

## CPSC 304 Project Cover Page

Milestone #: 4

Date: 2024-08-05

Group Number: 50

Name	Student Number	Alias (Userid)	Preferred E-mail Address
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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

Repository Link:

[https://github.students.cs.ubc.ca/CPSC304-2024S-T2/project\\_f3c7i\\_u8w8n\\_x4z8c/tree/main](https://github.students.cs.ubc.ca/CPSC304-2024S-T2/project_f3c7i_u8w8n_x4z8c/tree/main)

## Project Description

### **A short description of the final project, and what it accomplished.**

Making friends on campus can be challenging. Every year, there are thousands of reddit posts from students highlighting the challenges of making new friends. Our final project is a social media application for people to connect through regularly assigned hangouts, called Donut dates, which are paired based on similar attributes such as hobbies, major, etc. We used the department provided DB, with a locally running server SSH tunneled into it (like the local ExpressJS guide from tutorial 2). Once paired, you can chat with your partner to plan your donut date. Our front-end is a React PWA since we wanted a mobile experience and our server was built in Node/ExpressJS. After each donut, users can make a post highlighting their donut by adding an image and short description of what they did. Other users can then comment and interact with the post through reactions and replying to threads.

### **A description of how your final schema differed from the schema you turned in. If the final schema differed, explain why.**

For our final schema, a few things differed:

- We included a PostalLocation table which includes the postal code, city and province of the user in order to normalize our profile table
- Our Profile table now references the PostalLocation table and includes a unique username attribute so every user has their own unique identifier
- We created a BlackListed table for users to blacklist specific users they don't want to be paired up with
- Our Donut table now includes a groupName attribute so users can rename their group chat
- Our Post table now includes a postOrder attribute, used alongside donutID to form a primary key
- The title attribute was removed in our Picture entity because it was similar to our alt attribute. We also included a postOrder attribute so we can reference it to Post
- Some of our date types have been replaced with timestamp, since we also want the time stored
  - Entities: Message, Thread, Notification
- We added a category attribute to hobby so we can group them up
- PostReaction now uses donutID, postOrder and emoji as the primary key instead of postID to reduce the number of attributes we have
- Thread now uses donutID and postOrder to reference Post, and title has been renamed to text

### **A copy of the schema and screenshots that show what data is present in each relation after the SQL initialization script is run.**

PostalLocation( postalCode, city, province )

POSTALCODE	CITY	PROVINCE
V6T1Z4	Vancouver	British Columbia
V1M3B5	Surrey	British Columbia
V5A1S6	Burnaby	British Columbia

Profile( email, pictureURL, gender, age, fullName, enabled, year, major, settings, address, **postalCode**,username )

EMAIL	PICTUREURL	GENDER	AGE	FULLNAME	ENABLED	YEAR	MAJOR	SETTINGS	ADDRESS	POSTALCODE	USERNAME
davidd.lim05	https://lh3.g			David Lim	1						
daviddlim11	https://lh3.g	male	21	David Dongg	1	4	math				dave
jaewuchun@	https://lh3.g	male	21	Jae Wu Chun	1	3	CMS				jaewuchun
upnaijwu@g	https://lh3.g	male	21	Lebron Jame	1	3	genderstudie				lebron

BeenPaired( profileA, profileB, pairedDate )

PROFILEA	PROFILEB	PAIREDDATE
davidd.lim05	upnaijwu@g	2024-08-06T07:00:00.000Z
daviddlim11	jaewuchun@	2024-08-06T07:00:00.000Z

Blacklist( blacklister, blacklisted )

BLACKLISTER	BLACKLISTED
davidd.lim05	daviddlim11@gmail.com
daviddlim11	davidd.lim0528@gmail.com

Donut( donutID, createdAt, isCompleted, course, suggestedActivity, groupName )

DONUTID	CREATEDAT	ISCOMPLETE	COURSE	GROUPNAM	SUGGESTEDACTIVITY
7107b36d-23	2024-08-06T0				
cdf1e019-26	2024-08-06T0				
ed201242-37	2024-08-06T0				
e10f602d-2b	2024-08-06T0				

AssignedTo( donutID, profile )

DONUTID	PROFILE
7107b36d-23	daviddlim11@gmail.com
7107b36d-23	jaewuchun@gmail.com
cdf1e019-26	davidd.lim0528@gmail.com
cdf1e019-26	upnaijwu@gmail.com
ed201242-37	daviddlim11@gmail.com
ed201242-37	jaewuchun@gmail.com

Picture( <u>pictureURL</u> , <b>donutID</b> , <b>postOrder</b> , alt )			
PICTUREURL	DONUTID	ALT	POSTORDER
https://stora	ed201242-37	Picture 0	1

PROFILE	HOBBY
jaewuchun@	Building
jaewuchun@	Driving
jaewuchun@	Hiking
jaewuchun@	Investing
jaewuchun@	Weightlifting
upnaijwu@g	Building
upnaijwu@g	Driving
upnaijwu@g	Hiking
upnaijwu@g	Investing
upnaijwu@g	Weightlifting

Notification( notificationID, time, message, **receiver** )

NOTIFICATIO	TIME	MESSAGE	RECEIVER
e5935abb-1c	2024-08-06T	"Added to dc	daviddlim11@gmail.com
b9b89f14-d4	2024-08-06T	"Added to dc	davidd.lim0528@gmail.com
8862445f-bf	2024-08-06T	"Added to dc	upnaijwu@gmail.com

PostReaction( profile, donutID, postOrder, emoji )

PROFILE	DONUTID	POSTORDER	EMOJI
jaewuchun@	ed201242-37	1	✅
jaewuchun@	ed201242-37	1	✨
jaewuchun@	ed201242-37	1	❤️
jaewuchun@	ed201242-37	1	🔥

Thread( threadID, **author**, donutID, **postOrder**, **parent**, text, createdAt )

THREADID	AUTHOR	DONUTID	POSTORDER	PARENT	TEXT	CREATEDAT
41d3eeb0-56	daviddlim11	ed201242-37	1		it was so fun	2024-08-06T02:04:22.000Z
771c15e4-f1	davidd.lim05	ed201242-37	1	41d3eeb0-56	WOW that s	2024-08-06T02:05:49.000Z
5d8a4fd2-58	jaewuchun@	ed201242-37	1	41d3eeb0-56	www	2024-08-06T02:06:09.000Z
c1ed68e8-b8	jaewuchun@	ed201242-37	1	771c15e4-f1	you're confu	2024-08-06T02:06:19.000Z
3e6e0fc3-69	davidd.lim05	ed201242-37	1	079467c2-92	comment he	2024-08-06T02:57:10.000Z
40c4893a-27	jaewuchun@	ed201242-37	1	41d3eeb0-56	I don't really	2024-08-06T02:05:57.000Z
079467c2-92	upnaijwu@g	ed201242-37	1	41d3eeb0-56	are you sure	2024-08-06T02:07:00.000Z

ThreadReaction( profile, threadID, emoji )

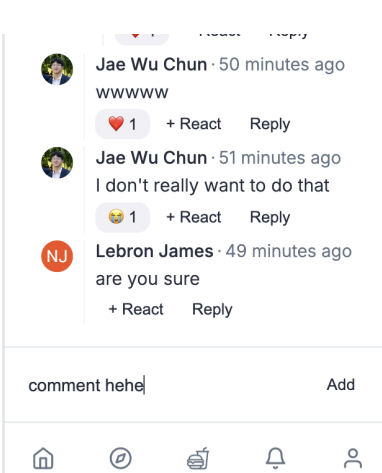
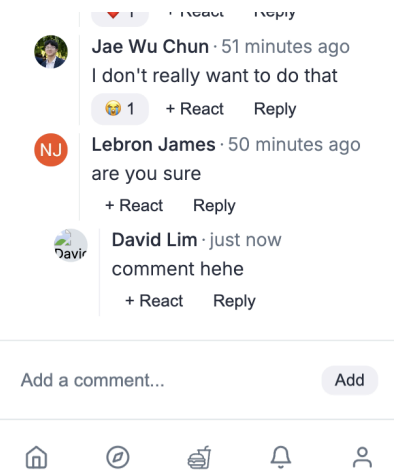
PROFILE	EMOJI	THREADID		
davidd.lim05	😭	40c4893a-27da-4198-a523-5ab7c1b4d21c		
davidd.lim05	❤️	5d8a4fd2-589d-4b6e-bb3d-97fdf3f43af2		
davidd.lim05	❤️	771c15e4-f135-4cab-9538-6b4add57aa3c		
davidd.lim05	❤️	c1ed68e8-b891-48d8-bc29-a197cd922b9c		
daviddlim11	🔥	41d3eeb0-5660-4301-bcc2-83bd15f8e4c1		
upnaijwu@g	🔥	41d3eeb0-5660-4301-bcc2-83bd15f8e4c1		
upnaijwu@g	😭	41d3eeb0-5660-4301-bcc2-83bd15f8e4c1		

## Queries

Query	App function
<u>INSERT</u> server/services/threadService.js (88)	Thread <ul style="list-style-type: none"> <li>- Specify what values to insert: text</li> <li>- Should affect more than one table: thread holds fk to post/donut</li> <li>- Handle when selected fk does not exist: Give gui error</li> </ul>
<u>DELETE</u> server/services/postService.js (617)	Donut <ul style="list-style-type: none"> <li>- Cascade-on-delete: Post -&gt; Reactions, Threads</li> </ul>
<u>UPDATE</u> server/services/profileService.js (106)	Profile <ul style="list-style-type: none"> <li>- Update any number of non-primary key attributes in a relation: fullName</li> <li>- At least one attribute must be unique: username</li> </ul>
<u>Selection</u> server/services/profileService.js (237)	Hobby <ul style="list-style-type: none"> <li>- Search for hobbies of a search criteria</li> </ul>
<u>Projection</u> server/services/exploreService.js (3,16,32)	Explore -> "Godmode" <ol style="list-style-type: none"> <li>1. Find all tables</li> <li>2. Find all attributes</li> <li>3. Find all values with attributes</li> </ol>
<u>Join</u> server/services/profileService.js (209)	Profile -> "donut count" <ul style="list-style-type: none"> <li>- Returns the number of donuts that a user has been a part of for a particular given year and month pair</li> </ul>

<u>Aggregation w/ Group By</u> server/services/exploreService.js (58)	Explore -> "Stats" - Get num users by major, by year
<u>Aggregation w/ Having</u> server\services\threadsService.js (205)	Threads - Filter for comments with X or greater num of reactions
<u>Nested aggregation w/ Group By</u> server/services/postService (635)	Explore -> "avg emoji use over threads" - Average use of each emoji over individual threads that have been reacted to
<u>Division</u> server/services/profileService.js (7)	Explore -> "Find Partner"

## Screenshots

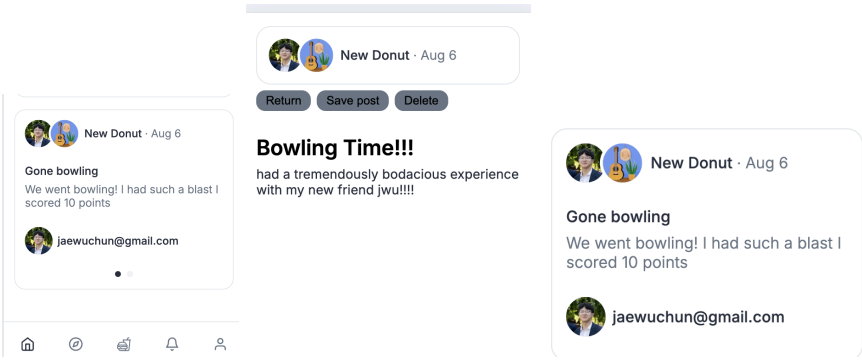
Query	Before/After
<u>INSERT</u>  Image 1: Prior to thread insertion - shows current threads associated with post  Image 2: Thread is inserted into the Threads table.	 

DELETE

Image 1: UI representing 2 posts associated with some donut

Image 2: Donut screen - query operation run on-click of “Delete” button”

Image 3: Delete operation performed; post and associated threads (cascade) are deleted. Only one post is left.

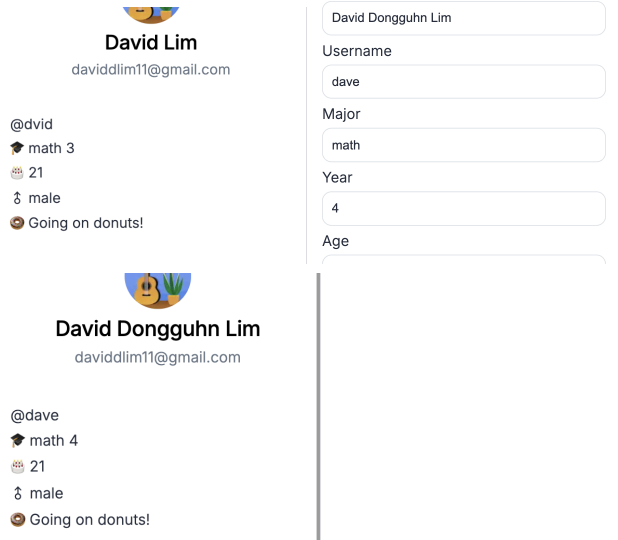


UPDATE

Image 1: tuple values for Profile prior to update

Image 2: input screen to update non-primary key attributes of the relation

Image 3: Update is performed - and tuple values display change





## Selection

Image 1: list of hobbies (unselected)

Image 2: user specified filtering condition is inputted

Image 3: hobbies are filtered based on OR clause specified by user

**Hobbies**  
Advanced search

e.g. category==Music && category==Art

Hiking  
Exploring nature by walking.

Anime  
Discussing Japanese animation and manga.

Driving  
Racing or commuting by vehicle.

Investing  
Buying equities.

Running  
Walking fast for fitness and enjoyment.

Singing  
Enjoying vocal music.

Building  
Creating various projects.

Weightlifting  
Lifting weights.

Drawing  
Drawing some pictures.

Painting  
Painting some paintings.

League Of Legends  
I hate my life.

CSGO  
Pew pew.

Harry Potter  
Expelliarmus!

**Hobbies**  
Advanced search

category==Sports|category==Music

**Filter Hobbies**

**Reset**

Hiking  
Exploring nature by walking.

Running  
Walking fast for fitness and enjoyment.

Singing  
Enjoying vocal music.

Weightlifting  
Lifting weights.

**Hobbies**  
Advanced search

category==Music|category==Art

**Filter Hobbies**

**Reset**

Singing  
Enjoying vocal music.

Drawing  
Drawing some pictures.

Painting  
Painting some paintings.

## Projection

Image 1 (top-left): Table access screen prior to queries

Image 2 (top-right): user selection of table

Image 3 (bottom-left): user selection of attribute corresponding to selected table

Image 4 (bottom-right): query results of projection

### God mode

Access all user data

Table to access:

POSTALLOCATION

Attributes to find:

No attributes

**Get results**

**Major**

☒ POSTALLOCATION

☐ PROFILE

☐ BEENPAIRED

☐ BLACKLIST

☐ DONUT

☐ ASSIGNEDTO

☐ POST

☒ PICTURE

☐ MESSAGE

☐ HOBBY

☐ PROFILEHOBBY

☐ NOTIFICATION

☐ POSTREACTION

☐ THREAD

☐ THREADREACTION

### God mode

Access all user data

Table to access:

PROFILE

Attributes to find:

EMAIL

PICTUREURL

**GENDER**

**AGE**

FULLNAME

ENABLED

YEAR

**MAJOR**

SETTINGS

ADDRESS

POSTALCODE

USERNAME

**Get results**

Attributes to find:

EMAIL

PICTUREURL

**GENDER**

**AGE**

FULLNAME

ENABLED

YEAR

**MAJOR**

SETTINGS

ADDRESS

POSTALCODE

USERNAME

**Get results**

```
[{"GENDER":null,"AGE":null,"MAJOR":null},
{"GENDER":"male",
"AGE":21,"MAJOR":"math"},
{"GENDER":"male",
"AGE":21,"MAJOR":"CMS"},{"GENDER":"r",
"AGE":21,"MAJOR":"genderstudies"}]
```

<p><u>Join</u></p> <p>Image 1: Donut count screen, prior to query</p> <p>Image 2: Join (between Donut and Profile) is performed and queries the count of 1 donut</p> <p>Image 3: Another example showing a join that resulted in 0 tuples</p>	<div><div><div><div>Profile</div><div><div>David Lim davidlim11@gmail.com</div></div><div><div>Select Year and Month: <input type="text"/></div><div>Donut Count</div><div>Click the button above to view the number of donuts in a given year and month that you have been in.</div></div></div><div><div>Profile</div><div><div>David Lim davidlim11@gmail.com</div></div><div><div>Select Year and Month: <input type="text" value="August 2024"/></div><div>Update Count</div><div>You have been in 1 donuts!</div><div> Math 3</div></div></div><div><div>Profile</div><div><div>David Lim davidlim11@gmail.com</div></div><div><div>Select Year and Month: <input type="text" value="January 2024"/></div><div>Update Count</div><div>You have been in 0 donuts!</div><div> Math 3</div></div></div></div></div>
<p><u>Aggregation w/ Group By</u></p> <p>Image 1: Aggregation UI that shows attribute for profile to query on</p> <p>Image 2: query executed - shows that for attribute "Major" with value "english", there are no profiles</p> <p>Image 3: query executed - shows that for attribute "Major" with value "math", there is 1 profile</p>	<div><div><div>Statistics</div><div>Get number of profiles of a specific attribute (major, gender, year)</div><div>Attribute <input type="text" value="Major"/></div><div>Value <input type="text" value="e.g. math"/></div><div>Find now</div><div>Number of profiles: 0</div></div><div><div>Statistics</div><div>Get number of profiles of a specific attribute (major, gender, year)</div><div>Attribute <input type="text" value="Major"/></div><div>Value <input type="text" value="math"/></div><div>Find now</div><div>Number of profiles: 1</div></div></div> <div><div><div>Statistics</div><div>Get number of profiles of a specific attribute (major, gender, year)</div><div>Attribute <input type="text" value="Major"/></div><div>Value <input type="text" value="english"/></div><div>Find now</div><div>Number of profiles: 0</div></div></div>

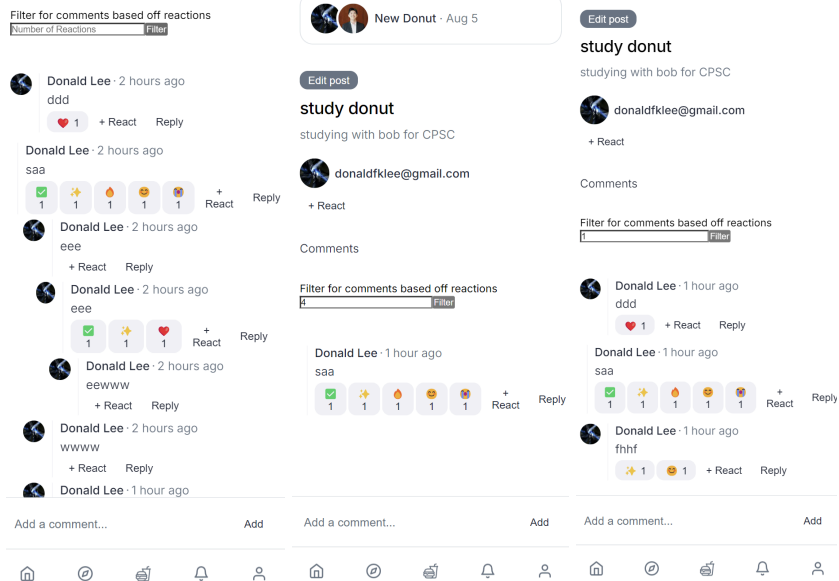
## Aggregation w/ Having

Image 1:

Comments under a post prior to Aggregation w/ Having. No number has been added to the input box, therefore, all comments are shown no matter how many reactions they have.

Image 2:  
Entered in 4 and clicked on the filter button. Only displays threads with more than 4 reactions

Image 3:  
Entered in 1 and clicked on the filter button. Only displays threads with more than 1 reactions



## Nested aggregation with Group By

Image 1:  
Comments (threads) under a post with their associated reaction

Image 2:  
Filter/analytics section of the post which includes the button to call the query ("show stats")

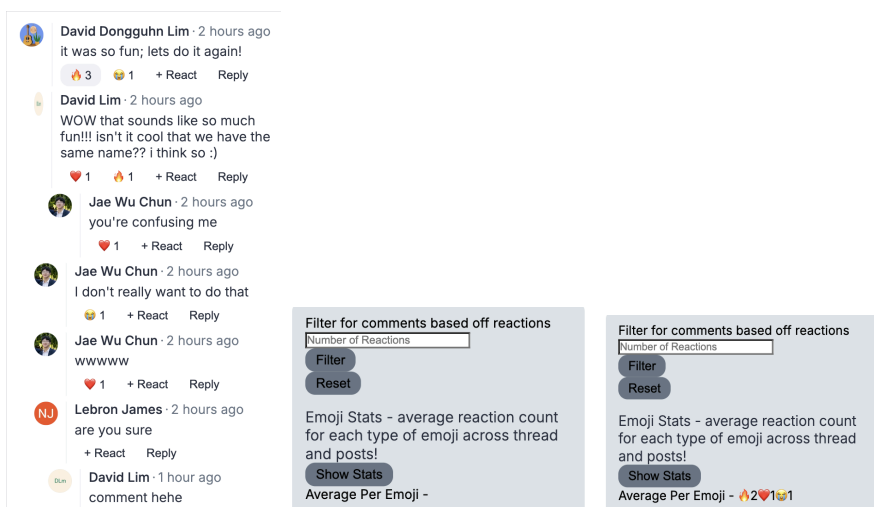


Image 3: Query is called and nested aggregation is performed, with the query result displayed beside “Average Per Emoji”

### Division

Image 1 & 2: LeBron James and Jae Wu has the same hobbies

Image 3: On Jae Wu's explore page, I can click on find a partner

Image 4: After clicking find now, I get another user with the exact same hobbies as me

### Profile



**Lebron James**

upnajibwu@gmail.com

@lebron

📖 genderstudies 3

🎂 21

♂ male

🍩 Going on donuts!

### Hobbies

Building  
Driving  
Hiking  
Investing  
Weightlifting

Edit profile

Logout

View the number of donuts in a given



### Profile



**Jae Wu Chun**

jaewuchun@gmail.com

@jaewuchun

📖 CMS 3

🎂 21

♂ male

🍩 Going on donuts!

### Hobbies

Building  
Driving  
Hiking  
Investing  
Weightlifting

Edit profile

Logout

View the number of donuts in a given



## Explore

### Find your partner

Find someone with your exact same hobbies

Find now

### Statistics

Get number of profiles of a specific attribute (major, gender, year)

# Explore

## Find your partner

Find someone with your exact same hobbies

Find now



Lebron James  
upnaijwu@gmail.com

## Statistics