SQL Advent Calendar 2024

https://www.sqlcalendar.com/app/advent-calendar

About SQL Advent Calendar 2024

- This document contains my solutions to the **SQL Advent Calendar Challenge**, created by Dawn Choo. The challenge features 24 SQL problems, designed to be solved daily from December 1st to Christmas Eve, 2024.
- Each solution is carefully crafted to demonstrate best practices in SQL problem-solving, with clear and concise explanations to ensure ease of understanding.

Day 1

Day 1 of SQL Advent Calendar

Today's Question:
A ski resort company want to know which customers rented ski equipment for more than one type of activity (e.g., skiing and snowboarding). List the customer names and the number of distinct activities they rented equipment for.

Table name: rentals

rental_id	customer_name	activity	rental_date
1	Emily	Skiing	2024-01-01
2	Michael	Snowboarding	2024-01-02
3	Emily	Snowboarding	2024-01-03
4	Sarah	Skiing	2024-01-01
5	Michael	Skiing	2024-01-02
6	Michael	Snowtubing	2024-01-02

Question level of difficulty: Medium 

Write your SQL query here

```sql
SELECT customer_name,
       COUNT(DISTINCT(activity)) AS distinct_activities
FROM rentals
GROUP BY customer_name
HAVING COUNT(DISTINCT(activity)) > 1;
```

Is your query correct?

Submit Answer

CUSTOMER_NAME	DISTINCT_ACTIVITIES
Emily	2
Michael	3

Correct!! 🎉 Great work!

Click here to go back to the calendar

Solution:

```sql
SELECT customer_name,
       COUNT(DISTINCT(activity)) AS distinct_activities
FROM rentals
GROUP BY customer_name
HAVING COUNT(DISTINCT(activity)) > 1;
```

Day 2

Day 2 of SQL Advent Calendar

Today's Question:

Santa wants to know which gifts weigh more than 1 kg. Can you list them?

Table name: gifts

gift_name	recipient	weight_kg
Toy Train	John	2.5
Chocolate Box	Alice	0.8
Teddy Bear	Sophia	1.2
Board Game	Liam	0.9

Question level of difficulty: Easy 

Write your SQL query here

```
1  SELECT gift_name
2  FROM gifts
3  WHERE weight_kg > 1;
```

Is your query correct?

Submit Answer

GIFT_NAME
Toy Train
Teddy Bear

Correct!! Great work!

Click here to go back to the calendar

Solution:

```sql
SELECT gift_name
FROM gifts
WHERE weight_kg > 1;
```

Day 3

Day 3 of SQL Advent Calendar

Today's Question:

You're trying to identify the most calorie-packed candies to avoid during your holiday binge. Write a query to rank candies based on their calorie count within each category. Include the candy_name, candy_category, calories, and rank (rank_in_category) within the category.

Table name: candy_nutrition

candy_id	candy_name	calories	candy_category
1	Candy Cane	200	Sweets
2	Chocolate Bar	250	Chocolate
3	Gingerbread Cookie	150	Baked Goods
4	Lollipop	100	Sweets
5	Dark Chocolate Truffle	180	Chocolate
6	Marshmallow	900	Sweets
7	Sugar Cookie	140	Baked Goods

Question level of difficulty: Hard 

Write your SQL query here

```sql
SELECT candy_name,
       candy_category,
       calories,
       RANK() OVER(PARTITION BY candy_category
                   ORDER BY calories DESC) AS rank_in_category
FROM candy_nutrition;

```

Is your query correct?

Submit Answer

CANDY_NAME	CANDY_CATEGORY	CALORIES	RANK_IN_CATEGORY
Gingerbread Cookie	Baked Goods	150	1
Sugar Cookie	Baked Goods	140	2
Chocolate Bar	Chocolate	250	1
Dark Chocolate Truffle	Chocolate	180	2
Marshmallow	Sweets	900	1
Candy Cane	Sweets	200	2
Lollipop	Sweets	100	3

Correct!! Great work!

Click here to go back to the calendar

Solution:

```sql
SELECT candy_name,
       candy_category,
       calories,
       RANK() OVER(PARTITION BY candy_category
                   ORDER BY calories DESC) AS rank_in_category
FROM candy_nutrition;
```

Day 4

Day 4 of SQL Advent Calendar

Today's Question:

You're planning your next ski vacation and want to find the best regions with heavy snowfall. Given the tables resorts and snowfall, find the average snowfall for each region and sort the regions in descending order of average snowfall. Return the columns region and average_snowfall.

Table name: ski_resorts

resort_id	resort_name	region
1	Snowy Peaks	Rocky Mountains
2	Winter Wonderland	Wasatch Range
3	Frozen Slopes	Alaska Range
4	Powder Paradise	Rocky Mountains

Table name: snowfall

resort_id	snowfall_inches
1	60
2	45
3	75
4	55

Question level of difficulty: Medium 

Write your SQL query here

```sql
SELECT ski_resorts.region,
       AVG(snowfall.snowfall_inches) AS average_snowfall
FROM ski_resorts
LEFT JOIN snowfall
ON ski_resorts.resort_id = snowfall.resort_id
GROUP BY ski_resorts.region
ORDER BY average_snowfall DESC;
```

Is your query correct?

Submit Answer

REGION	AVERAGE_SNOWFALL
Alaska Range	75
Rocky Mountains	57.5
Wasatch Range	45

Correct!! 🎉 Great work!

Click here to go back to the calendar

Solution:

```
SELECT ski_resorts.region,
       AVG(snowfall.snowfall_inches) AS average_snowfall
FROM ski_resorts
LEFT JOIN snowfall
ON ski_resorts.resort_id = snowfall.resort_id
GROUP BY ski_resorts.region
ORDER BY average_snowfall DESC;
```

Day 5

Day 5 of SQL Advent Calendar

Today's Question:
This year, we're celebrating Christmas in the Southern Hemisphere! Which beaches are expected to have temperatures above 30°C on Christmas Day?

Table name: beach_temperature_predictions

beach_name	country	expected_temperature_c	date
Bondi Beach	Australia	32	2024-12-24
Copacabana Beach	Brazil	28	2024-12-24
Clifton Beach	South Africa	31	2024-12-25
Brighton Beach	New Zealand	25	2024-12-25

Question level of difficulty: Easy 

Write your SQL query here

```sql
SELECT beach_name
FROM beach_temperature_predictions
WHERE expected_temperature_c > 30 AND date = '2024-12-25';
```

Is your query correct?

Submit Answer

BEACH_NAME
Clifton Beach

Correct!! 🎉 Great work!

Click here to go back to the calendar

Solution:

```sql
SELECT beach_name
FROM beach_temperature_predictions
WHERE expected_temperature_c > 30 AND date = '2024-12-25';
```

Day 6

Day 6 of SQL Advent Calendar

Today's Question:
Scientists are tracking polar bears across the Arctic to monitor their migration patterns and caloric intake. Write a query to find the top 3 polar bears that have traveled the longest total distance in December 2024. Include their bear_id, bear_name, and total_distance_traveled in the results.

Table name: polar_bears

bear_id	bear_name	age
1	Snowball	10
2	Frosty	7
3	Iceberg	15
4	Chilly	5

Table name: tracking

tracking_id	bear_id	distance_km	date
1	1	25	2024-12-01
2	2	40	2024-12-02
3	1	30	2024-12-03
4	3	50	2024-12-04
5	2	35	2024-12-05
6	4	20	2024-12-06
7	3	55	2024-12-07
8	1	45	2024-12-08

Question level of difficulty: Hard

Write your SQL query here

```sql
SELECT polar_bears.bear_id,
       polar_bears.bear_name,
       SUM(tracking.distance_km) AS total_distance
FROM tracking
LEFT JOIN polar_bears
ON tracking.bear_id = polar_bears.bear_id
WHERE date BETWEEN '2024-12-01' AND '2024-12-31'
GROUP BY polar_bears.bear_id
ORDER BY total_distance DESC
LIMIT 3;
```

Is your query correct?

Submit Answer

BEAR_ID	BEAR_NAME	TOTAL_DISTANCE
3	Iceberg	105
1	Snowball	100
2	Frosty	75

Correct!! 🎉 Great work!

Click here to go back to the calendar

Solution:

```sql
SELECT polar_bears.bear_id,
       polar_bears.bear_name,
       SUM(tracking.distance_km) AS total_distance
FROM tracking
LEFT JOIN polar_bears
ON tracking.bear_id = polar_bears.bear_id
WHERE date BETWEEN '2024-12-01' AND '2024-12-31'
GROUP BY polar_bears.bear_id
ORDER BY total_distance DESC
LIMIT 3;
```

Day 7

Day 7 of SQL Advent Calendar

Today's Question:

The owner of a winter market wants to know which vendors have generated the highest revenue overall. For each vendor, calculate the total revenue for all their items and return a list of the top 2 vendors by total revenue. Include the vendor_name and total_revenue in your results.

Table name: vendors

vendor_id	vendor_name	market_location
1	Cozy Crafts	Downtown Square
2	Sweet Treats	Central Park
3	Winter Warmers	Downtown Square

Table name: sales

sale_id	vendor_id	item_name	quantity_sold	price_per_unit
1	1	Knitted Scarf	15	25
2	2	Hot Chocolate	50	3.5
3	3	Wool Hat	20	18
4	1	Handmade Ornament	10	15
5	2	Gingerbread Cookie	30	5

Question level of difficulty: Medium 

Write your SQL query here

```sql
SELECT v.vendor_name,
       SUM(s.quantity_sold * price_per_unit) AS total_revenue
FROM sales s
LEFT JOIN vendors v
ON s.vendor_id = v.vendor_id
GROUP BY v.vendor_name
ORDER BY total_revenue DESC
LIMIT 2;
```

Is your query correct?

Submit Answer

VENDOR_NAME	TOTAL_REVENUE
Cozy Crafts	525
Winter Warmers	360

Correct!! 🎉 Great work!

Click here to go back to the calendar

Solution:

```sql
SELECT v.vendor_name,
       SUM(s.quantity_sold * price_per_unit) AS total_revenue
FROM sales s
LEFT JOIN vendors v
ON s.vendor_id = v.vendor_id
GROUP BY v.vendor_name
ORDER BY total_revenue DESC
LIMIT 2;
```

Day 8

Day 8 of SQL Advent Calendar

Today's Question:
You are managing inventory in Santa's workshop. Which gifts are meant for "good" recipients? List the gift name and its weight.

Table name: gifts

gift_id	gift_name	recipient_type	weight_kg
1	Toy Train	good	2.5
2	Lumps of Coal	naughty	1.5
3	Teddy Bear	good	1.2
4	Chocolate Bar	good	0.3
5	Board Game	naughty	1.8

Question level of difficulty: Easy

Write your SQL query here

```sql
SELECT gift_name,
       weight_kg AS weight
FROM gifts
WHERE recipient_type = 'good';
```

Is your query correct?

Submit Answer

GIFT_NAME	WEIGHT
Toy Train	2.5
Teddy Bear	1.2
Chocolate Bar	0.3

Correct!! 🎉 Great work!

Click here to go back to the calendar

Solution:

```sql
SELECT gift_name,
       weight_kg AS weight
FROM gifts
WHERE recipient_type = 'good';
```

Day 9

Day 9 of SQL Advent Calendar

Today's Question:

A community is hosting a series of festive feasts, and they want to ensure a balanced menu. Write a query to identify the top 3 most calorie-dense dishes (calories per gram) served for each event. Include the dish_name, event_name, and the calculated calorie density in your results.

Table name: events

event_id	event_name
1	Christmas Eve Dinner
2	New Years Feast
3	Winter Solstice Potluck

Table name: menu

dish_id	dish_name	event_id	calories	weight_g
1	Roast Turkey	1	3500	5000
2	Chocolate Yule Log	1	2200	1000
3	Cheese Fondue	2	1500	800
4	Holiday Fruitcake	3	4000	1200
5	Honey Glazed Ham	2	2800	3500

Question level of difficulty: Hard 

Write your SQL query here

```sql
SELECT x.dish_name,
       x.event_name,
       x.calorie_density
FROM(
SELECT m.dish_name,
       e.event_name,
       1.0 * m.calories/m.weight_g AS calorie_density,
       RANK() OVER(PARTITION BY e.event_name
                   ORDER BY (1.0 * m.calories/m.weight_g) DESC) AS calorie_rank
FROM menu m
LEFT JOIN events e
ON m.event_id = e.event_id
)x
WHERE x.calorie_rank < 4;
```

Is your query correct?

Submit Answer

DISH_NAME	EVENT_NAME	CALORIE_DENSITY
Chocolate Yule Log	Christmas Eve Dinner	2.2
Roast Turkey	Christmas Eve Dinner	0.7
Cheese Fondue	New Years Feast	1.875
Honey Glazed Ham	New Years Feast	0.8
Holiday Fruitcake	Winter Solstice Potluck	3.3333333333333335

Correct!! 🎉 Great work!

Click here to go back to the calendar

Solution:

```sql
SELECT x.dish_name,
       x.event_name,
       x.calorie_density
FROM(
SELECT m.dish_name,
       e.event_name,
       1.0 * m.calories/m.weight_g AS calorie_density,
       RANK() OVER(PARTITION BY e.event_name
                   ORDER BY (1.0 * m.calories/m.weight_g)
DESC) AS calorie_rank
FROM menu m
LEFT JOIN events e
ON m.event_id = e.event_id
)x
WHERE x.calorie_rank < 4;
```

Day 10

Day 10 of SQL Advent Calendar

Today's Question:

You are tracking your friends' New Year's resolution progress. Write a query to calculate the following for each friend: number of resolutions they made, number of resolutions they completed, and success percentage (% of resolutions completed) and a success category based on the success percentage:

- **Green**: If success percentage is greater than 75%.
- **Yellow**: If success percentage is between 50% and 75% (inclusive).
- **Red**: If success percentage is less than 50%.

Table name: resolutions

resolution_id	friend_name	resolution	is_completed
1	Alice	Exercise daily	1
2	Alice	Read 20 books	0
3	Bob	Save money	0
4	Bob	Eat healthier	1
5	Charlie	Travel more	1
6	Charlie	Learn a new skill	1
7	Diana	Volunteer monthly	1
8	Diana	Drink more water	0
9	Diana	Sleep 8 hours	1

Question level of difficulty: Medium

Write your SQL query here

```sql
SELECT friend_name,
       no_of_resolutions,
       completed_resolutions,
       success_percentage,
       CASE WHEN success_percentage > 75 THEN 'Green'
            WHEN success_percentage BETWEEN 50 AND 75 THEN 'Yellow'
            ELSE 'Red'
        END AS success_category
FROM (
        SELECT friend_name,
            COUNT(resolution) AS no_of_resolutions,
            COUNT(CASE WHEN is_completed = 1 THEN 1 END) AS completed_resolutions,
            100.0 * COUNT(CASE WHEN is_completed = 1 THEN 1 END) /
                    COUNT(resolution) AS success_percentage
        FROM resolutions
        GROUP BY friend_name)x
```

Is your query correct?

Submit Answer

FRIEND_NAME	NO_OF_RESOLUTIONS	COMPLETED_RESOLUTIONS	SUCCESS_PERCENTAGE	SUCCESS_CATEGORY
Alice	2	1	50	Yellow
Bob	2	1	50	Yellow
Charlie	2	2	100	Green
Diana	3	2	66.66666666666667	Yellow

Correct!! 🎉 Great work!

Click here to go back to the calendar

Solution:

```sql
SELECT friend_name,
       no_of_resolutions,
       completed_resolutions,
       success_percentage,
       CASE WHEN success_percentage > 75 THEN 'Green'
            WHEN success_percentage BETWEEN 50 AND 75 THEN 'Yellow'
            ELSE 'Red'
        END AS success_category
FROM (
        SELECT friend_name,
            COUNT(resolution) AS no_of_resolutions,
            COUNT(CASE WHEN is_completed = 1 THEN 1 END) AS completed_resolutions,
            100.0 * COUNT(CASE WHEN is_completed = 1 THEN 1 END) /
                    COUNT(resolution) AS success_percentage
        FROM resolutions
        GROUP BY friend_name)x
```

Day 11

Day 11 of SQL Advent Calendar

Today's Question:
You are preparing holiday gifts for your family. Who in the family_members table are celebrating their birthdays in December 2024? List their name and birthday.

Table name: family_members

member_id	name	relationship	birthday
1	Dawn	Sister	2024-12-24
2	Bob	Father	2024-05-20
3	Charlie	Brother	2024-12-25
4	Diana	Mother	2024-03-15

Question level of difficulty: Easy 

Write your SQL query here

```sql
SELECT name,
       birthday
FROM family_members
WHERE birthday BETWEEN '2024-12-01' AND '2024-12-31';
```

Is your query correct?

Submit Answer

NAME	BIRTHDAY
Dawn	2024-12-24
Charlie	2024-12-25

Correct!! 🎉 Great work!

Click here to go back to the calendar

Solution:

```sql
SELECT name,
       birthday
FROM family_members
WHERE birthday BETWEEN '2024-12-01' AND '2024-12-31';
```

Day 12

Day 12 of SQL Advent Calendar

Today's Question:
A collector wants to identify the top 3 snow globes with the highest number of figurines. Write a query to rank them and include their globe_name, number of figurines, and material.

Table name: snow_globes

globe_id	globe_name	volume_cm3	material
1	Winter Wonderland	500	Glass
2	Santas Workshop	300	Plastic
3	Frozen Forest	400	Glass
4	Holiday Village	600	Glass

Table name: figurines

figurine_id	globe_id	figurine_type
1	1	Snowman
2	1	Tree
3	2	Santa Claus
4	2	Elf
5	2	Gift Box
6	3	Reindeer
7	3	Tree
8	4	Snowman
9	4	Santa Claus
10	4	Tree
11	4	Elf
12	4	Gift Box

Question level of difficulty: Hard 

Write your SQL query here

```sql
SELECT s.globe_name,
       COUNT(f.figurine_type) AS no_of_figurines,
       s.material
FROM figurines f
LEFT JOIN snow_globes s
ON f.globe_id = s.globe_id
GROUP BY s.globe_name
ORDER BY no_of_figurines DESC
LIMIT 3;
```

Is your query correct?

Submit Answer

GLOBE_NAME	NO_OF_FIGURINES	MATERIAL
Holiday Village	5	Glass
Santas Workshop	3	Plastic
Winter Wonderland	2	Glass

Correct!! 🎉 Great work!

Click here to go back to the calendar

Solution:

```sql
SELECT s.globe_name,
       COUNT(f.figurine_type) AS no_of_figurines,
       s.material
FROM figurines f
LEFT JOIN snow_globes s
ON f.globe_id = s.globe_id
GROUP BY s.globe_name
ORDER BY no_of_figurines DESC
LIMIT 3;
```

Day 13

Day 13 of SQL Advent Calendar

Today's Question:

We need to make sure Santa's sleigh is properly balanced. Find the total weight of gifts for each recipient.

Table name: gifts

gift_id	gift_name	recipient	weight_kg
1	Toy Train	John	2.5
2	Chocolate Box	Alice	0.8
3	Teddy Bear	Sophia	1.2
4	Board Game	John	0.9

Question level of difficulty: Medium 

Write your SQL query here

```sql
SELECT recipient,
       SUM(weight_kg) AS total_weight
FROM gifts
GROUP BY recipient;
```

Is your query correct?

Submit Answer

RECIPIENT	TOTAL_WEIGHT
Alice	0.8
John	3.4
Sophia	1.2

Correct!! 🎉 Great work!

Click here to go back to the calendar

Solution:

```sql
SELECT recipient,
       SUM(weight_kg) AS total_weight
FROM gifts
GROUP BY recipient;
```

Day 14

Day 14 of SQL Advent Calendar

Today's Question:

Which ski resorts had snowfall greater than 50 inches?

Table name: snowfall

resort_name	location	snowfall_inches
Snowy Peaks	Colorado	60
Winter Wonderland	Utah	45
Frozen Slopes	Alaska	75

Question level of difficulty: Easy 

Write your SQL query here

```
1  SELECT resort_name
2  FROM snowfall
3  WHERE snowfall_inches > 50;
```

Is your query correct?

Submit Answer

RESORT_NAME
Snowy Peaks
Frozen Slopes

Correct!! Great work!

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Solution:

```
SELECT resort_name
FROM snowfall
WHERE snowfall_inches > 50;
```

Day 15

Day 15 of SQL Advent Calendar

Today's Question:
A family reunion is being planned, and the organizer wants to identify the three family members with the most children. Write a query to calculate the total number of children for each parent and rank them. Include the parent's name and their total number of children in the result.

Table name: family_members

member_id	name	age
1	Alice	30
2	Bob	58
3	Charlie	33
4	Diana	55
5	Eve	5
6	Frank	60
7	Grace	32
8	Hannah	8
9	Ian	12
10	Jack	3

Table name: parent_child_relationships

parent_id	child_id
2	1
3	5
4	1
6	7
6	8
7	9
7	10
4	8

Question level of difficulty: Hard 

Write your SQL query here

```sql
SELECT parent_name, total_children
FROM(
SELECT  f.name AS parent_name,
        COUNT(p.child_id) AS total_children,
        RANK() OVER(ORDER BY COUNT(p.child_id)  DESC) AS rnk
FROM parent_child_relationships p
LEFT JOIN family_members f
ON p.parent_id = f.member_id
GROUP BY f.name)x
WHERE x.rnk <4;
```

Is your query correct?

Submit Answer

PARENT_NAME	TOTAL_CHILDREN
Grace	2
Frank	2
Diana	2

Correct!! Great work!

Click here to go back to the calendar

Solution:

```sql
SELECT parent_name, total_children
FROM(
SELECT  f.name AS parent_name,
        COUNT(p.child_id) AS total_children,
        RANK() OVER(ORDER BY COUNT(p.child_id)  DESC) AS rnk
FROM parent_child_relationships p
LEFT JOIN family_members f
ON p.parent_id = f.member_id
GROUP BY f.name)x
WHERE x.rnk <4;
```

Day 16

Day 16 of SQL Advent Calendar

Today's Question:

As the owner of a candy store, you want to understand which of your products are selling best. Write a query to calculate the total revenue generated from each candy category.

Table name: candy_sales

sale_id	candy_name	quantity_sold	price_per_unit	category
1	Candy Cane	20	1.5	Sweets
2	Chocolate Bar	10	2	Chocolate
3	Lollipop	5	0.75	Sweets
4	Dark Chocolate Truffle	8	2.5	Chocolate
5	Gummy Bears	15	1.2	Sweets
6	Chocolate Fudge	12	3	Chocolate

Question level of difficulty: Medium 

Write your SQL query here

```sql
SELECT category,
       SUM(quantity_sold * price_per_unit) AS total_revenue
FROM candy_sales
GROUP BY category;
```

Is your query correct?

Submit Answer

CATEGORY	TOTAL_REVENUE
Chocolate	76
Sweets	51.75

Correct!! 🎉 Great work!

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Solution:

```sql
SELECT category,
       SUM(quantity_sold * price_per_unit) AS total_revenue
FROM candy_sales
GROUP BY category;
```

Day 17

Day 17 of SQL Advent Calendar

Today's Question:

The Grinch is planning out his pranks for this holiday season. Which pranks have a difficulty level of "Advanced" or "Expert"? List the prank name and location (both in descending order).

Table name: grinch_pranks

prank_id	prank_name	location	difficulty
1	Stealing Stockings	Whoville	Beginner
2	Christmas Tree Topple	Whoville Town Square	Advanced
3	Present Swap	Cindy Lous House	Beginner
4	Sleigh Sabotage	Mount Crumpit	Expert
5	Chimney Block	Mayors Mansion	Expert

Question level of difficulty: Easy 

Write your SQL query here

```sql
SELECT prank_name,
       location
FROM grinch_pranks
WHERE difficulty IN ('Advanced','Expert')
ORDER BY prank_name DESC, location DESC;
```

Is your query correct?

Submit Answer

PRANK_NAME	LOCATION
Sleigh Sabotage	Mount Crumpit
Christmas Tree Topple	Whoville Town Square
Chimney Block	Mayors Mansion

Correct!! 🎉 Great work!

Click here to go back to the calendar

Solution:

```
SELECT prank_name,
       location
FROM grinch_pranks
WHERE difficulty IN ('Advanced','Expert')
ORDER BY prank_name DESC, location DESC;
```

Day 18

Day 16 of SQL Advent Calendar

Today's Question:

A travel agency is promoting activities for a "Summer Christmas" party. They want to identify the top 2 activities based on the average rating. Write a query to rank the activities by average rating.

Table name: activities

activity_id	activity_name
1	Surfing Lessons
2	Jet Skiing
3	Sunset Yoga

Table name: activity_ratings

rating_id	activity_id	rating
1	1	4.7
2	1	4.8
3	1	4.9
4	2	4.6
5	2	4.7
6	2	4.8
7	2	4.9
8	3	4.8
9	3	4.7
10	3	4.9
11	3	4.8
12	3	4.9

Question level of difficulty: Hard 

Write your SQL query here

```sql
SELECT a1.activity_id,
       a2.activity_name,
       AVG(a1.rating) AS average_rating
FROM activity_ratings a1
LEFT JOIN activities a2
ON a1.activity_id = a2.activity_id
GROUP BY a1.activity_id, a2.activity_name
ORDER BY average_rating DESC;
```

Is your query correct?

Submit Answer

ACTIVITY_ID	ACTIVITY_NAME	AVERAGE_RATING
3	Sunset Yoga	4.82
1	Surfing Lessons	4.8
2	Jet Skiing	4.75

Sorry, that's not quite right. Give it another shot.

Give me a hint

Solution:

```sql
SELECT a1.activity_id,
       a2.activity_name,
       AVG(a1.rating) AS average_rating
FROM activity_ratings a1
LEFT JOIN activities a2
ON a1.activity_id = a2.activity_id
GROUP BY a1.activity_id, a2.activity_name
ORDER BY average_rating DESC;
```

Day 19

Day 19 of SQL Advent Calendar

Today's Question:

Scientists are studying the diets of polar bears. Write a query to find the maximum amount of food (in kilograms) consumed by each polar bear in a single meal December 2024. Include the bear_name and biggest_meal_kg, and sort the results in descending order of largest meal consumed.

Table name: polar_bears

bear_id	bear_name	age
1	Snowball	10
2	Frosty	7
3	Iceberg	15

Table name: meal_log

log_id	bear_id	food_type	food_weight_kg	date
1	1	Seal	30	2024-12-01
2	2	Fish	15	2024-12-02
3	1	Fish	10	2024-12-03
4	3	Seal	25	2024-12-04
5	2	Seal	20	2024-12-05
6	3	Fish	18	2024-12-06

Question level of difficulty: Medium 

Write your SQL query here

```sql
SELECT p.bear_name,
       MAX(m.food_weight_kg) AS biggest_meal
FROM meal_log m
LEFT JOIN polar_bears p
ON m.bear_id = p.bear_id
WHERE m.date BETWEEN '2024-12-01' AND '2024-12-31'
GROUP BY p.bear_name
ORDER BY biggest_meal DESC;
```

Is your query correct?

Submit Answer

BEAR_NAME	BIGGEST_MEAL
Snowball	30
Iceberg	25
Frosty	20

Correct!! 🎉 Great work!

Click here to go back to the calendar

Solution:

```sql
SELECT p.bear_name,
       MAX(m.food_weight_kg) AS biggest_meal
FROM meal_log m
LEFT JOIN polar_bears p
ON m.bear_id = p.bear_id
WHERE m.date BETWEEN '2024-12-01' AND '2024-12-31'
GROUP BY p.bear_name
ORDER BY biggest_meal DESC;
```

Day 20

Day 20 of SQL Advent Calendar

Today's Question:
We are looking for cheap gifts at the market. Which vendors are selling items priced below $10? List the unique (i.e. remove duplicates) vendor names.

Table name: vendors

vendor_id	vendor_name	market_location
1	Cozy Crafts	Downtown Square
2	Sweet Treats	Central Park
3	Winter Warmers	Downtown Square

Table name: item_prices

item_id	vendor_id	item_name	price_usd
1	1	Knitted Scarf	25
2	2	Hot Chocolate	5
3	2	Gingerbread Cookie	3.5
4	3	Wool Hat	18
5	3	Santa Pin	2

Question level of difficulty: Easy 

Write your SQL query here

```
SELECT DISTINCT(v.vendor_name)
FROM item_prices i
LEFT JOIN vendors v
ON i.vendor_id = v.vendor_id
WHERE i.price_usd < 10;
```

Is your query correct?

Submit Answer

VENDOR_NAME
Sweet Treats
Winter Warmers

Correct!! 🎉 Great work!

Click here to go back to the calendar

Solution:

```sql
SELECT DISTINCT(v.vendor_name)
FROM item_prices i
LEFT JOIN vendors v
ON i.vendor_id = v.vendor_id
WHERE i.price_usd < 10;
```

Day 21

Day 21 of SQL Advent Calendar

Today's Question:

Santa needs to optimize his sleigh for Christmas deliveries. Write a query to calculate the total weight of gifts for each recipient type (good or naughty) and determine what percentage of the total weight is allocated to each type. Include the recipient_type, total_weight, and weight_percentage in the result.

Table name: gifts

gift_id	gift_name	recipient_type	weight_kg
1	Toy Train	good	2.5
2	Lumps of Coal	naughty	1.5
3	Teddy Bear	good	1.2
4	Chocolate Bar	good	0.3
5	Board Game	naughty	1.8

Question level of difficulty: Hard 

Write your SQL query here

```sql
SELECT recipient_type,
       SUM(weight_kg) AS total_weight,
       100.0 * SUM(weight_kg) / SUM(weight_kg) OVER () AS weight_percentage
FROM gifts
GROUP BY recipient_type;
```

Is your query correct?

Submit Answer

RECIPIENT_TYPE	TOTAL_WEIGHT	WEIGHT_PERCENTAGE
good	4	100
naughty	3.3	82.5

Correct!! 🎉 Great work!

Click here to go back to the calendar

Solution:

```sql
SELECT recipient_type,
       SUM(weight_kg) AS total_weight,
       100.0 * SUM(weight_kg) / SUM(weight_kg) OVER () AS weight_percentage
FROM gifts
GROUP BY recipient_type;
```

Day 22

Day 22 of SQL Advent Calendar

Today's Question:

We are hosting a gift party and need to ensure every guest receives a gift. Using the guests and guest_gifts tables, write a query to identify the guest(s) who have not been assigned a gift (i.e. they are not listed in the guest_gifts table).

Table name: guests

guest_id	guest_name
1	Cindy Lou
2	The Grinch
3	Max the Dog
4	Mayor May Who

Table name: guest_gifts

gift_id	guest_id	gift_name
1	1	Toy Train
2	1	Plush Bear
3	2	Bag of Coal
4	2	Sleigh Bell
5	3	Dog Treats

Question level of difficulty: Medium 

Write your SQL query here

```sql
SELECT g1.guest_name
FROM guests g1
LEFT JOIN guest_gifts g2
ON g1.guest_id = g2.guest_id
WHERE g2.gift_id IS NULL;
```

Is your query correct?

Submit Answer

GUEST_NAME
Mayor May Who

Correct!! 🎉 Great work!

Click here to go back to the calendar

Solution:

```sql
SELECT g1.guest_name
FROM guests g1
LEFT JOIN guest_gifts g2
ON g1.guest_id = g2.guest_id
WHERE g2.gift_id IS NULL;
```

Day 23

Day 23 of SQL Advent Calendar

Today's Question:

The Grinch tracked his weight every day in December to analyze how it changed daily. Write a query to return the weight change (in pounds) for each day, calculated as the difference from the previous day's weight.

Table name: grinch_weight_log

log_id	day_of_month	weight
1	1	250
2	2	248
3	3	249
4	4	247
5	5	246
6	6	248

Question level of difficulty: Medium 

Write your SQL query here

```sql
SELECT day_of_month, weight,
       weight_previous - weight AS weight_difference
FROM(
SELECT day_of_month,
       weight,
       COALESCE(LAG(weight) OVER(),weight) AS weight_previous
FROM grinch_weight_log)x;
```

Is your query correct?

Submit Answer

DAY_OF_MONTH	WEIGHT	WEIGHT_DIFFERENCE
1	250	0
2	248	2
3	249	-1
4	247	2
5	246	1
6	248	-2

Correct!! 🎉 Great work!

Click here to go back to the calendar

Solution:

```
SELECT day_of_month, weight,
       weight_previous - weight AS weight_difference
FROM(
SELECT day_of_month,
       weight,
       COALESCE(LAG(weight) OVER(),weight) AS weight_previous
FROM grinch_weight_log)x;
```

Day 24

Day 24 of SQL Advent Calendar

Today's Question:

Santa is tracking how many presents he delivers each night leading up to Christmas. He wants a running total to see how many gifts have been delivered so far on any given night. Using the deliveries table, calculate the cumulative sum of gifts delivered, ordered by the delivery date.

Table name: deliveries

delivery_date	gifts_delivered
2024-12-20	120
2024-12-21	150
2024-12-22	200
2024-12-23	300
2024-12-24	500

Question level of difficulty: Hard 

Write your SQL query here

```sql
SELECT delivery_date,
       SUM(gifts_delivered) OVER(ORDER BY delivery_date) AS sum_of_gifts
FROM deliveries;
```

Is your query correct?

Submit Answer

DELIVERY_DATE	SUM_OF_GIFTS
2024-12-20	120
2024-12-21	270
2024-12-22	470
2024-12-23	770
2024-12-24	1270

Correct!! 🎉 Great work!

Click here to go back to the calendar

Solution:

```sql
SELECT delivery_date,
       SUM(gifts_delivered) OVER(ORDER BY delivery_date) AS sum_of_gifts
FROM deliveries;
```