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**Question 1:**

We want to find out how the two stores compare in their count of rental orders during every month for all the years we have data for. **Write a query that returns the store ID for the store, the year and month and the number of rental orders each store has fulfilled for that month. Your table should include a column for each of the following: year, month, store ID and count of rental orders fulfilled during that month.**

**Check Your Solution**

The following table header provides a preview of what your table should look like. The count of rental orders is sorted in descending order.

*HINT:* One way to solve this query is the use of aggregations.

WITH t1 AS (SELECT date\_part('month', r.rental\_date) AS rental\_month,date\_part('year', r.rental\_date) AS rental\_year, store.store\_id AS store\_id,r.rental\_id AS rental\_id

FROM staff

JOIN store

ON staff.store\_id = store.store\_id

JOIN rental r

ON r.staff\_id = staff.staff\_id)

SELECT t1.rental\_month,t1.rental\_year, t1.store\_id,COUNT(t1.rental\_id) AS  count\_rentals

FROM t1

GROUP BY t1.rental\_month,t1.rental\_year,t1.store\_id

ORDER BY count\_rentals DESC

**Question 2**

We would like to know who were our top 10 paying customers, how many payments they made on a monthly basis during 2007, and what was the amount of the monthly payments. **Can you write a query to capture the customer name, month and year of payment, and total payment amount for each month by these top 10 paying customers?**

**Check your Solution:**

The following table header provides a preview of what your table should look like. The results are sorted first by customer name and then for each month. As you can see, total amounts per month are listed for each customer.

*HINT:* One way to solve is to use a subquery, limit within the subquery, and use concatenation to generate the customer name.

WITH t1 AS (SELECT c.first\_name|| ' ' ||c.last\_name AS full\_name, SUM(p.amount) total\_amount

FROM payment p

JOIN customer c

ON p.customer\_id = c.customer\_id

GROUP BY full\_name

ORDER BY total\_amount DESC

LIMIT 10)

SELECT t2.pay\_mon, t1.full\_name,t2.pay\_countpermonth,t2.pay\_amount

FROM t1

JOIN (SELECT DATE\_TRUNC('month',p.payment\_date) AS pay\_mon,

                        c.first\_name|| ' ' ||c.last\_name AS full\_name,

        COUNT(p.payment\_id) AS pay\_countpermonth,

        SUM(p.amount) pay\_amount

FROM payment p

JOIN customer c

ON p.customer\_id = c.customer\_id

GROUP BY pay\_mon, full\_name

ORDER BY full\_name) t2

ON t1.full\_name =t2.full\_name

**Question 3**

Finally, for each of these top 10 paying customers, I would like to find out the difference across their monthly payments during 2007. Please go ahead and **write a query to compare the payment amounts in each successive month.** Repeat this for each of these 10 paying customers. Also, it will be tremendously helpful if you can identify the customer name who paid the most difference in terms of payments.

**Check your solution:**

The customer Eleanor Hunt paid the maximum difference of $64.87 during March 2007 from $22.95 in February of 2007.

*HINT:* You can build on the previous questions query to add Window functions and aggregations to get the solution.

SELECT t3.pay\_mon, t3.full\_name,

                                t3.pay\_amount,

        LEAD(pay\_amount) OVER(PARTITION BY  full\_name ORDER BY pay\_mon) AS lead,

        LEAD(pay\_amount) OVER(PARTITION BY  full\_name ORDER BY pay\_mon) - pay\_amount AS difference

FROM (WITH t1 AS (SELECT c.first\_name|| ' ' ||c.last\_name AS full\_name, SUM(p.amount) total\_amount

FROM payment p

JOIN customer c

ON p.customer\_id = c.customer\_id

GROUP BY full\_name

ORDER BY total\_amount DESC

LIMIT 10)

SELECT t2.pay\_mon AS pay\_mon, t1.full\_name AS full\_name,t2.pay\_countpermonth AS pay\_countpermonth,t2.pay\_amount AS pay\_amount

FROM t1

JOIN (SELECT DATE\_TRUNC('month',p.payment\_date) AS pay\_mon,

                                c.first\_name|| ' ' ||c.last\_name AS full\_name,

        COUNT(p.payment\_id) AS pay\_countpermonth,

        SUM(p.amount) pay\_amount

FROM payment p

JOIN customer c

ON p.customer\_id = c.customer\_id

GROUP BY pay\_mon, full\_name

ORDER BY full\_name) t2

ON t1.full\_name =t2.full\_name) t3

ORDER BY difference DESC

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