

## 1. Cover Page

University of British Columbia, Department of Computer Science

# CPSC 304

## Cover Page for Project Part 3

**Date: Nov 20, 2020**

**Project Group Number on Canvas: 101**

### Group Members:

Name	Student Number	CS Alias (Userid)	Preferred E-mail Address
Vandy Liu	43550870	x8s1b	vandyliu1999@gmail.com
Eric Jang	54876453	n1l1b	ericjang310@gmail.com
Wilson Gee	69247682	y4m1b	y4m1b@ugrad.cs.ubc.ca

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

## 2. Codebase

Attached to the Canvas submission is our zipped project.

Also retrievable at <https://github.com/vandyliu/304project>

## 3. SQL Script

In the /sql\_scripts folder.

Found at [https://github.com/vandyliu/304project/tree/master/sql\\_scripts](https://github.com/vandyliu/304project/tree/master/sql_scripts)

## 4. Project Description

The domain of our application is in the world of online video games, particularly the new competitive video game: Valorant. It is for Valorant players, fans, tournament organizers, fanatics in general to easily find more information about their matches, and their account as well as other people's accounts and matches in a single nice website.

Our application will keep track of players, the matches they play in and tournaments they join. This would include a player's career statistics, and also information on the esports scene, so fanatics and analysts are able to follow tournaments more closely. Tournament organizers could easily display match information on streams and events. It can also help track a player's progress as they play over time to see how they improved.

Our service can be incorporated into Valorant's servers or as a standalone service. With 3 million unique players logging in to play daily, the abundance of matches every hour, and the constant updates to data like when a game is played, a database would provide the performance needed to ensure that the service can be sustained. Our application would be constantly updated with tons of requests, and a DBMS is the only sensible way to provide these functionalities. Because many gamers are competitive and like to keep track of their stats, our service can feed a player's competitive spirit by comparing their stats with friends as well as keep track of their progression as they become a more skilled player.

In our final product, we had to add an extra field 'average\_combat\_score' to the 'Player' table. Initially, we did not include it as we argued that it could simply be calculated using existing fields in our 'Player' schema, namely using the fields: kills, assists, damage\_dealt, and total rounds played. However, we realized that it would be far more efficient to avoid doing a calculation every time someone wanted to view their average\_combat\_score, especially since this would require a join on multiple tables. Because a player's strength cannot simply be assessed by the means of a kill-death ratio as they could be playing selfishly in favour of statistics instead of for the team, players may feel more inclined to turn towards the average\_combat\_score to more accurately assess their competency. Ultimately, this additional field allows us to add some extra query features such as average average\_combat\_score among competitive ranks, as well as, lowering the overhead of our application. Furthermore, we

decided not to add some of the relations and tables into our UI because we weren't going to query them.

## Pages

- **/**
  - home page
- **/Agents**
  - shows a list of the available agents in the game
- **/Tournaments**
  - shows a list of all the tournaments that have happened
  - also shows list of organizers for the tournaments (Aggregation - Group By), their first tournament date, and the total amount of money the put into the prize pools for their tournaments
- **/Team**
  - shows list of teams in the database
  - can create a team here to add (Insert)
  - can also update a team here to change their wins, losses or name (Update)
  - can also filter to see which teams have played in which tournaments, or teams that have played in all tournaments (Division)
  - can also see each team's tournament history by clicking on the tournament history button (goes to `/Team/:team_id`)
- **/Team/:team\_id**
  - view the team's tournament history (Join: Team, Team\_Tournament)
- **/Players**
  - shows a list of players in the database
  - can select which columns you want to show by clicking a button (Projection)
  - can also filter players by rank, minimum kills, assists, death, average combat score (ACS), headshot percentage or a combination of them (Selection)
  - can also delete a player from the database here (Delete)
  - can view a player's match history (goes to `/Players/:player_id`)
  - there's also a button at the bottom where you can see the average ACS for each rank, where each rank's average ACS must be greater than the average ACS across all ranks (Aggregation - Nested)
- **/Players/player\_id**
  - view match history for the player (Join: Match\_Player, Player table)
  - can filter by map, gamemode or agent
  - can see average stats per map, gamemode or agent (Aggregation - Having)
    - only where count for the group is greater than 3 to rule out anomalies
- **/Matches/**
  - view all the matches

## 5. SQL Queries used

The actual statements can be seen in the screenshots in the console.

Insertion:

- Create a new team in the 'Team' table  
Eg. Create new team Z9 with 0 wins, 10 losses

Deletion

- Remove a player from the 'Player' table  
Eg. Remove player 'Arrrrr#123'

Update

- Update an existing team's name, wins and losses  
Eg. Change Z9's wins from 0 to 100

Selection

- Select all rows where players meet a minimum threshold (rank, kills, assists, deaths, headshot %, AverageCombatScore)  
Eg. Select rank, kills, assists, and average combat score for all players who have an average combat score above 240

Projection

- Display all columns the users wishes to see for Players  
Eg. Show only ranks, kills, assists, and average combat score for all players

Join

- Look at a players match history (join between Match and Match\_player tables)  
Eg. Look at BigEdKnorr#572's match history

Aggregation with Group By

- Aggregate tournaments by organizer
- Show total prize pool and number of hosted tournaments for each tournament organizer

Aggregation with Having

- Aggregate the player's matches by the map it was played on
- Find avg kills, deaths, assists, damage\_dealt per map for a player on a specific agent, where there's at least 3 games played (to account for anomaly games)
- Eg. Find avg kills, deaths, assists, damage\_dealt for BigEdKnorr#572 for each agent they have played  $\geq 3$  times

Nested Aggregation with Group By

- Aggregate player rank's where the rank's average average\_combat\_score is higher than the average average\_combat\_score across all ranks

Division

- Find the teams that have participated in all tournaments in the tournaments table

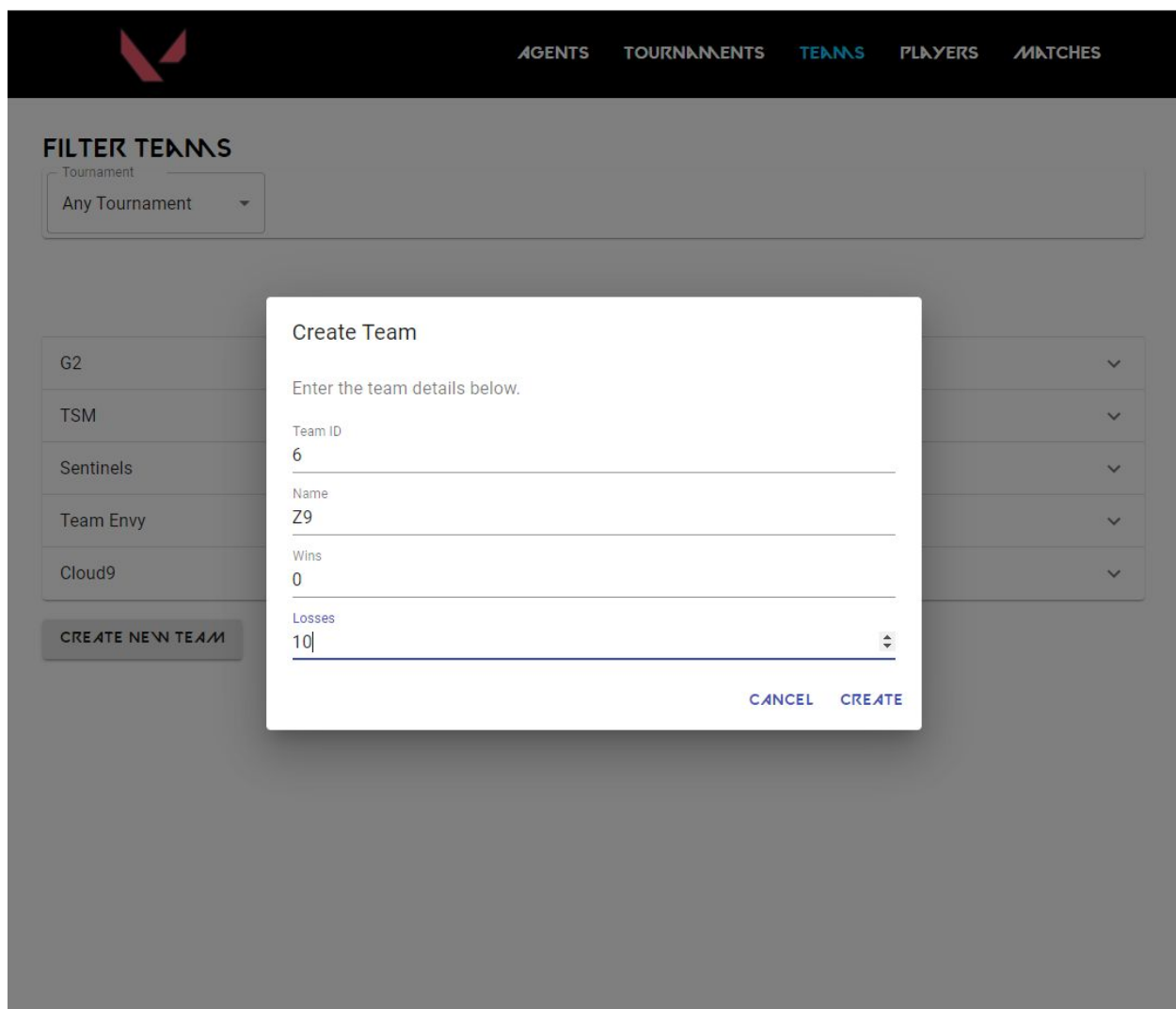
## 6. Sample Screenshots

All photos are in the /screenshots folder. There is also a GIF there.

There is also a gif in the README and screenshots folder that shows pretty much all features.


**Insertion:**

Before:



The screenshot shows a web application interface with a dark header bar containing navigation links: AGENTS, TOURNAMENTS, TEAMS (highlighted in blue), PLAYERS, and MATCHES. Below the header, there's a 'FILTER TEAMS' section with a 'Tournament' dropdown menu set to 'Any Tournament'. A list of teams is visible on the left: G2, TSM, Sentinels, Team Envy, and Cloud9. A 'CREATE NEW TEAM' button is at the bottom left. A 'Create Team' modal is open in the center, prompting the user to 'Enter the team details below.' The modal contains four input fields: 'Team ID' with the value '6', 'Name' with the value 'Z9', 'Wins' with the value '0', and 'Losses' with the value '10'. The 'Losses' field has a small up/down arrow icon on the right. At the bottom right of the modal are two buttons: 'CANCEL' and 'CREATE'.

After:



AGENTS   TOURNAMENTS   **TEAMS**   PLAYERS   MATCHES

**FILTER TEAMS**

Tournament

Any Tournament

**TEAMS**

G2	Wins: 1 Losses: 0	▼
TSM	Wins: 12 Losses: 2	▼
Sentinels	Wins: 13 Losses: 1	▼
Team Envy	Wins: 5 Losses: 1	▼
Cloud9	Wins: 12 Losses: 6	▼
Z9	Wins: 0 Losses: 10	▼

CREATE NEW TEAM

Elements   Console   Sources   Network   Per

top


```
INSERT INTO Team VALUES (6, "Z9", 0, 10)

SELECT * FROM Team

SELECT player_id FROM Team_Player WHERE team_id = 1
SELECT player_id FROM Team_Player WHERE team_id = 2
SELECT player_id FROM Team_Player WHERE team_id = 3
SELECT player_id FROM Team_Player WHERE team_id = 4
SELECT player_id FROM Team_Player WHERE team_id = 5
SELECT player_id FROM Team_Player WHERE team_id = 6
```

Deletion:

Before:



AGENTS   TOURNAMENTS   TEAMS   **PLAYERS**   MATCHES

**FIND PLAYERS**

Rank

All Ranks

Min. Kills

Min. Assists

Min. Deaths

Min. Headshot %

Min. ACS

**SELECT COLUMNS**

☒ Rank   ☒ Kills   ☒ Assists   ☒ Deaths   ☒ Headshot %   ☒ AverageCombatScore

**PLAYERS**

player_id	p_rank	kills	assists	deaths	headshot_percentage	average_combat_score		
Arrrr#123	Radiant	1337	72	593	23	257	MATCH HISTORY	DELETE
BigEdknorr#572	Diamond 2	2015	185	973	18	201	MATCH HISTORY	DELETE
C9 MitCh#000	Platinum 3	543	132	131	8	218	MATCH HISTORY	DELETE
C9 Relyks#000	Platinum 2	76	23	13	25	212	MATCH HISTORY	DELETE
C9 Shinobi#000	Radiant	131	56	178	16	154	MATCH HISTORY	DELETE
C9 TenZ#000	Radiant	9000	4555	2455	30	299	MATCH HISTORY	DELETE

After:

AGENTS

TOURNAMENTS

TEAMS

PLAYERS

MATCHES

FIND PLAYERS

Rank

All Ranks

Min. Kills

Min. Assists

Min. Deaths

Min. Headshot %

Min. ACS

SELECT COLUMNS

☒ Rank

☒ Kills

☒ Assists

☒ Deaths

☒ Headshot %

☒ AverageCombatScore

PLAYERS

player_id	p_rank	kills	assists	deaths	headshot_percentage	average_combat_score		
BigEdKnorr#572	Diamond 2	2015	185	973	18	201	MATCH HISTORY	DE
C9 Mitch#000	Platinum 3	543	132	131	8	218	MATCH HISTORY	DE
C9 Relyks#000	Platinum 2	76	23	13	25	212	MATCH HISTORY	DE
C9 Shinobi#000	Radiant	131	56	178	16	154	MATCH HISTORY	DE
C9 TenZ#000	Radiant	9000	4555	2455	30	299	MATCH HISTORY	DE

top

url:http://localhost:3000/static/

DELETE FROM Player WHERE player\_id = "Arctrr#5123"

SELECT player\_id, p\_rank, kills, assists, deaths, headshot\_percentage, average\_combat\_score FROM Player

Update:

Before:

AGENTS

TOURNAMENTS

TEAMS

PLAYERS

MATCHES

FILTER TEAMS

Tournament

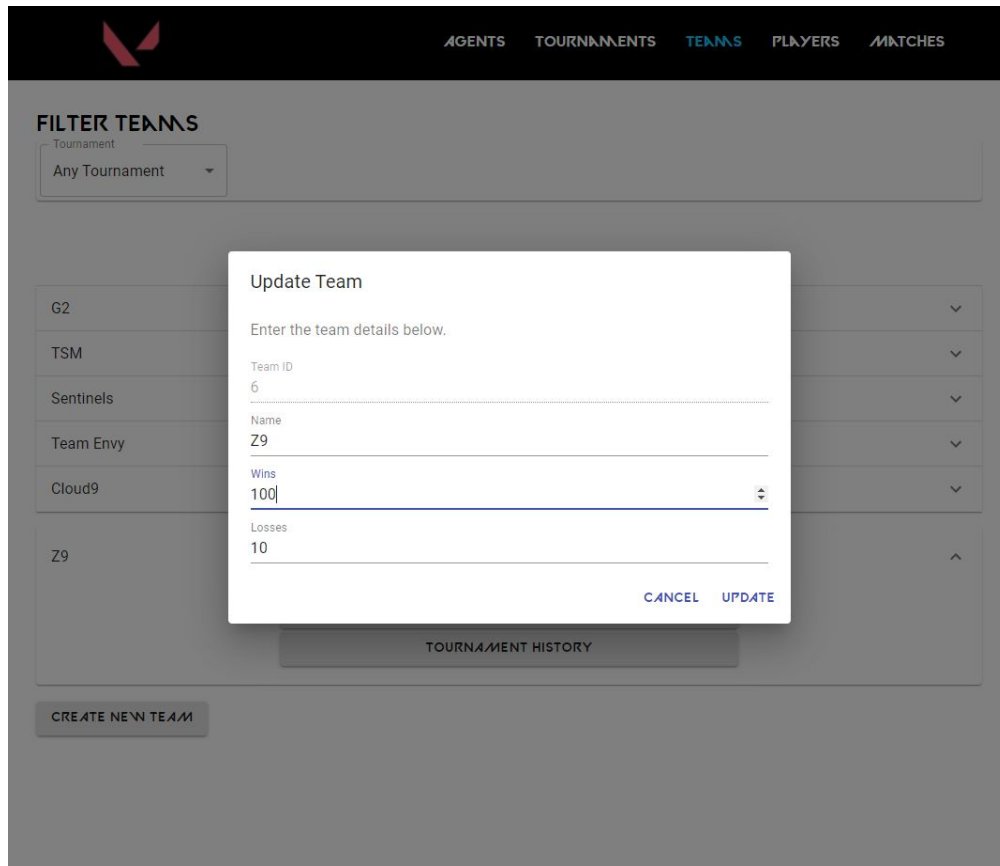
Any Tournament

TEAMS

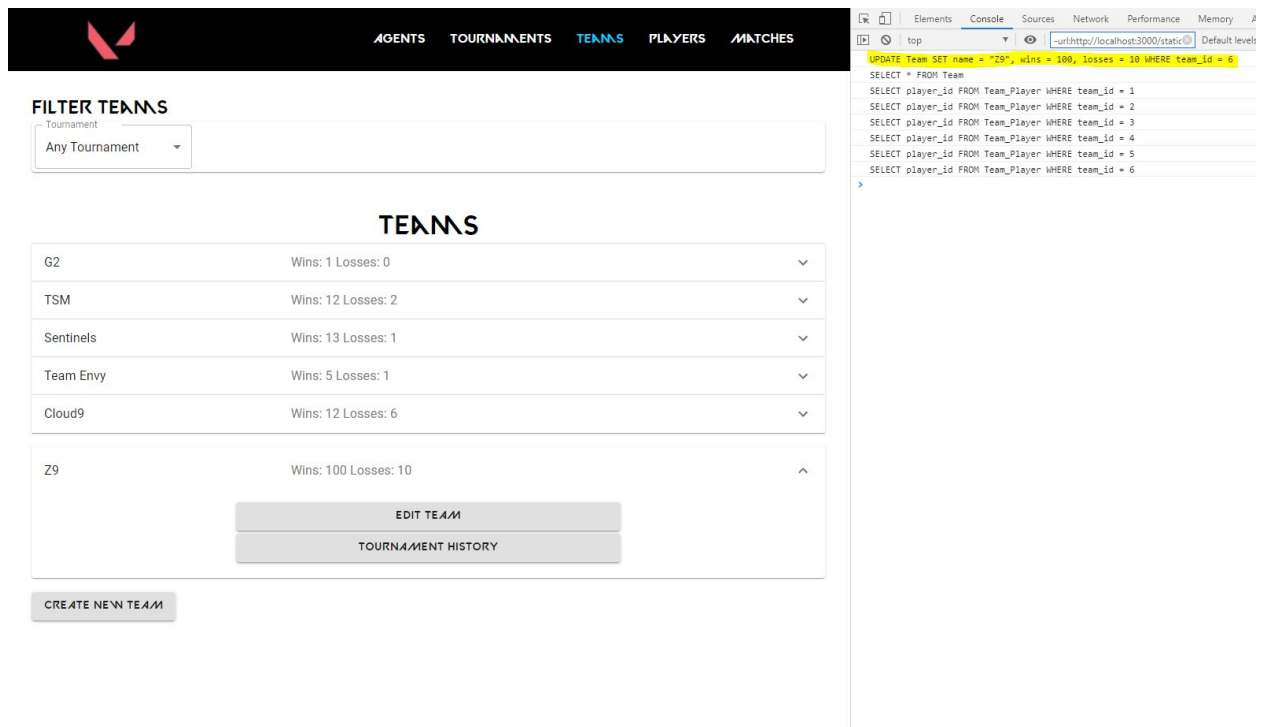
G2	Wins: 1 Losses: 0	▼
TSM	Wins: 12 Losses: 2	▼
Sentinels	Wins: 13 Losses: 1	▼
Team Envy	Wins: 5 Losses: 1	▼
Cloud9	Wins: 12 Losses: 6	▼
Z9	Wins: 0 Losses: 10	▲

EDIT TEAM

TOURNAMENT HISTORY



After:





Selection:  
Before:

AGENTS   TOURNAMENTS   TEAMS   **PLAYERS**   MATCHES

FIND PLAYERS

Rank

All Ranks

Min. Kills

Min. Assists

Min. Deaths

Min. Headshot %

Min. ACS

SELECT COLUMNS

☒ Rank

☒ Kills

☒ Assists

☒ Deaths

☒ Headshot %

☒ AverageCombatScore

PLAYERS

player_id	p_rank	kills	assists	deaths	headshot_percentage	average_combat_score		
BigEdKnon#572	Diamond 2	2015	185	973	18	201	MATCH HISTORY	DELETE
C9 Mitch#000	Platinum 3	543	132	131	8	218	MATCH HISTORY	DELETE
C9 Relyks#000	Platinum 2	76	23	13	25	212	MATCH HISTORY	DELETE
C9 Shinobi#000	Radiant	131	56	178	16	154	MATCH HISTORY	DELETE
C9 TenZ#000	Radiant	9000	4555	2455	30	299	MATCH HISTORY	DELETE
C9 Vice#000	Radiant	566	655	544	20	199	MATCH HISTORY	DELETE

After:

AGENTS   TOURNAMENTS   TEAMS   **PLAYERS**   MATCHES

FIND PLAYERS

Rank

All Ranks

Min. Kills

Min. Assists

Min. Deaths

Min. Headshot %

Min. ACS

240

SELECT COLUMNS

☒ Rank

☒ Kills

☒ Assists

☒ Deaths

☒ Headshot %

☒ AverageCombatScore

PLAYERS

player_id	p_rank	kills	assists	deaths	headshot_percentage	average_combat_score		
C9 TenZ#000	Radiant	9000	4555	2455	30	299	MATCH HISTORY	DELETE
TSM Wardell#000	Radiant	1500	1200	800	22	262	MATCH HISTORY	DELETE

Elements

Console

Sources

Network

Performance

Memory

Application

Lighthouse

top


localhost:3000/status

Default levels

```
SELECT player_id, p_rank, kills, assists, deaths, headshot_percentage, average_combat_score FROM Player
WHERE average_combat_score > 240

SELECT p_rank, AVG(average_combat_score) as AvgACS
FROM Player
GROUP BY p_rank
HAVING AVG(average_combat_score) >= (SELECT AVG(average_combat_score)
FROM Player)
```

Projection:  
Before:



AGENTS   TOURNAMENTS   TEAMS   **PLAYERS**   MATCHES

FIND PLAYERS

Rank

All Ranks

Min. Kills

Min. Assists

Min. Deaths

Min. Headshot %

Min. ACS

SELECT COLUMNNS

☒ Rank

☒ Kills

☒ Assists

☒ Deaths


☒ Headshot %

☒ AverageCombatScore

PLAYERS

player_id	p_rank	kills	assists	deaths	headshot_percentage	average_combat_score		
BigEdKnorr#572	Diamond 2	2015	185	973	18	201	MATCH HISTORY	DELETE
C9 Mitch#000	Platinum 3	543	132	131	8	218	MATCH HISTORY	DELETE
C9 Relyks#000	Platinum 2	76	23	13	25	212	MATCH HISTORY	DELETE
C9 Shinobi#000	Radiant	131	56	178	16	154	MATCH HISTORY	DELETE
C9 TenZ#000	Radiant	9000	4555	2455	30	299	MATCH HISTORY	DELETE
C9 Vice#000	Radiant	566	655	544	20	199	MATCH HISTORY	DELETE

After:



AGENTS   TOURNAMENTS   TEAMS   **PLAYERS**   MATCHES

FIND PLAYERS

Rank

All Ranks

Min. Kills

Min. Assists

Min. Deaths

Min. Headshot %

Min. ACS

SELECT COLUMNNS

☒ Rank

☒ Kills

☒ Assists

☐ Deaths

☐ Headshot %

☒ AverageCombatScore

PLAYERS

player_id	p_rank	kills	assists	average_combat_score		
BigEdKnorr#572	Diamond 2	2015	185	201	MATCH HISTORY	DELETE
C9 Mitch#000	Platinum 3	543	132	218	MATCH HISTORY	DELETE
C9 Relyks#000	Platinum 2	76	23	212	MATCH HISTORY	DELETE
C9 Shinobi#000	Radiant	131	56	154	MATCH HISTORY	DELETE
C9 TenZ#000	Radiant	9000	4555	299	MATCH HISTORY	DELETE
C9 Vice#000	Radiant	566	655	199	MATCH HISTORY	DELETE

top

url: http://localhost:3000/static

Default levels

SELECT player\_id, p\_rank, kills, assists, headshot\_percentage, average\_combat\_score FROM Player

SELECT p\_rank, AVG(average\_combat\_score) as AvgACS

FROM Player

GROUP BY p\_rank

HAVING AVG(average\_combat\_score) >= (SELECT AVG(average\_combat\_score)

FROM Player)

SELECT player\_id, p\_rank, kills, assists, average\_combat\_score FROM Player

SELECT p\_rank, AVG(average\_combat\_score) as AvgACS

FROM Player

GROUP BY p\_rank

HAVING AVG(average\_combat\_score) >= (SELECT AVG(average\_combat\_score)

FROM Player)

Join:

Before:

AGENTS   TOURNAMENTS   TEAMS   **PLAYERS**   MATCHES

FIND PLAYERS

Rank

All Ranks

Min. Kills

Min. Assists

Min. Deaths

Min. Headshot %

Min. ACS

SELECT COLUMNS

☒ Rank

☒ Kills

☒ Assists

☒ Deaths

☒ Headshot %

☒ AverageCombatScore

PLAYERS

player_id	p_rank	kills	assists	deaths	headshot_percentage	average_combat_score		
BigEdKnorr#572	Diamond 2	2015	185	973	18	201	<b>MATCH HISTORY</b>	DELETE
C9 Mitch#000	Platinum 3	543	132	131	8	218	MATCH HISTORY	DELETE
C9 Relyks#000	Platinum 2	76	23	13	25	212	MATCH HISTORY	DELETE
C9 Shinobi#000	Radiant	131	56	178	16	154	MATCH HISTORY	DELETE
C9 TenZ#000	Radiant	9000	4555	2455	30	299	MATCH HISTORY	DELETE
C9 Vice#000	Radiant	566	655	544	20	199	MATCH HISTORY	DELETE

After:

AGENTS   TOURNAMENTS   TEAMS   **PLAYERS**   MATCHES

FILTER MATCH HISTORY

Map

All Maps

Game mode

All Gamemodes

Agent

All Agents

STATS AVERAGES

\* must have at least 3 matches played per group

AVERAGES BY MAP

AVERAGES BY GAME MODE

AVERAGES BY AGENT

MATCH HISTORY FOR BIGEDKNORR#572

match_id	map	gamemode	start_time	end_time	agent_name	kills	assists	deaths	damage_dealt
2	Ascent	Competitive	2020-11-01T17:00:00.000Z	2020-11-01T18:00:00.000Z	Killjoy	9	5	17	6214
3	Icebox	Unrated	2020-08-13T16:00:00.000Z	2020-08-13T17:00:00.000Z	Killjoy	11	5	12	133
4	Split	Unrated	2020-10-10T15:00:00.000Z	2020-10-10T16:00:00.000Z	Killjoy	16	3	10	1555
5	Haven	Deathmatch	2020-09-21T16:00:00.000Z	2020-09-21T17:00:00.000Z	Killjoy	8	2	17	333
6	Icebox	Deathmatch	2020-05-05T16:00:00.000Z	2020-05-05T17:00:00.000Z	Killjoy	9	14	17	123
7	Bind	Spike Rush	2020-08-21T16:00:00.000Z	2020-08-21T17:00:00.000Z	Reyna	5	5	17	123
8	Ascent	Spike Rush	2020-06-05T16:00:00.000Z	2020-06-05T17:00:00.000Z	Killjoy	23	14	3	223
9	Haven	Custom	2020-10-18T14:00:00.000Z	2020-10-18T15:00:00.000Z	Killjoy	33	5	14	6214

Elements

Console

Sources

Network

Performance

Memory

⌵

top

url: http://localhost:3000

Default levels

SELECT Matches.match\_id, Matches.map, Matches.gamemode, Matches.start\_time, Matches.end\_time, Match\_Player.agent\_name, Match\_Player.kills, Match\_Player.assists, Match\_Player.deaths, Match\_Player.damage\_dealt FROM Matches, Match\_Player WHERE Matches.match\_id = Match\_Player.match\_id AND Match\_Player.player\_id = "BigEdKnorr#572"

Aggregation with Group By:
Before:

TOURNAMENTS

tournament_id	name	organizer	format	prize_pool	start_date	end_date
1	First Strike North America	Riot Games	Single-elimination	100000	2020-12-03T20:00:00.000Z	2020-12-04T20:00:00.000Z
2	NRG x Renegades Invitational	Nerd Street Gamers	Double-elimination	10000	2020-10-17T19:00:00.000Z	2020-10-18T19:00:00.000Z
3	FaZe Clan Invitational	FaZe Clan	Double-elimination	50000	2020-08-08T19:00:00.000Z	2020-08-09T19:00:00.000Z
4	G2 Esports Invitational	G2 Esports	Double-elimination	15000	2020-06-19T19:00:00.000Z	2020-06-21T19:00:00.000Z
5	Pop Flash	B Site Inc.	Double-elimination	50000	2020-08-20T19:00:00.000Z	2020-08-20T19:00:00.000Z
6	First Strike CIS	Riot Games	Single-elimination	52000	2020-12-03T20:00:00.000Z	2020-12-04T20:00:00.000Z
7	First Strike Korea	Riot Games	Single-elimination	100000	2020-12-03T20:00:00.000Z	2020-12-04T20:00:00.000Z
8	First Strike Japan	Riot Games	Single-elimination	47000	2020-12-03T20:00:00.000Z	2020-12-04T20:00:00.000Z
9	First Strike Brazil	Riot Games	Single-elimination	37000	2020-12-03T20:00:00.000Z	2020-12-04T20:00:00.000Z
10	First Strike Europe	Riot Games	Single-elimination	120000	2020-12-03T20:00:00.000Z	2020-12-04T20:00:00.000Z
11	First Strike Turkey	Riot Games	Single-elimination	31000	2020-12-03T20:00:00.000Z	2020-12-04T20:00:00.000Z
12	T1 x Nerd Street Gamers Showdown	Nerd Street Gamers	Double-elimination	35000	2020-06-26T19:00:00.000Z	2020-06-28T19:00:00.000Z
13	Nerd Street Gamers - Monthly October	Nerd Street Gamers	Single-elimination	10000	2020-10-26T19:00:00.000Z	2020-10-27T19:00:00.000Z
14	Nerd Street Gamers - Monthly September	Nerd Street Gamers	Single-elimination	10000	2020-09-26T19:00:00.000Z	2020-09-27T19:00:00.000Z
15	Nerd Street Gamers - Monthly November	Nerd Street Gamers	Single-elimination	10000	2020-11-26T20:00:00.000Z	2020-11-27T20:00:00.000Z
16	Trovo Challenge North America	Trovo	Single-elimination	10000	2020-07-03T19:00:00.000Z	2020-07-05T19:00:00.000Z
17	Trovo Challenge Europe	Trovo	Single-elimination	10000	2020-07-03T19:00:00.000Z	2020-07-05T19:00:00.000Z

SHOW ORGANIZERS

After:

12	T1 x Nerd Street Gamers Showdown	Nerd Street Gamers	Double-elimination	35000	2020-06-26T19:00:00.000Z	2020-06-28T19:00:00.000Z
13	Nerd Street Gamers - Monthly October	Nerd Street Gamers	Single-elimination	10000	2020-10-26T19:00:00.000Z	2020-10-27T19:00:00.000Z
14	Nerd Street Gamers - Monthly September	Nerd Street Gamers	Single-elimination	10000	2020-09-26T19:00:00.000Z	2020-09-27T19:00:00.000Z
15	Nerd Street Gamers - Monthly November	Nerd Street Gamers	Single-elimination	10000	2020-11-26T20:00:00.000Z	2020-11-27T20:00:00.000Z
16	Trovo Challenge North America	Trovo	Single-elimination	10000	2020-07-03T19:00:00.000Z	2020-07-05T19:00:00.000Z
17	Trovo Challenge Europe	Trovo	Single-elimination	10000	2020-07-03T19:00:00.000Z	2020-07-05T19:00:00.000Z

SHOW ORGANIZERS

organizer	Total prize pool (\$)	First tournament date
Riot Games	507000	2020-12-03T20:00:00.000Z
Nerd Street Gamers	75000	2020-06-26T19:00:00.000Z
FaZe Clan	50000	2020-08-06T19:00:00.000Z
G2 Esports	15000	2020-06-19T19:00:00.000Z
B Site Inc.	50000	2020-08-20T19:00:00.000Z
Trovo	20000	2020-07-03T19:00:00.000Z


SELECT \* FROM Tournament

SELECT organizer, SUM(prize\_pool) AS "Total prize pool (\$)", MIN(start\_date) AS "First tournament date" FROM Tournament GROUP BY organizer

DevTools failed to load SourceMap: Could not load content for chrome-extension://omiddibajecanoebl/bundle.mid.js.map: HTTP error: status code 404, net::ERR\_UNKNOWN\_URL\_SCHEME

## Aggregation with Having:

Before:

AGENTS   TOURNAMENTS   TEAMS   **PLAYERS**   MATCHES


**FILTER MATCH HISTORY**  
Map: All Maps   Gamemode: All Gamemodes   Agent: All Agents

**STATS AVERAGES**  
\* must have at least 3 matches played per group  
AVERAGES BY MAP   AVERAGES BY GAME MODE   **AVERAGES BY AGENT**

**MATCH HISTORY FOR BIGEDKNORR#512**

match_id	map	gamemode	start_time	end_time	agent_name	kills	assists	deaths	damage_dealt
2	Ascent	Competitive	2020-11-01T17:00:00.000Z	2020-11-01T18:00:00.000Z	Killjoy	9	5	17	6214
3	Icebox	Unrated	2020-08-13T16:00:00.000Z	2020-08-13T17:00:00.000Z	Killjoy	11	5	12	133
4	Split	Unrated	2020-10-10T15:00:00.000Z	2020-10-10T16:00:00.000Z	Killjoy	16	3	10	1555
5	Haven	Deathmatch	2020-09-21T17:00:00.000Z	2020-09-21T17:00:00.000Z	Killjoy	8	2	17	333
6	Icebox	Deathmatch	2020-05-05T16:00:00.000Z	2020-05-05T17:00:00.000Z	Killjoy	9	14	17	123
7	Bind	Spike Rush	2020-08-21T16:00:00.000Z	2020-08-21T17:00:00.000Z	Reyna	5	5	17	123
8	Ascent	Spike Rush	2020-06-05T16:00:00.000Z	2020-06-05T17:00:00.000Z	Killjoy	23	14	3	223
9	Haven	Custom	2020-10-18T14:00:00.000Z	2020-10-18T15:00:00.000Z	Killjoy	33	5	14	6214

After:

AGENTS   TOURNAMENTS   TEAMS   **PLAYERS**   MATCHES

**FILTER MATCH HISTORY**  
Map: All Maps   Gamemode: All Gamemodes   Agent: All Agents

**STATS AVERAGES**  
\* must have at least 3 matches played per group  
AVERAGES BY MAP   AVERAGES BY GAME MODE   **AVERAGES BY AGENT**

**MATCH HISTORY FOR BIGEDKNORR#512**

agent_name	count	avg_kills	avg_assists	avg_deaths	avg_damage_dealt
Killjoy	15	18.6667	10.3333	12.2667	1832.2667
Reyna	7	18.1429	12.4286	10.1429	1832

Elements   Console   Sources   Network   Performance   Memory

top   <http://localhost:3000>   Default levels

```
SELECT match_player.agent_name, Count(*) as count, PlayerMatchHistory,
Avg(Match_Player.kills) as avg_kills, Avg(Match_Player.assists) as
avg_assists, Avg(Match_Player.deaths) as avg_deaths, Avg(Match_Player.damage_dealt) as
avg_damage_dealt
FROM Matches, Match_Player
WHERE Matches.match_id = Match_Player.match_id AND Match_Player.player_id =
"BigEdKnorr#512"
GROUP BY Match_Player.agent_name
HAVING count >= 3
```

### Nested Aggregation with Group By:

Before:

PLAYERS							
player_id	p_rank	kills	assists	deaths	headshot_percentage	average_combat_score	
BigEdKnonr#572	Diamond 2	2015	185	973	18	201	<button>MATCH HISTORY</button> <button>DELETE</button>
O9 Mitch#000	Platinum 3	542	132	131	8	218	<button>MATCH HISTORY</button> <button>DELETE</button>
O9 Rally#000	Platinum 2	76	23	13	25	212	<button>MATCH HISTORY</button> <button>DELETE</button>
O9 Shinobi#000	Radiant	131	56	178	16	154	<button>MATCH HISTORY</button> <button>DELETE</button>
O9 TenZ#000	Radiant	9000	4555	2455	30	299	<button>MATCH HISTORY</button> <button>DELETE</button>
O9 Vici#000	Radiant	565	655	544	20	199	<button>MATCH HISTORY</button> <button>DELETE</button>
gamer#123	Iron 1	12	3	46	5	85	<button>MATCH HISTORY</button> <button>DELETE</button>
NV Crashles#000	Bronze 3	1232	679	444	26	204	<button>MATCH HISTORY</button> <button>DELETE</button>
NV FNS#000	Silver 1	900	907	900	24	173	<button>MATCH HISTORY</button> <button>DELETE</button>
NV Food#000	Radiant	144	133	70	22	227	<button>MATCH HISTORY</button> <button>DELETE</button>
NV Kaboose#000	Diamond 2	1509	1333	1555	23	205	<button>MATCH HISTORY</button> <button>DELETE</button>
NV Mummy#000	Immortal 3	1223	1355	655	17	204	<button>MATCH HISTORY</button> <button>DELETE</button>
SEN Oapn#000	Immortal 1	123	111	415	23	208	<button>MATCH HISTORY</button> <button>DELETE</button>
SEN Shazam#000	Gold 2	111	11	113	25	210	<button>MATCH HISTORY</button> <button>DELETE</button>
SEN Sick#000	Immortal 2	2555	1344	1333	20	230	<button>MATCH HISTORY</button> <button>DELETE</button>
SEN Sinatras#000	Radiant	133	131	135	18	221	<button>MATCH HISTORY</button> <button>DELETE</button>
SEN Zomba#000	Radiant	1333	809	978	13	188	<button>MATCH HISTORY</button> <button>DELETE</button>
SmallEdKnonr#572	Gold 2	111	111	111	11	182	<button>MATCH HISTORY</button> <button>DELETE</button>
TenZ#000	Bronze 3	55	5	200	9	133	<button>MATCH HISTORY</button> <button>DELETE</button>
TSM Outlier#000	Diamond 3	588	111	233	16	194	<button>MATCH HISTORY</button> <button>DELETE</button>
TSM Drone#000	Immortal 3	1887	1833	1600	23	215	<button>MATCH HISTORY</button> <button>DELETE</button>
TSM Haze#000	Diamond 1	133	31	122	15	193	<button>MATCH HISTORY</button> <button>DELETE</button>
TSM Subroza#000	Diamond 2	1000	131	102	17	204	<button>MATCH HISTORY</button> <button>DELETE</button>
TSM Wardell#000	Radiant	1500	1200	800	22	262	<button>MATCH HISTORY</button> <button>DELETE</button>

SHOWN NESTED AGGREGATION

After:

TSM Cutler#000	Diamond 3	988	111	233	10	194	MATCH HISTORY	DELETE
TSM Drone#000	Immortal 3	1887	1533	1600	23	215	MATCH HISTORY	DELETE
TSM Hazed#000	Diamond 1	133	31	122	15	193	MATCH HISTORY	DELETE
TSM Subroza#000	Diamond 2	1000	131	102	17	204	MATCH HISTORY	DELETE
TSM Wardell#000	Radiant	1500	1200	800	22	262	MATCH HISTORY	DELETE

SHOW NESTED AGGREGATION

## AVERAGE ACS PER RANK

p_rank	AvgACS
Diamond 2	203.3333
Platinum 3	218
Platinum 2	212
Radiant	221.4286
Immortal 3	209.5
Immortal 1	208
Immortal 2	230


\*AVGACS FOR EACH RANK MUST BE GREATER THAN AVERAGE ACS ACROSS ALL RANKS TO APPEAR

```
SELECT player_id, p_rank, kills, assists, deaths, headshot_percentage,
average_combat_score FROM Player
SELECT p_rank, AVG(average_combat_score) as AvgACS
FROM Player
GROUP BY p_rank
HAVING AVG(average_combat_score) >= (SELECT AVG(average_combat_score)
FROM Player)
```

⚠ DevTools failed to load SourceMap: Could not load content for chrome-extension://omohjpebieapoeel/bundle.mid.js.map: HTTP error: status code 404, net::ERR\_UNKNOWN\_URL\_SCHEME

Division:

Before:

 AGENTS TOURNAMENTS **TEAMS** PLAYERS MATCHES


**FILTER TEAMS**  
Tournament  
Any Tournament

**TEAMS**

G2	Wins: 1 Losses: 0	▼
TSM	Wins: 12 Losses: 2	▼
Sentinels	Wins: 13 Losses: 1	▼
Team Envy	Wins: 5 Losses: 1	▼
Cloud9	Wins: 12 Losses: 6	▼
Z9	Wins: 100 Losses: 10	▼

CREATE NEW TEAM

After:

 AGENTS TOURNAMENTS **TEAMS** PLAYERS MATCHES

**FILTER TEAMS**  
Tournament  
All Tournaments

**TEAMS**

Sentinels	Wins: 13 Losses: 1	▼
Team Envy	Wins: 5 Losses: 1	▼
Cloud9	Wins: 12 Losses: 6	▼

CREATE NEW TEAM

Elements Console Sources Network Performance Memory Application Lighthouse

top -urlhttp://localhost:3000/static/js/0

SELECT \* FROM Team WHERE NOT EXISTS (SELECT Tournament.tournament\_id FROM Tournament WHERE NOT EXISTS (SELECT Team\_Tournament.tournament\_id FROM Team\_Tournament WHERE Team\_Tournament.tournament\_id = Tournament.tournament\_id AND Team\_Tournament.team\_id = Team.team\_id))

SELECT player\_id FROM Team\_Player WHERE team\_id = 3 Teams,1

SELECT player\_id FROM Team\_Player WHERE team\_id = 4 Teams,1

SELECT player\_id FROM Team\_Player WHERE team\_id = 5 Teams,1

## 7. Readme.md

<https://github.com/vandyliu/304project/blob/master/README.md>