University of British Columbia, Vancouver
Department of Computer Science

CPSC 304 Project Cover Page

Milestone #: ___4____

Date: ___April 5, 2024___

Group Number: ____24_____

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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

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Short Description of Final Project (and what it accomplished)

Our final project provides a platform for the culinary industry, particularly gourmet dining and restaurant management in Vancouver. Our projection allows users to write, edit and delete reviews, view others' reviews, and find restaurants based on various criteria (group by, aggregation, etc.) through our user-friendly GUI.

Description of How Final Schema Differed From Original Schema

The final schema differs slightly from our original one, as we added an additional many-to-one relationship between SignatureDish and Cuisine, to ensure we meet the minimum requirement of having 7 relationships. Furthermore, in our DDL statements, we have combined some to reduce the redundancy - we got rid of ReviewerHasReview and RestaurantHasReview tables and combined those relationships into the Review table, as well as getting rid of the RestaurantServes table and combining that relationship with the Restaurant table.

Schema

Note: Primary keys are underlined, foreign keys are bolded, and *candidate keys* are italicized.

Cuisine(CuisineID, Name, Description)

Location(Address, PostalCode, City, Province)

Reviewer(ReviewerID, Name)

LeadChef(ChefID, Name, Biography)

Restaurant(RestaurantID, Name, Website, PriceRange, **Address**, **PostalCode**, AverageScore, **CuisineID**)

WorksAtRestaurant(***ChefID***, ***RestaurantID***)

SignatureDish(DishName, **RestaurantID**, Description, Course, **CuisineID**)

Award(AwardID, Name, MichelinRating, Description, **RestaurantID**)

ProfessionalCritic(**ReviewerID**, Title)

FoodBlogger(**ReviewerID**, Website)

Review(ReviewID, **RestaurantID**, **ReviewerID**, Date, Score, Comment)

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Screenshots of Data in Each Relation After SQL Script is Run

Cuisine:

```
SQL> select * from cuisine;

CUISINEID NAME                    DESCRIPTION
---------- -------------------- --------------------
        1 Chinese               Cantonese
        2 Contemporary          French
        3 Japanese              Sushi

3 rows selected.
```

Location:

```
SQL> select * from location;

ADDRESS                          POSTALCODE    CITY        PROVINCE
-------------------------------- ------------- ----------- -----------
3330 Main St.                    V5V 3M7       Vancouver   BC
1038 Mainland St.                V6B 2T4       Vancouver   BC
750 Nelson St.                   V6Z 1A8       Vancouver   BC
898 Homer St.                    V6B 2W5       Vancouver   BC
845 Hornby St.                   V6Z 1V1       Vancouver   BC
108-777 W. Broadway              V5Z 4J7       Vancouver   BC

6 rows selected.
```

Reviewer

```
SQL> select * from reviewer;

no rows selected
```

LeadChef

```
SQL> select * from leadchef;

CHEFID NAME           BIOGRAPHY
------ -------------- -------------------------------------------------------------------------------------------------------------------
                      ---------------------------------------------------
     1 Hilary Nguy    Vietnamese Chef Hilary Nguy grew up in East Van, opening Sushi Hil in 2022.
     2 Takuya Matsuda From Mie Prefecture, Japan, Chef Matsuda started his career at the age of 15, accumulating more than 25 years of experience.
     3 Chef Jin       Chef Jin has over 30 years of experience serving extraordinary food to extraordinary guests.
     4 Bobby Milheron Chef Bobby Milheron is the Executive Chef of Wentworth Hospitality Group and competed at the Canadian Culinary Championship in 2023.
     5 Montgomery Lau Chef Montgomery Lau is the Executive Chef at Bacchus at Wedgewood Hotel.
     6 Sam Leung      Executive Chef Sam Leung began his apprenticeship in Guangzhou and immigrated to Canada in 1985.

6 rows selected.
```

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Restaurant

```
SQL> select * from restaurant;

RESTAURANTID NAME            WEBSITE                                                    PRICERANGE   ADDRESS            POSTALCODE   AVERAGESCORE CUISINEID
------------ --------------- ---------------------------------------------------------- ------------ ------------------ ------------ ------------ ---------
           1 Sushi Hil       https://www.sushihil.com/                                  $$           3330 Main St.      V5V 3M7               4.7         3
           2 Okeya Kyujiro   https://okeya.ca/                                          $$$$         1038 Mainland St.  V6B 2T4               4.8         3
           3 Sushi Jin       https://sushijinvancouver.ca/                              $$$$         750 Nelson St.     V6Z 1A8               4.6         3
           4 Homer St. Cafe  https://www.homerstreetcafebar.com/                        $$$          898 Homer St.      V6B 2W5               4.4         2
           5 Bacchus         https://wedgewoodhotel.com/dining/bacchus-restaurant/      $$$          845 Hornby St.     V6Z 1V1               4.5         2
           6 Dynasty Seafood https://dynasty-restaurant.ca/                             $$$          108-777 W. Broadway V5Z 4J7              4.2         1

6 rows selected.
```

WorksAtRestaurant

```
SQL> select * from WorksAtRestaurant;

    CHEFID RESTAURANTID
---------- ------------
         1            1
         2            2
         3            3
         4            4
         5            5
         6            6

6 rows selected.
```

SignatureDish

```
SQL> select * from signaturedish;

DISHNAME           RESTAURANTID DESCRIPTION                                                                      COURSE               CUISINEID
------------------ ------------ -------------------------------------------------------------------------------- -------------------- ---------
Aka Isaki                     1 Aka Isaki, or red grunt, is served with orange to underscore the                Main Course                  3
Omakase Course                2 Highlights include chawanmushi with cherry blossom, shatteringly crispy                                      3
Omakase                       3 Begin with otsumami such as live lobster sashimi, followed by delicious courses                             3
Rotisserie Chicken            4 Brined in Homer St. Cafes signature sauce overnight to render tender, flavourful meat.                       2
Tomato Soup                   5 Humble tomato soup is elevated.                                                                              2
Dim Sum                       6 A wide selection from shrimp dumplings to congee and soups.                                                  1

6 rows selected.
```

Award

```
SQL> select * from award;

AWARDID NAME            MICHELINRATING DESCRIPTION                                                                                        RESTAURANTID
------- --------------- -------------- -------------------------------------------------------------------------------------------------- ------------
      1 Bib Gourmand                   good quality, good value cooking                                                                              1
      2 Michelin Star                1 High quality cooking                                                                                          2
      3 Selected                       Good cooking                                                                                                  3
      4 Selected                       Good cooking                                                                                                  4
      5 Selected                       Good cooking                                                                                                  5
      6 Selected                       Good cooking                                                                                                  6

6 rows selected.
```

Foodblogger, ProfessionalCritic, Review

```
SQL> select * from foodBlogger;

no rows selected

SQL> select * from professionalCritic;

no rows selected

SQL> select * from Review;

no rows selected
```

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A list of all SQL queries used and where it can be found in the code (i.e., file name and line number(s))

Insert Operation:
```sql
INSERT INTO Review
VALUES
  (
    NULL,
    : bind1,
    : bind2,
    TO_DATE(: bind3, 'YYYY-MM-DD'),
    : bind4,
    : bind5
  )
```

File: main.php
Line: 458

Delete Operation:
```sql
DELETE FROM ProfessionalCritic
WHERE ReviewerID = :reviewerID

DELETE FROM FoodBlogger
WHERE ReviewerID = :reviewerID

DELETE FROM Review
WHERE ReviewerID = :reviewerID

DELETE FROM Reviewer
WHERE ReviewerID = :reviewerID
```

File: main.php
Line: 617, 618, 619, 620

Update Operation:
```sql
UPDATE
  Review
SET
  RestaurantID = COALESCE(
    cast(: bind3 AS INT),
    RestaurantID
  ),
  \ "Date\"= COALESCE(TO_DATE(:bind4, 'YYYY-MM-DD'),
     \"Date\"),
    Score= COALESCE(cast(:bind5 AS INT), Score),
    \"Comment\"= COALESCE(TO_CLOB(:bind6), \"Comment\")
    WHERE ReviewerID=:bind1 AND ReviewID=:bind2
```

File: main.php
Line: 416

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Selection:

SELECT *
FROM Review
WHERE ReviewerID = :reviewerID
ORDER BY \"Date\"

File: main.php
Line: 573

Projection:

SELECT $attributesListString
FROM Restaurant

File: main.php
Line: 597

Join:

```
SELECT DISTINCT Name, DishName, PriceRange
FROM Restaurant r
INNER JOIN
SignatureDish s
ON r.RestaurantID = s.RestaurantID
WHERE PriceRange = :price
```

File: restaurant.php
Line: 390

Aggregation with Group By:

```
SELECT
  CuisineID,
  MAX(AverageScore)
FROM
  Restaurant
GROUP BY
  CuisineID
```

File: restaurant.php
Line: 311

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Aggregation with Having:

```sql
SELECT A.Name, A.MichelinRating, COUNT(R.RestaurantID)
FROM Award A
INNER JOIN
Restaurant R
ON A.RestaurantID = R.RestaurantID
GROUP BY A.Name, A.MichelinRating
HAVING COUNT(R.RestaurantID) >= :minimum"
```

File: restaurant.php

Line: 342

Nested Aggregation with Group By:

```sql
SELECT MAX(r.Name), r.PriceRange, MAX(r.AverageScore)
FROM Restaurant r
WHERE r.AverageScore = (
        SELECT MAX(AverageScore)
        FROM Restaurant
        WHERE PriceRange = r.PriceRange)
GROUP BY r.PriceRange
ORDER BY r.PriceRange ASC
```

File: restaurant.php

Line: 361

Division:

```sql
SELECT Reviewer.ReviewerID, Reviewer.Name
FROM Reviewer
JOIN Review ON Reviewer.ReviewerID = Review.ReviewerID
GROUP BY Reviewer.ReviewerID, Reviewer.Name
HAVING COUNT(DISTINCT Review.RestaurantID) = :totalRestaurants
```

File: main.php
Line: 656,657,658,659,660

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Screenshots demonstrating the functionality of each query using the GUI (before/during/after progression of events)

Insert Operation:

Before:

Insert Restaurant Review

* = mandatory

RestaurantID*: [   ]

Your ReviewerID*: [   ]

Date*: [yyyy - mm - dd 📅]

Score (out of 5)*: [   ]

Comment: [   ]

[Insert]

Retrieved data from table Review: * (no reviews present)

During:

Insert Restaurant Review

* = mandatory

RestaurantID*: [1]

Your ReviewerID*: [12345]

Date*: [2024 - 04 - 02 📅]

Score (out of 5)*: [5]

Comment: [The food was delicious and priced fairly.]

[Insert]

After:

Retrieved data from table Review:

ReviewID: 1

RestaurantID: 1

ReviewerID: 12345

Date: 02-APR-24

Score: 5

Comment: The food was delicious and priced fairly.

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Delete Operation:

Before:

Delete a Reviewer Account

All reviews by this account will also be deleted

Reviewer ID: 2

Delete

During:

www.students.cs.ubc.ca says

Are you sure you want to delete this account?

Cancel   OK

After:

Reviewer and all related data successfully deleted.

Update Operation:

Before:

Retrieved data from table Review:

ReviewID: 2

RestaurantID: 3

ReviewerID: 49172

Date: 18-MAR-24

Score: 2

Comment: Sushi was good, but the service was just okay.

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During:

Update Review

* = mandatory

Your ReviewerID*: 49172

Old ReviewID*: 2

Edit Review Content (Leave values blank if you do not want to change them)

RestaurantID: 1

Date: 2024-04-03

Score (out of 5): 4

Comment: Originally left the review for the wrong restaurant. The sushi was good, and service was better today.

Update

After:

Retrieved data from table Review:

ReviewID: 2

RestaurantID: 1

ReviewerID: 49172

Date: 03-APR-24

Score: 4

Comment: Originally left the review for the wrong restaurant. The sushi was good, and service was better today.

Selection:

During:

Search Reviews by Reviewer

Reviewer ID: 1   Search

After:

Retrieved data from table Review:

ReviewID: 1

RestaurantID: 1

ReviewerID: 1

Date: 05-APR-24

Score: 5

Comment: Amazing!

Projection:

Before:

Display Restaurants with Selected Attributes

Select attributes to display:

☑ Name (always displayed)
☐ Website
☐ Price Range
☐ Address
☐ Average Score
[Display]

During:

Display Restaurants with Selected Attributes

Select attributes to display:

☑ Name (always displayed)
☐ Website
☐ Price Range
☐ Address
☐ Average Score
[Display]

After:

Retrieved Restaurant Data:

Name
Sushi Hil
Okeya Kyujiro
Sushi Jin
Homer St. Cafe
Bacchus
Dynasty Seafood

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Join:

Before:

Display Signature Dishes by Price Range

Select Price Range: [$ ▾] [Submit]

Resetting Database

During:

Display Sign [$] Dishes by Price Range

$
$$
✓ $$$
$$$$

Select Price Range ✓ $$$ [Submit]

Resetting Database

After:

Display Signature Dishes by Price Range

Select Price Range: [$ ▾] [Submit]

Retrieved data from Restaurant and SignatureDish Tables:

Restaurant	Signature Dish	Price Range
Homer St. Cafe	Rotisserie Chicken	$$$
Dynasty Seafood	Dim Sum	$$$
Bacchus	Tomato Soup	$$$

Aggregation with Group By:

Before:

Highest Restaurant Rating Grouped By Cuisine

[Submit]

During:

Highest Restaurant Rating Grouped By Cuisine

[Submit]

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After:

Retrieved data from Restaurant table:

CuisineID	Max Rating
1	4.2
2	4.5
3	4.8

Cuisine Table for Reference:

CuisineID	Name	Description
1	Chinese	Cantonese
2	Contemporary French	
3	Japanese	Sushi

Aggregation with Having:

Before:

Award Categories with Minimum Number of Restaurants

Enter minimum number of restaurants: [   ]

[Submit]

During:

Award Categories with Minimum Number of Restaurants

Enter minimum number of restaurants: [1   ⇕]

[Submit]

After:

Retrieved data from Restaurant and Award tables:

Award Name	Michelin Stars	# of Restaurants
Selected		4
Bib Gourmand		1
Michelin Star	1	1

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Nested Aggregation with Group By:

Before:

Restaurant with Highest Rating By Price Range

Submit

After:

Retrieved data from Restaurant table:

Restaurant	Price Range	Rating
Sushi Hil	$$	4.7
Bacchus	$$$	4.5
Okeya Kyujiro	$$$$	4.8

Division:

Before:

Display All Reviewers that have reviewed all restaurants

Submit

After:

Reviewers who have reviewed all restaurants:

ReviewerID: 1

Name: abc