**SQL Queries for Sakila Database**

**(NUID: 001306848)**

**-- 1.1 Contribution of Countries & Cities (in hierarchy) by rental amount - Treemap (or Heatmap) & sql query**

SELECT c.country 'AS Country',

ci.city AS 'City',

sum(p.amount) AS 'Total Rental Amount'

FROM country c

INNER JOIN city ci ON c.country\_id = ci.country\_id

INNER JOIN address a ON a.city\_id = ci.city\_id

INNER JOIN customer cust ON cust.address\_id = a.address\_id

INNER JOIN payment p ON p.customer\_id = cust.customer\_id

GROUP BY c.country,

ci.city

ORDER BY sum(p.amount) DESC;

**-- 1.2 Rental amounts by countries for PG & PG-13 rated films - bar chart & sql query**

SELECT c.country AS 'Country',

sum(p.amount) AS 'Total Amount for PG & PG-13'

FROM country c

INNER JOIN city ci ON c.country\_id = ci.country\_id

INNER JOIN address a ON a.city\_id = ci.city\_id

INNER JOIN customer cust ON cust.address\_id = a.address\_id

INNER JOIN payment p ON p.customer\_id = cust.customer\_id

WHERE p.rental\_id IN

(SELECT rental\_id

FROM rental

WHERE inventory\_id IN

(SELECT inventory\_id

FROM inventory

WHERE film\_id IN

(SELECT film\_id

FROM film

WHERE rating IN ('PG','PG-13'))))

GROUP BY c.country

ORDER BY sum(p.amount) DESC;

**-- 1.3. Top 20 cities by number of customers who rented - bar chart & sql query**

SELECT ci.city AS 'City',

count(r.customer\_id) as 'Number of Customers'

FROM rental r

INNER JOIN customer cust ON r.customer\_id = cust.customer\_id

INNER JOIN address a ON a.address\_id = cust.address\_id

INNER JOIN city ci ON ci.city\_id = a.city\_id

WHERE cust.customer\_id in (select customer\_id from rental)

GROUP BY ci.city

ORDER BY count(r.customer\_id) DESC limit 20;

**-- 1.4. Top 20 cities by number of films rented - bar chart & sql query**

SELECT ci.city AS 'City',

count(r.inventory\_id) as 'Total Film Rentals'

FROM rental r

INNER JOIN customer cust ON r.customer\_id = cust.customer\_id

INNER JOIN address a ON a.address\_id = cust.address\_id

INNER JOIN city ci ON ci.city\_id = a.city\_id

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

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

GROUP BY ci.city

ORDER BY count(r.inventory\_id) DESC limit 20;

**-- 1.5. Rank cities by average rental cost - bar chart & sql query**

SELECT ci.city AS 'City',

AVG(p.amount) "Average Rental Amount",

RANK() OVER (ORDER BY AVG(p.amount) DESC) AS 'Rank'

FROM customer c

INNER JOIN rental r ON c.customer\_id = r.customer\_id

INNER JOIN payment p ON p.rental\_id = r.rental\_id

AND p.customer\_id = c.customer\_id

INNER JOIN address a ON a.address\_id = c.address\_id

INNER JOIN city ci ON ci.city\_id = a.city\_id

GROUP BY ci.city

ORDER BY AVG(p.amount) DESC;

**-- 2.1 Film categories by rental amount (ranked) & rental quantity – tabular& sql query**

SELECT c.name AS 'Film Category',

sum(p.amount) AS 'Total Rental Amount',

count(r.rental\_id) AS 'Rental Quantity',

RANK() OVER (ORDER BY sum(p.amount) DESC) AS 'Rank'

FROM category AS c

INNER JOIN film\_category AS f ON c.category\_id = f.category\_id

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

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

INNER JOIN payment AS p ON p.rental\_id = r.rental\_id

GROUP BY c.name

ORDER BY sum(p.amount) DESC;

**-- 2.2 Film categories by rental amount (ranked) – bar chart & sql query**

SELECT RANK() OVER (ORDER BY sum(p.amount) DESC) AS 'Rank',

c.name AS 'Film Category',

sum(p.amount) AS 'Total Rental Amount'

FROM category AS c

INNER JOIN film\_category AS f ON c.category\_id = f.category\_id

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

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

INNER JOIN payment AS p ON p.rental\_id = r.rental\_id

GROUP BY c.name

ORDER BY sum(p.amount) DESC;

**-- 2.3 Film categories by average rental amount (ranked) & – tabular & sql query**

SELECT RANK() OVER (ORDER BY avg(p.amount) DESC) AS 'Rank',

c.name AS 'Film Category',

avg(p.amount) AS 'Average Rental Amount'

FROM category AS c

INNER JOIN film\_category AS f ON c.category\_id = f.category\_id

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

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

INNER JOIN payment AS p ON p.rental\_id = r.rental\_id

GROUP BY c.name

ORDER BY avg(p.amount) DESC;

**-- 2.4 Contribution of Film Categories by number of customers - Treemap (or Heatmap) & sql query**

SELECT ct.name,

count(r.customer\_id) AS 'Number of Customers'

FROM customer AS c

INNER JOIN rental AS r ON c.customer\_id = r.customer\_id

INNER JOIN inventory AS i ON r.inventory\_id=i.inventory\_id

INNER JOIN film\_category AS f ON f.film\_id=i.film\_id

INNER JOIN category AS ct ON ct.category\_id=f.category\_id GROUP BY ct.name

ORDER BY count(r.customer\_id) DESC;

**-- 2.5 Contribution of Film Categories by rental amount - Treemap (or Heatmap) & sql query**

SELECT ct.name,

sum(p.amount) AS RentalAmount

FROM customer AS c

INNER JOIN rental AS r ON c.customer\_id = r.customer\_id

INNER JOIN inventory AS i ON r.inventory\_id=i.inventory\_id

INNER JOIN film\_category AS f ON f.film\_id=i.film\_id

INNER JOIN category AS ct ON ct.category\_id=f.category\_id

INNER JOIN payment AS p ON p.rental\_id=r.rental\_id GROUP BY ct.category\_id, ct.name

ORDER BY RentalAmount DESC;

**-- 3.1 List Films with rental amount, rental quantity, rating, rental rate, replacement cost and category name – tabular & sql query**

SELECT f.title AS films,

f.replacement\_cost,

f.rental\_rate,

f.rating,

sum(p.amount) AS rental\_amount,

count(r.rental\_id) AS 'Rental Quantity',

c.name AS category\_name,

c.category\_id

FROM payment AS p

INNER JOIN rental AS r ON p.rental\_id = r.rental\_id

INNER JOIN inventory AS i ON r.inventory\_id = i.inventory\_id

INNER JOIN film AS f ON i.film\_id = f.film\_id

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

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

GROUP BY f.title order by sum(p.amount) desc;

**-- 3.2. List top 10 Films by rental amount (ranked) – bar chart & sql query**

SELECT RANK() OVER (ORDER BY sum(p.amount) DESC) AS 'Rank',

f.title AS films,

sum(p.amount) AS rental\_amount

FROM payment AS p

INNER JOIN rental AS r ON p.rental\_id = r.rental\_id

INNER JOIN inventory AS i ON r.inventory\_id = i.inventory\_id

INNER JOIN film AS f ON i.film\_id = f.film\_id

GROUP BY f.film\_id

ORDER BY rental\_amount DESC

LIMIT 10;

**-- 3.3. List top 20 Films by number of customers(ranked) – bar chart & sql query**

SELECT row\_number() OVER (ORDER BY count(r.customer\_id) DESC) AS 'Rank',

f.title,

count(r.customer\_id) AS COUNT

FROM rental AS r

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

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

GROUP BY f.title

ORDER BY count(r.customer\_id) DESC

LIMIT 20;

**-- 3.4. List Films with the word “punk” in title with rental amount and number of customers – Tabular & sql query**

SELECT f.film\_id,

f.title,

sum(p.amount) AS rental\_amount,

count(r.customer\_id)

FROM payment AS p

INNER JOIN rental AS r ON p.rental\_id = r.rental\_id

INNER JOIN inventory AS i ON r.inventory\_id = i.inventory\_id

INNER JOIN film AS f ON i.film\_id = f.film\_id

WHERE f.title LIKE '%punk%'

GROUP BY film\_id;

**-- 3.5 Contribution by rental amount for films with a documentary category - Treemap (or Heatmap) & sql query**

SELECT f.title as Films,

sum(p.amount) AS rental\_amount

FROM payment AS p

INNER JOIN rental AS r ON p.rental\_id = r.rental\_id

INNER JOIN inventory AS i ON i.inventory\_id = r.inventory\_id

INNER JOIN film AS f ON i.film\_id = f.film\_id

INNER JOIN film\_category AS g ON i.film\_id = g.film\_id

INNER JOIN category AS c ON g.category\_id = c.category\_id

WHERE c.name LIKE '%doc%'

GROUP BY f.title

ORDER BY sum(p.amount) DESC;

**-- 4.1 List Customers (Last name, First Name) with rental amount, rental quantity, active status, country and city –tabular & sql query**

SELECT c.first\_name,

c.last\_name,

sum(p.amount) AS RentalAmount,

count(r.rental\_id) AS Rental\_Quantity,

country.country,

city.city,

c.active

FROM customer AS c

INNER JOIN rental AS r ON c.customer\_id = r.customer\_id

INNER JOIN inventory AS i ON r.inventory\_id=i.inventory\_id

INNER JOIN film\_category AS f ON f.film\_id=i.film\_id

INNER JOIN category AS ct ON ct.category\_id=f.category\_id

INNER JOIN payment AS p ON p.rental\_id=r.rental\_id

INNER JOIN address AS a ON a.address\_id=c.address\_id

INNER JOIN city AS city ON a.city\_id=city.city\_id

INNER JOIN country AS country ON country.country\_id=city.country\_id

WHERE c.active = 1 GROUP BY c.last\_name,

c.first\_name

ORDER BY c.last\_name,

c.first\_name desc;

**-- 4.2 List top 10 Customers (Last name, First Name) by rental amount (ranked) for PG & PG-13 rated films – bar chart & sql query**

SELECT c.first\_name,

c.last\_name,

sum(p.amount) AS RentalAmount,

fil.rating

FROM customer AS c

INNER JOIN rental AS r ON c.customer\_id = r.customer\_id

INNER JOIN inventory AS i ON r.inventory\_id=i.inventory\_id

INNER JOIN film\_category AS f ON f.film\_id=i.film\_id

INNER JOIN film AS fil ON fil.film\_id = f.film\_id

INNER JOIN category AS ct ON ct.category\_id=f.category\_id

INNER JOIN payment AS p ON p.rental\_id=r.rental\_id

WHERE fil.rating ='PG' OR fil.rating = 'PG-13'

GROUP BY c.last\_name,

c.first\_name

ORDER BY RentalAmount DESC

LIMIT 10;

**-- 4.3 Contribution by rental amount for customers from France, Italy or Germany - Treemap (or Heatmap) & sql query**

SELECT c.first\_name, c.last\_name,

SUM(p.amount) AS 'Total Rental Amount'

FROM customer c

INNER JOIN rental r ON c.customer\_id = r.customer\_id

INNER JOIN payment p ON p.rental\_id = r.rental\_id AND p.customer\_id = c.customer\_id

INNER JOIN address a ON a.address\_id = c.address\_id

INNER JOIN city ci ON ci.city\_id = a.city\_id

INNER JOIN country co ON co.country\_id = ci.country\_id

WHERE co.country='France'

OR co.country='Italy'

OR co.country='Germany'

GROUP BY c.customer\_id

ORDER BY SUM(p.amount) DESC;

**-- 4.4 List top 20 Customers (Last name, First Name) by rental amount (ranked) for comedy films – bar chart & sql query**

SELECT c.first\_name,

c.last\_name,

SUM(p.amount) AS 'Rental Amount',

RANK() OVER(ORDER BY SUM(p.amount) DESC) AS 'Rank'

FROM customer c

INNER JOIN rental r ON c.customer\_id = r.customer\_id

INNER JOIN payment p ON p.rental\_id = r.rental\_id

AND p.customer\_id = c.customer\_id

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

INNER JOIN film\_category f ON f.film\_id = i.film\_id

INNER JOIN category fc ON fc.category\_id = f.category\_id

WHERE fc.name='Comedy'

GROUP BY c.first\_name,

c.last\_name

ORDER BY SUM(p.amount) DESC

LIMIT 20;

**-- 4.5 List top 10 Customers (Last name, First Name) from China by rental amount (ranked) for films that have replacement costs greater than $24 – bar chart & sql query**

SELECT c.first\_name,

c.last\_name,

SUM(p.amount) AS 'Rental Amount',

RANK() OVER(ORDER BY SUM(p.amount) DESC) AS 'Rank'

FROM customer c

INNER JOIN rental r ON c.customer\_id = r.customer\_id

INNER JOIN payment p ON p.rental\_id = r.rental\_id

AND p.customer\_id = c.customer\_id

INNER JOIN address a ON a.address\_id = c.address\_id

INNER JOIN city ci ON ci.city\_id = a.city\_id

INNER JOIN country co ON co.country\_id = ci.country\_id

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

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

WHERE co.country='China'

AND f.replacement\_cost > 24

GROUP BY c.first\_name,

c.last\_name

ORDER BY SUM(p.amount) DESC

LIMIT 10;