

Selection of Sorting and Filtering Techniques

Grouping, Ordering and Limiting

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Custom Sorting

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Grouping, Ordering and Limiting

--Find the top 10 countries in terms of customer numbers

```
SELECT D.country,  
       COUNT(A.customer_id) AS no_customers  
FROM customer A  
INNER JOIN address B ON A.address_id = B.address_id  
INNER JOIN city C ON B.city_id = C.city_id  
INNER JOIN country D ON C.country_id = D.country_id  
GROUP BY D.country  
ORDER BY no_customers DESC  
LIMIT 10 -- only top 10
```

	Data Output	Explain	Messages	Notifications
	country character varying (50)		no_customers bigint	
1	India		60	
2	China		53	
3	United States		36	
4	Japan		31	
5	Mexico		30	
6	Brazil		28	
7	Russian Federation		28	
8	Philippines		20	
9	Turkey		15	
10	Indonesia		14	

Custom Sorting

--Find the min and max replacement cost for each rating category ordered by rating: G, PG, PG-13, R, NC-17






```
SELECT rating AS rating_category,  
       MIN(replacement_cost) AS min_replacement_cost,  
       MAX(replacement_cost) AS max_replacement_cost  
FROM film  
GROUP BY rating  
ORDER BY CASE  
    WHEN rating = 'G' THEN 1  
    WHEN rating = 'PG' THEN 2  
    WHEN rating = 'PG-13' THEN 3  
    WHEN rating = 'R' THEN 4  
    ELSE 5  
END ASC
```

	Data Output	Explain	Messages	Notifications
	rating_category mpaa_rating		min_replacement_cost numeric	max_replacement_cost numeric
1	G		9.99	29.99
2	PG		9.99	29.99
3	PG-13		9.99	29.99
4	R		9.99	29.99
5	NC-17		9.99	29.99

Filtering Based on Conditions

--Select films with mpaa rating PG or G with the count, average rental rate, max and min rental duration.

```
SELECT rating AS film_rating,  
       COUNT(film_id) AS count_of_movies,  
       AVG(rental_rate) AS average_movie_rental_rate,  
       MAX(rental_duration) AS maximum_rental_duration,  
       MIN(rental_duration) AS minimum_rental_duration  
FROM film  
GROUP BY film_rating  
HAVING rating  
IN ('PG', 'G')  
ORDER BY rating
```

Data Output		Explain	Messages	Notifications					
	film_rating mpaa_rating		count_of_movies bigint		average_movie_rental_rate numeric		maximum_rental_duration smallint		minimum_rental_duration smallint
1	G		178		2.888876404494382		7		3
2	PG		194		3.0518556701030928		7		3

--To find film titles not in the inventory

```
SELECT A.film_id,  
       title AS film_title,  
       rental_rate,  
       rating,  
       name AS film_genre  
FROM   film A  
INNER JOIN film_category B ON A.film_id = B.film_id  
INNER JOIN category C ON B.category_id = C.category_id  
WHERE  A.film_id  
NOT IN (SELECT inventory.film_id FROM inventory)
```

Filtering Based on Aggregated Data

-- To find the top 50 films by revenue

```
SELECT title AS film_title,  
       name AS film_genre,  
       rating AS film_rating,  
       rental_rate,  
       SUM(amount) AS total_revenue  
FROM   payment A  
INNER JOIN rental B ON A.rental_id = B.rental_id  
INNER JOIN inventory C ON B.inventory_id = C.inventory_id  
INNER JOIN film D ON C.film_id = D.film_id  
INNER JOIN film_category E ON D.film_id = E.film_id  
INNER JOIN category F ON E.category_id = F.category_id  
GROUP BY title,  
       name,  
       rating,  
       rental_rate  
ORDER BY total_revenue DESC  
LIMIT 50
```