Project One: Investigate a Relational Database

Question 1

We want to understand more about the movies that families are watching. The following categories are considered family movies: Animation, Children, Classics, Comedy, Family and Music.

**Create a query that lists each movie, the film category it is classified in, and the number of times it has been rented out.**

/\* Query 1 - the query used for the first insight \*/

SELECT

f.title AS film\_title,

c.name AS category\_name,

COUNT(\*) AS rental\_count

FROM

film f

JOIN film\_category fc ON fc.film\_id = f.film\_id

JOIN category c ON c.category\_id = fc.category\_id

JOIN inventory i ON i.film\_id = f.film\_id

JOIN rental r ON r.inventory\_id = i.inventory\_id

WHERE

c.name IN (

'Animation',

'Children',

'Classics',

'Comedy',

'Family',

'Music'

)

GROUP BY

1,

2

ORDER BY

2,

1;

### Question 2

Now we need to know how the length of rental duration of these family-friendly movies compares to the duration that all movies are rented for. **Can you provide a table with the movie titles and divide them into 4 levels (first\_quarter, second\_quarter, third\_quarter, and final\_quarter) based on the quartiles (25%, 50%, 75%) of the average rental duration (in the number of days) for movies across all categories?** Make sure to also indicate the category that these family-friendly movies fall into.

/\* Query 2 - the query used for the second insight \*/

SELECT

f.title,

c.name,

f.rental\_duration,

NTILE(4) OVER (

ORDER BY

f.rental\_duration

) AS standard\_quartile

FROM

film f

JOIN film\_category fc ON fc.film\_id = f.film\_id

JOIN category c ON c.category\_id = fc.category\_id

WHERE

c.name IN (

'Animation',

'Children',

'Classics',

'Comedy',

'Family',

'Music'

)

ORDER BY

4;

### Question 3

Finally, provide a table with the family-friendly film category, each of the quartiles, and the corresponding count of movies within each combination of film category for each corresponding rental duration category. The resulting table should have three columns:

* Category
* Rental length category
* Count

SELECT

t.name AS category\_name,

t.standard\_quartile AS rental\_length\_category,

COUNT(t.standard\_quartile) AS central\_count

FROM

(

SELECT

f.title,

c.name,

f.rental\_duration,

NTILE(4) OVER (

ORDER BY

f.rental\_duration

) AS standard\_quartile

FROM

film f

JOIN film\_category fc ON fc.film\_id = f.film\_id

JOIN category c ON c.category\_id = fc.category\_id

WHERE

c.name IN (

'Animation',

'Children',

'Classics',

'Comedy',

'Family',

'Music'

)

) t

GROUP BY

1,

2

ORDER BY

1,

2;

### Question 1 part 2:

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.**

The count of rental orders is sorted in descending order.

/\* Query 4 - the query used for the fourth insight \*/

SELECT

DATE\_PART('month', r1.rental\_date) rental\_month,

DATE\_PART('year', r1.rental\_date) rental\_year,

s1.store\_id,

COUNT(\*) AS count\_rentals

FROM

rental r1

JOIN staff s1 ON s1.staff\_id = r1.staff\_id

JOIN store s2 ON s2.store\_id = s1.store\_id

GROUP BY

1,

2,

3

ORDER BY

4 DESC;

### Question 2 part 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?**

WITH table1

AS (SELECT

p.customer\_id,

CONCAT(c.first\_name, ' ', c.last\_name) AS fullname,

SUM(p.amount) pay\_amount

FROM payment AS p

JOIN customer AS c

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

GROUP BY 1,

2

ORDER BY 3 DESC

LIMIT 10)

SELECT

TO\_CHAR(pay.payment\_date, 'month') AS month\_paid,

t1.fullname,

COUNT(\*) AS Successive\_monthly\_payments,

SUM(pay.amount) AS paid\_amount

FROM table1 AS t1

JOIN payment AS pay

ON t1.customer\_id = pay.customer\_id

WHERE DATE\_TRUNC('month', pay.payment\_date) BETWEEN '2007-01-01' AND '2007-12-31'

GROUP BY 1,

2

ORDER BY 2, EXTRACT(MONTH FROM TO\_DATE(TO\_CHAR(pay.payment\_date,'month'), 'Month'));