

Part A

Our website, GameList, has successfully become a platform where you can review games, as users, that have been added to the database by Admins. Moreover, Admins can insert game studios and developers that have worked on certain games. Users can query the Game, Review, GameStudio, and Developer sites with the features available to them. Game Studio supports image displaying to display studios logos and gives you the option to update them. Developers have an option to find for-life developers that worked on ALL of the available studios in the database.

Here is our repository link:

https://github.students.cs.ubc.ca/CPSC304-2021W-T1/project_l3w2b_u1w2b_y9a3b

Part B

- Given the scope of the project and the time constraints for Milestone 4, we decided to not implement gameCollection and newsStory in our website. Out of respect for those tables though, we decided to include their table generation in our db.sql file, but we did not insert anything into them as we do not query them. When we want to further develop the website they'll be awaiting us there.
- We changed the way images are stored. In Milestone 2, we specified the image files to be type image but we've found that we could just store the string file name (such as 'ubi.jpg') and use img=src command to display the images in the front end which saves memory space and simplifies our database and backend
- We've decided not to use the post-normalization tables we've created for Milestone 2. Due to the simple fact that the pre-normalization tables make more sense and were more practical to use compared to the post-normalization ones. For example, while it did satisfy BCNF and 3NF, creating a new table for studio logos doesn't really make sense when they could just exist in the studio table without issue in the first place.

Part C

SQL queries for game.php:

Insert:

"insert into game values (:bind1, :bind2, :bind3, :bind4, :bind5, :bind6)"

Update:

"UPDATE game SET gameName='\" . \$new_name . \"' WHERE gameID='\" . \$game_id . \"'"

Delete:

"DELETE FROM game WHERE gameId=" . \$gameID

Count the games in the database:

"SELECT Count(*) FROM game"

Game Studio with the best average game scores (**Nested Aggregation with Group By**):

```
"SELECT g.studioName, AVG(avgScore)
  FROM game g, gameStudio s
 WHERE g.studioName = s.studioName
 GROUP BY g.studioName
 HAVING AVG(avgScore) >= ALL (SELECT AVG(s.avgScore)
                             FROM game s
                             GROUP BY s.studioName)"
```

Highest Scoring Game (**Projection**):

"SELECT gameName, avgScore FROM game WHERE avgScore = (SELECT MAX(avgScore) from game)"

Lowest Scoring Game:

"SELECT gameName, avgScore FROM game WHERE avgScore = (SELECT MIN(avgScore) from game)"

Function to display everything on the game database:

"SELECT * FROM game ORDER BY gameId"

Function for displaying games with average score larger than given input (**Selection**):

"SELECT * FROM game WHERE avgScore>" . \$score . "" . "ORDER BY gameId"

Function for displaying game studios and their average game scores that have more than X number of games

(**Aggregation with Group By**):

"SELECT studioName, AVG(avgScore) FROM game GROUP BY studioName HAVING COUNT(studioName) >" . \$number

Function for displaying the average score of the games in a certain genre that have more than X games

(**Aggregation with Having**):

"SELECT genre, AVG(avgScore) FROM game GROUP BY genre HAVING COUNT(genre) >" . \$number

SQL queries for review.php:

Insert:

"insert into review values (:bind1, :bind2, :bind3, :bind4)"

Update:

"UPDATE review SET text=" . \$new_review . " WHERE reviewID=" . \$review_id . " AND gameId=" . \$game_id . ""

Delete:

```
"DELETE FROM review WHERE reviewID='" . $review_id . "' AND gameId='" . $game_id . "'"
```

Count the reviews a game has (**Join**):

```
"SELECT Count(g.gameID) FROM game g, reviewTable r WHERE g.gameID = r.gameID AND g.gameID='" . $game_id . "'"
```

Display all reviews:

```
"SELECT * FROM review ORDER BY gameId, reviewID"
```

Display reviews for a given gameId

```
"SELECT * FROM review WHERE gameId='" . $game_id . "'" . "ORDER BY gameId, reviewID"
```

SQL queries for gameStudio.php:

Insert:

```
"insert into gameStudio values (:bind1, :bind2)"
```

Update:

```
"UPDATE gameStudio SET image='" . $new_path . "' WHERE image='" . $old_path . "'"
```

Delete Game Studio:

```
"DELETE FROM gameStudio WHERE studioName = '$studioName'"
```

Count the Number of Studios Added So Far:

```
"SELECT Count(*) FROM gameStudio"
```

Display the Studios in the Database:

```
"SELECT * FROM gameStudio"
```

SQL queries for developer.php:

Add a New Developer to the Site:

```
"insert into developer values (:bind1, :bind2, :bind3)"
```

Update Developer Name in Table:

Efe Demir Baris Ozkan Kiril Lazarev

```
"UPDATE developer SET devName='" . $new_name . "' WHERE devName='" . $old_name . "'"
```

Delete Developer:

```
"DELETE FROM developer WHERE devID = '$devID'"
```

Count the Number of Developers Added So Far:

```
"SELECT Count(*) FROM developer"
```

Display the Developers in the Database:

```
"SELECT * FROM developer"
```

Find Developers Who Worked in ALL of the Studios Available in the Database (Satisfies: Division Query)

```
"    SELECT *
    FROM developer d
    WHERE NOT EXISTS
        ((SELECT g.studioName
         FROM gameStudio g)
    MINUS
    (SELECT ww.studioName
     FROM workedWith ww
     WHERE ww.devID = d.devID))"
```

SQL queries for user.inc.php:

```
"SELECT * FROM users WHERE username = '" . $username . "'"
```

```
"insert into users values (:bind1, :bind2, :bind3, :bind4)"
```

```
"SELECT * FROM admins WHERE userid = '" . $userid . "'"
```

Part D

Insertion Before:

Retrieved games from the game database:

Game ID	Admin ID	Name	Average Score	Genre	Game Studio
game1	userid1	CSGO	5	FPS	Valve
game10	userid1	Minecraft Story Mode	3.7	Interactive Movie	Mojang
game11	userid1	Wolfenstein	3.8	FPS	id Software
game12	userid1	Age of Empires IV	2.456	Strategy	Relic Entertainment
game13	userid1	Call of Duty: Modern Warfare	3.9	FPS	Activision Blizzard
game14	userid1	Halo Infinite	3.3	FPS	343 Industries
game15	userid1	Warhammer 40K: Dawn of War	4.2	Strategy	Relic Entertainment
game16	userid1	Company of Heroes	3.9	Strategy	Relic Entertainment
game17	userid1	Company of Heroes 2	4.8	Strategy	Relic Entertainment
game18	userid1	Risk!	3	Strategy	Hasbro
game2	userid1	League of Legends	4	MOBA	Riot Games
game3	userid1	Minecraft	4.5	Sandbox Survival	Mojang
game4	userid1	Monopoly	2	Board Game	Hasbro
game5	userid1	Team Fortress 2	2.2	FPS	Valve
game6	userid1	Yu-Gi-Oh!	3.98	Card Game	Konami
game7	userid1	FIFA	2.6	Sports	Electronic Arts
game8	userid1	Rainbox Six Siege	3.65	FPS	Ubisoft
game9	userid1	Valorant	1.4	FPS	Riot Games

Insertion After:

Retrieved games from the game database:

Game ID	Admin ID	Name	Average Score	Genre	Game Studio
61a46227f11be	userid1	Civilization 6	4	Strategy	Hasbro
game1	userid1	CSGO	5	FPS	Valve
game10	userid1	Minecraft Story Mode	3.7	Interactive Movie	Mojang
game11	userid1	Wolfenstein	3.8	FPS	id Software
game12	userid1	Age of Empires IV	2.456	Strategy	Relic Entertainment
game13	userid1	Call of Duty: Modern Warfare	3.9	FPS	Activision Blizzard
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game15	userid1	Warhammer 40K: Dawn of War	4.2	Strategy	Relic Entertainment
game16	userid1	Company of Heroes	3.9	Strategy	Relic Entertainment
game17	userid1	Company of Heroes 2	4.8	Strategy	Relic Entertainment
game18	userid1	Risk!	3	Strategy	Hasbro
game2	userid1	League of Legends	4	MOBA	Riot Games
game3	userid1	Minecraft	4.5	Sandbox Survival	Mojang
game4	userid1	Monopoly	2	Board Game	Hasbro
game5	userid1	Team Fortress 2	2.2	FPS	Valve
game6	userid1	Yu-Gi-Oh!	3.98	Card Game	Konami
game7	userid1	FIFA	2.6	Sports	Electronic Arts
game8	userid1	Rainbox Six Siege	3.65	FPS	Ubisoft
game9	userid1	Valorant	1.4	FPS	Riot Games

Deletion Before:

Retrieved games from the game database:

Game ID	Admin ID	Name	Average Score	Genre	Game Studio
61a46227f11be	userid1	Civilization 6	4	Strategy	Hasbro
game1	userid1	CSGO	5	FPS	Valve
game10	userid1	Minecraft Story Mode	3.7	Interactive Movie	Mojang
game11	userid1	Wolfenstein	3.8	FPS	id Software
game12	userid1	Age of Empires IV	2.456	Strategy	Relic Entertainment
game13	userid1	Call of Duty: Modern Warfare	3.9	FPS	Activision Blizzard
game14	userid1	Halo Infinite	3.3	FPS	343 Industries
game15	userid1	Warhammer 40K: Dawn of War	4.2	Strategy	Relic Entertainment
game16	userid1	Company of Heroes	3.9	Strategy	Relic Entertainment
game17	userid1	Company of Heroes 2	4.8	Strategy	Relic Entertainment
game18	userid1	Risk!	3	Strategy	Hasbro
game2	userid1	League of Legends	4	MOBA	Riot Games
game3	userid1	Minecraft	4.5	Sandbox Survival	Mojang
game4	userid1	Monopoly	2	Board Game	Hasbro
game5	userid1	Team Fortress 2	2.2	FPS	Valve
game6	userid1	Yu-Gi-Oh!	3.98	Card Game	Konami
game7	userid1	FIFA	2.6	Sports	Electronic Arts
game8	userid1	Rainbox Six Siege	3.65	FPS	Ubisoft
game9	userid1	Valorant	1.4	FPS	Riot Games

Deletion After:

Retrieved games from the game database:

Game ID	Admin ID	Name	Average Score	Genre	Game Studio
game1	userid1	CSGO	5	FPS	Valve
game10	userid1	Minecraft Story Mode	3.7	Interactive Movie	Mojang
game11	userid1	Wolfenstein	3.8	FPS	id Software
game12	userid1	Age of Empires IV	2.456	Strategy	Relic Entertainment
game13	userid1	Call of Duty: Modern Warfare	3.9	FPS	Activision Blizzard
game14	userid1	Halo Infinite	3.3	FPS	343 Industries
game15	userid1	Warhammer 40K: Dawn of War	4.2	Strategy	Relic Entertainment
game16	userid1	Company of Heroes	3.9	Strategy	Relic Entertainment
game17	userid1	Company of Heroes 2	4.8	Strategy	Relic Entertainment
game18	userid1	Risk!	3	Strategy	Hasbro
game2	userid1	League of Legends	4	MOBA	Riot Games
game3	userid1	Minecraft	4.5	Sandbox Survival	Mojang
game4	userid1	Monopoly	2	Board Game	Hasbro
game5	userid1	Team Fortress 2	2.2	FPS	Valve
game6	userid1	Yu-Gi-Oh!	3.98	Card Game	Konami
game7	userid1	FIFA	2.6	Sports	Electronic Arts
game8	userid1	Rainbox Six Siege	3.65	FPS	Ubisoft
game9	userid1	Valorant	1.4	FPS	Riot Games

Update Before:

Retrieved games from the game database:

Game ID	Admin ID	Name	Average Score	Genre	Game Studio
1	1	Counter Strike: Global Offensive	5	FPS	Valve
2	1	League of Legends	4	MOBA	Riot Games
3	1	Minecraft	4.5	Sandbox Survival	Mojang
4	1	Monopoly	2	Board Game	Hasbro
5	1	Team Fortress 2	2.2	FPS	Valve
6	1	Yu-Gi-Oh!	3.98	Card Game	Konami
7	1	FIFA	2.6	Sports	Electronic Arts
8	1	Rainbox Six Siege	3.65	FPS	Ubisoft
9	1	Valorant	1.4	FPS	Riot Games
10	1	Minecraft Story Mode	3.7	Interactive Movie	Mojang
11	1	Wolfenstein	3.8	FPS	id Software
12	1	Age of Empires IV	2.456	Strategy	Relic Entertainment
13	1	Call of Duty: Modern Warfare	3.9	FPS	Activision Blizzard
14	1	Halo Infinite	3.3	FPS	343 Industries

Update After:

Retrieved games from the game database:

Game ID	Admin ID	Name	Average Score	Genre	Game Studio
1	1	CSGO	5	FPS	Valve
2	1	League of Legends	4	MOBA	Riot Games
3	1	Minecraft	4.5	Sandbox Survival	Mojang
4	1	Monopoly	2	Board Game	Hasbro
5	1	Team Fortress 2	2.2	FPS	Valve
6	1	Yu-Gi-Oh!	3.98	Card Game	Konami
7	1	FIFA	2.6	Sports	Electronic Arts
8	1	Rainbox Six Siege	3.65	FPS	Ubisoft
9	1	Valorant	1.4	FPS	Riot Games
10	1	Minecraft Story Mode	3.7	Interactive Movie	Mojang
11	1	Wolfenstein	3.8	FPS	id Software
12	1	Age of Empires IV	2.456	Strategy	Relic Entertainment
13	1	Call of Duty: Modern Warfare	3.9	FPS	Activision Blizzard
14	1	Halo Infinite	3.3	FPS	343 Industries

Selection Before:

Retrieved games from the game database:

Game ID	Admin ID	Name	Average Score	Genre	Game Studio
61a4617702ddd	61a45cdeeb4e0	Dota	2	moba	Valve
61a46227f11be	userid1	Civilization 6	4	Strategy	Hasbro
game1	userid1	CSGO	5	FPS	Valve
game10	userid1	Minecraft Story Mode	3.7	Interactive Movie	Mojang
game11	userid1	Wolfenstein	3.8	FPS	id Software
game12	userid1	Age of Empires IV	2.456	Strategy	Relic Entertainment
game13	userid1	Call of Duty: Modern Warfare	3.9	FPS	Activision Blizzard
game14	userid1	Halo Infinite	3.3	FPS	343 Industries
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game16	userid1	Company of Heroes	3.9	Strategy	Relic Entertainment
game17	userid1	Company of Heroes 2	4.8	Strategy	Relic Entertainment
game18	userid1	Risk!	3	Strategy	Hasbro
game2	userid1	League of Legends	4	MOBA	Riot Games
game3	userid1	Minecraft	4.5	Sandbox Survival	Mojang
game4	userid1	Monopoly	2	Board Game	Hasbro
game5	userid1	Team Fortress 2	2.2	FPS	Valve
game6	userid1	Yu-Gi-Oh!	3.98	Card Game	Konami
game7	userid1	FIFA	2.6	Sports	Electronic Arts
game8	userid1	Rainbox Six Siege	3.65	FPS	Ubisoft
game9	userid1	Valorant	1.4	FPS	Riot Games

Selection After: (used 2 as input)

Retrieved games from the game database:

Game ID	Admin ID	Name	Average Score	Genre	Game Studio
61a46227f11be	userid1	Civilization 6	4	Strategy	Hasbro
game1	userid1	CSGO	5	FPS	Valve
game10	userid1	Minecraft Story Mode	3.7	Interactive Movie	Mojang
game11	userid1	Wolfenstein	3.8	FPS	id Software
game12	userid1	Age of Empires IV	2.456	Strategy	Relic Entertainment
game13	userid1	Call of Duty: Modern Warfare	3.9	FPS	Activision Blizzard
game14	userid1	Halo Infinite	3.3	FPS	343 Industries
game15	userid1	Warhammer 40K: Dawn of War	4.2	Strategy	Relic Entertainment
game16	userid1	Company of Heroes	3.9	Strategy	Relic Entertainment
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game18	userid1	Risk!	3	Strategy	Hasbro
game2	userid1	League of Legends	4	MOBA	Riot Games
game3	userid1	Minecraft	4.5	Sandbox Survival	Mojang
game5	userid1	Team Fortress 2	2.2	FPS	Valve
game6	userid1	Yu-Gi-Oh!	3.98	Card Game	Konami
game7	userid1	FIFA	2.6	Sports	Electronic Arts
game8	userid1	Rainbox Six Siege	3.65	FPS	Ubisoft

Projection Before:

Retrieved games from the game database:

Game ID	Admin ID	Name	Average Score	Genre	Game Studio
game1	userid1	Counter Strike	5	FPS	Valve
game10	userid1	Minecraft Story Mode	3.7	Interactive Movie	Mojang
game11	userid1	Wolfenstein	3.8	FPS	id Software
game12	userid1	Age of Empires IV	2.456	Strategy	Relic Entertainment
game13	userid1	Call of Duty: Modern Warfare	3.9	FPS	Activision Blizzard
game14	userid1	Halo Infinite	3.3	FPS	343 Industries
game15	userid1	Warhammer 40K: Dawn of War	4.2	Strategy	Relic Entertainment
game16	userid1	Company of Heroes	3.9	Strategy	Relic Entertainment
game17	userid1	Company of Heroes 2	4.8	Strategy	Relic Entertainment
game18	userid1	Risk!	3	Strategy	Hasbro
game2	userid1	League of Legends	4	MOBA	Riot Games
game3	userid1	Minecraft	4.5	Sandbox Survival	Mojang
game4	userid1	Monopoly	2	Board Game	Hasbro
game5	userid1	Team Fortress 2	2.2	FPS	Valve
game6	userid1	Yu-Gi-Oh!	3.98	Card Game	Konami
game7	userid1	FIFA	2.6	Sports	Electronic Arts
game8	userid1	Rainbox Six Siege	3.65	FPS	Ubisoft
game9	userid1	Valorant	1.4	FPS	Riot Games

Projection After:

The highest scoring game in the database is **Counter Strike** with a score of: **5**

Join Before:

Retrieved data from the review table:

Review ID	Game ID	User ID	Review
1	1	1	Nice game
2	1	2	Okay game
3	1	3	Counter-Strike: Global Offensive is a multiplayer first-person shooter developed by Valve and Hidden Path Entertainment. It is the fourth game in the Counter-Strike series. Developed for over two years, Global Offensive was released for Windows, macOS, Xbox 360, and PlayStation 3 in August 2012, and for Linux in 2014.
1	5	1	Meh
1	6	2	Alright game
1	9	3	Nice game for noobs who cant get kills in csgo loool

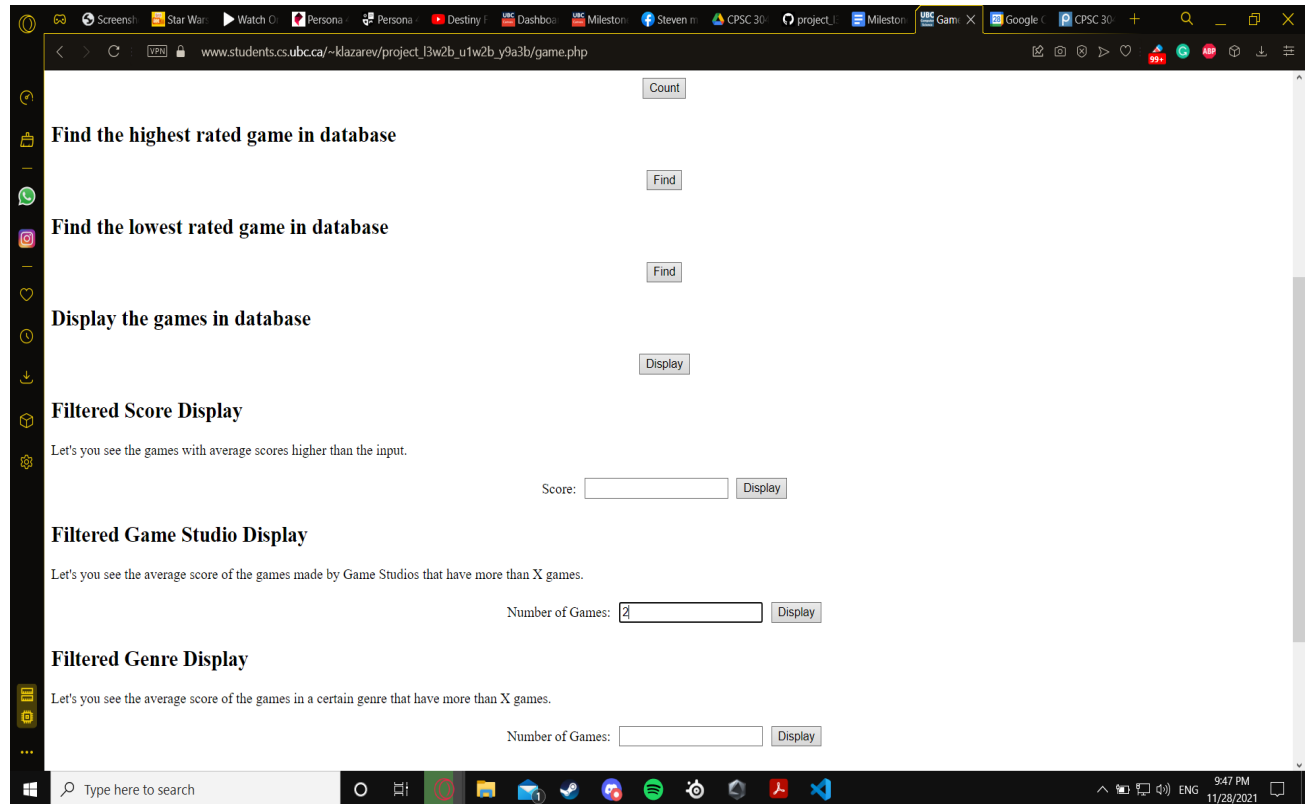
Join After:

The number of reviews in this game: 3

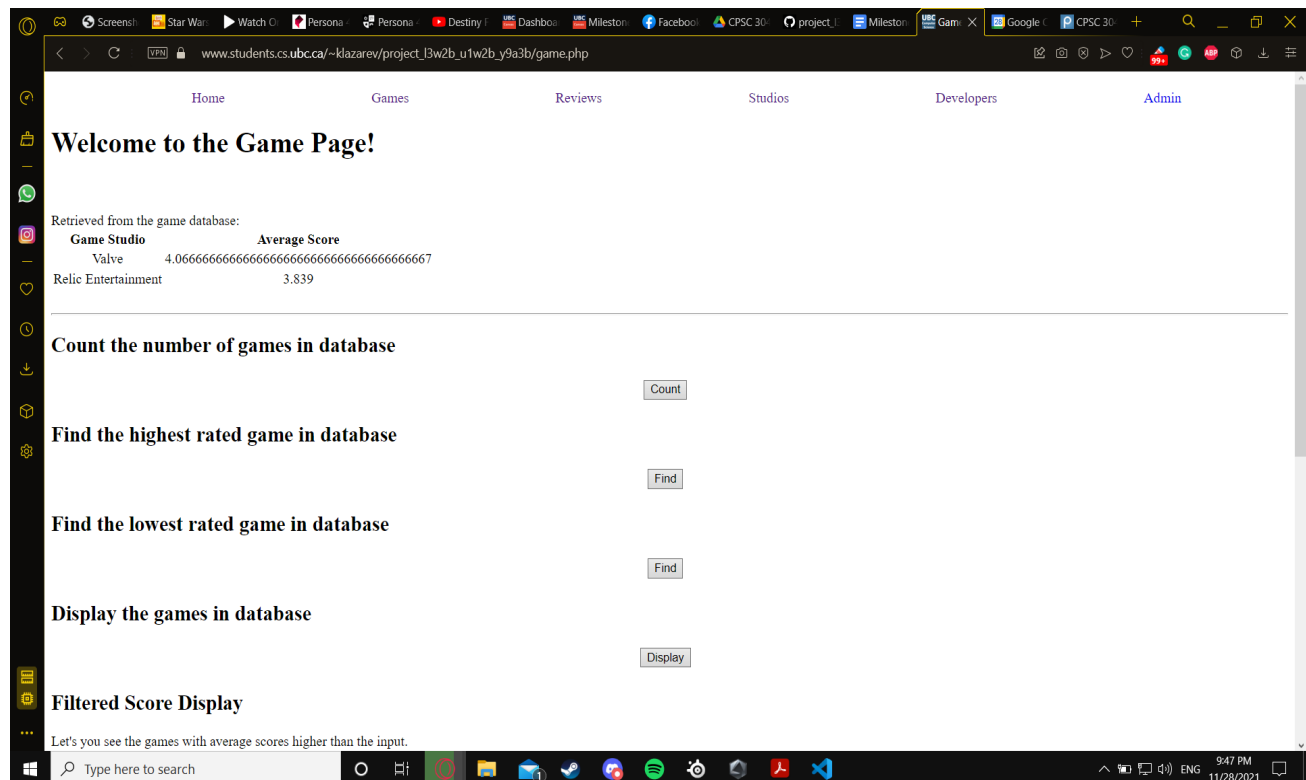
Kiril Lazarev

Aggregation with Group By Query:

Before



After



Aggregation with Having Before:

Retrieved games from the game database:

Game ID	Admin ID	Name	Average Score	Genre	Game Studio
61a46737059d4	61a45cdeeb4e0	newgame	5	whatever	Valve
game1	userid1	Counter Strike	5	FPS	Valve
game10	userid1	Minecraft Story Mode	3.7	Interactive Movie	Mojang
game11	userid1	Wolfenstein	3.8	FPS	id Software
game12	userid1	Age of Empires IV	2.456	Strategy	Relic Entertainment
game13	userid1	Call of Duty: Modern Warfare	3.9	FPS	Activision Blizzard
game14	userid1	Halo Infinite	3.3	FPS	343 Industries
game15	userid1	Warhammer 40K: Dawn of War	4.2	Strategy	Relic Entertainment
game16	userid1	Company of Heroes	3.9	Strategy	Relic Entertainment
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game18	userid1	Risk!	3	Strategy	Hasbro
game2	userid1	League of Legends	4	MOBA	Riot Games
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game6	userid1	Yu-Gi-Oh!	3.98	Card Game	Konami
game7	userid1	FIFA	2.6	Sports	Electronic Arts
game8	userid1	Rainbox Six Siege	3.65	FPS	Ubisoft
game9	userid1	Valorant	1.4	FPS	Riot Games

Aggregation with Having After:

Retrieved from the game database:

Genre	Average Score
FPS	3.32142857142857142857142857142857
Strategy	3.6712

Nested Aggregation with Group By Before:

Retrieved games from the game database:

Game ID	Admin ID	Name	Average Score	Genre	Game Studio
61a46737059d4	61a45cdeeb4e0	newgame	5	whatever	Valve
game1	userid1	Counter Strike	5	FPS	Valve
game10	userid1	Minecraft Story Mode	3.7	Interactive Movie	Mojang
game11	userid1	Wolfenstein	3.8	FPS	id Software
game12	userid1	Age of Empires IV	2.456	Strategy	Relic Entertainment
game13	userid1	Call of Duty: Modern Warfare	3.9	FPS	Activision Blizzard
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game5	userid1	Team Fortress 2	2.2	FPS	Valve
game6	userid1	Yu-Gi-Oh!	3.98	Card Game	Konami
game7	userid1	FIFA	2.6	Sports	Electronic Arts
game8	userid1	Rainbox Six Siege	3.65	FPS	Ubisoft
game9	userid1	Valorant	1.4	FPS	Riot Games

Nested Aggregation with Group By After:

Game Studio Average Score

Mojang 4.1

Division Query:

Before

Delete Developer

If you enter an invalid Developer ID, nothing will happen.

Please keep in mind the text box is case and space sensitive.

Developer ID:

Count the Number of Developers Added So Far

Display the Developers in the Database

Find Developers Who Worked in ALL of the Studios Available in the Database

These are beasts that are just built different and not only develop games for a career but THEY LIVE IT!!

Retrieved data from the database:

Developer ID	Developer Name	Bio
dev1	Aiden	Passionate and chill developer
dev2	Depressed Boi	Depressed and over-crunched developer who dived first into the industry hoping to monetize his passion but rather found only darkness
dev3	George	Inexperienced but passionate developer that is ready to do menial tasks
dev4	Jade	Senior experienced physics coder and passionate about incorporating game mechanics to the physics engine
dev5	Yasmine	Senior Project Lead. Passionate about bringing in different components such as sound, coding, design, and writing
dev6	Stacy	Junior story designer and writer. Particularly interested in ghost stories and spooky castles
dev7	EdgeLordQQ	Anonymous and Mysterious developer

After

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

Old Name: New Name:

Delete Developer

If you enter an invalid Developer ID, nothing will happen.

Please keep in mind the text box is case and space sensitive.

Developer ID:

Count the Number of Developers Added So Far

Display the Developers in the Database

Find Developers Who Worked in ALL of the Studios Available in the Database

These are beasts that are just built different and not only develop games for a career but THEY LIVE IT!!

Retrieved data from the database:

Developer ID	Developer Name	Bio
dev2	Depressed Boi	Depressed and over-crunched developer who dived first into the industry hoping to monetize his passion but rather found only darkness
dev5	Yasmine	Senior Project Lead. Passionate about bringing in different components such as sound, coding, design, and writing
dev7	EdgeLordQQ	Anonymous and Mysterious developer