

## Filtering data

```
SELECT film_id, title, description
FROM film
WHERE length>120
AND rental_rate>2.99
```

## Searching for duplicates

```
SELECT title, release_year, language_id, rental_duration, COUNT(*)
FROM film
GROUP BY title, release_year, language_id, rental_duration
HAVING COUNT(*) >1
```

## Searching for missing values

```
SELECT DISTINCT customer_id, store_id, first_name, last_name, email, address_id
FROM customer
ORDER BY customer_id
```

## Joining tables, filtering data

```
SELECT SUM(A.amount) AS total_paid, A.customer_id, B.first_name, B.last_name, D.city,
E.country
FROM payment A
INNER JOIN customer B ON A.customer_id = B.customer_id
INNER JOIN address C ON B.address_id = C.address_id
INNER JOIN city D ON C.city_id = D.city_id
INNER JOIN country E ON D.country_id = E.country_id
WHERE city IN ('Aurora', 'Atlixco', 'Xintai', 'Adoni', 'Dhule (Dhulia)', 'Kurashiki', 'Pingxiang',
'Sivas','Celaya', 'So Leopoldo')
GROUP BY city, country, last_name, first_name, A.customer_id
ORDER BY SUM(A.amount)
DESC LIMIT 5
```

## subquery

```
SELECT A.country, all_customer_count, COUNT(A.country) AS top_5_customer_count
FROM (SELECT SUM(A.amount) AS total_paid, A.customer_id, B.first_name, B.last_name,
D.city, E.country
FROM payment A
INNER JOIN customer B ON A.customer_id = B.customer_id
INNER JOIN address C ON B.address_id = C.address_id
INNER JOIN city D ON C.city_id = D.city_id
INNER JOIN country E ON D.country_id = E.country_id
WHERE city IN ('Aurora', 'Atlixco', 'Xintai', 'Adoni', 'Dhule (Dhulia)', 'Kurashiki', 'Pingxiang',
'Sivas','Celaya', 'So Leopoldo')
GROUP BY city, country, last_name, first_name, A.customer_id ORDER BY total_paid
DESC LIMIT 5) A
LEFT JOIN ( SELECT COUNT(DISTINCT A.customer_id) AS all_customer_count, D.country
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 country
ORDER BY all_customer_count DESC) B ON A.country = B.country
GROUP BY A.country, B.all_customer_count
```

## CTE

```
WITH top_5_customers (total_paid)
AS (SELECT SUM(A.amount)
AS total_paid, A.customer_id, B.first_name, B.last_name, D.city, E.country
FROM payment A
INNER JOIN customer B ON A.customer_id = B.customer_id
INNER JOIN address C ON B.address_id = C.address_id
INNER JOIN city D ON C.city_id = D.city_id
INNER JOIN country E ON D.country_id = E.country_id
WHERE city IN ('Aurora', 'Atlixco', 'Xintai', 'Adoni', 'Dhule (Dhulia)', 'Kurashiki', 'Pingxiang',
'Sivas', 'Celaya', 'So Leopoldo')
GROUP BY city, country, last_name, first_name, A.customer_id
ORDER BY SUM(A.amount) DESC LIMIT 5)
SELECT AVG(total_paid) AS avg_amount_paid_top_5_customers
FROM Top_5_customers
```