

# ISE 305 Database Project: League of Legends

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# League of Legends

- Multiplayer online battle arena video game developed and published by Riot Games.
- More than 150 champions for players to play.
- Two teams of 5 compete to take down each other's nexus first.



# Table 1

Champions	
ID INT	
champName VARCHAR(45)	
role VARCHAR(45)	
champType VARCHAR(45)	
winRate DECIMAL(2)	
pickRate DECIMAL(2)	
banRate DECIMAL(2)	
releaseYear INT	
rangeType VARCHAR(45)	
Indexes	

ID	champName	role	champType	winRate	pickRate	banRate	releaseYear	rangeType
1	Aatrox	Top	Fighter	49.63%	9.95%	26.15%	2013	Melee
2	Ahri	Mid	Mage	49.80%	6.86%	2.38%	2011	Ranged
3	Akali	Mid	Assassin	48.90%	10.73%	14.07%	2010	Melee
4	Akshan	Mid	Marksman	50.74%	2.02%	2.42%	2021	Ranged
5	Alistar	Support	Tank	49.54%	2.75%	0.67%	2009	Melee
6	Amumu	Jungler	Tank	52.43%	4.38%	5.01%	2009	Melee
7	Anivia	Mid	Mage	51.12%	2.13%	1.43%	2009	Ranged
8	Annie	Mid	Mage	49.35%	1.30%	0.37%	2009	Ranged
9	Aphelios	Bot	Marksman	44.88%	4.92%	0.96%	2019	Ranged
10	Ashe	Bot	Marksman	49.95%	9.02%	2.19%	2009	Ranged
11	Aurelion Sol	Mid	Mage	48.90%	0.39%	0.15%	2016	Ranged
12	Azir	Mid	Mage	44.48%	3.13%	0.72%	2014	Ranged
13	Bard	Support	Support	49.41%	1.86%	0.27%	2015	Ranged
14	Bel'Veth	Jungler	Fighter	51.61%	6.65%	24.47%	2022	Melee
15	Blitzcrank	Support	Tank	51.44%	9.26%	32.82%	2009	Melee
16	Brand	Mid	Mage	50.39%	1.05%	0.95%	2011	Ranged
17	Braum	Support	Tank	48.39%	1.91%	0.23%	2014	Melee
18	Caitlyn	Bot	Marksman	49.82%	20.96%	15.54%	2011	Ranged
19	Camille	Top	Fighter	50.34%	4.64%	1.94%	2016	Melee
20	Cassiopeia	Mid	Mage	50.77%	1.80%	1.29%	2010	Ranged
21	Cho' Gath	Top	Tank	49.89%	1.59%	0.46%	2009	Melee
22	Corki	Mid	Marksman	48.56%	1.20%	0.17%	2009	Ranged
23	Darius	Top	Fighter	50.54%	9.82%	29.09%	2012	Melee
24	Diana	Jungler	Assassin	51.35%	6.91%	3.85%	2012	Melee
25	Dr.Mundo	Top	Tank	52.08%	2.63%	1.50%	2009	Melee
26	Draven	Bot	Marksman	49.81%	4.75%	13.40%	2012	Ranged
27	Ekkko	Mid	Assassin	50.76%	2.81%	1.48%	2015	Melee
28	Elise	Jungler	Mage	51.66%	3.32%	4.90%	2012	Ranged
29	Evelynn	Jungler	Assassin	51.30%	3.70%	4.46%	2009	Melee
30	Ezreal	Bot	Marksman	49.23%	17.76%	4.06%	2010	Ranged
31	Fiddlesticks	Jungler	Mage	51.88%	3.96%	3.46%	2009	Ranged



# Table 2

## Abilities

ID INT

passiveSkill VARCHAR(45)

firstSkill VARCHAR(45)

secondSkill VARCHAR(45)

thirdSkill VARCHAR(45)

ultimateSkill VARCHAR(45)

costType VARCHAR(45)

champID INT

Indexes

ID	Name	passiveSkill	firstSkill	secondSkill	thirdSkill	ultimateSkill	costType	champID
1	Aatrox	Blood Well: When using an ability that	Dark Flight: Aatrox takes flight	Blood Thirst/Blood Price: W	Blades of Torment: Aatrox ur	Massacre: Aatrox draws in the	N/A	1
2	Ahri	Essence Theft: Gains a charge of Essenc	Orb of Deception: Ahri sends	Fox-Fire: Ahri releases thre	Charm: Ahri blows a kiss that	Spirit Rush: Ahri dashes forward	Mana	2
3	Akali	Twin Disciplines: Discipline of Force: Al	Mark of the Assassin: Akali sj	Twilight Shroud: Akali throw	Crescent Slash: Akali flourish	Shadow Dance: Akali moves th	Energy	3
4	Alistar	Trample: Each time Alistar casts a spell,	Pulverize: Alistar smashes th	Headbutt: Alistar rams a tar	Triumphant Roar: Alistar lets	Unbreakable Will: Alistar lets c	Mana	5
5	Amumu	Cursed Touch: Amumu's attacks reduce	Bandage Toss: Amumu tosse	Despair: Overcome by angu	Tantrum: Permanently reduc	Curse of the Sad Mummy: Ami	Mana	6
6	Anivia	Rebirth: Upon dying, Anivia will revert	Flash Frost: Anivia brings her	Crystallize: Anivia condense	Frostbite: With a flap of her v	Glacial Storm: Anivia summon: Mana		7
7	Annie	Pyromania: After casting 4 spells, Annie	Disintegrate: Annie hurls a M	Incinerate: Annie casts a bl	Molten Shield: Increases Anr	Summon Tibbers: Annie wills l	Mana	8
8	Ashe	Frost Shot: Ashe's attacks slow their tar	Ranger's Focus: Ashe builds u	Volley: Ashe fires 9 arrows	Hawkshot: Ashe sends her h	Enchanted Crystal Arrow: Ashe	Mana	10
9	Azir	Shurima's Legacy: Azir can summon the	Conquering Sands: Azir send	Arise: Azir summons a Sand	Shifting Sands: Azir dashes to	Emperor's Divide: Azir summo	Mana	12
10	Bard	Traveler's Call: Bard's presence causes i	Cosmic Binding: Bard fires a	Caretaker's Shrine: Reveals	Magical Journey: Bard opens	Tempered Fate: Bard sends sp	Mana	13
11	Blitzcrank	Mana Barrier: When Blitzcrank's life is l	Rocket Grab: Blitzcrank fires	Overdrive: Blitzcrank super	Powerfist: Blitzcrank charges	Static Field: Passively causes li	Mana	15
12	Brand	Blaze: Brand's spells light his targets ab	Sear: Brand launches a ball o	Pillar of Flame: After a shor	Conflagration: Brand conjure	Pyroclasm: Brand unleashes a	Mana	16
13	Braum	Concussive Blows: Braum adds stacks o	Winter Bite: Braum propels f	Stand Behind Me: Braum le	Unbreakable: Braum raises h	Glacial Fissure: Braum slams th	Mana	17
14	Caitlyn	Headshot: Every few basic attacks, Cait	Piltover Peacemaker: Caitlyn	Yordle Snap Trap: Caitlyn se	90 Caliber Net: Caitlyn fires a	Ace in the Hole: Caitlyn takes t	Mana	18
15	Cassiopeia	Aspect of the Serpent: Cassiopeia gain	Noxious Blast: Cassiopeia bl	Miasma: Cassiopeia release	Twin Fang: Cassiopeia lets lo	Petrifying Gaze: Cassiopeia rel	Mana	20
16	Cho'Gath	Carnivore: Whenever Cho'Gath kills a u	Rupture: Ruptures the groun	Feral Scream: Cho'Gath unlk	Vorpal Spikes: Cho'Gath's att	Feast: Devours an enemy unit, Mana		21
17	Corki	Hextech Shrapnel Shells: Corki's basic a	Phosphorus Bombs: Corki fir	Valkyrie: Corki surges to tar	Gatling Gun: Corki's gatling g	Missile Barrage: Corki fires a n	Mana	22
18	Darius	Hemorrhage: Darius aims his attacks str	Decimate: Darius winds up a	Crippling Strike: Darius's ne	Apprehend: Darius hones his	Noxian Guillotine: Darius leap	Mana	23
19	Diana	Moonsilver Blade: Gains Attack Speed,	Crescent Strike: Diana swing	Pale Cascade: Diana creates	Moonfall: Diana draws in anc	Lunar Rush: Diana dashes to ar	Mana	24
20	Dr. Mundo	Adrenaline Rush: Dr. Mundo regenerat	Infected Cleaver: Dr. Mundo	Burning Agony: Dr. Mundo c	Masochism: Masochism deal: Sadism: Dr. Mundo sacrifices a	Health		25
21	Draven	League of Draven: Draven gains his fan	Spinning Axe: Draven's next	Blood Rush: Draven gains in	Stand Aside: Draven throws i	Whirling Death: Draven hurls t	Mana	26
22	Ekko	Z-Drive Resonance: Ekko's Zero-Drive c	Timewinder: Ekko throws a t	Parallel Convergence: Ekko	Phase Dive: Ekko rolls evasi	Chronobreak: Ekko shatters hi	Mana	27
23	Elise	Spider Queen: Human Form - When Eli	Neurotoxin/Venomous Bite:	Volatile Spiderling / Skitter	Cocoon/Rappel: Human Form	Spider Form: Transforms into e	Mana	28
24	Evelynn	Shadow Walk: When out of combat, Evi	Hate Spike: Evelynn fires a li	Dark Frenzy: Evelynn passiv	Ravage: Evelynn slashes her	Agony's Embrace: Evelynn surr	Mana	29
25	Ezreal	Rising Spell Force: Hitting a target with	Mystic Shot: Ezreal fires a da	Essence Flux: Ezreal fires a f	Arcane Shift: Ezreal teleports	Trueshot Barrage: Ezreal wind	Mana	30
26	Fiddlesticks	Dread: Fiddlesticks' spells reduce the	N. Terrify: Strikes a target unit v	Drain: Fiddlesticks saps the	Dark Wind: A wisp of wind st	Crowstorm: A murder of crows	Mana	31
27	Fiora	Duelist's Dance: Fiora challenges nearb	Lunge: Fiora lunges in a direc	Riposte: Fiora parries all inc	Bladework: Fiora has increas	Grand Challenge: Fiora reveals	Mana	32
28	Fizz	Nimble Fighter: Fizz's dexterity allows	Urchin Strike: Fizz strikes his	Seastone Trident: Fizz's atta	Playful/Trickster: Fizz hops ir	Chum the Waters: Fizz release	Mana	33
29	Galio	Runic Skin: Galio converts 50% of his to	Resolute Smite: Galio fires a	Bulwark: Galio shields an al	Righteous Gust: Galio claps h	Idol of Durand: Galio assumes	Mana	34
30	Gangplank	Trial by Fire: Every few seconds, Gangp	Parrley: Shoots target, plun	Remove Scurvy: Eats citrus t	Powder Keg: Gangplank uncc	Cannon Barrage: Gangplank slg	Mana	35
31	Garen	Perseverance: If Garen has not recently	Decisive Strike: Garen gains i	Courage: Garen passively in	Judgment: Garen performs a	Demacian Justice: The enemy	N/A	36
32	Gnar	Rage Gene: While in combat Gnar gene	Boomerang Throw/Boulder T	Hyper/Wallop: Gnar's attack	Hop/Crunch: Gnar leaps to a	GNAR!: Mega Gnar throws eve	N/A	37
33	Graves	Happy Hour: On ability up, Graves take	Barrel Roll: Graves rolls his	Drunken Rage: Graves awa	Redeem: Graves charges to	Explosive Cork: Graves hurls hi	Mana	38

# Table 3

ID	ItemName	Cost	Type	attackDama	abilityDama	armor	magicResist	abilityHaste	Health	Mana	attackSpeed	CritRate	Mov
118	Abyssal Mask	2700	Legendary Item	0	0	0	35	10	450	0	0	0	0
79	Aegis of the Legion	1400	Epic Items	0	0	30	30	10	0	0	0	0	0
80	Aether Wisp	850	Epic Items	0	30	0	0	0	0	0	0	0	0
65	Amplifying Tomes	435	Basic Items	0	20	0	0	0	0	0	0	0	0
119	Anathema's Chains	2500	Legendary Item	0	0	0	0	20	650	0	0	0	0
120	Archangel's Staff	2600	Legendary Item	0	60	0	0	0	200	500	0	0	0
121	Ardent Censor	2300	Legendary Item	0	60	0	0	0	0	0	0	0	0
122	Axiom Arc	3000	Legendary Item	55	0	0	0	25	0	0	0	0	0
66	B.F. Sword	1300	Basic Items	45	0	0	0	0	0	0	0	0	0
81	Bami's Cinder	1000	Epic Items	0	0	0	0	0	300	0	0	0	0
82	Bangleglass Mirror	950	Epic Items	0	20	0	0	10	0	0	0	0	0
123	Banshee's Veil	2600	Legendary Item	0	80	0	45	10	0	0	0	0	0
58	Berserker's Greaves	1100	Boots	0	0	0	0	0	0	0	35	0	0
124	Black Cleaver	3100	Legendary Item	45	0	0	10	30	350	0	0	0	0
125	Blade of The Ruined King	3300	Legendary Item	40	0	0	0	0	0	0	25	0	0
67	Blasting Wand	850	Basic Items	0	40	0	0	0	0	0	0	0	0
83	Blighting Jewel	1250	Epic Items	0	25	0	0	0	0	0	0	0	0
126	Bloodthirster	3400	Legendary Item	55	0	0	0	0	0	0	0	20	0
57	Boots	300	Boots	0	0	0	0	0	0	0	0	0	0
59	Boots of Swiftess	900	Boots	0	0	0	0	0	0	0	0	0	0
84	Bramble Vest	800	Epic Items	0	0	30	0	0	0	0	0	0	0
85	Caulfield's Warhammer	1100	Epic Items	25	0	0	0	10	0	0	0	0	0
86	Chain Vest	800	Epic Items	0	0	40	0	0	0	0	0	0	0
127	Chempunk Chainsword	2800	Legendary Item	55	0	0	0	25	250	0	0	0	0
128	Chemtech Putrifier	2300	Legendary Item	0	60	0	0	20	0	0	0	0	0
68	Cloak of Agility	600	Basic Items	0	0	0	0	0	0	0	0	15	0
69	Cloth Armor	300	Basic Items	0	0	15	0	0	0	0	0	0	0
129	Cosmic Drive	3000	Legendary Item	0	65	0	0	30	200	0	0	0	0
30	Crown of the Shattered Queen	2800	Mythic Items	0	70	0	0	20	250	600	0	0	0
87	Crystalline Bracer	800	Epic Items	0	0	0	0	0	200	0	0	0	0
45	Cull	450	Starter Items	7	0	0	0	0	0	0	0	0	0
70	Dagger	300	Basic Items	0	0	0	0	0	0	0	12	0	0
46	Dark Seal	250	Starter Items	0	15	0	0	0	40	0	0	0	0

Items

- itemName VARCHAR(45)
- cost INT
- type VARCHAR(45)
- itemDescription VARCHAR(45)
- attackDamage INT
- abilityPower INT
- armor INT
- magicResist INT
- abilityHaste INT
- ID INT

Indexes

## Table 4

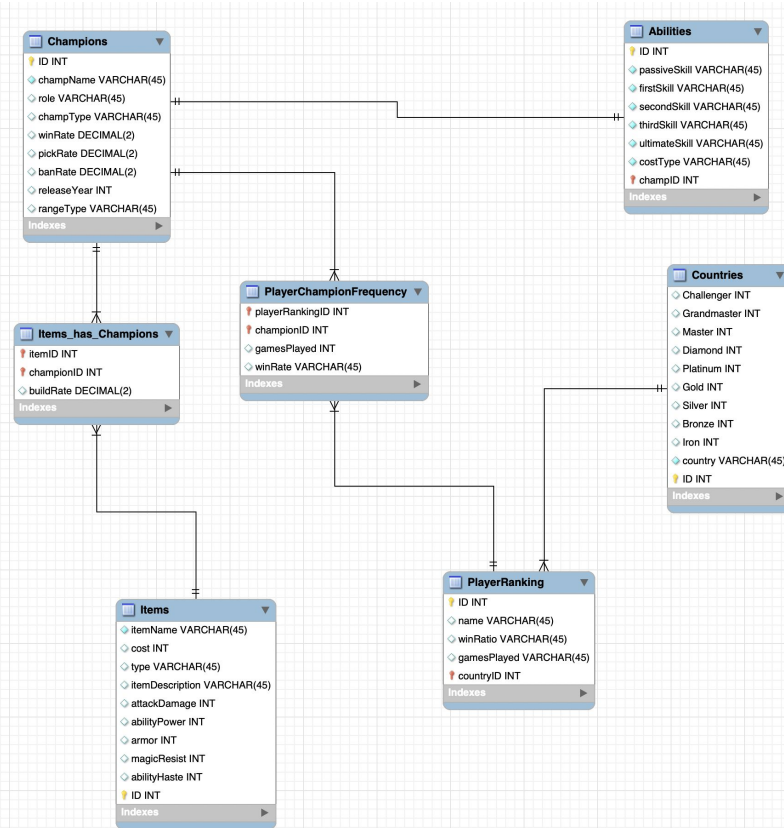
[illegible]

# Table 5

PlayerRanking	
🔑 ID INT	
📄 name VARCHAR(45)	
📄 winRatio VARCHAR(45)	
📄 gamesPlayed VARCHAR(45)	
📄 countryID INT	
Indexes	

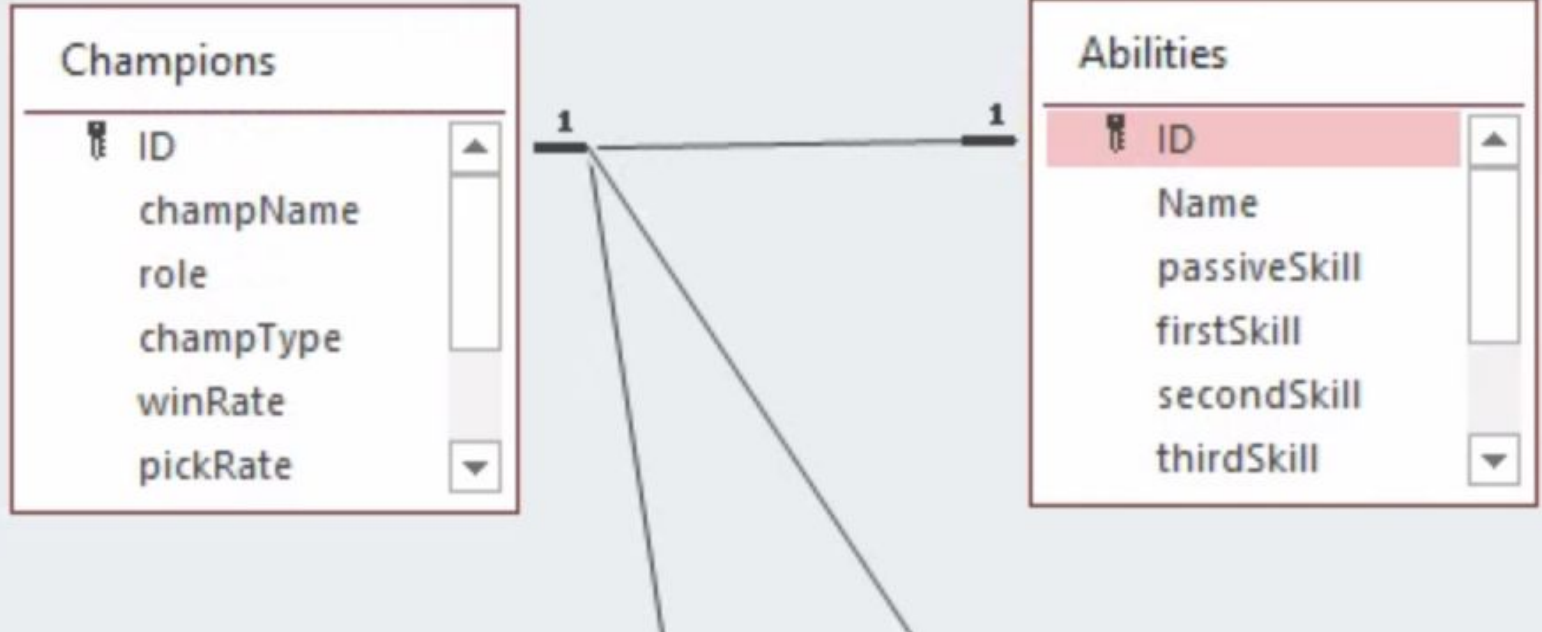
ID	playerName	gamesPlayed	winRate	leaguePoints	countryID
1	Breadwhatwhat	376	58.78%	1855	8
2	Tar2an	419	59.90%	1819	7
3	Charlie Heaton	467	58.03%	1765	3
4	Aim First	350	55.71%	1741	7
5	Di Morwinela	567	57.67%	1734	8
6	Curselol1	590	0.00%	1729	7
7	PwVx Hc9999na	418	60.29%	1726	1
8	Agurin	1219	54.31%	1713	2
9	MU APA	598	57.36%	1692	1
10	Wakanda f0rever	197	69.04%	1684	1
11	c2 meteos	1052	54.66%	1647	1
12	Windstyleee	2013	51.86%	1641	8
13	WX Arendel	621	56.68%	1628	1
14	Mountain Wolf	673	58.10%	1627	2
15	tttttttttt2703	265	64.15%	1611	7
16	1Fresco	641	55.69%	1601	8
17	냥냥이게임	272	64.71%	1584	5
18	G1DEON	735	55.51%	1581	5
19	SiddyWiddy123	474	58.44%	1559	1
20	King	732	55.46%	1529	7
21	VRX Disamis	489	58.08%	1525	7
22	ningyao	624	57.37%	1523	5
23	Morttheusz	853	54.51%	1522	7
24	winnie poohbear	1062	54.61%	1522	1
25	Topo	857	54.38%	1521	1
26	Razerk Activoo	728	57.01%	1519	2
27	담원기아 루시드	231	64.50%	1519	5
28	zeyzal7	231	59.38%	1507	1
29	PolskiKoz	605	57.19%	1505	3
30	Jett0	1143	53.89%	1504	5
31	thick b4rk	348	60.34%	1502	7
32	Snoopy	464	57.97%	1494	3
33	winter	571	55.47%	1493	1

# Relational Data Model

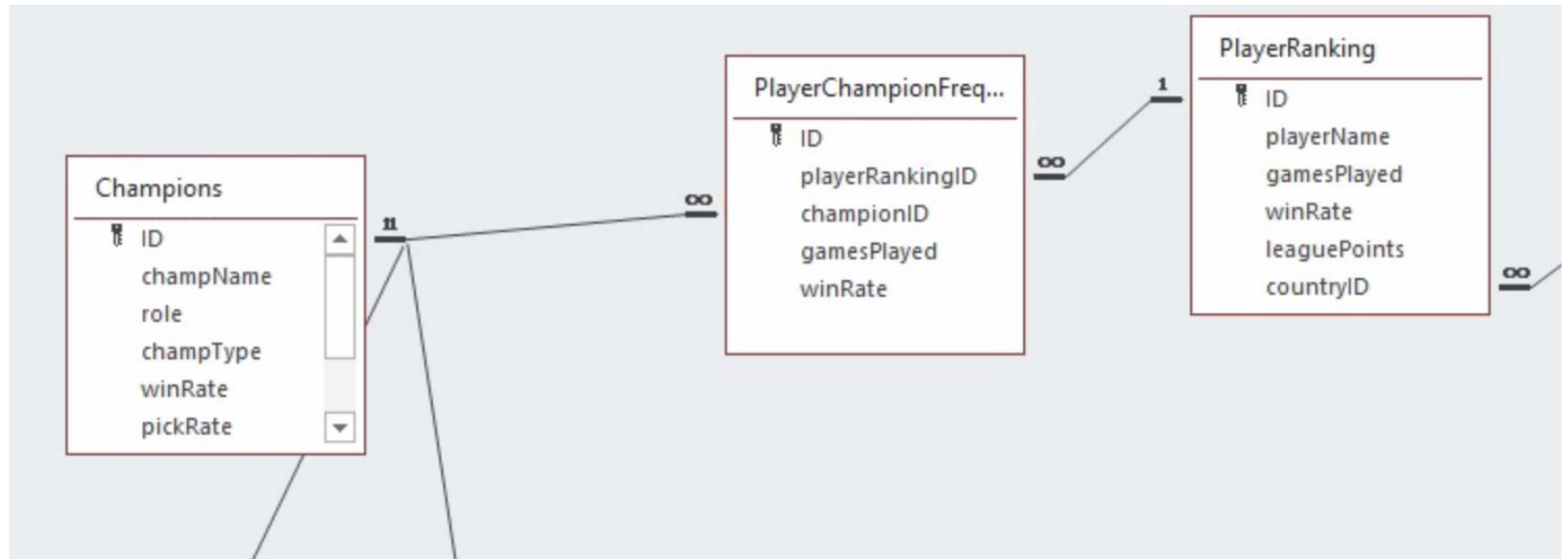




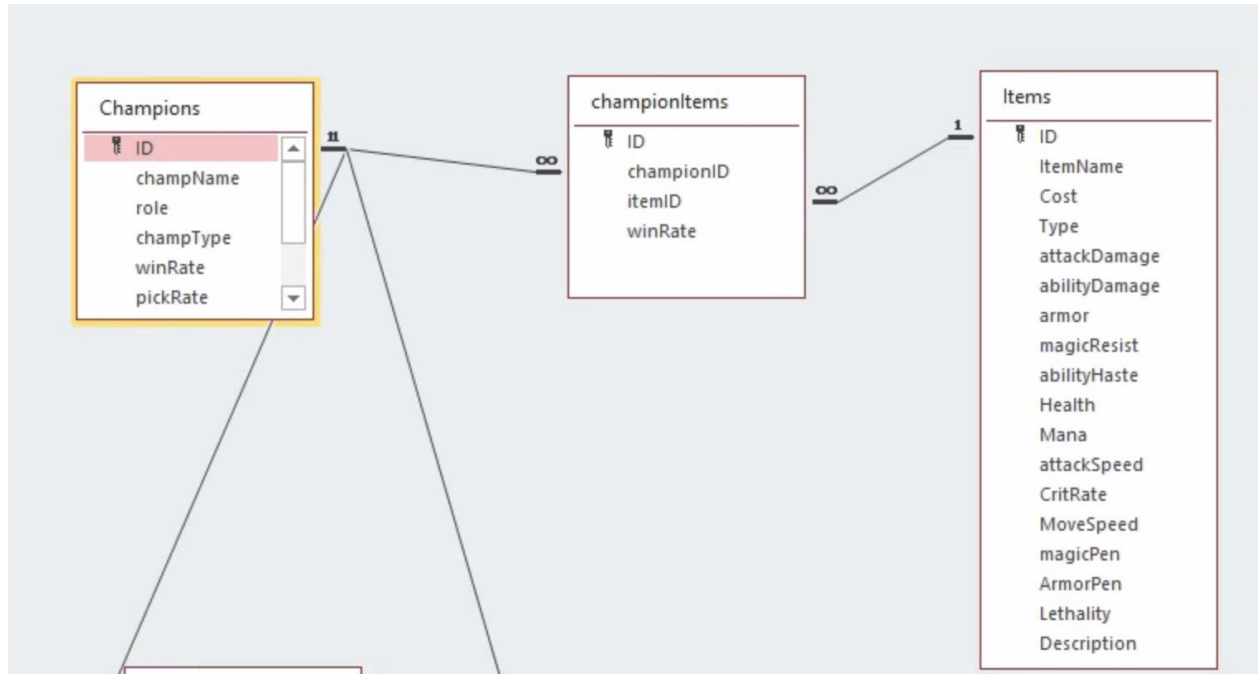
## Relationship 1



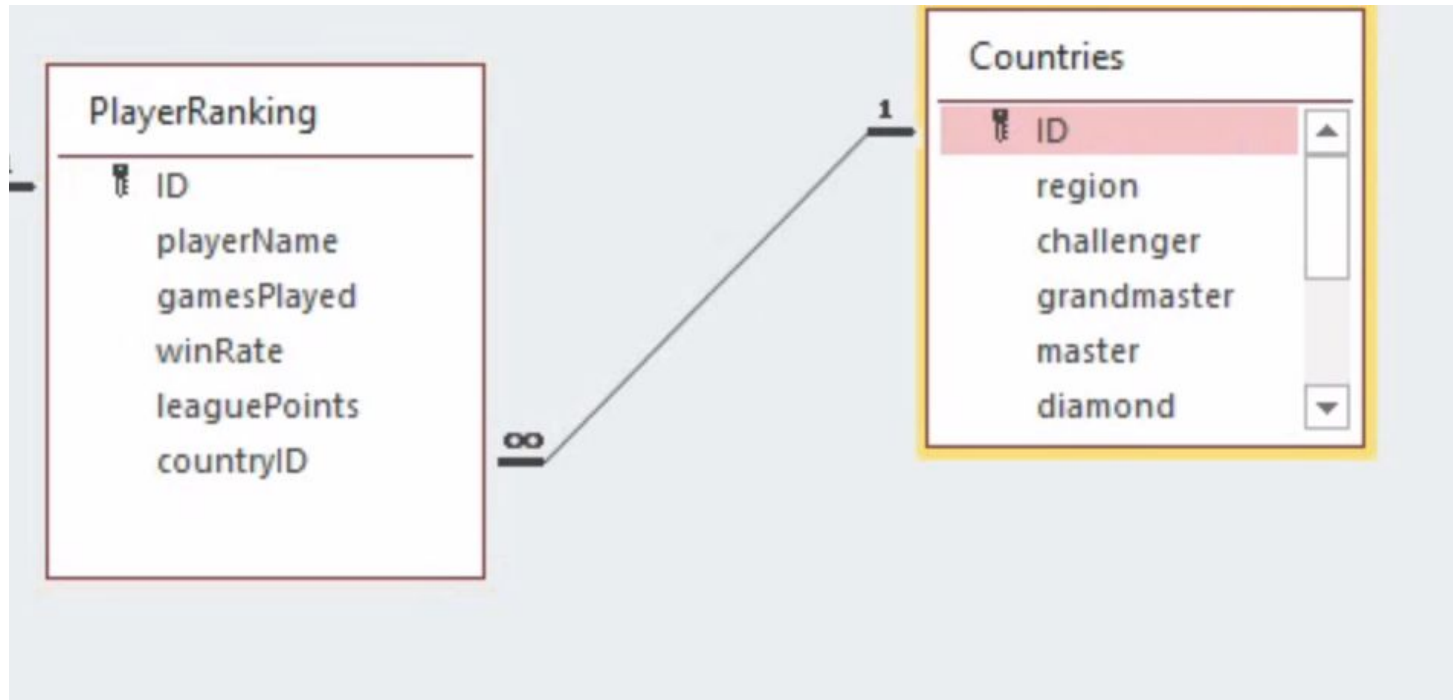
## Relationship 2



## Relationship 3



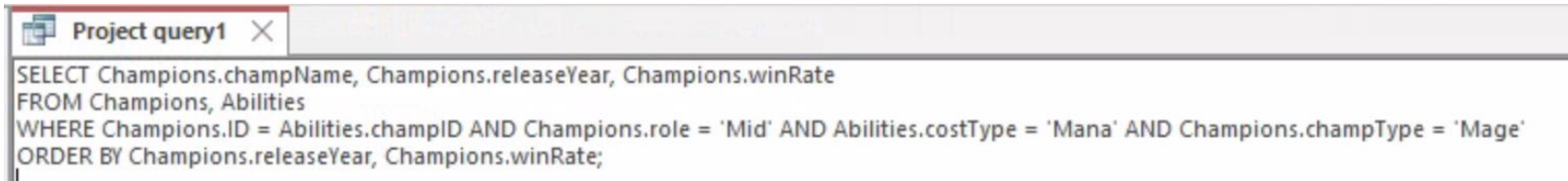
## Relationship 4





# Query 1

List all Champions whose role is Mid, type is Mage, energy type is Mana. Sort the Champions by highest win rate and release year. This query allows new users as well as current players to find champions that can fit their play style more. The query also gives insight about a champion's strengths by listing the win rate. The query can easily be adjusted to allow players to find champions of a particular role and type.



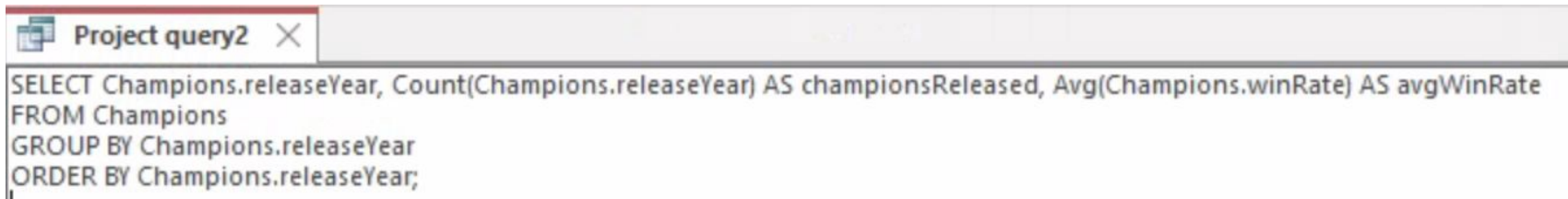
```
SELECT Champions.champName, Champions.releaseYear, Champions.winRate
FROM Champions, Abilities
WHERE Champions.ID = Abilities.champID AND Champions.role = 'Mid' AND Abilities.costType = 'Mana' AND Champions.champType = 'Mage'
ORDER BY Champions.releaseYear, Champions.winRate;
```





## Query 2

Find the number of champions released each year and the average win rate of the champions for each year. This query informs players the number of champions that's being released in a specific year. There are new champions released every year and with different abilities, strengths, and weaknesses. Knowing the win rate may help users gauge what play style is strong and which champions may be stronger to play. The query also shows the rate or average at which Riot Games is releasing more champions.



```
SELECT Champions.releaseYear, Count(Champions.releaseYear) AS championsReleased, Avg(Champions.winRate) AS avgWinRate
FROM Champions
GROUP BY Champions.releaseYear
ORDER BY Champions.releaseYear;
```



## Query 3

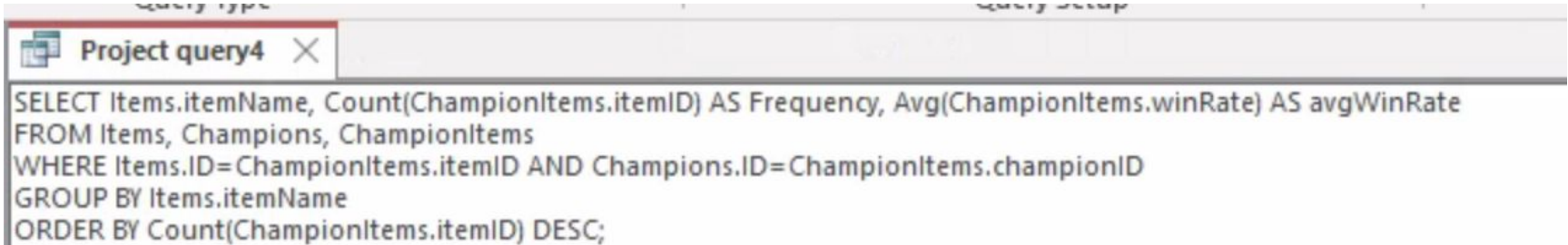
Find the country with the most highest ranked players, the average games played along with the average win rate per country. This query gives a good breakdown of each region's strengths and dedication to the game. Each region is different in terms of rank percentages, with some regions having more higher ranked players than others. The query can be used to predict or support which countries will perform better in international tournaments.



```
SELECT Countries.region, Count(PlayerRanking.countryID) AS numPlayers, Avg(PlayerRanking.gamesPlayed) AS numGames, Avg(PlayerRanking.winRate) AS winRate
FROM Countries, PlayerRanking
WHERE (((Countries.ID)=[PlayerRanking].[countryID]))
GROUP BY Countries.region;
```

## Query 4

Find the frequency at which items are built by champions and list the average win rate per item. This query allows the player base to know which items are built frequently and thus correlating to which items are stronger in the current season. The stats of some items may change with a new patch. Knowing the win rate of each item and if more champions are building a particular item may help players gauge what to build or how to counter a particular champion.



```
SELECT Items.itemName, Count(ChampionItems.itemID) AS Frequency, Avg(ChampionItems.winRate) AS avgWinRate
FROM Items, Champions, ChampionItems
WHERE Items.ID=ChampionItems.itemID AND Champions.ID=ChampionItems.championID
GROUP BY Items.itemName
ORDER BY Count(ChampionItems.itemID) DESC;
```



## Query 5

List the most frequently played champion amongst top ranked players. This query allows the player base to know which champions are stronger in the current meta. This also shows which champions may have a higher skill requirement. The highest ranked players are all playing to win and know how to utilize each champion at their highest level. It may be challenging for the lower player base to play a champion at the same level.



```
SELECT Champions.champName, COUNT(PlayerChampionFrequency.championID) AS Frequency
FROM Champions, PlayerRanking, PlayerChampionFrequency
WHERE Champions.ID = PlayerChampionFrequency.championID AND PlayerRanking.ID = PlayerChampionFrequency.playerRankingID
GROUP BY Champions.champName
ORDER BY Champions.champName;
```

# Form 1

Champions

ID

1

champName

Aatrox

role

Top

champType

Fighter

releaseYear

2013

rangeType

Melee

ChampionItems

itemID	winRate
38	57.8%
131	57.8%
63	57.8%
124	60.9%
12	61.7%
15	61.9%
*	0
	0.0%

Record: 1 of 6

Champions

ChampionItems Subform

itemID

38

winRate

57.8%



## Form 2

Countries X

Countries

ID

region

PlayerRanking

playerName	gamesPlayed	winRate
PwVx Hc999na	418	60.29%
MU APA	598	57.36%
Wakanda f0rever	197	69.04%
c2 meteos	1052	54.66%
WX Arendel	621	56.68%
SiddyWiddy123	474	58.44%
winnie poohbear	1062	54.61%
Topo	857	54.38%
zeyzal7	231	59.38%
winstxn	521	55.47%
Fishlord	1251	53.16%
Wx Mjm978244659	392	56.63%

Record: 1 of 16 No Filter Search

Countries X PlayerRanking Subform X

playerName

gamesPlayed

winRate

leaguePoints

# Report

hampions

## Champions

ID	champName	role	champType	winRate	pickRate	banRate	releaseYear	rangeType
1	Aatrox	Top	Fighter	49.63%	9.95%	26.15%	2013	Melee
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4	Akshan	Mid	Marksman	50.74%	2.02%	2.42%	2021	Ranged
5	Alistar	Support	Tank	49.54%	2.75%	0.67%	2009	Melee
6	Amumu	Jungler	Tank	52.43%	4.38%	5.01%	2009	Melee
7	Anivia	Mid	Mage	51.12%	2.13%	1.43%	2009	Ranged
8	Annie	Mid	Mage	49.35%	1.30%	0.37%	2009	Ranged
9	Aphelios	Bot	Marksman	44.88%	4.92%	0.96%	2019	Ranged
10	Ashe	Bot	Marksman	49.95%	9.02%	2.19%	2009	Ranged
11	Aurelion Sol	Mid	Mage	48.90%	0.39%	0.15%	2016	Ranged
12	Azir	Mid	Mage	44.48%	3.13%	0.72%	2014	Ranged
13	Bard	Support	Support	49.41%	1.86%	0.27%	2015	Ranged
14	Bel'Veth	Jungler	Fighter	51.61%	6.65%	24.47%	2022	Melee
15	Blitzcrank	Support	Tank	51.44%	9.26%	32.82%	2009	Melee
16	Brand	Mid	Mage	50.39%	1.05%	0.95%	2011	Ranged



# Group Members

Tables + Relationships: Both

Queries: Both

Forms: Both

Report: Both

RDM: Both