

Assignment 2A: COUNT, LIMIT, ORDER BY, GROUP BY

Navigating the DVD Rental Data as a Business Manager

As the manager of a bustling DVD Rental store, your understanding and manipulation of data are crucial to the business's success. This assignment will guide you through various scenarios requiring you to leverage SQL's 'COUNT', 'LIMIT', 'ORDER BY', and 'GROUP BY' clauses and functions to extract meaningful information from the DVD Rental database. You'll be thinking like a business manager, making decisions based on the data insights you uncover.

Assignment Instructions:

- For each prompt, think about which SQL function or clause best fits the scenario.
- Write and execute the SQL query in PgAdmin using the DVD Rental database.
- Take a screenshot of your query and the output.
- Reflect briefly on what the data tells you about that aspect of the business.

Assignment Prompts:

Prompt 1: How Many Movies Do We Have?

A customer walks into your store with a keen interest in your collection. She's considering hosting a movie marathon and wants to know just how extensive your selection is. As she approaches you, the manager, her question is straightforward yet critical: "How many movies do you have available for rent?" To provide an accurate answer and perhaps impress the customer with your quick data handling skills, you turn to the DVD Rental database. Use the database to count the total number of movies available for rent.

Task: Use the database to count the total number of movies available for rent. Your goal is to retrieve this information efficiently, showcasing the breadth of your store's offerings.

Query/Answer 1 -

```
SELECT COUNT(*) AS TotalMovies FROM film;
```

Prompt 2: How Many Movies Do We Have?

It's a busy afternoon at your DVD Rental store, and you're updating the display for your featured movies section. To keep things fresh, you decide to showcase some films that haven't been in the spotlight recently. Before making your selection, you need a quick snapshot of your inventory to identify potential candidates.

Task: Retrieve a preview of the first 5 movies listed in your inventory, ordered alphabetically by title. This will help you decide which movies to feature next.

Query/Answer 1 -

```
SELECT title FROM film  
ORDER BY title ASC LIMIT 5;
```

Prompt 3: How Many Movies Do We Have?

In planning the next marketing campaign for your DVD Rental store, you're considering a promotion targeting family-friendly movie nights. To tailor your campaign effectively, you first need to understand the composition of your film inventory, specifically regarding movie ratings.

Task: Find out which movie rating (G, PG, PG-13, R, NC-17) is most common in your inventory. This information will guide your promotional strategy and film selection for the campaign.

Query/Answer 1 -

```
SELECT rating, COUNT(*) AS NumberOfMovies FROM film
GROUP BY rating
ORDER BY NumberOfMovies DESC LIMIT 1;
```

Prompt 4: Spotlighting Actors

Your DVD Rental store is hosting an "Actor Spotlight" week, where films featuring specific actors will be prominently displayed and available for promotional pricing. To kick things off, you want to create a diverse list of actors to feature, starting with those whose last names come early in the alphabet.

Task: Compile a list of the first 10 actors in alphabetical order by last name. This list will help you select a varied group of actors for your "Actor Spotlight" week.

Query/Answer 1 -

```
SELECT first_name, last_name FROM actor
ORDER BY last_name ASC LIMIT 10;
```

Prompt 5: Assessing Category Popularity

As part of your effort to optimize the inventory at your DVD Rental store, you're considering which genres or categories of movies to prioritize for future acquisitions. Before making any decisions, it's essential to understand the current composition of your movie categories and identify which are most prevalent in your inventory.

Task: Determine how many movies fall into each category and identify which category has the most movies. This analysis will inform your purchasing and promotional strategies moving forward.

Query/Answer 1 -

```
SELECT c.name AS CategoryName, COUNT(f.film_id) AS NumberOfMovies FROM category c
JOIN film_category fc ON c.category_id = fc.category_id
JOIN film f ON fc.film_id = f.film_id
GROUP BY c.name
ORDER BY NumberOfMovies DESC;
```

Prompt 6: Blockbuster Hits

To celebrate the anniversary of your DVD Rental store, you're planning a "Blockbuster Night" featuring screenings of the most popular movies from your collection. To select the films for this event, you need to identify which movies have been rented the most.

Task: Identify the top 5 most frequently rented movies. This task will involve analyzing data across the `rental`, `inventory`, and possibly the `film` table.

Query/Answer 1 -

```
SELECT f.title, COUNT(r.rental_id) AS rental_count
FROM rental r
JOIN inventory i ON r.inventory_id = i.inventory_id
JOIN film f ON i.film_id = f.film_id
GROUP BY f.title
ORDER BY rental_count DESC
LIMIT 5;
```

Prompt 7: Celebrating Customer Loyalty

Recognizing and rewarding loyal customers is a key part of your customer relationship strategy. You're planning to offer special discounts to your most frequent renters but first need to identify who they are.

Task: Determine which 3 customers have rented the most movies. Display their first and last names along with the number of rentals.

Query/Answer 1 -

```
SELECT customer_id, COUNT(rental_id) AS Rentals FROM rental
GROUP BY customer_id
ORDER BY Rentals DESC LIMIT 3;
```

Prompt 8: Analyzing Rental Trends

As part of your yearly business review, you aim to identify trends in rental activity. Understanding when customers rent the most can help you plan marketing efforts and manage inventory effectively.

Task: Determine the busiest month for rentals by counting rentals by month.

Query/Answer 1 -

```
SELECT EXTRACT(MONTH FROM rental_date) AS Month, COUNT(rental_id) AS Rentals
FROM rental
GROUP BY Month
ORDER BY Rentals DESC LIMIT 1;
```

Prompt 9: Preferences Across Ratings

To tailor your DVD Rental store's inventory to customer preferences, you aim to identify the most popular genres based on rental activity. Understanding which genres are most in demand can guide future acquisitions and marketing strategies.

Task: Determine the total number of rentals for each film genre. Utilize the `film_category` table to count how many times films of each genre have been rented.

Query/Answer -

```
SELECT genre_id, COUNT(rental_id) AS Rentals FROM film
JOIN inventory ON film.film_id = inventory.film_id
JOIN rental ON inventory.inventory_id = rental.inventory_id
GROUP BY genre_id
ORDER BY Rentals DESC;
```

Prompt 10: Staff Recognition

Recognizing the hard work of your staff is important for morale and motivation. You're planning an appreciation event and want to highlight staff members who have processed the most rentals.

Task: Identify the top-performing staff members in terms of processing rentals, ranking them by the number of transactions processed.

Query/Answer 1 -

```
SELECT staff_id, COUNT(rental_id) AS ProcessedRentals FROM rental
GROUP BY staff_id
ORDER BY ProcessedRentals DESC;
```