Title: DB Assignment 2
Date: Sep 30, 2025

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--=============================================================================
-- Question 1: Find the average price of foods served at each restaurant
--=============================================================================
select   resturants.name as resturants_name,
                    avg(foods.price) as avg_price

from resturants join serves on resturants.restID = serves.restID
                                    join foods on serves.foodID = foods.foodID

group by resturants_name
order by avg_price desc;
```

resturants_name	avg_price
La Trattoria	13.5
Bistro Paris	13.5
Indian Spice	13.5
Sushi Haven	12
Thai Delight	12
Taco Town	9.5

Question 1 Explanation: using the keyword "desc," we are able to order the avg price from greatest to least. We do this by grouping the restaurant names. We use an inner join with the "on" keyword to connect restaurants to serves, which is then connected to foods.

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--=============================================================================
-- Question 2: Maximum Food Price at Each Restaurant
--=============================================================================

select   resturants.name as resturants_name,
                    MAX(foods.price) as max_price

from resturants join serves using (restID)
                                    join foods using(foodID)

group by resturants_name
order by max_price desc;
```

resturants_name	max_price
Bistro Paris	18
La Trattoria	15
Indian Spice	15
Sushi Haven	14
Thai Delight	13
Taco Town	11

Question 2 Explanation: Selects the restaurant's name and the max food price. It then inner joins restaurants with serves using the restID. It does the same with serves and foods using foodID. It then groups the table by restaurant names and orders the max price in descending order.

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--=========================================================================
-- Question 3: Count of Different Food Types Served at Each Restaurant
--=========================================================================
select  resturants.name as resturants_name,
                count(distinct foods.type) as foodtype_count

from    resturants cross join serves
                                cross join foods
where  resturants.restID = serves.restID and serves.foodID = foods.foodID

group by resturants_name
order by foodtype_count desc;
```

resturants_name	foodtype_count
Sushi Haven	2
Bistro Paris	1
Indian Spice	1
La Trattoria	1
Taco Town	1
Thai Delight	1

Question 3 Explanation: Selects the restaurant's name and counts the different types of distinct food types. It then cross joins restaurants with serves using the restID. It does the same with

serves and foods using foodID. It then groups the table by restaurant names and orders by food type for each restaurant.

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--=========================================================================
-- Question 4: Average Price of Foods Served by Each Chef
--=========================================================================

select  chefs.name as chef_name,
                avg(foods.price) as avg_price

from    chefs join works using(chefID)
                  join resturants using(restID)
        join serves using(restID)
        join foods using(foodID)

group by chef_name
order by avg_price desc;
```

chef_name	avg_price
Jane Smith	12.75
Robert Brown	12.75
Michael Wilson	12.75
Emily Davis	12.75
John Doe	11.5
Alice Johnson	11.5

Question 4 Explanation: Selects the chefs name and finds the avg price of foods. It then inner joins chefs with serves using the chefID. It does the same with works and resturants using restID; It does the same with resturant and serves using restID; and it also does the same with serves and foods using foodID. It then groups the table by chef name and orders by avg food price per chef in descending order.

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--=========================================================================
-- Question 5: Find the Restaurant with the Highest Average Food Price
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--=========================================================================

select  resturants.name as resturant_name,
                avg(foods.price) as avg_price

from    resturants join serves on resturants.restID = serves.restID
                                  join foods on serves.foodID = foods.foodID
group by resturants.name
having(avg(foods.price)) >= all

   -- Subquerry to find the max avg food price
   (select avg(foods.price)
   from resturants join serves on resturants.restID = serves.restID
                                     join foods on serves.foodID = foods.foodID
        group by resturants.name);
```

resturant_name	avg_price
La Trattoria	13.5
Bistro Paris	13.5
Indian Spice	13.5

Question 5 Explanation: This question was very similar to the first question, other than the fact that it wants us to find the HIGHEST avg price for food out of all the restaurants. If we wanted to do the easy way, we could just say LIMIT 1 and call it at that. However, for our data set there is a three-way tie for first, so that will not work. Instead, we create a subquery that will produce the highest avg price for every restaurant even if there are ties.

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--=========================================================================
-- Question 6: Determine which chef has the highest average price of the foods served at the restaurants where they work. Include the chef's name, the average food price, and the names of the restaurants where the chef works. Sort the results by the average food price in descending order.
--=========================================================================

select  chefs.name as chef_name,
                avg(foods.price) as avg_price,
                group_concat(distinct resturants.name
                order by resturants.name separator ',') as resturants_name

from    chefs join works using(chefID)
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                        join resturants using(restID)
        join serves using(restID)
        join foods using(foodID)
group by chefs.name
having avg(foods.price) >= all


    (select avg(foods.price)
    from    chefs join works using(chefID)
                        join resturants using(restID)
        join serves using(restID)
        join foods using(foodID)
    group by chefs.chefID);
```

chef_name	avg_price	resturants_name
Emily Davis	12.75	Indian Spice,Thai Delight
Jane Smith	12.75	La Trattoria,Sushi Haven
Michael Wilson	12.75	Indian Spice,Thai Delight
Robert Brown	12.75	Bistro Paris,Sushi Haven

Question 6 Explanation: This is very similar to question 4 where we found the avg price of each found for each chef. However this question wanted us to find the chef with the highest avg price for food. It also wanted us to make a table which listed the chefs name, the resturant name, and the avg price, This was a problem because in our data, chefs can work at multiple resturants. To solve this we needed to use a MYSQL function named group_concat which can combine data from multiple rows into a singular one. This allowed us to list all the restuarants at which each chef worked, the chefs name, and the avg price of food.