

# CPSC 304 Project Cover Page

Milestone #: 4

Date: August 6, 2025

Group Number: 40

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By typing our names and student numbers in the above table, we certify that the work in the attached assignment was performed solely by those whose names and student IDs are included above. (In the case of Project Milestone 0, the main purpose of this page is for you to let us know your e-mail address, and then let us assign you to a TA for your project supervisor.)

In addition, we indicate that we are fully aware of the rules and consequences of plagiarism, as set forth by the Department of Computer Science and the University of British Columbia

## Project Description

Our project named 'LOLData' is a hub of data to tend to the needs of users and developers of the game League of Legends. The database will mainly consist of in-game data pertaining to matches played by users tracking performance based measures. The database will allow the inference of optimal playstyles and skewed trends. This data will be found useful by players as a guide to making 'data-driven' decisions. As well, developers will find use in the data to ensure a 'fair' game experience among the entire player base.

## Schema Changes

Nothing has changed **structurally** from the schema provided in Milestone 2 (after BCNF changes). We found that all functional dependencies and information in a relationship were able to be properly represented through our composed schema. However, some naming conventions and constraints were altered as given below.

### Changes in Schema

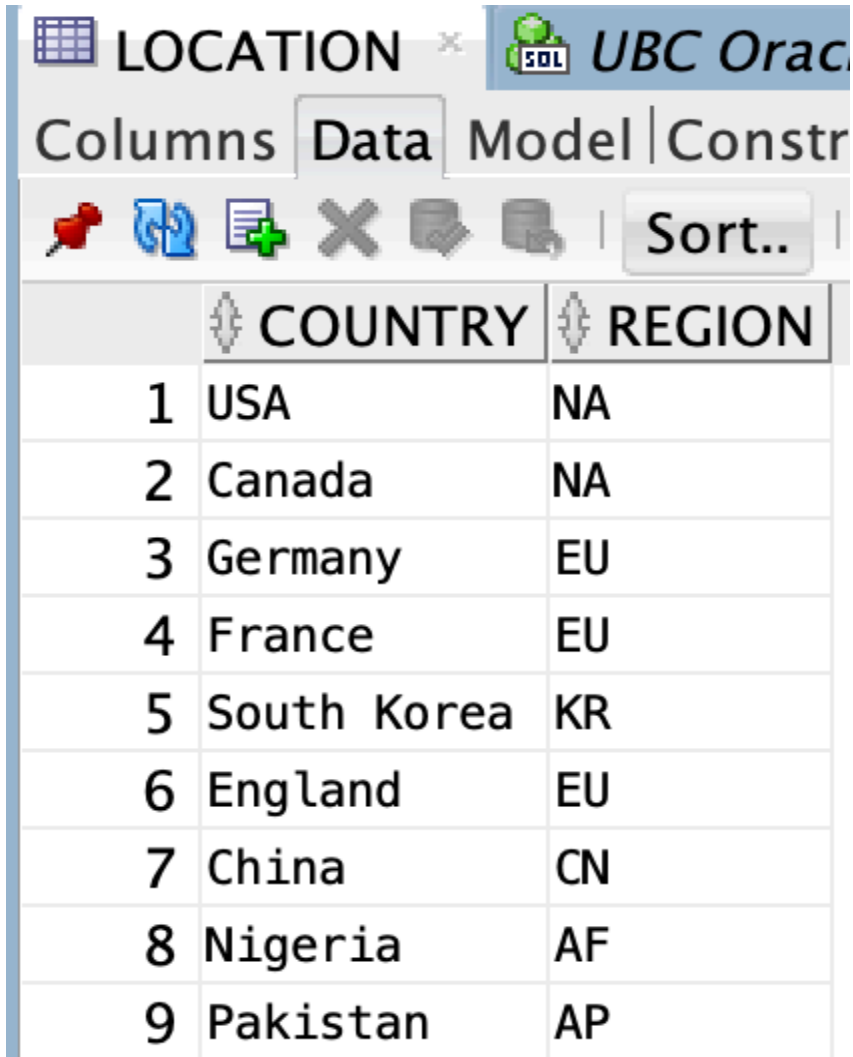
- Changed attribute name in BannedChampion from 'champ' to 'cname' to match naming convention throughout the document
- Changed attribute name in PlayedIn from 'pName' to 'uName' just for style
- Changed attribute name in PlayedIn from 'rPrimary' to 'rPrincipal' as 'primary' is a reserved word in SQL and we wanted to avoid ambiguity
- Added UNIQUE constraint to email as a payers should not have duplicate emails for multiple accounts

## Copy of Schema

- Location(country, region)
- Champion(championID, class, race)
- SkinCollection(collectionName, colour, cost)
- RuneFamily(principal, statBonus)
- Item(itemID, bonus)
- Match(matchID, winningTeam, gameMode)
- SummonerSpell(ssID, cooldown)
- GamePerformance(kills, deaths, assists, performance)
- Player(playerID, **country**, dateCreated, email)
- ChampionHasSkin(**cName**, skinID, **collectionName**)
- Rune(**principal**, secondary)
- ItemInfo(bonus, cost, numberOfUses, **buildsInto**)
- BannedChampion(**matchID**, **cName**)
- AffectedPatch(**cName**, patchID, description, patchType)
- PlayerPlaysChampion(**pName**, **cName**, role)
- PlayerBuildsItem(**matchID**, **pName**, item)
- PlayedIn(**matchID**, uName, **cName**, sName\_F, sName\_D, rPrincipal, rSecondary, role, team, **kills**, **assists**, **deaths**)

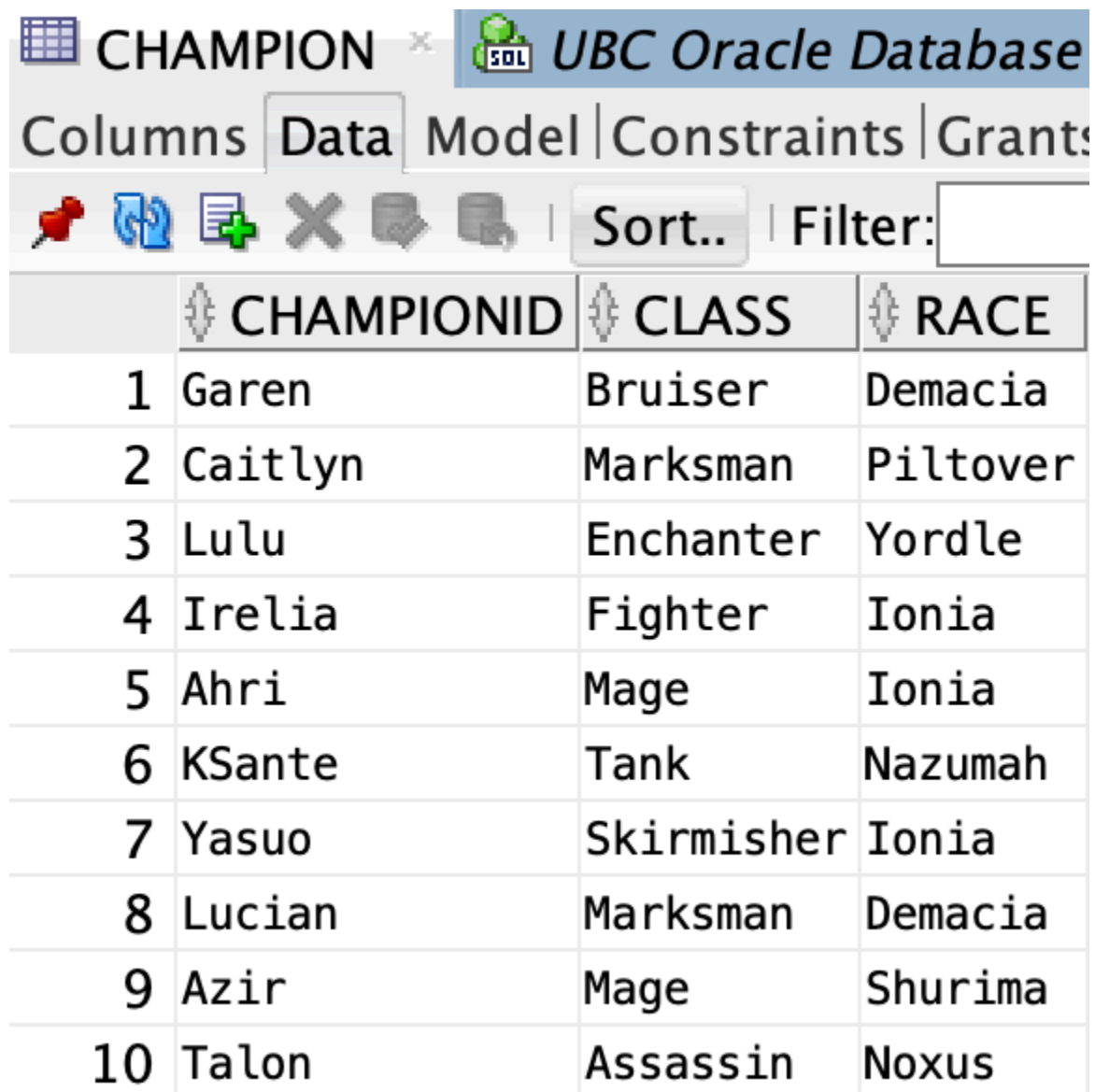
### Loaded Tables

- Location(country, region)



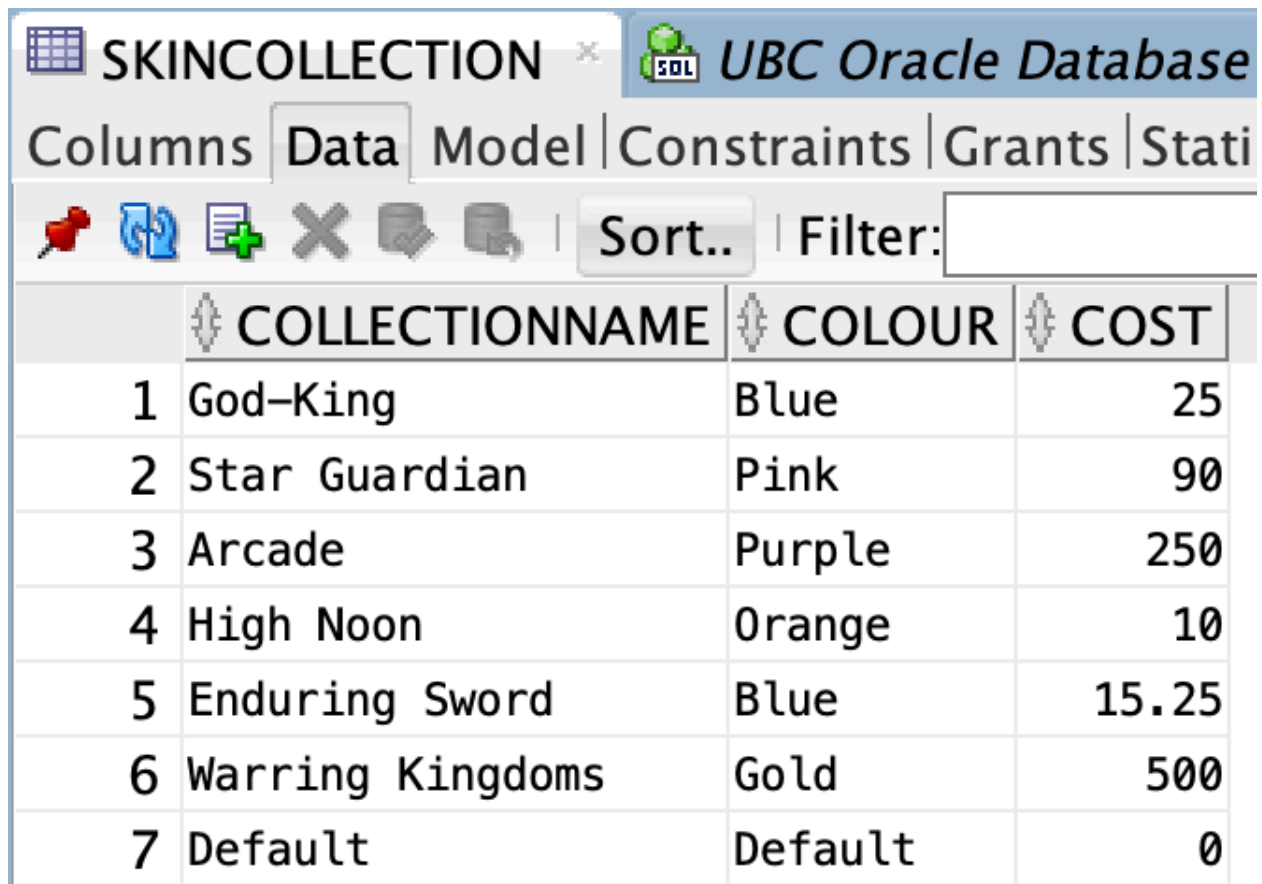
	COUNTRY	REGION
1	USA	NA
2	Canada	NA
3	Germany	EU
4	France	EU
5	South Korea	KR
6	England	EU
7	China	CN
8	Nigeria	AF
9	Pakistan	AP

- Champion(championID, class, race)



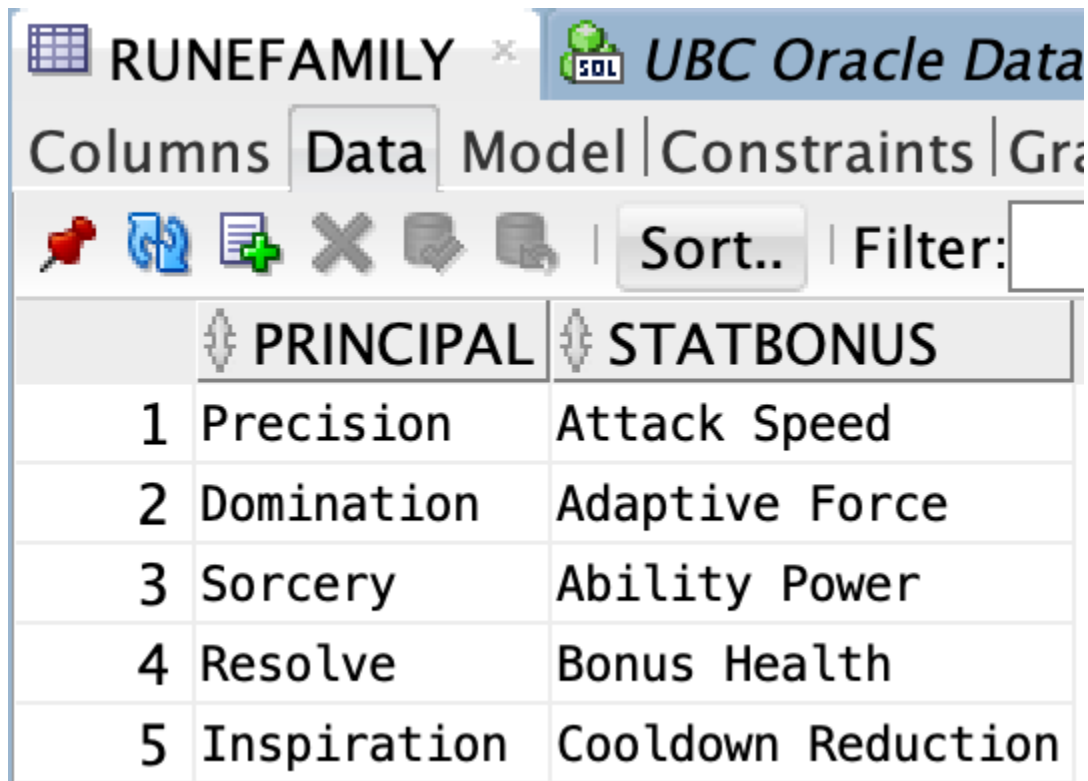
	CHAMPIONID	CLASS	RACE
1	Garen	Bruiser	Demacia
2	Caitlyn	Marksman	Piltover
3	Lulu	Enchanter	Yordle
4	Irelia	Fighter	Ionia
5	Ahri	Mage	Ionia
6	KSante	Tank	Nazumah
7	Yasuo	Skirmisher	Ionia
8	Lucian	Marksman	Demacia
9	Azir	Mage	Shurima
10	Talon	Assassin	Noxus

- SkinCollection(collectionName, colour, cost)



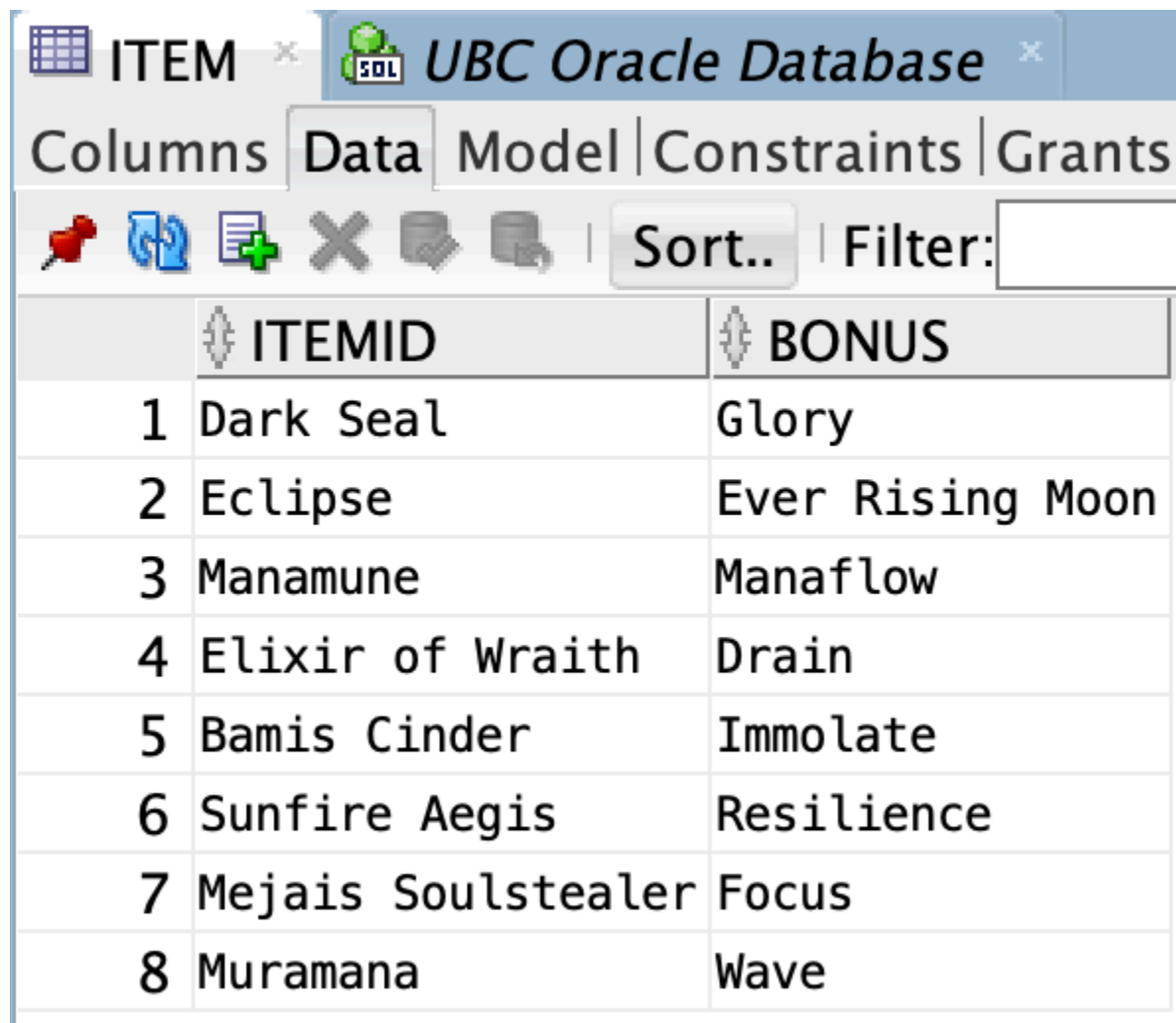
	COLLECTIONNAME	COLOUR	COST
1	God-King	Blue	25
2	Star Guardian	Pink	90
3	Arcade	Purple	250
4	High Noon	Orange	10
5	Enduring Sword	Blue	15.25
6	Warring Kingdoms	Gold	500
7	Default	Default	0

- RuneFamily(principal, statBonus)



	PRINCIPAL	STATBONUS
1	Precision	Attack Speed
2	Domination	Adaptive Force
3	Sorcery	Ability Power
4	Resolve	Bonus Health
5	Inspiration	Cooldown Reduction

- Item(itemID, bonus)

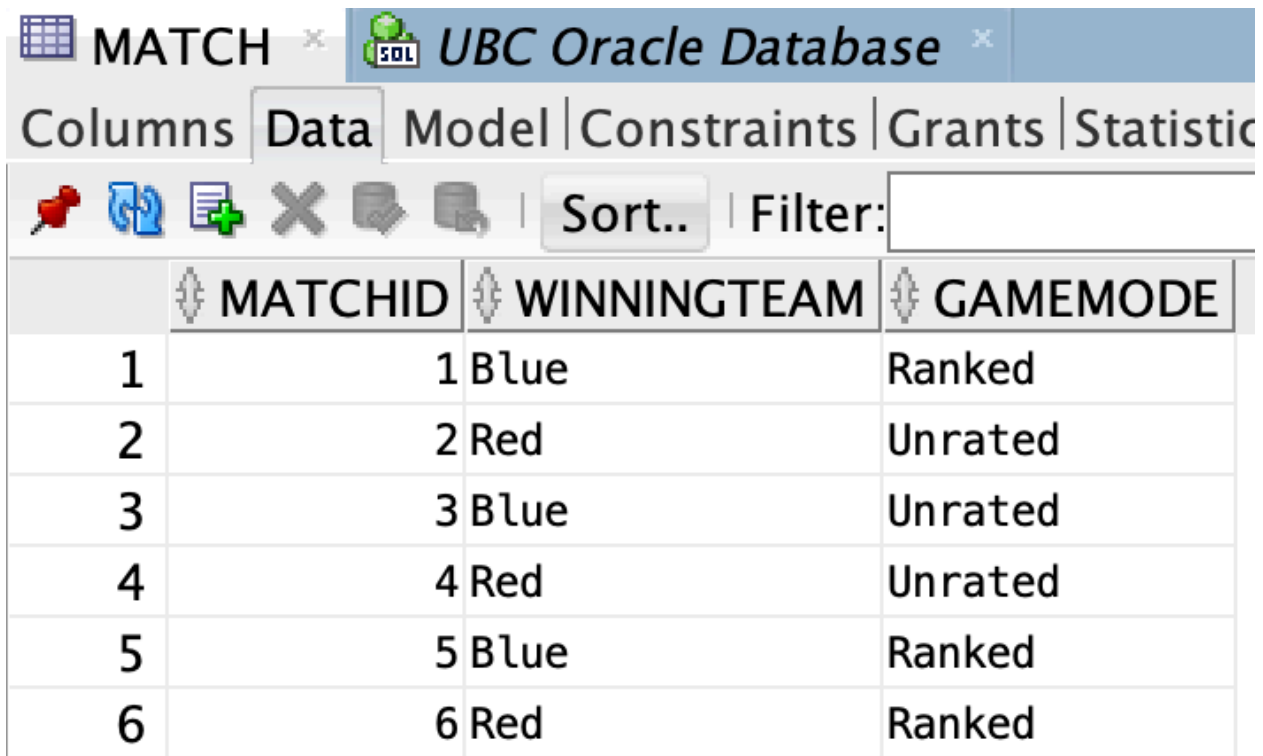


The screenshot shows a database application window titled 'UBC Oracle Database'. The 'Data' tab is selected, displaying the 'ITEM' table. The table has two columns: 'ITEMID' and 'BONUS'. The data is as follows:

	ITEMID	BONUS
1	Dark Seal	Glory
2	Eclipse	Ever Rising Moon
3	Manamune	Manaflow
4	Elixir of Wraith	Drain
5	Bamis Cinder	Immolate
6	Sunfire Aegis	Resilience
7	Mejais Soulstealer	Focus
8	Muramana	Wave



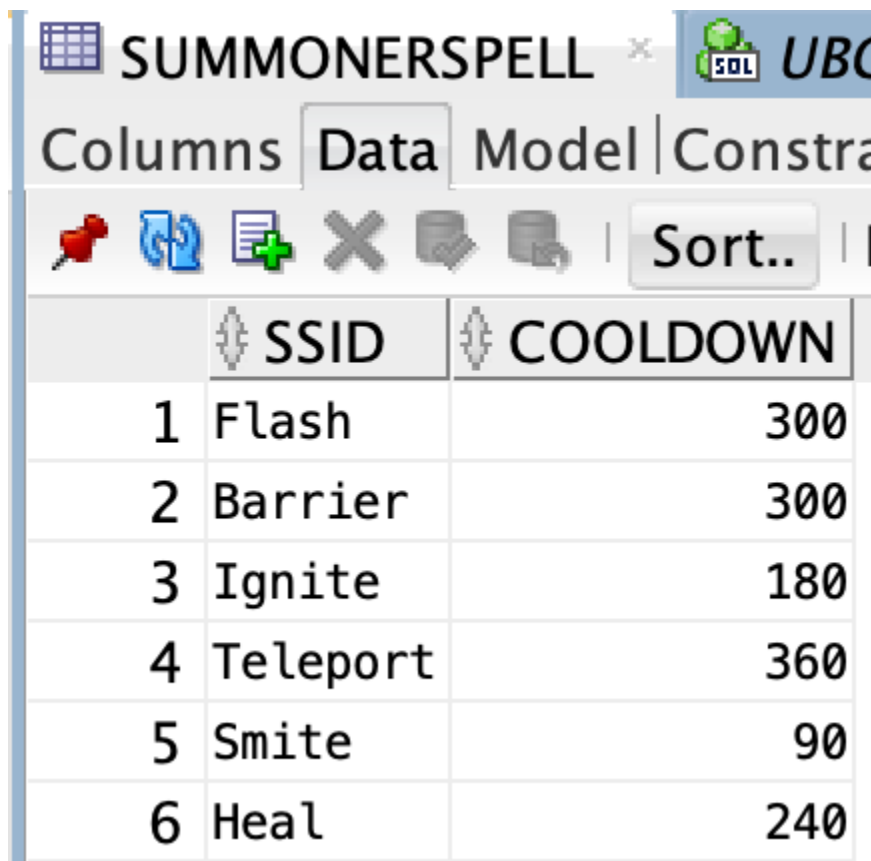
- Match(matchID, winningTeam, gameMode)



The screenshot shows a database application window with the title 'MATCH' and 'UBC Oracle Database'. The 'Data' tab is selected, displaying a table with three columns: MATCHID, WINNINGTEAM, and GAMEMODE. The table contains six rows of data. The interface includes a toolbar with icons for various database operations and a 'Sort..' button.

	MATCHID	WINNINGTEAM	GAMEMODE
1	1	Blue	Ranked
2	2	Red	Unrated
3	3	Blue	Unrated
4	4	Red	Unrated
5	5	Blue	Ranked
6	6	Red	Ranked

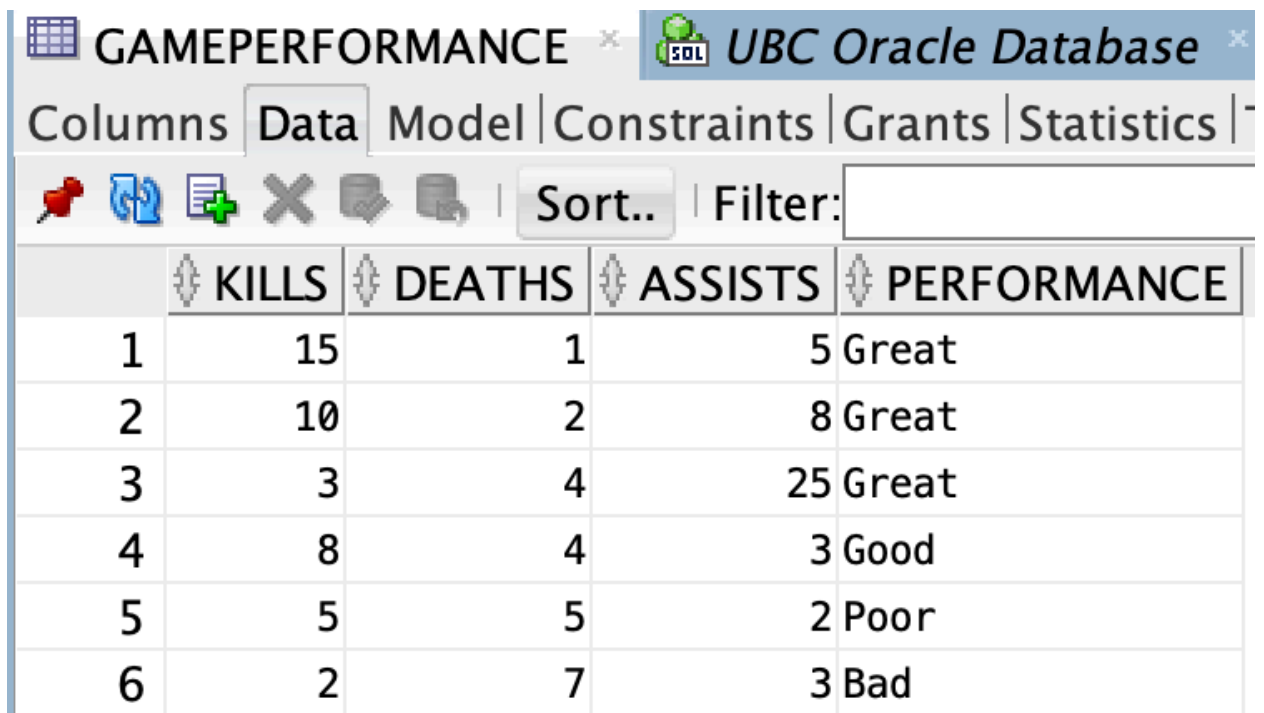
- SummonerSpell(ssID, cooldown)



The screenshot shows a database application window titled "SUMMONERSPELL". The window has tabs for "Columns", "Data", "Model", and "Constraints". The "Data" tab is active, displaying a table with two columns: "SSID" and "COOLDOWN". The table contains six rows of data, numbered 1 through 6. The spells listed are Flash, Barrier, Ignite, Teleport, Smite, and Heal, with their respective cooldown times in seconds.

	SSID	COOLDOWN
1	Flash	300
2	Barrier	300
3	Ignite	180
4	Teleport	360
5	Smite	90
6	Heal	240

- GamePerformance(kills, deaths, assists, performance)



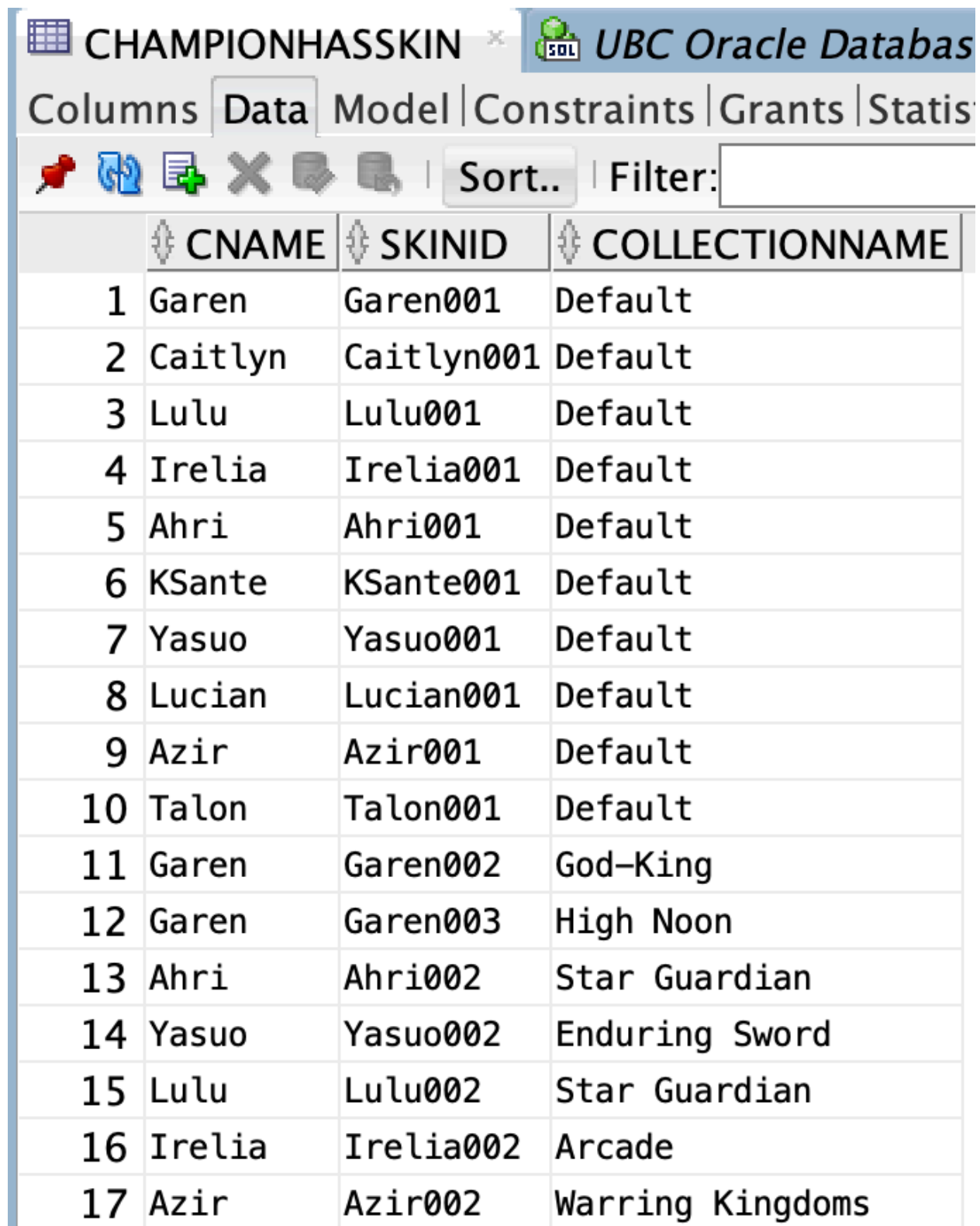
The screenshot shows a database application window titled "GAMEPERFORMANCE" and "UBC Oracle Database". The window has tabs for "Columns", "Data", "Model", "Constraints", "Grants", and "Statistics". The "Data" tab is selected, displaying a table with 6 rows and 4 columns: KILLS, DEATHS, ASSISTS, and PERFORMANCE. The table data is as follows:

	KILLS	DEATHS	ASSISTS	PERFORMANCE
1	15	1	5	Great
2	10	2	8	Great
3	3	4	25	Great
4	8	4	3	Good
5	5	5	2	Poor
6	2	7	3	Bad

- Player(playerID, country, dateCreated, email)

PLAYER UBC Oracle Database				
Columns Data Model Constraints Grants Statistics Triggers Flashback				
Sort.. Filter:				
	PLAYERID	COUNTRY	DATECREATED	EMAIL
1	topLaneLegend	Canada	14-12-01	ses_ela@gmail.com
2	DoubleLift	Pakistan	15-06-25	pengyilang@hotmail.com
3	hideonbush	South Korea	13-01-21	midgap@gmail.com
4	mid0rFeed	China	16-04-20	johnsmith@hotmail.com
5	G2Caps	France	14-02-15	rasmuswinther@yahoo.com
6	Buasffs	Germany	15-03-19	simonhof@gmail.com
7	theshy	Germany	17-02-20	seunglok@hotmail.com
8	rekkless	Nigeria	18-09-18	carlmartin@gmail.com
9	GenChovy	South Korea	20-05-16	jihoon@hotmail.com
10	doinb	England	23-02-18	supercarry@hotmail.com

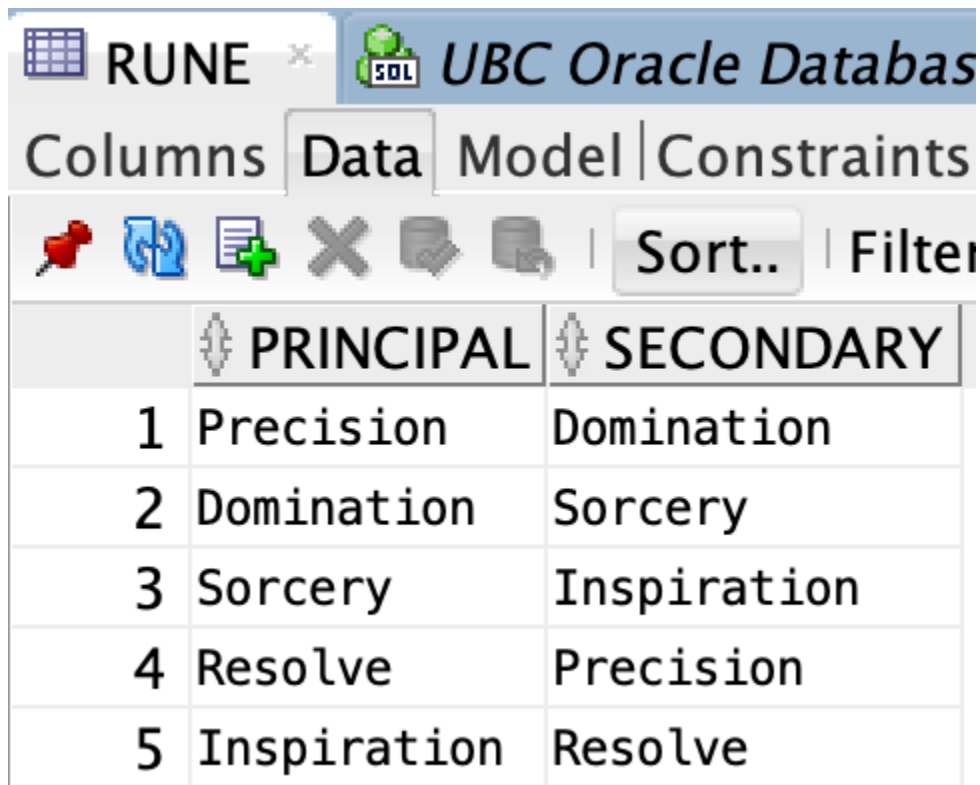
- ChampionHasSkin(cName, skinID, collectionName)



The screenshot shows the SQL Developer interface with the 'CHAMPIONHASSKIN' table selected. The 'Data' tab is active, displaying a list of 17 rows. The table has three columns: CNAME, SKINID, and COLLECTIONNAME. The data is as follows:

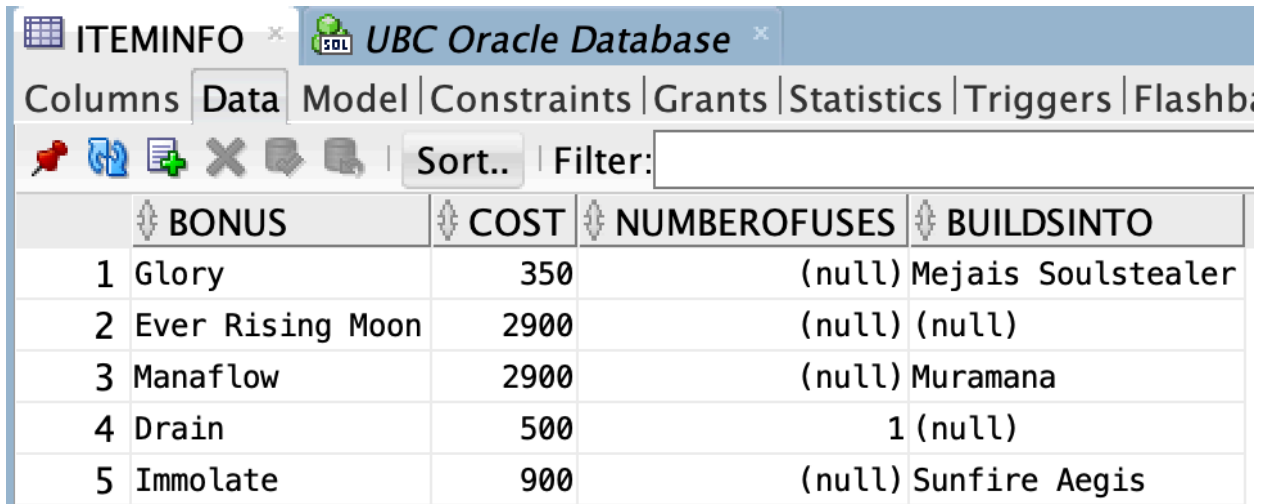
	CNAME	SKINID	COLLECTIONNAME
1	Garen	Garen001	Default
2	Caitlyn	Caitlyn001	Default
3	Lulu	Lulu001	Default
4	Irelia	Irelia001	Default
5	Ahri	Ahri001	Default
6	KSante	KSante001	Default
7	Yasuo	Yasuo001	Default
8	Lucian	Lucian001	Default
9	Azir	Azir001	Default
10	Talon	Talon001	Default
11	Garen	Garen002	God-King
12	Garen	Garen003	High Noon
13	Ahri	Ahri002	Star Guardian
14	Yasuo	Yasuo002	Enduring Sword
15	Lulu	Lulu002	Star Guardian
16	Irelia	Irelia002	Arcade
17	Azir	Azir002	Warring Kingdoms

- Rune(principal, secondary)



	PRINCIPAL	SECONDARY
1	Precision	Domination
2	Domination	Sorcery
3	Sorcery	Inspiration
4	Resolve	Precision
5	Inspiration	Resolve

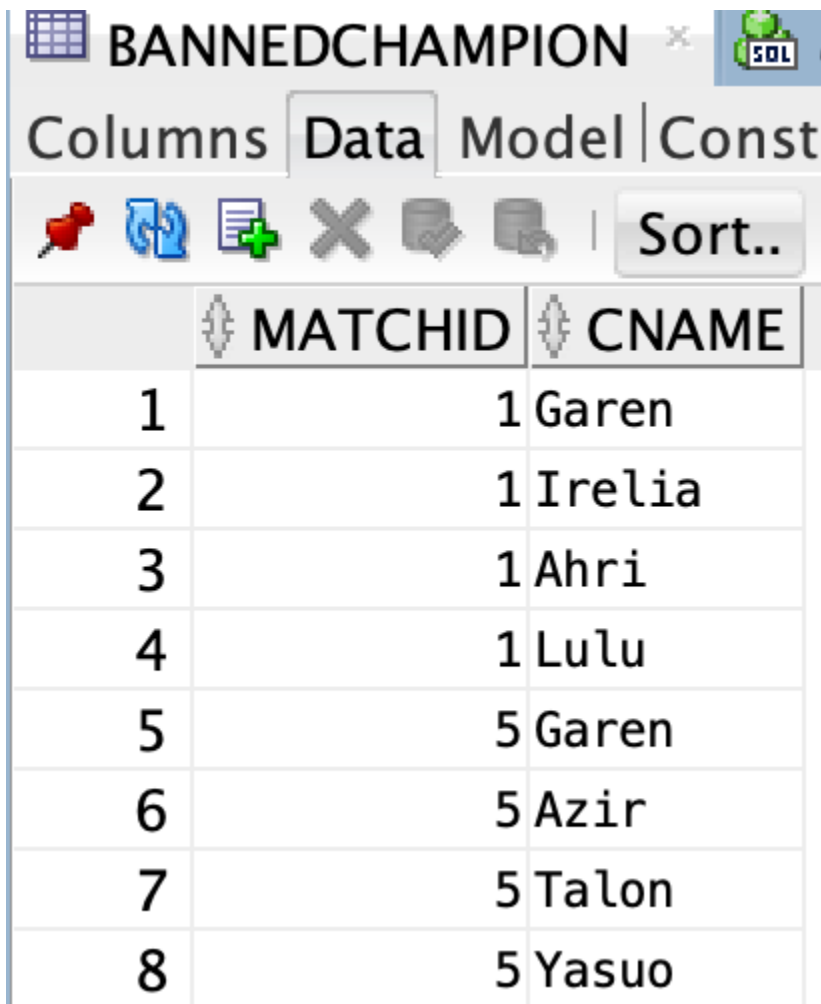
- ItemInfo(bonus, cost, numberOfUses, **buildsInto**)



The screenshot shows the SQL Developer interface for the UBC Oracle Database. The 'ITEMINFO' table is selected, and the 'Data' tab is active. The table structure and data are as follows:

	BONUS	COST	NUMBEROFUSES	BUILDSINTO
1	Glory	350	(null)	Mejais Soulstealer
2	Ever Rising Moon	2900	(null)	(null)
3	Manaflow	2900	(null)	Muramana
4	Drain	500	1	(null)
5	Immolate	900	(null)	Sunfire Aegis

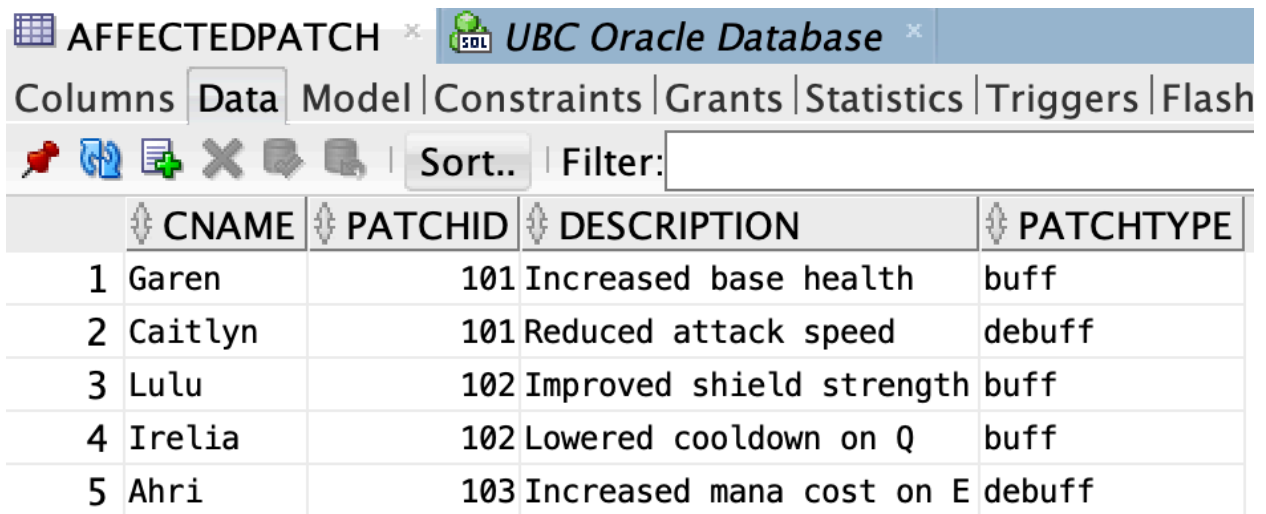
- BannedChampion(matchID, cName)



	MATCHID	CNAME
1	1	Garen
2	1	Irelia
3	1	Ahri
4	1	Lulu
5	5	Garen
6	5	Azir
7	5	Talon
8	5	Yasuo



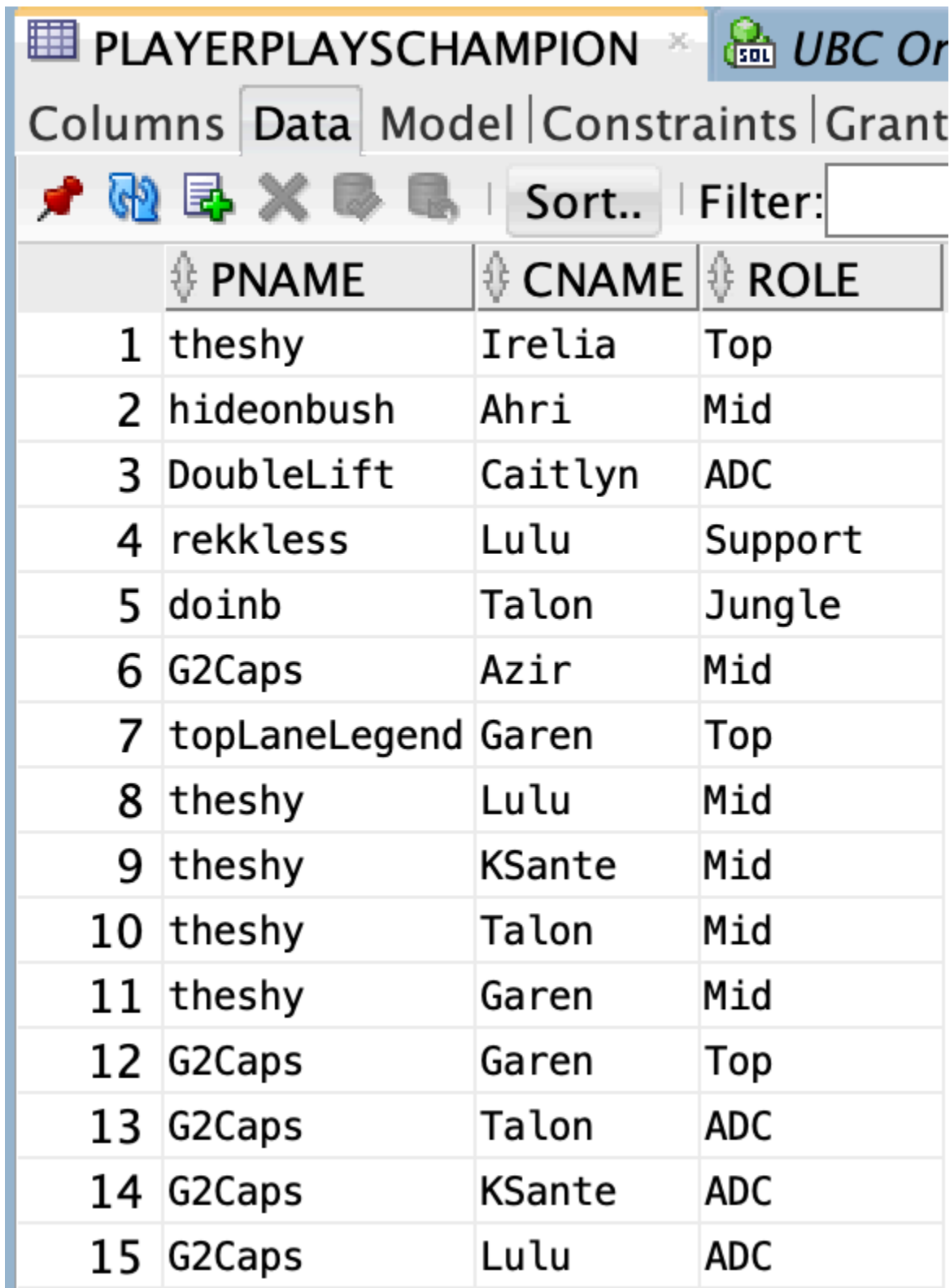
- AffectedPatch(**cName**, patchID, description, patchType)



The screenshot shows a database application window with the title 'AFFECTEDPATCH' and 'UBC Oracle Database'. The 'Data' tab is selected, displaying a table with the following columns: CNAME, PATCHID, DESCRIPTION, and PATCHTYPE. The table contains five rows of data, sorted by PATCHID. The interface includes a toolbar with icons for various database operations and a 'Sort..' button.

	CNAME	PATCHID	DESCRIPTION	PATCHTYPE
1	Garen	101	Increased base health	buff
2	Caitlyn	101	Reduced attack speed	debuff
3	Lulu	102	Improved shield strength	buff
4	Irelia	102	Lowered cooldown on Q	buff
5	Ahri	103	Increased mana cost on E	debuff

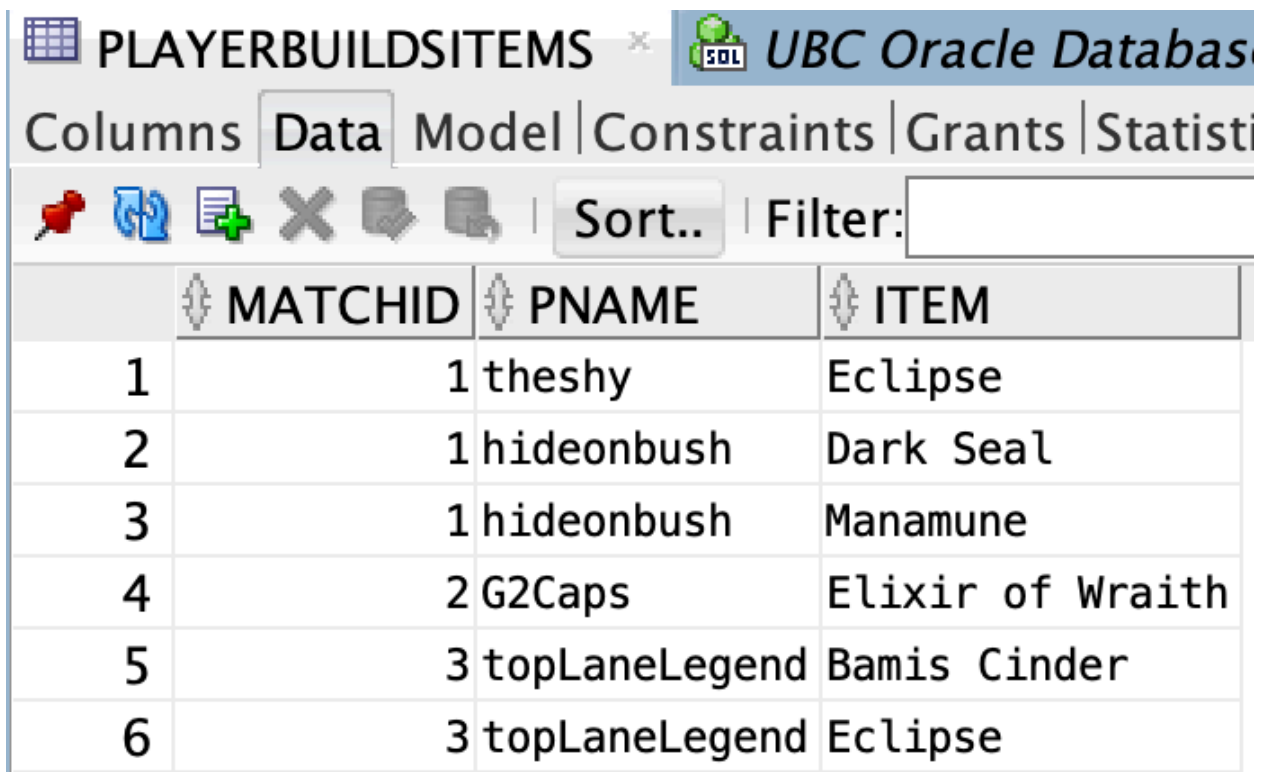
- PlayerPlaysChampion(pName, cName, role)



The screenshot shows a database application window titled "PLAYERPLAYSCHAMPION". The window has a tabbed interface with "Columns", "Data", "Model", "Constraints", and "Grant" tabs. The "Data" tab is active, displaying a table with 4 columns: PNAME, CNAME, and ROLE. The table contains 15 rows of data, numbered 1 to 15. The interface includes a toolbar with icons for adding, deleting, and refreshing data, as well as a "Sort.." button and a "Filter:" input field.

	PNAME	CNAME	ROLE
1	theshy	Irelia	Top
2	hideonbush	Ahri	Mid
3	DoubleLift	Caitlyn	ADC
4	rekkless	Lulu	Support
5	doinb	Talon	Jungle
6	G2Caps	Azir	Mid
7	topLaneLegend	Garen	Top
8	theshy	Lulu	Mid
9	theshy	KSante	Mid
10	theshy	Talon	Mid
11	theshy	Garen	Mid
12	G2Caps	Garen	Top
13	G2Caps	Talon	ADC
14	G2Caps	KSante	ADC
15	G2Caps	Lulu	ADC

- PlayerBuildsItem(matchID, pName, item)



The screenshot shows the SQL Developer interface with the 'PLAYERBUILDSITEMS' table selected. The 'Data' tab is active, displaying a list of 6 rows. The table has three columns: MATCHID, PNAME, and ITEM. The data is as follows:

	MATCHID	PNAME	ITEM
1	1	theshy	Eclipse
2	1	hideonbush	Dark Seal
3	1	hideonbush	Manamune
4	2	G2Caps	Elixir of Wraith
5	3	topLaneLegend	Bamis Cinder
6	3	topLaneLegend	Eclipse

- PlayedIn(matchID, uName, cName, sName\_F, sName\_D, rPrincipal, rSecondary, role, team, kills, assists, deaths)

UBC Oracle Database PLAYEDIN

Columns | Data | Model | Constraints | Grants | Statistics | Triggers | Flashback | Dependencies | Details | Partitions | Indexes | SQL

Sort: Filter: Actions...

	MATCHID	UNAME	CNAME	SNAME_F	SNAME_D	RPRINCIPAL	RSECONDARY	ROLE	TEAM	KILLS	ASSISTS	DEATHS
1	1	theshy	Irelia	Flash	Teleport	Precision	Domination	Top	Blue	10	8	2
2	1	hideonbush	Ahri	Flash	Ignite	Domination	Sorcery	Mid	Blue	15	5	1
3	1	DoubleLift	Caitlyn	Flash	Heal	Precision	Domination	ADC	Blue	3	25	4
4	1	rekkless	Lulu	Flash	Heal	Sorcery	Inspiration	Support	Blue	8	3	4
5	1	doinb	Talon	Flash	Smite	Domination	Sorcery	Jungle	Blue	5	2	5
6	2	G2Caps	Azir	Flash	Barrier	Sorcery	Inspiration	Mid	Red	2	3	7
7	3	theshy	Lulu	Flash	Ignite	Sorcery	Inspiration	Mid	Red	2	3	7
8	4	theshy	KSante	Flash	Barrier	Sorcery	Inspiration	Mid	Red	2	3	7
9	5	theshy	Talon	Ignite	Heal	Sorcery	Inspiration	Mid	Red	2	3	7
10	6	theshy	Garen	Flash	Smite	Sorcery	Inspiration	Mid	Red	2	3	7
11	3	G2Caps	Garen	Teleport	Ignite	Sorcery	Inspiration	Top	Blue	3	25	4
12	4	G2Caps	Talon	Flash	Barrier	Sorcery	Inspiration	ADC	Red	3	25	4
13	5	G2Caps	KSante	Ignite	Heal	Sorcery	Inspiration	ADC	Blue	3	25	4
14	6	G2Caps	Lulu	Flash	Smite	Sorcery	Inspiration	ADC	Red	3	25	4

## SQL Query Requirements

- INSERT OPERATION
  - appService.js - line 163-175, 211-223
- DELETE OPERATION
  - appService.js - line 341-352
- UPDATE OPERATION
  - appService.js - line 177-209, 225-237
- SELECTION OPERATION
  - appService.js - line 372-399
- PROJECTION OPERATION
  - appService.js - line 85-161
- JOIN OPERATION
  - appService.js - line 327-339
- AGGREGATION BY GROUP
  - appService.js - line 273-289
- AGGREGATION BY HAVING
  - appService.js - line 239-254
- NESTED AGGREGATION WITH GROUP
  - appService.js - line 291-309
- DIVISION OPERATION
  - appService.js - line 354-370

## Insert Operation

### Before Insertion

```
SQL> select * from player;
```

PLAYERID	COUNTRY	DATECREAT	EMAIL
topLaneLegend	Canada	01-DEC-14	ses_ela@gmail.com
DoubleLift	Pakistan	25-JUN-15	pengyilang@hotmail.com
hideonbush	South Korea	21-JAN-13	midgap@gmail.com
midOrFeed	China	20-APR-16	johnsmith@hotmail.com
G2Caps	France	15-FEB-14	rasmuswinther@yahoo.com
Buasffs	Germany	19-MAR-15	simonhof@gmail.com
theshy	Germany	20-FEB-17	seunglok@hotmail.com
rekkless	Nigeria	18-SEP-18	carlmartin@gmail.com
GenChovy	South Korea	16-MAY-20	jihoon@hotmail.com
doinb	England	18-FEB-23	supercarry@hotmail.com
newPlayer	South Korea	12-DEC-21	newEmail@hotmail.com

11 rows selected.

### Insert New Players

PlayerID:

Country:

Date Created:

Email:

Data inserted successfully!

### During Insertion

```
SQL> select * from player;
```

PLAYERID	COUNTRY	DATECREAT	EMAIL
topLaneLegend	Canada	01-DEC-14	ses_ela@gmail.com
DoubleLift	Pakistan	25-JUN-15	pengyilang@hotmail.com
hideonbush	South Korea	21-JAN-13	midgap@gmail.com
midOrFeed	China	20-APR-16	johnsmith@hotmail.com
G2Caps	France	15-FEB-14	rasmuswinther@yahoo.com
Buasffs	Germany	19-MAR-15	simonhof@gmail.com
theshy	Germany	20-FEB-17	seunglok@hotmail.com
rekkless	Nigeria	18-SEP-18	carlmartin@gmail.com
GenChovy	South Korea	16-MAY-20	jihoon@hotmail.com
doinb	England	18-FEB-23	supercarry@hotmail.com
newPlayer	South Korea	12-DEC-21	newEmail@hotmail.com

PLAYERID	COUNTRY	DATECREAT	EMAIL
newestPlayer	Nigeria	12-DEC-04	hey@gmail.com

12 rows selected.

## After Insertion

**Insert New Players**

PlayerID:

Country:

Date Created:

Email:

Error inserting data!

Attempting to insert into the player table where the country (foreign key) does not exist in the location table. Error expected.

```
SQL> select * from location;
```

COUNTRY	REG
-----	---
USA	NA
Canada	NA
Germany	EU
France	EU
South Korea	KR
England	EU
China	CN
Nigeria	AF
Pakistan	AP

```
9 rows selected.
```

```
SQL> select * from player  
2  where playerid = 'hunter';
```

```
no rows selected
```

hunter was not inserted into the player table, as expected.

## Delete Operation

### Before Delete

```
SQL> select * from summonerspell;
```

SSID	COOLDOWN
Flash	300
Barrier	300
Ignite	180
Teleport	360
Smite	90
Heal	240

6 rows selected.

### During Delete

#### Delete Summoner Spell

ItemID:

Delete

Data updated successfully!

### After Delete

```
SQL> select * from summonerspell;
```

SSID	COOLDOWN
Flash	300
Ignite	180
Teleport	360
Smite	90
Heal	240

PlayedIn table before barrier was deleted

```
SQL> select SNAME_F, SNAME_D from playedin;
```

SNAME_F	SNAME_D
Flash	Teleport
Flash	Ignite
Flash	Heal
Flash	Heal
Flash	Smite
Flash	Barrier
Flash	Ignite
Flash	Barrier
Ignite	Heal
Flash	Smite
Teleport	Ignite

SNAME_F	SNAME_D
Flash	Barrier
Ignite	Heal
Flash	Smite

After deleting barrier from summoner spell, the playedIn table who has the foreign key of SNAME\_F and SNAME\_D who each reference summonerSpell have turn to null

```
SQL> run
1* select SNAME_F, SNAME_D from playedin
```

SNAME_F	SNAME_D
Flash	Teleport
Flash	Ignite
Flash	Heal
Flash	Heal
Flash	Smite
Flash	
Flash	Ignite
Flash	
Ignite	Heal
Flash	Smite
Teleport	Ignite

SNAME_F	SNAME_D
Flash	
Ignite	Heal
Flash	Smite

```
14 rows selected.
```



## Update Operation

### Before Update

```
SQL> select * from player where playerID = 'theshy';
```

PLAYERID		
-----		
COUNTRY		DATECREAT
-----		-----
EMAIL		
-----		
theshy		
Germany		20-FEB-17
seunglok@hotmail.com		


### During Update

#### Update attributes for Players

The values are case sensitive and if you enter in the wrong case, the update statement will not do anything.

PlayerID:

New Email:

Date Created:  

Country

update

Data updated successfully!

### After Update

```
SQL> select * from player where playerID = 'theshy';
```

PLAYERID

COUNTRY

DATECREAT

EMAIL

theshy

Canada

26-AUG-25

newemail@gmail.com

## Selection (Filter) Operation

Show Table

ChampionID	Class	Race
Garen	Bruiser	Demacia
Caitlyn	Marksman	Piltover
Lulu	Enchanter	Yordle
Irelia	Fighter	Ionia
Ahri	Mage	Ionia
KSante	Tank	Nazumah
Yasuo	Skirmisher	Ionia
Lucian	Marksman	Demacia
Azir	Mage	Shurima
Talon	Assassin	Noxus

Champion Table

### Filter Champions (Select)

ChampionID:

Garen

Class:

Enter Class

Race:

Enter Race

Search

ChampionID	Class	Race
Garen	Bruiser	Demacia

Filtering on ChampionID

Filter Champions (Select)

ChampionID:

Enter ChampionID

Class:

Enter Class

Race:

Ionia

Search

ChampionID	Class	Race
Irelia	Fighter	Ionia
Ahri	Mage	Ionia
Yasuo	Skirmisher	Ionia

Filtering On Race Attribute

Filter Champions (Select)

ChampionID:

Enter ChampionID

Class:

Marksman

Race:

Enter Race

Search

ChampionID	Class	Race
Caitlyn	Marksman	Piltover
Lucian	Marksman	Demacia

Filtering on Class Attribute

Projection Operation

Played In

☒ MatchID

☒ PlayedID

☒ ChampionID

☒ Spell (F-key)

☒ Spell (D-key)

☒ Rune (Primary)

☒ SRune (Secondary)

☒ Role

☒ Team

☒ Kills

☒ Assists

☒ Deaths

Select Table

Choosing which attributes to project, resulting table is below

MatchID	PlayedID	ChampionID	Spell (F-key)	Spell (D-key)	Rune (Primary)	SRune (Secondary)	Role	Team	Kills	Assists	Deaths
1	theshy	Irelia	Flash	Teleport	Precision	Domination	Top	Blue	10	8	2
1	hideonbush	Ahri	Flash	Ignite	Domination	Sorcery	Mid	Blue	15	5	1
1	DoubleLift	Caitlyn	Flash	Heal	Precision	Domination	ADC	Blue	3	25	4
1	rekkless	Lulu	Flash	Heal	Sorcery	Inspiration	Support	Blue	8	3	4
1	doinb	Talon	Flash	Smite	Domination	Sorcery	Jungle	Blue	5	2	5
2	G2Caps	Azir	Flash	Barrier	Sorcery	Inspiration	Mid	Red	2	3	7
3	theshy	Lulu	Flash	Ignite	Sorcery	Inspiration	Mid	Red	2	3	7
4	theshy	KSante	Flash	Barrier	Sorcery	Inspiration	Mid	Red	2	3	7
5	theshy	Talon	Ignite	Heal	Sorcery	Inspiration	Mid	Red	2	3	7
6	theshy	Garen	Flash	Smite	Sorcery	Inspiration	Mid	Red	2	3	7

☐ SRune (Secondary)

☒ Role

☒ Team

☒ Kills

☒ Assists

☒ Deaths

Select Table

Role	Team	Kills	Assists	Deaths
Top	Blue	10	8	2
Mid	Blue	15	5	1
ADC	Blue	3	25	4
Support	Blue	8	3	4
Jungle	Blue	5	2	5
Mid	Red	2	3	7
Mid	Red	2	3	7
Mid	Red	2	3	7
Mid	Red	2	3	7
Mid	Red	2	3	7

Specifying a certain subset of attributes to project from the table

Another example of choosing a certain subset of attributes to project

Played In

- ☐ MatchID
- ☒ PlayedID
- ☒ ChampionID
- ☐ Spell (F-key)
- ☐ Spell (D-key)
- ☐ Rune (Primary)
- ☐ SRune (Secondary)
- ☐ Role
- ☐ Team
- ☒ Kills
- ☒ Assists
- ☒ Deaths

Select Table

PlayedID	ChampionID	Kills	Assists	Deaths
theshy	Irelia	10	8	2
hideonbush	Ahri	15	5	1
DoubleLift	Caitlyn	3	25	4
rekkless	Lulu	8	3	4
doinb	Talon	5	2	5
G2Caps	Azir	2	3	7
theshy	Lulu	2	3	7

## Join Operation

### Player Match History (Join)

Provide a valid PlayerID:

Search

PlayerID	MatchID	Champion	Kills	Assists	Deaths
theshy	1	Irelia	10	8	2
theshy	3	Lulu	2	3	7
theshy	4	KSante	2	3	7
theshy	5	Talon	2	3	7
theshy	6	Garen	2	3	7

Joining together the Player table and PlayedIn table on Player.playerID and PlayedIn.uName  
To retrieve a user's match history to showcase the champion they played in the match and their kills assists and deaths.

### Player Match History (Join)

Provide a valid PlayerID:

Search

PlayerID	MatchID	Champion	Kills	Assists	Deaths
hideonbush	1	Ahri	15	5	1

Another example, using a different player.

The user is able to specify the value of PlayerID in the where clause.

### Aggregation with Group By

#### Champion Ban Rates

Display Ban Rates

#### Champion Ban Rates

Close

Champion	Ban Rate
Ahri	0.33
Talon	0.33
Irelia	0.33
Lulu	0.33
Azir	0.33
Yasuo	0.33
Garen	0.67

The aggregation involves grouping champions by their name and aggregating the sum of number of times they appear in bannedChampions and dividing by the sum of number of times they appear in a playedIn Table where the gameMode is ranked champion has

### Aggregation with Having

#### Group Users By Region Having more than x Players

Minimum Player Count:

Region	Player Count
--------	--------------

Users can find the number of players that play in a certain region.

The query groups users by their region and then counts the total number of players and returns only those tuples where the Player Count > Minimum Player Count.

#### Group Users By Region Having more than x Players

Minimum Player Count:

Region	Player Count
AF	1
AP	1
CN	1
NA	1
KR	3
EU	4

Example Query with at least 1 player count

#### Group Users By Region Having more than x Players

Minimum Player Count:

Region	Player Count
KR	3
EU	4

Another example Query with minimum 3 players



## Nested Aggregation with GROUP BY

### Player Win Rates

Display Win Rates

### Player Win Rates

Close

Player ID	Win Count	Matches Played	Win Rate
doinb	1	1	1
rekkless	1	1	1
hideonbush	1	1	1
DoubleLift	1	1	1
theshy	3	5	0.6
G2Caps	1	1	1

The user can choose to show the display or hide the win rates in this query.

In this query, there is a nested aggregation to retrieve the wincount of the player and then the number of matches played to which win count is divided by total matches played to get win rate.

### **Division**

First take a look at all possible summoner spells

ssID Cooldown Select Table	ssID Cooldown Select Table
Flash	300
Barrier	300
Ignite	180
Teleport	360
Smite	90
Heal	240

Then observe that theshy and G2Caps have used all of the possible spells available in the database

PlayedID	Spell (F-key)	Spell (D-key)
theshy	Flash	Teleport
theshy	Flash	Ignite
theshy	Flash	Barrier
theshy	Ignite	Heal
theshy	Flash	Smite
G2Caps	Flash	Barrier
G2Caps	Teleport	Ignite
G2Caps	Flash	Barrier
G2Caps	Ignite	Heal
G2Caps	Flash	Smite

### All players who have used all summoner spells

PlayerID
G2Caps
theshy

Find Players

Data retrieved successfully!

Then all players in playedin, the query divides by all of the summoner spells to find the players Who has used every summoner spell and to which theshy has.