

Big Data analytics

Mini Project 2 Business Report

Apache Spark



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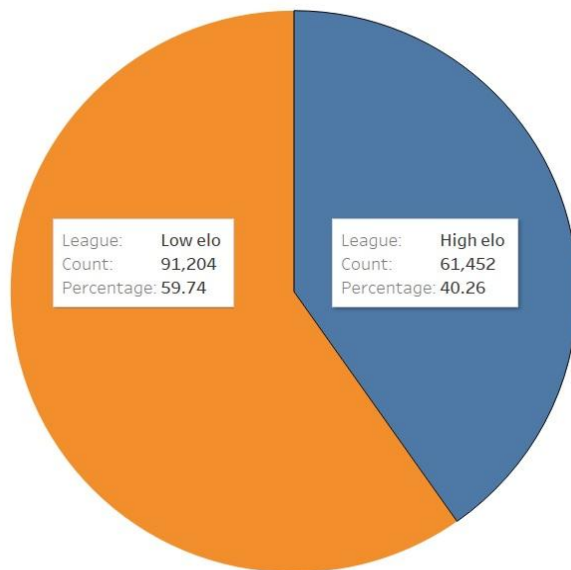
Introduction

This report contains the findings we got from analysing Riot api data for over 150,000 matches for high elo ranked matches and low elo ranked matches.

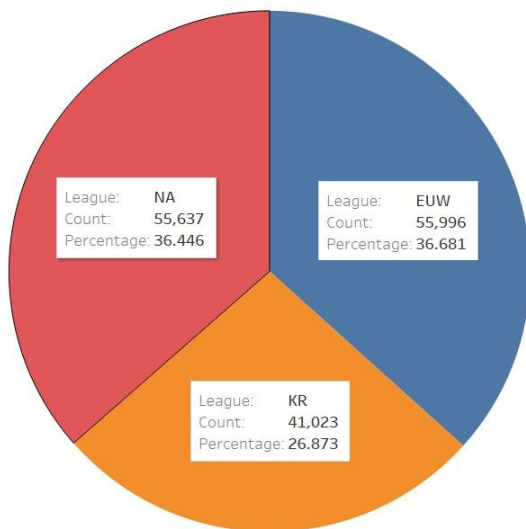
In this document:

- ❖ Information regarding the data we collected for this project
- ❖ Results of the analysis:
 - Champions picks and win rates
 - Champion bans
 - Champion synergies
 - Champions record against other champions
 - Items picks and win rates
 - Item synergies with champions
 - Item suggestion for Jhin and Lulu

Information Regarding the data we collected:



We have collected over 153,000 matches for high elo ranks and low elo ranks

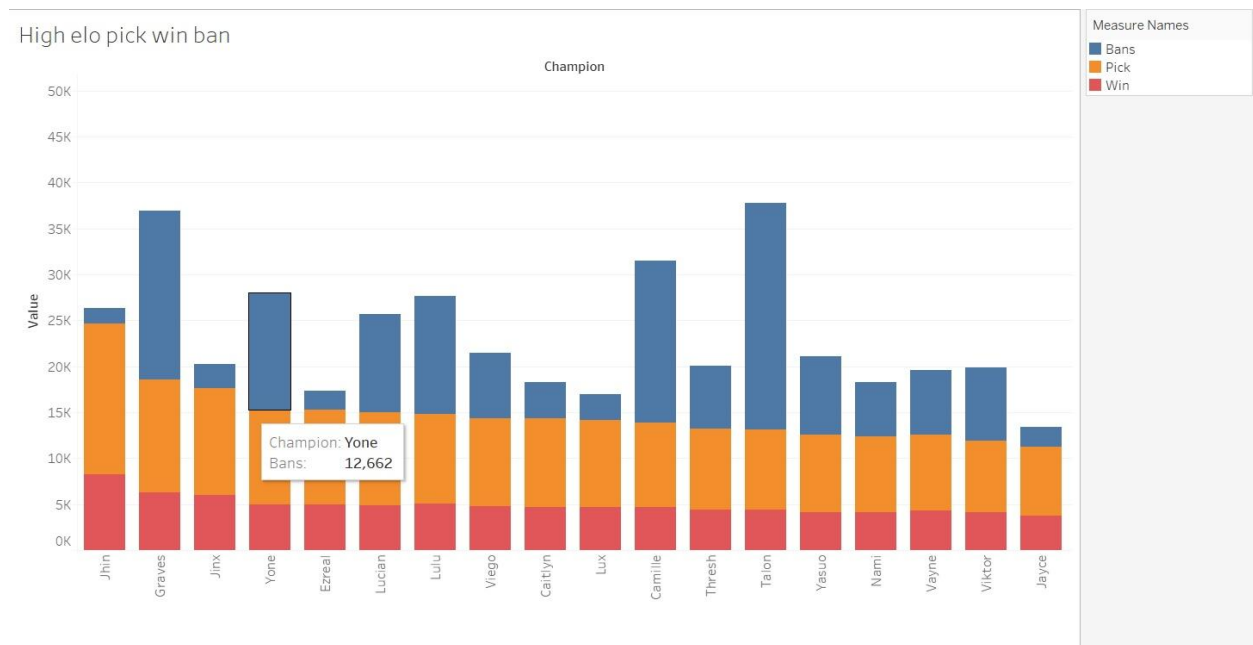


We collected data from several servers which are: EUW, NA,KR

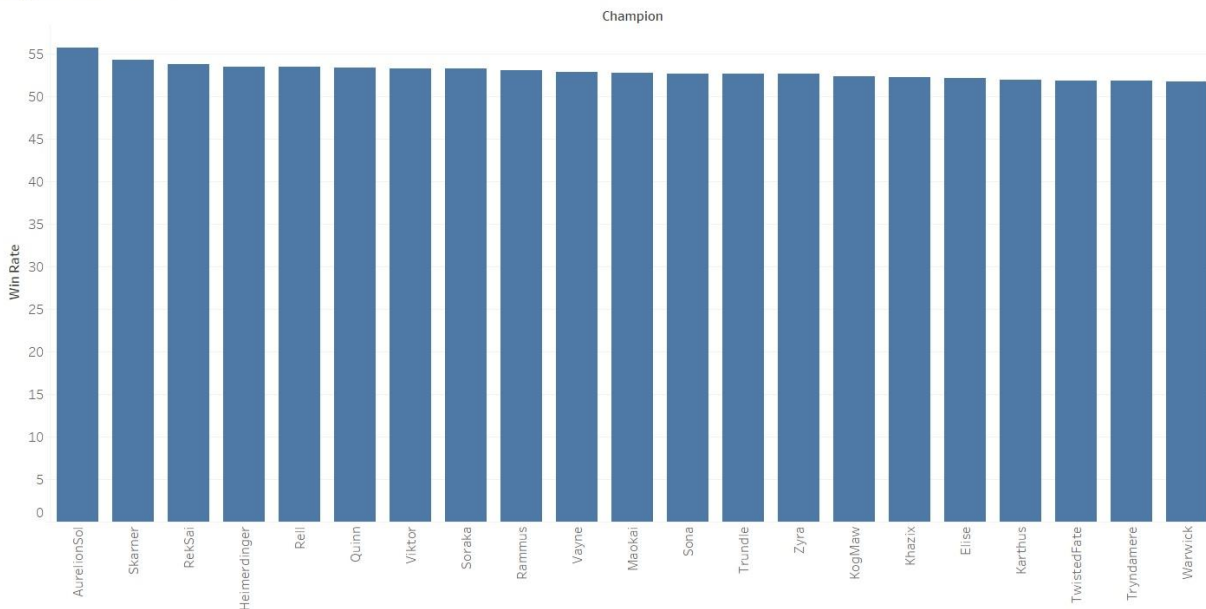
Results for the analytics:

- For champions:
 - Pick, win and ban rates
 - For HighElo ranks:

	champion	pick	win	win_rate
0	Jhin	16366	8280	50.59269217
1	Graves	12332	6248	50.66493675
2	Jinx	11619	6006	51.69119546
3	LeeSin	10924	5295	48.47125595
4	Yone	10335	4979	48.17610063
5	Ezreal	10285	4983	48.44919786
6	Lucian	10104	4912	48.61441013



High elo win rates



Resulting for the most picks is : Jhin

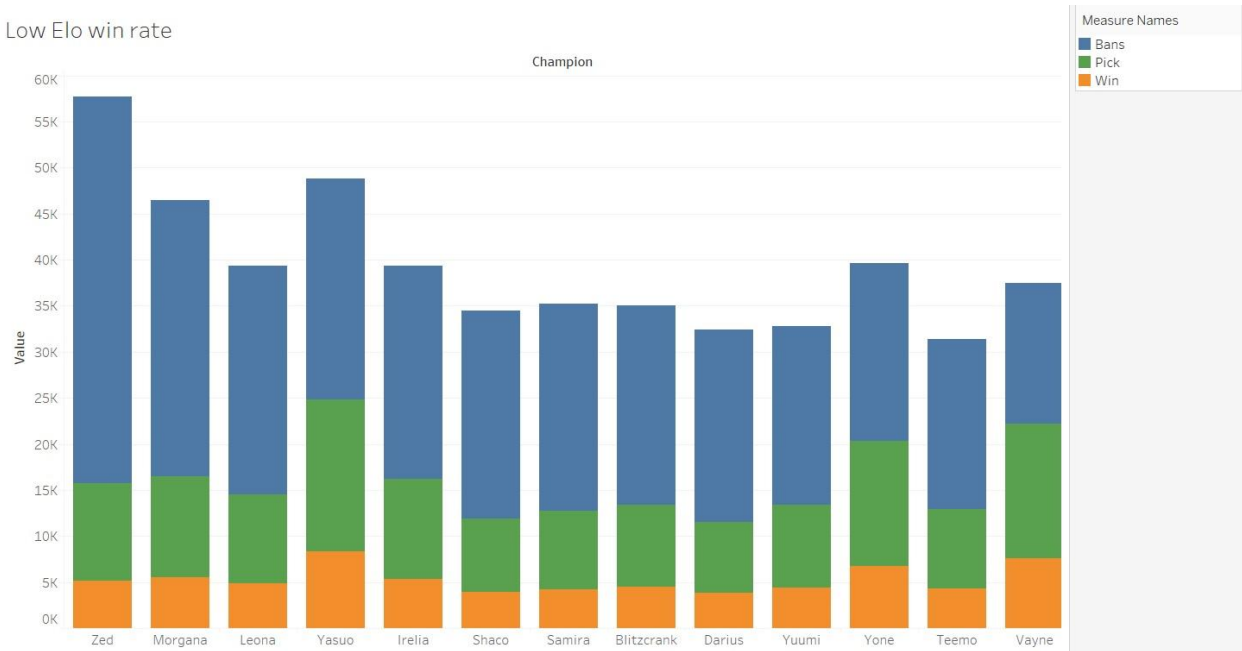
The most wins: Jhin

The best win rate: AurelionSol with win rate: 55.7 %

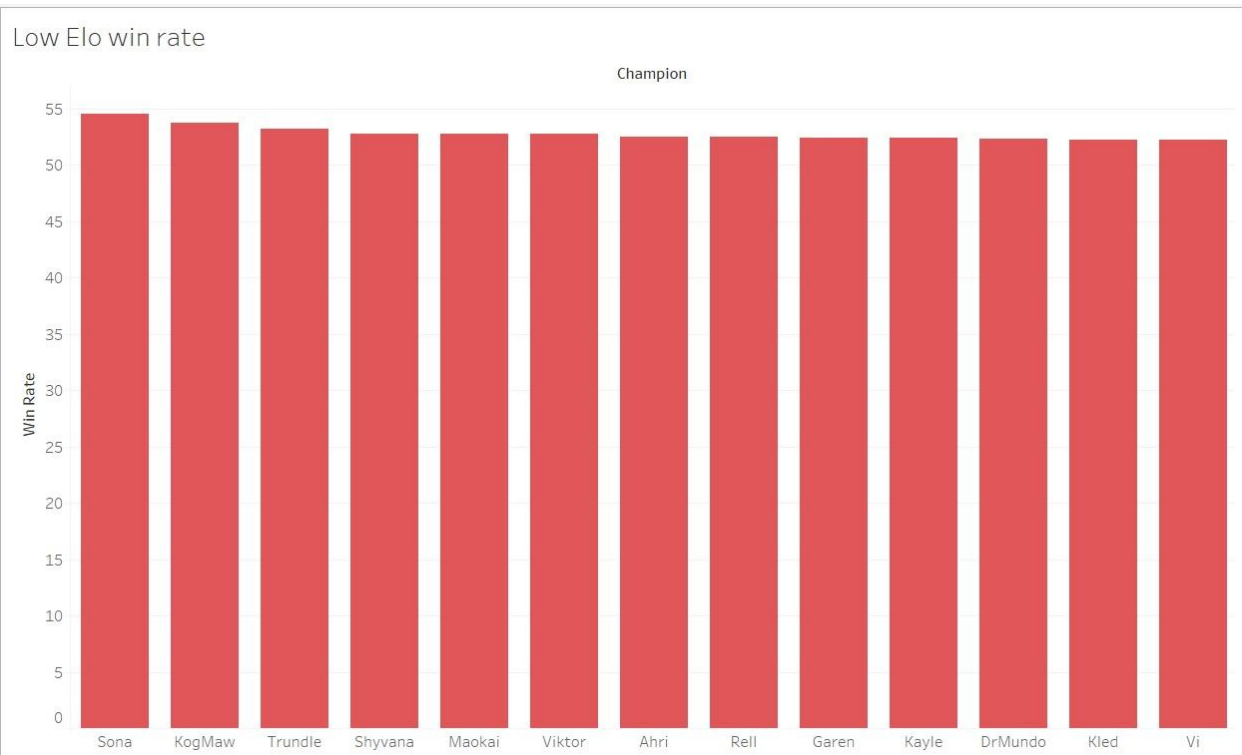
■ Low elo ranks:

	champion	pick	win	win_rate
0	Ezreal	19404	9406	48.47454133
1	Lux	18489	9318	50.39753367
2	Jhin	17552	8956	51.02552416
3	Yasuo	16513	8311	50.330043
4	Caitlyn	15404	7497	48.66917684
5	MissFortune	14899	7548	50.6611182
6	Vayne	14587	7588	52.01892096

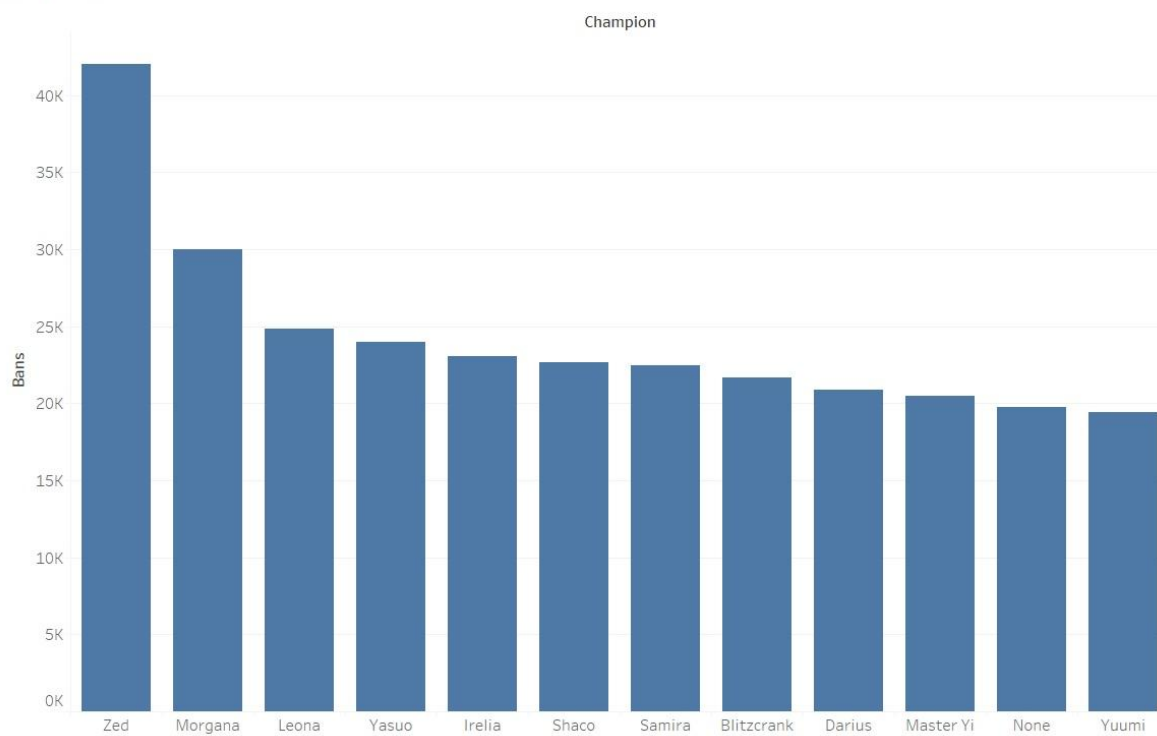
Low Elo win rate



Low Elo win rate



Low Elo bans



Resulting that

Most picks for : Ezrael

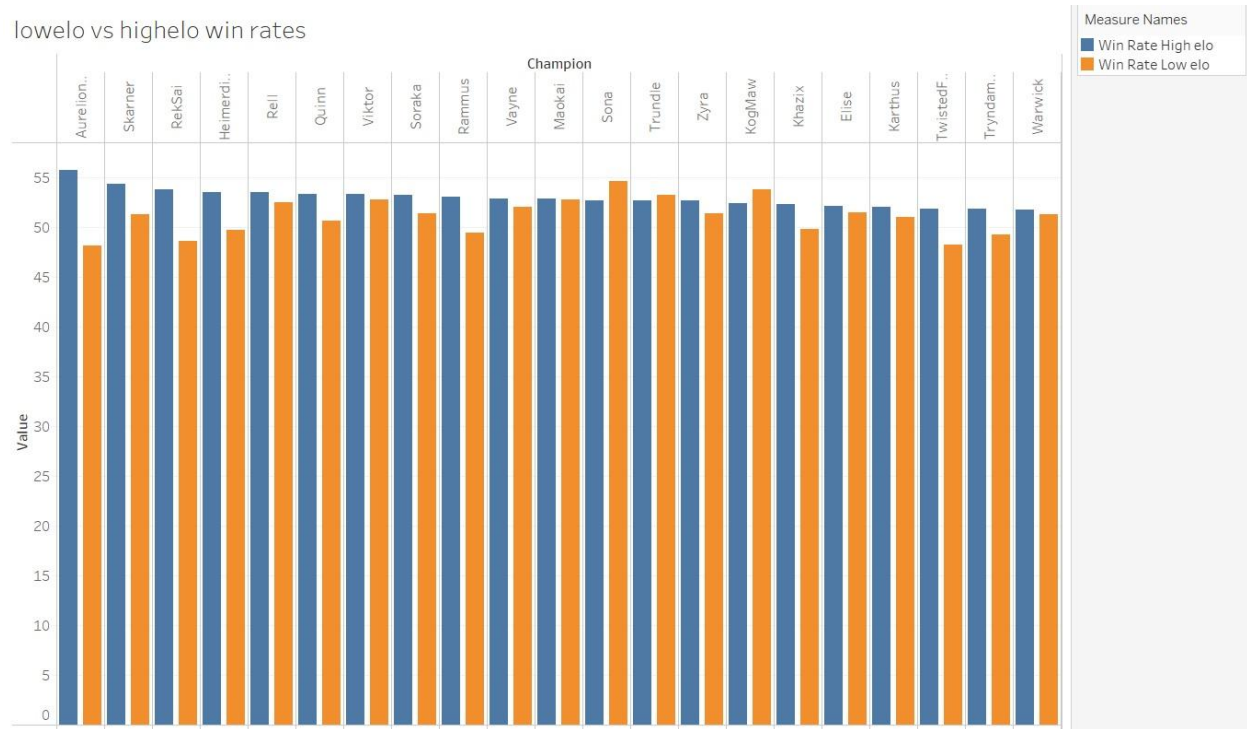
Most wins for : Ezrael

Best win rate overall for : Sona with win rate of 54.4 %

Most number of bans for : Zed for more than 40k bans

- **A comparison between high elo and low elo:**

lowelo vs highelo win rates



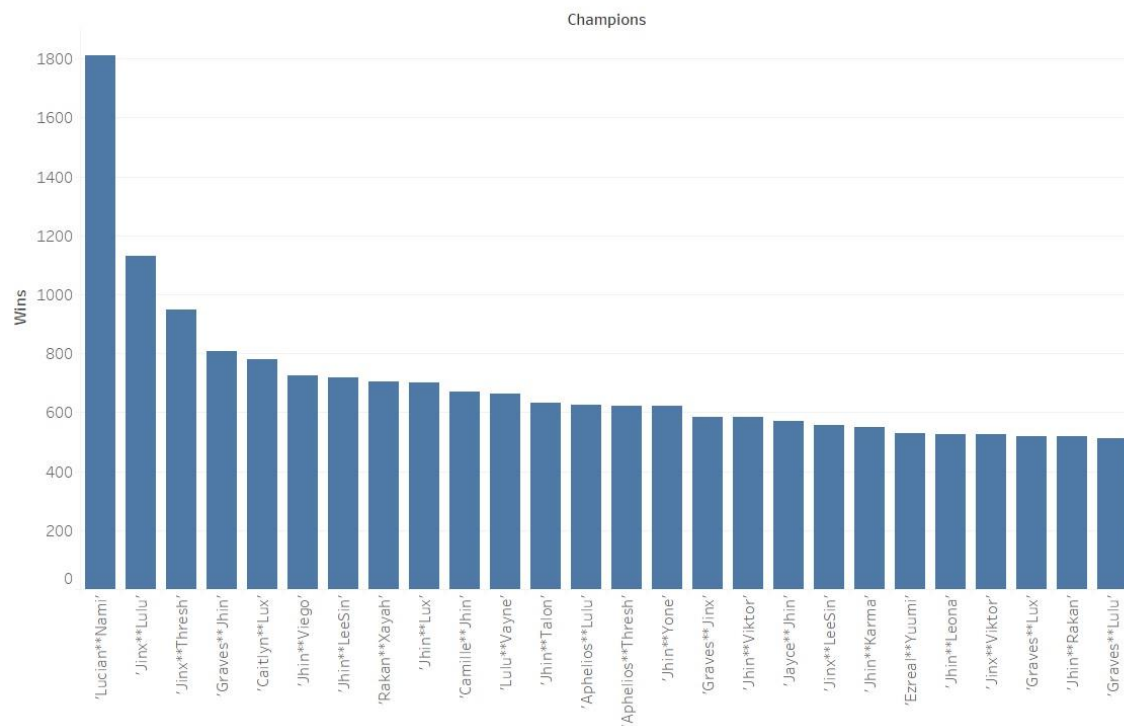
We would find that best win rates for high elo differs from the best in the low elo ranks

- **Champion Synergies:**

- **For High elo:**

	champions	wins
0	Lucian**Nami'	1809
1	Jinx**Lulu'	1129
2	Jinx**Thresh'	948
3	Graves**Jhin'	808
4	Caitlyn**Lux'	781
5	Jhin**Viego'	724
6	Jhin**LeeSin'	718

high elo champ senergies



We would find that the most wins is for : Lucian and Nami with over than 1,800 wins overall.

- **For low elo:**

	champions	wins
0	Jhin**Lux'	1090
1	Caitlyn**Lux'	1041
2	Ezreal**Lux'	981
3	Lucian**Nami'	940
4	Caitlyn**Morgana'	870
5	Lux**MissFortune'	819
6	Ezreal**LeeSin'	810

We would find that Jhin and Lux are the most wins with 1090 wins

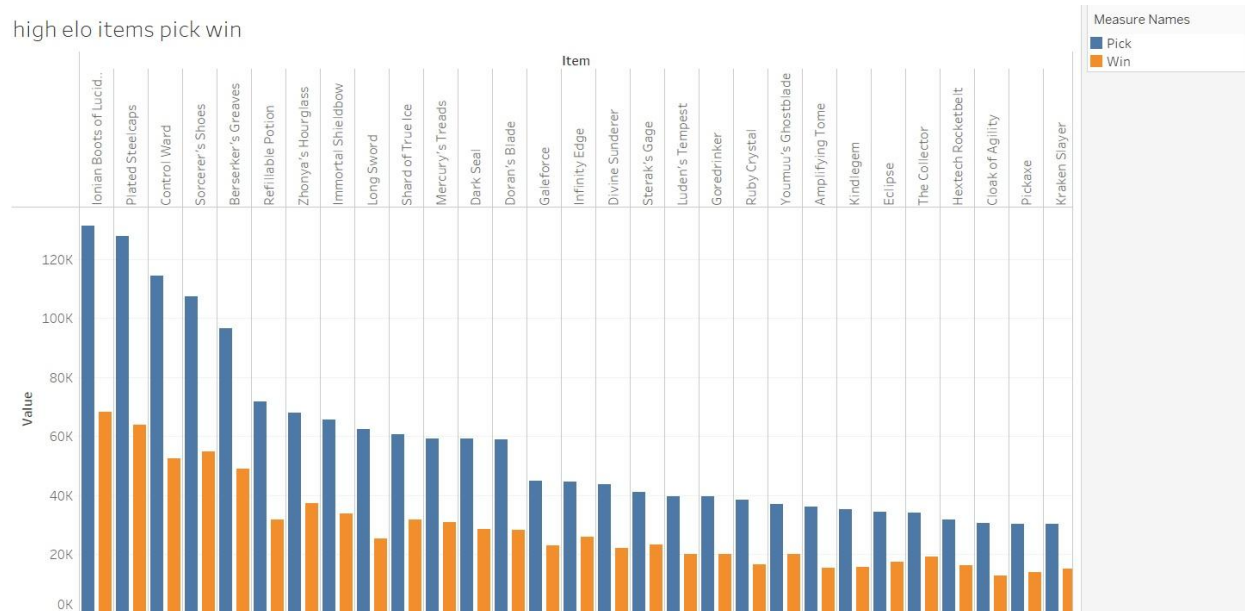
Which shows that in high elo there are specific champions that plays with each others much more than among low elo ranks

- **Items picks and win rates:**

- **For high elo:**

	Item	pick	win	win_rate
0	Ionian Boots of Lucid	131201	68252	52.02094496
1	Plated Steelcaps	127811	63952	50.03638185
2	Control Ward	114535	52412	45.76062451
3	Sorcerer's Shoes	107369	54876	51.10972441
4	Berserker's Greaves	96593	48955	50.68172642
5	Refillable Potion	71717	31687	44.18338748
6	Zhonya's Hourglass	67874	37262	54.89878304

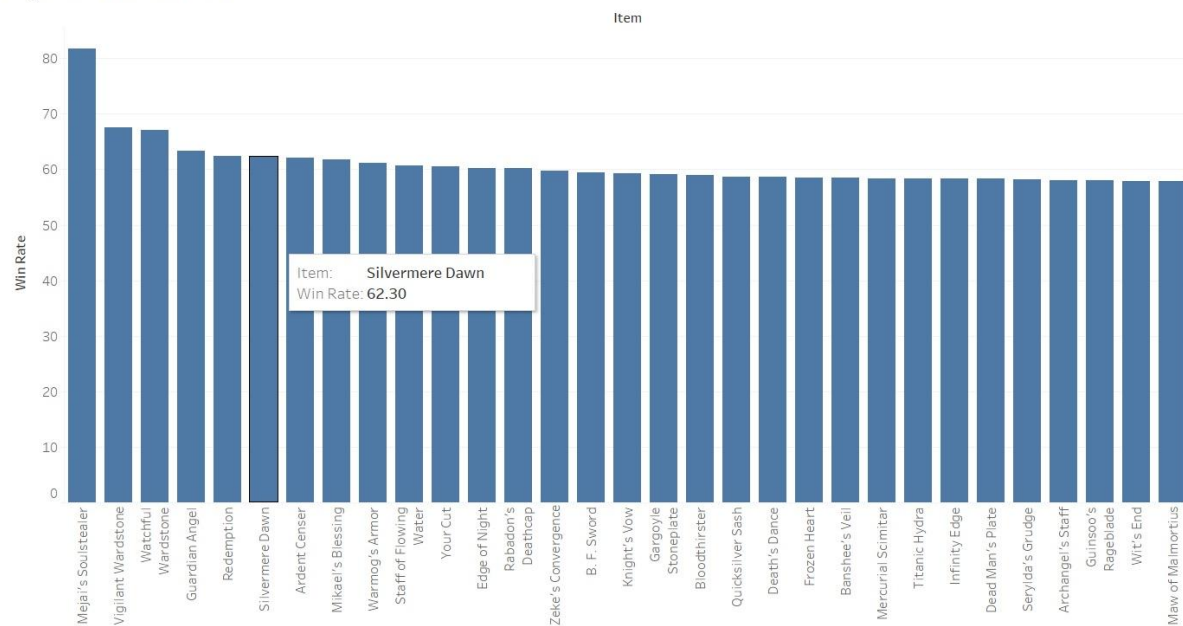
high elo items pick win



We find that the most picked item is : Ionian Boots of Lucidity

The most wins items for : Ionian Boots of Lucidity

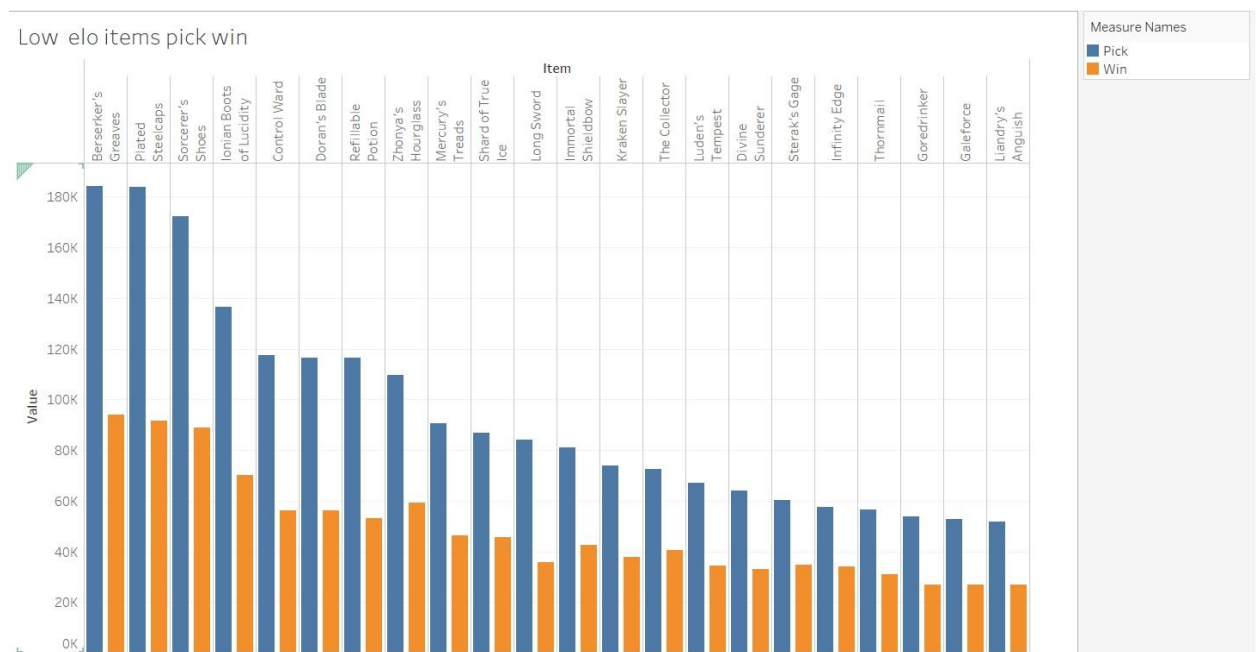
high elo items win rate



And the best win rate for : Mejai's Soulstealer for about 80%

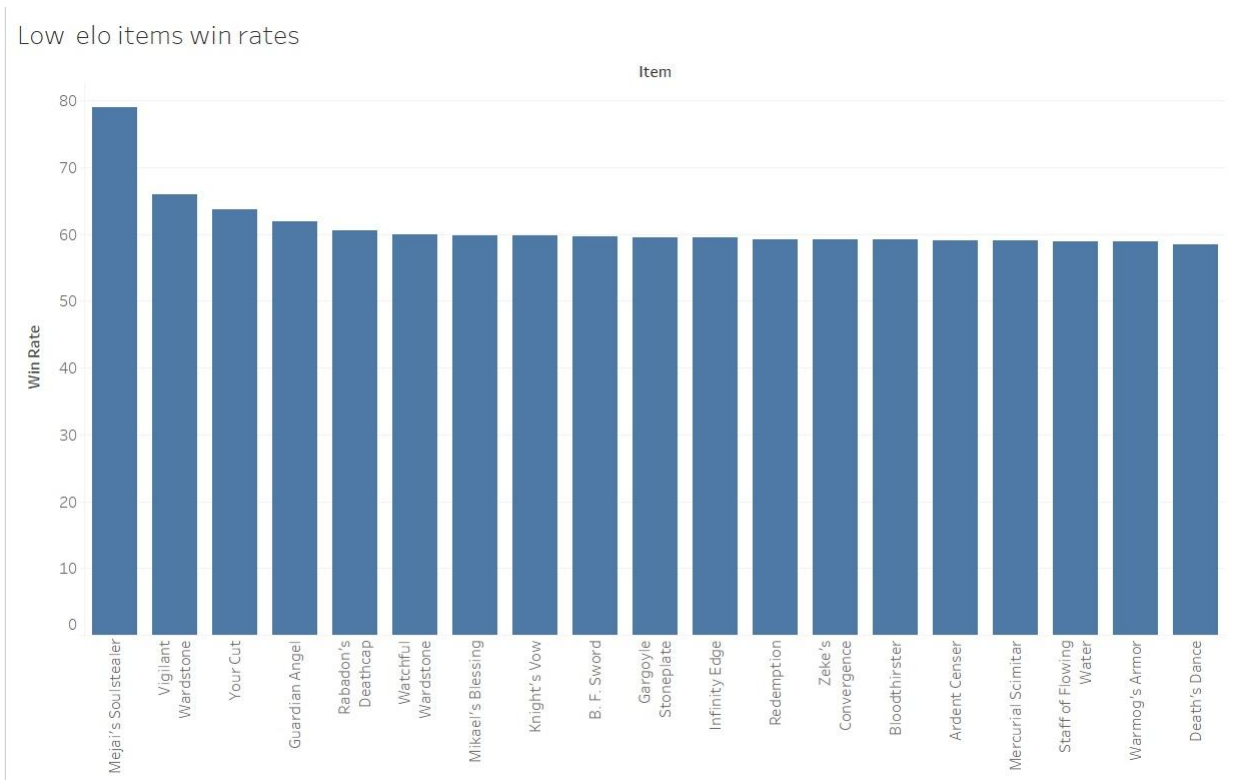
- **For Low elo:**

	Item	pick	win	win_rate
0	Berserker's Greaves	184238	93914	50.97428326
1	Plated Steelcaps	184067	91628	49.77969978
2	Sorcerer's Shoes	172274	88941	51.62763969
3	Ionian Boots of Lucidity	136464	70037	51.32269316
4	Control Ward	117526	56320	47.92131103
5	Doran's Blade	116358	56165	48.26913491
6	Refillable Potion	116321	53177	45.71573491



The most picks for : Berserker's Greaves

The most wins for : Berserker's Greaves



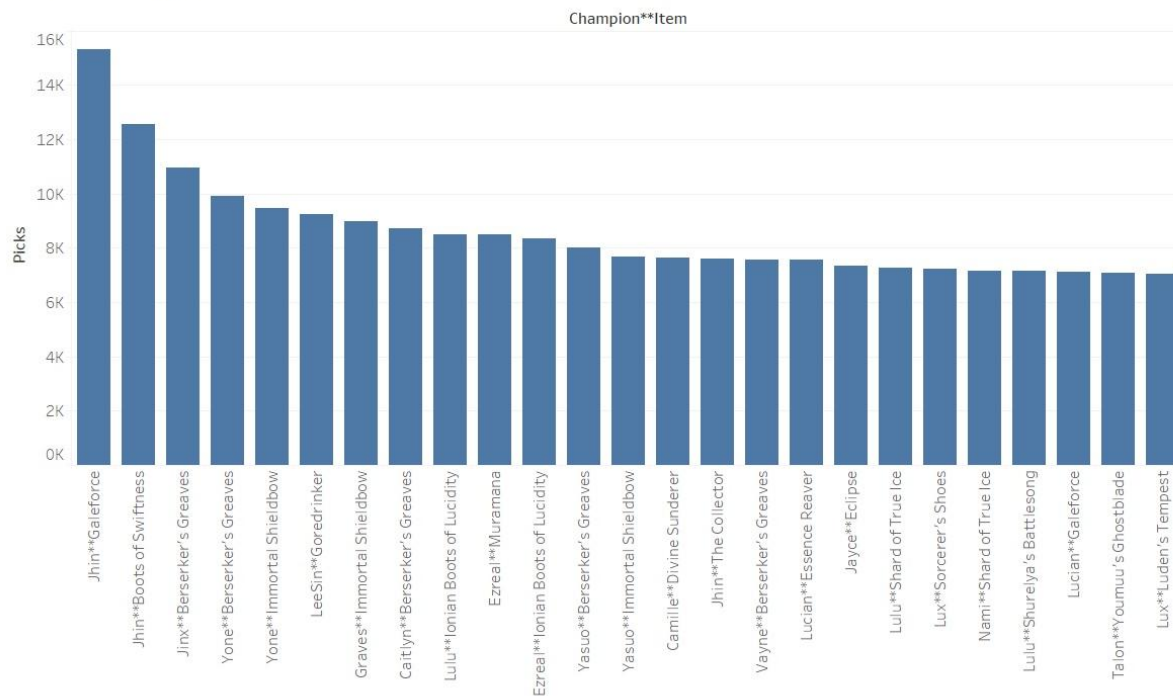
And also the most win rate for : Mejai's Soulstealer for about 80%

- **Items synergies with champions:**

- **For high elo**

	Champion**Item	picks
0	Jhin**Galeforce	15328
1	Jhin**Boots of Swiftn	12574
2	Jinx**Berserker's Gre	10946
3	Yone**Berserker's Gre	9923
4	Yone**Immortal Shie	9474

high elo champ item senergies



- **Item Suggestion:**

- **For Jhin:**

	item	pick	win	win_rate	score
0	Galeforce	15328	7874	51.37004175	51.37004175
1	Boots of Swiftess	12574	6456	51.34404326	50.78595584
2	The Collector	7604	4289	56.40452393	55.17833863
3	Rapid Firecannon	6887	3963	57.54319733	55.66678872
4	Lord Dominiks Regar	5241	2763	52.71894677	50.42681865
5	Infinity Edge	4333	2496	57.60443111	54.47375551
6	Cloak of Agility	3916	1724	44.02451481	41.1533508
7	Refillable Potion	3167	1556	49.13167035	45.39339108
8	Plated Steelcaps	2744	1377	50.18221574	45.81854481
9	Pickaxe	2524	1132	44.84944532	40.46199959

We won't here rely on win rate as there are items with low pick rates so we would calculate a score for every item based on the win rate and the ranking of the number of picks.

The suggestion would be : Rapid Firecannon with score 55.7

- **For Lulu:**

	item	pick	win	win_rate	pick_rate	score
0	Ionian Boots of Lucid	8500	4463	52.50588235	16.27230263	854.3916073
1	Shard of True Ice	7249	3949	54.47647951	13.87740256	755.9920361
2	Shurelyas Battlesong	7158	3897	54.44258173	13.7031932	746.0372157
3	Control Ward	4512	2048	45.39007092	8.637721112	392.0667739
4	Chemtech Putrifier	3353	2024	60.36385327	6.418944789	387.4722414
5	Forbidden Idol	2166	1295	59.78762696	4.146565587	247.9133165
6	Amplifying Tome	2085	955	45.80335731	3.991500115	182.824106
7	Oblivion Orb	1756	778	44.30523918	3.361666284	148.9394287
8	Ardent Censer	1513	936	61.86384666	2.896469868	179.1867677
9	Moonstone Renewer	1412	710	50.28328612	2.703116625	135.9215866

We used a different criteria for scoring here based on the win rate and the pick rate.

The suggestion would be: Ionian Boots of Lucidity for a score of 854.4

- **More Requirements:**

- **Most picked and won champions against each others:**

	Champion	Against	VS. Times	VS. Won	VS. Win Rate
0	Jhin	Jinx	1969	989	50.22854241
1	Jinx	Jhin	1969	980	49.77145759
2	Jhin	Graves	1766	908	51.41562854
3	Jhin	Caitlyn	1747	902	51.63136806
4	Jhin	Ezreal	1668	862	51.67865707
5	Graves	Jhin	1766	858	48.58437146
6	Caitlyn	Jhin	1747	845	48.36863194
7	Ezreal	Jhin	1668	806	48.32134293
8	Jhin	LeeSin	1554	805	51.8018018
9	Jhin	Lucian	1543	799	51.78224238

The most played against each others are : Jhin and Jinx (1969 matches) with Jhin winning in 50.23 % (989 matches) and Jinx winning in 49.77%(980 matches) and

- **A comprehensive details regarding champions:**

	Champion	pick	win	win_rate	bans	Best Enemy, winRate	Worst Enemy, winRate
0	Jhin	16366	8280	50.59269217	1707	('Nocturne', 58.8447)	('AurelionSol', 37.73)
1	Graves	12332	6248	50.66493675	18409	('Illaoi', 75.0)	('Skamer', 37.096774)
2	Jinx	11619	6006	51.69119546	2600	('Azir', 64.86486486)	('AurelionSol', 40.81)
3	LeeSin	10924	5295	48.47125595		('Malzahar', 59.6153)	('Shyvana', 35.36585)
4	Yone	10335	4979	48.17610063	12662	('Illaoi', 67.34693877)	('Rammus', 32.65306)
5	Ezreal	10285	4983	48.44919786	2121	('Yorick', 60.8695652)	('DrMundo', 34.3558)
6	Lucian	10104	4912	48.61441013	10683	('Azir', 59.40594059)	('Neeko', 38.3333333)
7	Lulu	9779	5032	51.45720421	12825	('Neeko', 61.76470588)	('AurelionSol', 39.02)
8	Viego	9631	4745	49.26798879	7087	('Varus', 61.2500000)	('Yorick', 27.2727272)
9	Caitlyn	9567	4732	49.46169123	3951	('Illaoi', 60.0)	('Akshan', 39.766081)
10	Lux	9427	4688	49.72950037	2889	('Rammus', 60.9756)	('AurelionSol', 34.0)
11	Camille	9119	4713	51.68329861	17699	('Nasus', 62.5)	('Quinn', 36.8421052)
12	Thresh	8806	4393	49.88644106	6888	('Garen', 59.1549295)	('AurelionSol', 37.5)
13	Talon	8686	4441	51.12825236	24670	('Neeko', 62.1621621)	('Rell', 40.8)

In this sheet we added everything together regarding champion and added finally the best enemy that every champion played against(the best win rate against a rival) and the worst enemy (the worst win rate against a rival)