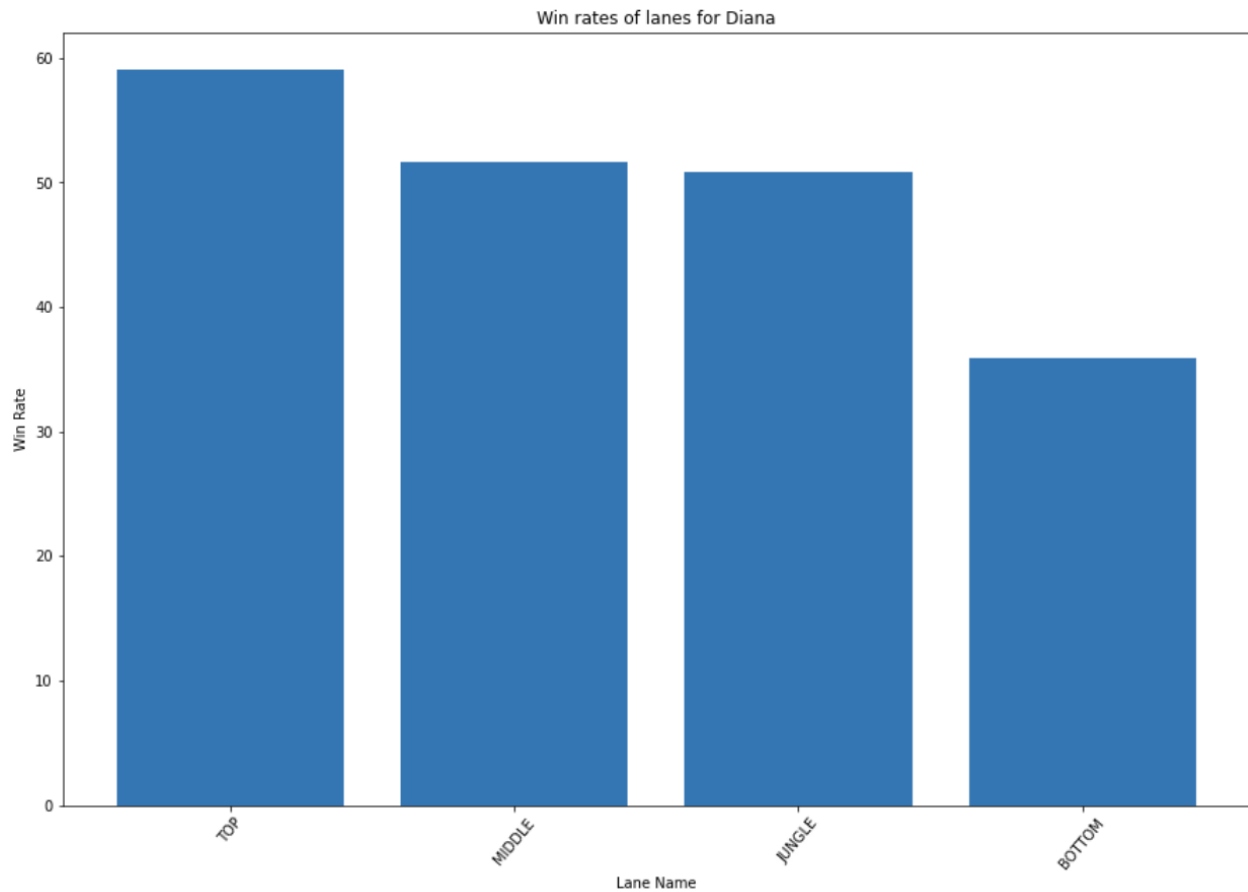


Figure 12. Win rates of lanes for Diana

2) Best Lanes for champion “Irelia”:

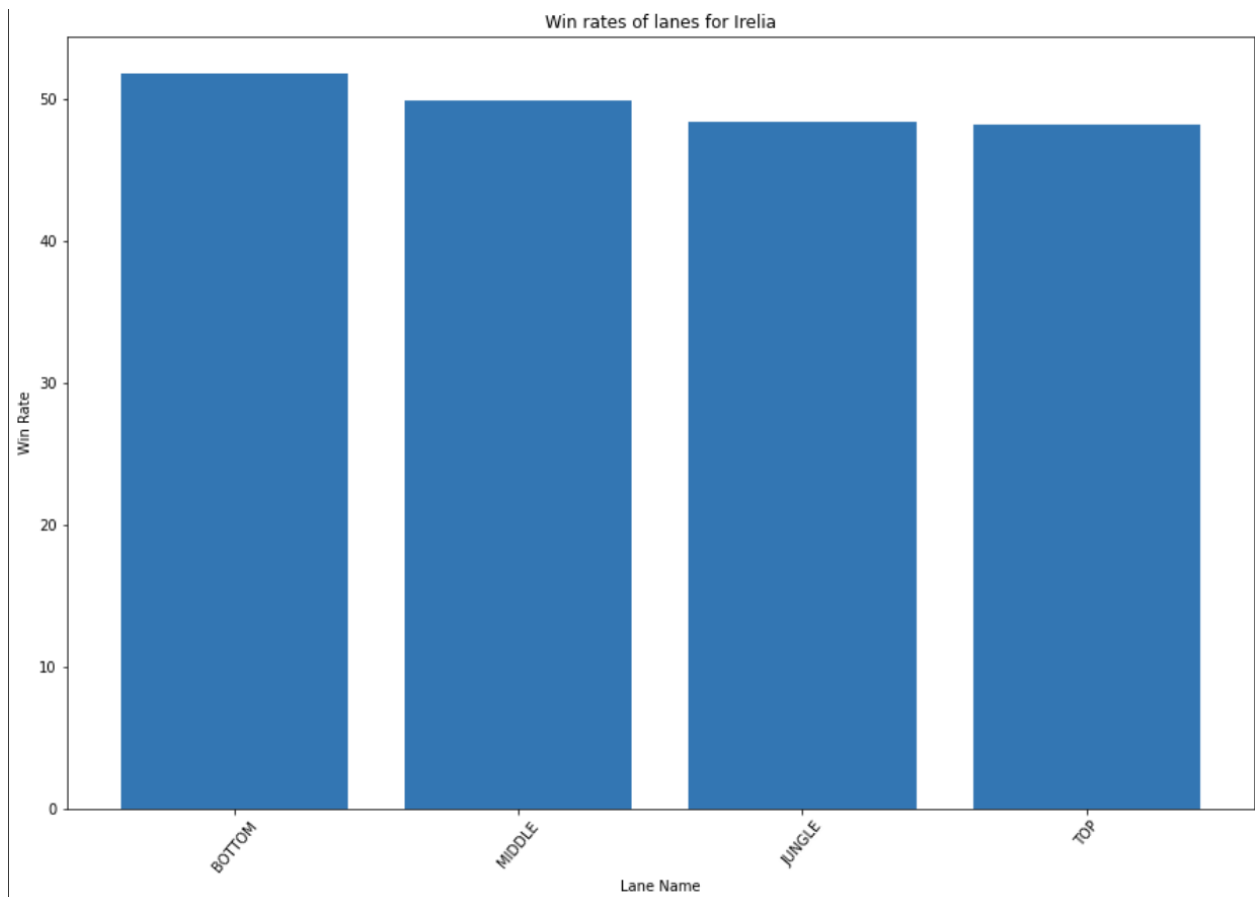


Figure 13. Win rates of lanes for Irelia