## DB Assignment 2

Name: Sean Gor

Date: 9.26.24

1.)

```
-- query 1: finds average price at each restaurant
  2
  3 •
         SELECT r.name AS restaurant_name, avg(price) AS avg_price
         FROM restaurants r
         JOIN serves s ON r.restID = s.restID -- links the serves table
  5
         JOIN foods f ON s.foodID = f.foodID -- links the foods table
  7
         GROUP BY r.name;
                                            Export: Wrap Cell Content: IA
Result Grid
                   Filter Rows:
   restaurant_name
                   avg_price
  La Trattoria
                  13.5000
  Sushi Haven
                  12.0000
  Taco Town
                  9.5000
  Bistro Paris
                  13.5000
  Thai Delight
                  12.0000
  Indian Spice
                   13.5000
```

This query extracts all restaurant names and average prices from the database. It then uses JOIN statements to group the stats together (restaurant ID's from the restaurant table, food ID's from the food table).

2.)

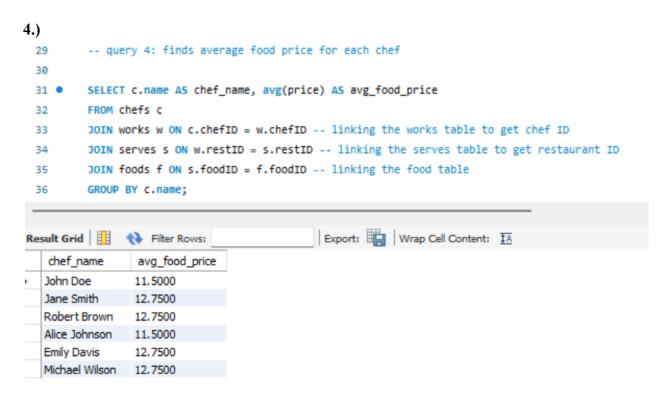
```
-- query 2: finds maximum price of foods at each restaurant
  10
          SELECT r.name AS restaurant_name, MAX(price) AS max_food_price -- using aggregate function MAX
  12
          FROM restaurants r
  13
          JOIN serves s ON r.restID = s.restID -- linking serves table
          JOIN foods f ON s.foodID = f.foodID -- linking foods table
  15
          GROUP BY r.name;
Export: Wrap Cell Content: IA
    restaurant_name max_food_price
   La Trattoria
   Sushi Haven
                   14
   Taco Town
   Bistro Paris
                    18
   Thai Delight
                    13
   Indian Spice
                    15
```

This query extracts all restaurant names and maximum prices (found by using the MAX function) from the database. Like query 1, it uses join statements in order to obtain information from the foods table (via the serves table). This helps get the maximum price.

## 3.)

```
-- query 3: finds the count of each food type at each restaurant.
 21
 22
        SELECT r.name as restaurant_name, count(distinct f.type) as num_of_food_types
        from restaurants r
        join serves s ON r.restID = s.restID -- linking the serves table
 25
        join foods f ON s.foodID = f.foodID -- linking the food table
 26
        GROUP BY r.name; -- organizing data by the restaurant's name
 27
 28
                                        Export: Wrap Cell Content: 1A
restaurant_name
                 num_of_food_types
  Bistro Paris
  Indian Spice
                 1
  La Trattoria
                 1
  Sushi Haven
                 2
  Taco Town
                 1
  Thai Delight
```

This query uses join statements again to get information from the foods table; however, It also uses the count aggregate function to obtain the frequencies of each food type and the distinct keyword to ensure that there are no duplicates.



This query extracts the data headings from the appropriate tables, calculates the average price through the aggregate function, and uses several join statements to obtain the information about food through the works and serves tables.

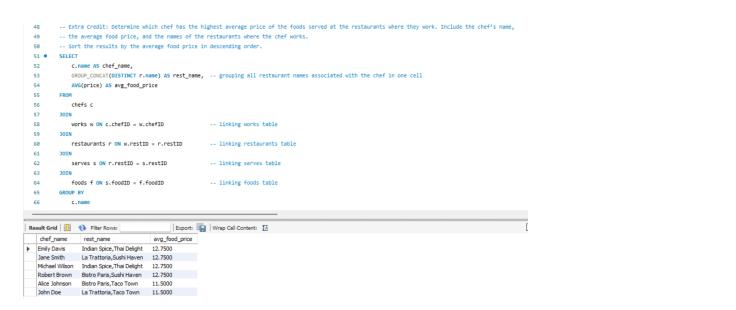
**5.)** 

```
-- query 5: finds restaurants with highest average food price
        SELECT r.name AS restaurant_name, avg(f.price) AS avg price -- aggregate function max being used
 32 •
 33
      FROM restaurants r
        JOIN serves s ON r.restID = s.restID
                                                                  -- serves table is linked
        JOIN foods f ON s.foodID = f.foodID
                                                                  -- foods table is linked
 35
         GROUP BY r.name
 36

⊖ Having AVG(f.price) = (
                                                                  -- Using having statement to include only restaurants with the highest price
 37
            SELECT MAX(sub.avg_price)
                                                                  -- subquery to find the maximum average price
            FROM (
 39
 40
                SELECT r.restID, AVG(f.price) AS avg_price
 41
                FROM restaurants r
 42
                JOIN serves s ON r.restID = s.restID
                JOIN foods f ON s.foodID = f.foodID
 43
                GROUP BY r.restID
 44
            ) AS sub
 46
            );
Export: Wrap Cell Content: IA
   restaurant_name avg_price
  La Trattoria
                  13.5000
  Bistro Paris
                  13.5000
  Indian Spice
                  13.5000
```

This query calculates the average values of the food prices (similar to problem 1). It then uses a subquery to calculate the maximum food price from all the restaurants, and then checks if the price for each restaurant is equal to that maximum value (with a Having clause). If so, the restaurant name is included in the table.

## **Extra Credit:**



This query extracts each chef's name, stores the average price in a variable called avg\_food\_price, and groups all distinct restaurant names together using the Group\_concat() function. It uses join statements to receive necessary information from the restaurant and food tables. Finally, it sorts the results from the highest to lowest price with the Order by function.