Querying data

Comparison operators

Comparison operators

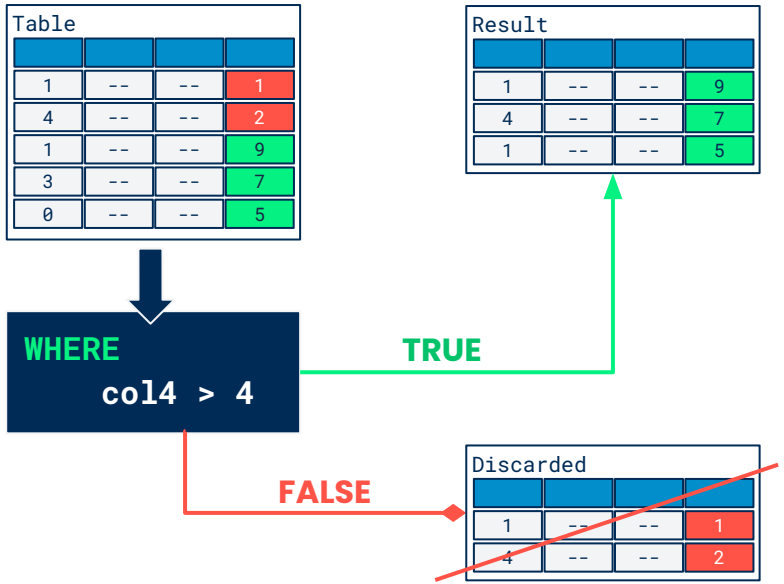
SQL operators

Using the **WHERE** keyword, we can filter data. **Operators** can be used in conjunction with the **WHERE** clause to specify filter conditions.

Practical uses:

- Find all countries with a gross domestic product (GDP) of **more than** $400 billion.
- Find global regions with a population of **less than** 1 million.
- Find the development indexes **after** a certain date **and** for a **specific** country.
- Find elder death rates for sub-Saharan countries during the COVID-19 crisis (**between** 2020 and 2023).

For example, a **greater than** operator (**>**) in SQL only returns rows that have a value larger than 4 in col4.



Comparison operators

Comparison operators are used to **compare values** and determine the truth or falsity of a condition based on the comparison result.

Examples of comparison operators in SQL include:

- equals (**=**)
- not equals (**<>**)
- less than (**<**)
- greater than (**>**)
- less than or equal to (**<=**)
- greater than or equal to (**>=**)

A square is a triangle → **FALSE**

A circle is not a triangle → **TRUE**

23 > 1

23 is greater than 1 → **TRUE**

“Kenya” = “Nigeria”

The strings “Kenya” and “Nigeria” are the same → **FALSE**

Comparison operators

In SQL, comparison operators are commands used with **WHERE** that return the data in a row if the condition is **TRUE**.

=	>	>=	<	<=	<>
Checks if **A = B** Returns the rows where the value **A** in a column **equals** a specified value **B**.	Checks if **A > B** Returns the rows where value **A** in a column is **greater than** a specified value **B**.	Checks if **A ≥ B** Returns the rows where value **A** in a column is **greater than or equal to** a specified value **B**.	Checks if **A < B** Returns the rows where value **A** in a column is **less than** a specified value **B**.	Checks if **A < B** or if **A ≤ B** Returns the rows where value **A** in a column is **less than or equal to** a specified value **B**.	Checks if **A ≠ B** Returns the rows where value **A** in a column is **not equal** to a specified value **B**.

Our example database

We will use this placeholder database as an example:

Database (db)

Table_1

col1	col2	col3
x	34	s
y	73	m
z	22	l
w	12	m

Table_2

col1	col2	col3
car	68	s
cat	1	l
pet	7	l
cart	56	m

Table_3

col1	col2	col3
x	NULL	s
x	42	s
z	NULL	s
x	7	s

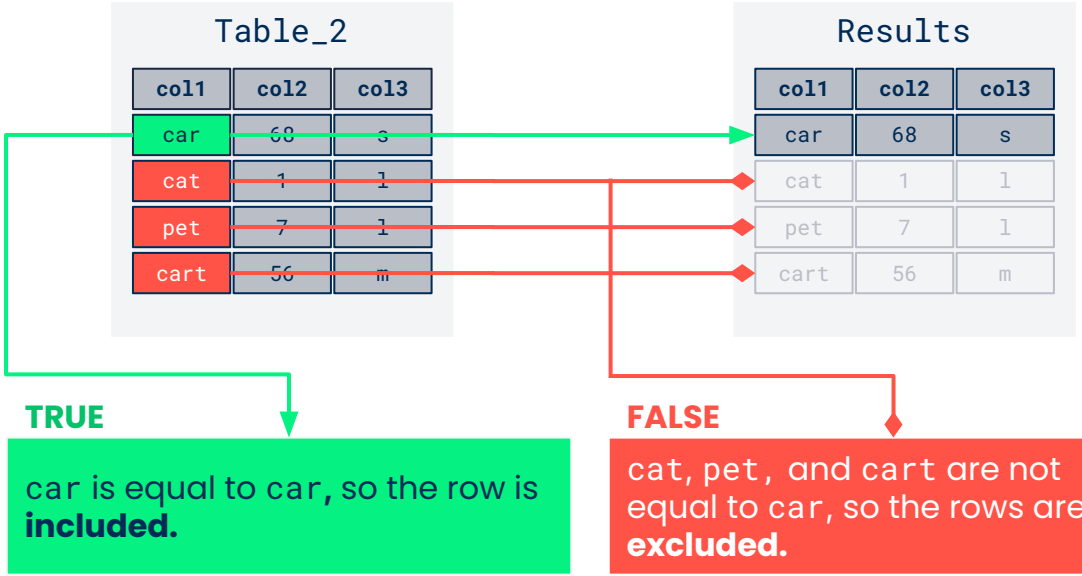
Note: These are bad naming examples, but we use them here to show how queries work. Always try to use more descriptive titles.

Comparison operators

Equal to

The = operator returns the rows where the value in a column **equals** a specified value.

```
SELECT
    *
FROM
    db.Table_2
WHERE
    col1 = "car";
```



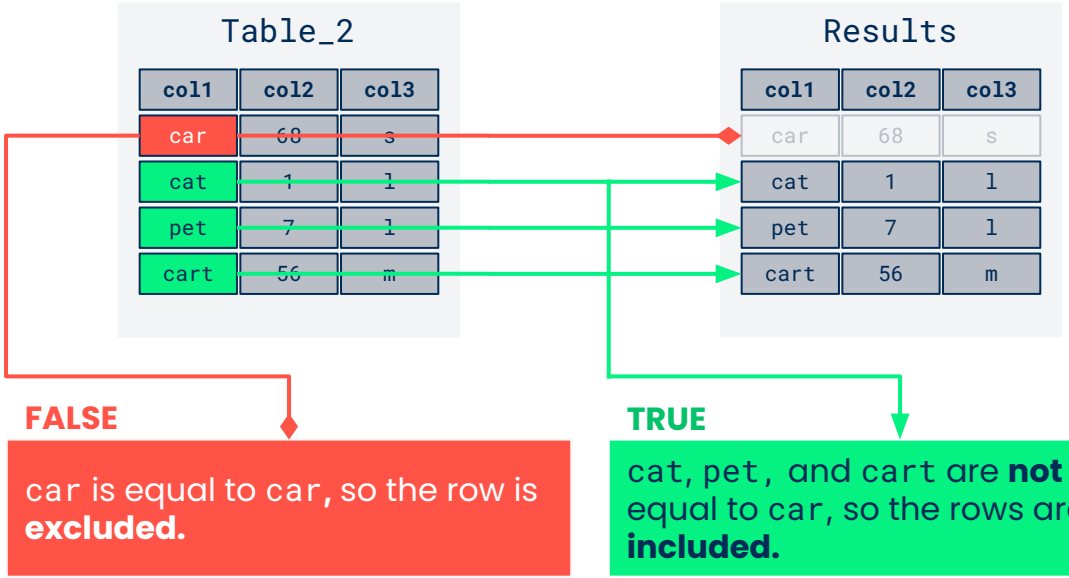
Note that **car** is a **string**, so we enclose it in quotes.

Comparison operators

Not equal to

The operator `!=` or `<>` can be used to return the rows where the value in a column is **not equal to** a specified value. Both `!=` and `<>` serve as alternatives for expressing inequality.

```
SELECT
    *
FROM
    db.Table_2
WHERE
    col1 <> "car";
```



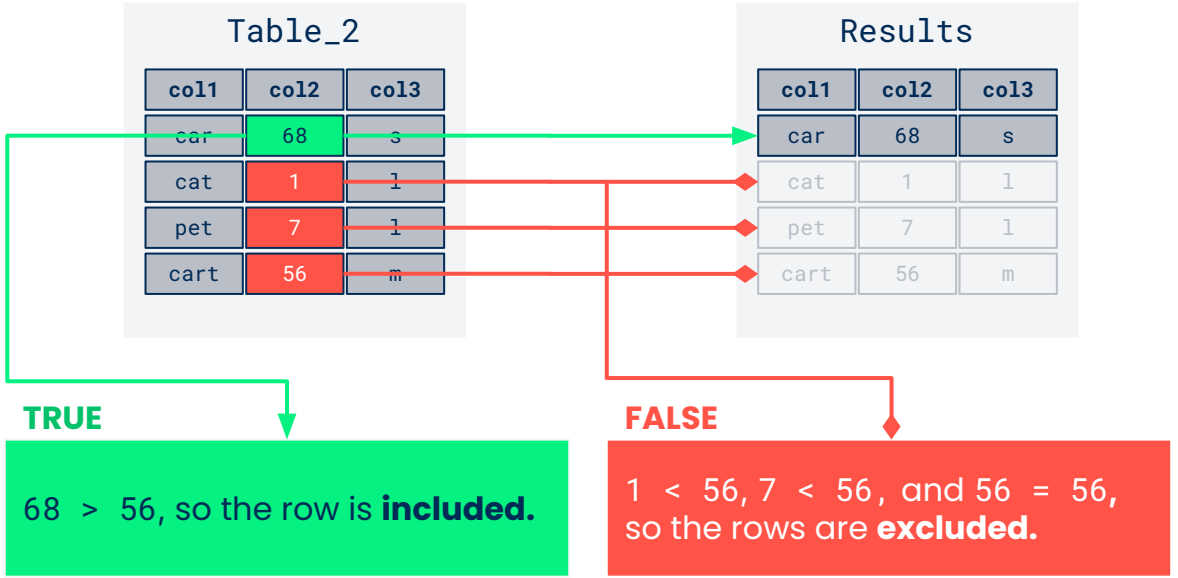
Note that we add a space before and after the operator in SQL code to make it more readable.

Comparison operators

Greater than

The `>` operator returns the rows where the value in a column is **greater than** a specified value.

```
SELECT
    *
FROM
    db.Table_2
WHERE
    col2 > 56;
```

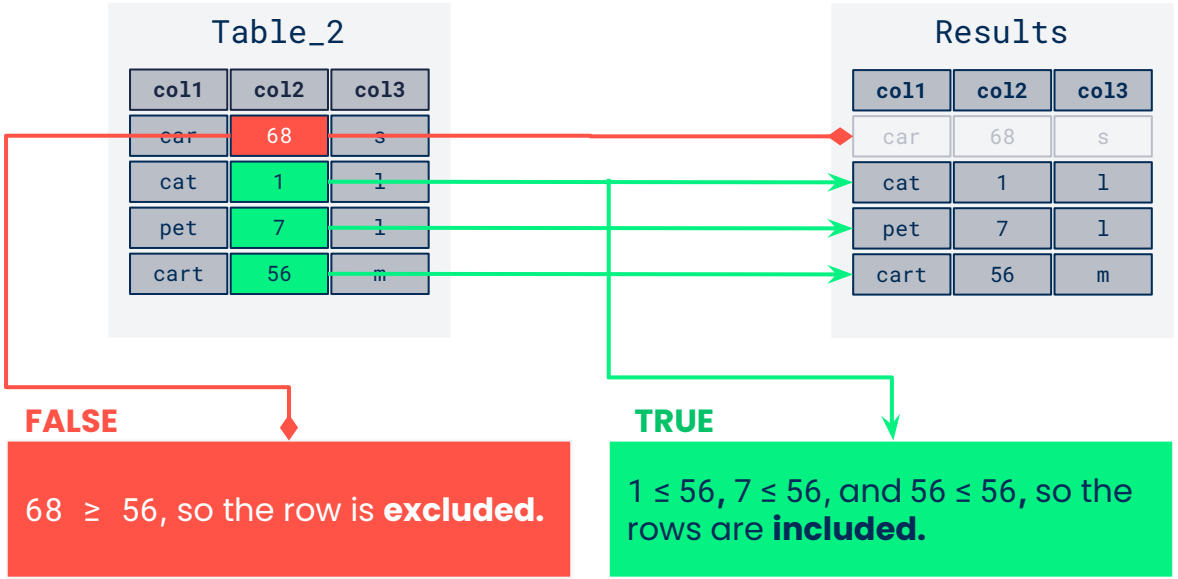


Comparison operators

Less than or equal to

The `<=` operator returns the rows where the value in a column is **less than or equal to** a specified value.

```
SELECT
    *
FROM
    db.Table_2
WHERE
    col2 <= 56;
```



Using `col2 <= 56` includes 56, unlike `<`.

Comparison operators

Greater than or equal to

The `>=` operator returns the rows where the value in a column is **greater than or equal to** a specified value.

```
SELECT
    *
FROM
    db.Table_2
WHERE
    col2 >= 56;
```