COUNT to Count Records

by Sophia

WHAT'S COVERED

In this lesson, you will use the COUNT function to count records, in two parts. Specifically, this lesson will cover:

1. COUNT Function
2. Counting Distinct Values

1. COUNT Function

The **COUNT** function is commonly used for data analysis purposes. It provides insights into the size or quantity of data within a table or the result set of a query. Counting the number of records enables you to understand the distribution, volume, or occurrence of specific data you seek. COUNT can be crucial for decision making and reporting.

The COUNT function lets you summarize and present aggregated information in your result set. You can use it alongside other SQL functions like WHERE, GROUP BY, or HAVING to obtain counts within different categories or subsets of your data. This enables you to generate meaningful reports and presentations that capture the distribution or frequency of specific attributes.

Recall that with the SELECT clause, the * option returns all rows in a table. If we pass the * in the COUNT function, it will return the total number of rows that fit the criteria.

If we looked at a basic query to find the number of customers, the query would look like the following:

```
SELECT *
FROM customer;
```

Not all databases will return a specific row count in the result set, but PostgreSQL does:

Query Results

Row count: 59

customer_id	first_name	last_name	company	address
1	Luís	Gonçalves	Embraer - Empresa Brasileira de Aeronáutica S.A.	Av. Brigadeiro Faria Lima, 2170
2	Leonie	Köhler		Theodor-Heuss-Straße 34
3	François	Tremblay		1498 rue Bélanger
4	Biørn	Hansen		Ullevålsveien 14

Using COUNT(*) in the query, however, would work on all databases:

```
SELECT COUNT(*)
FROM customer;
```

Query Results

Row count: 1

count
59

Instead of passing in the * to count all rows, you can also add the column name in the table to count the number of rows that contain non-null values in that column. For example, if we're looking for the number of customer records where the company column is not empty, it would look like this:

```
SELECT COUNT(company)
FROM customer;
```

Query Results

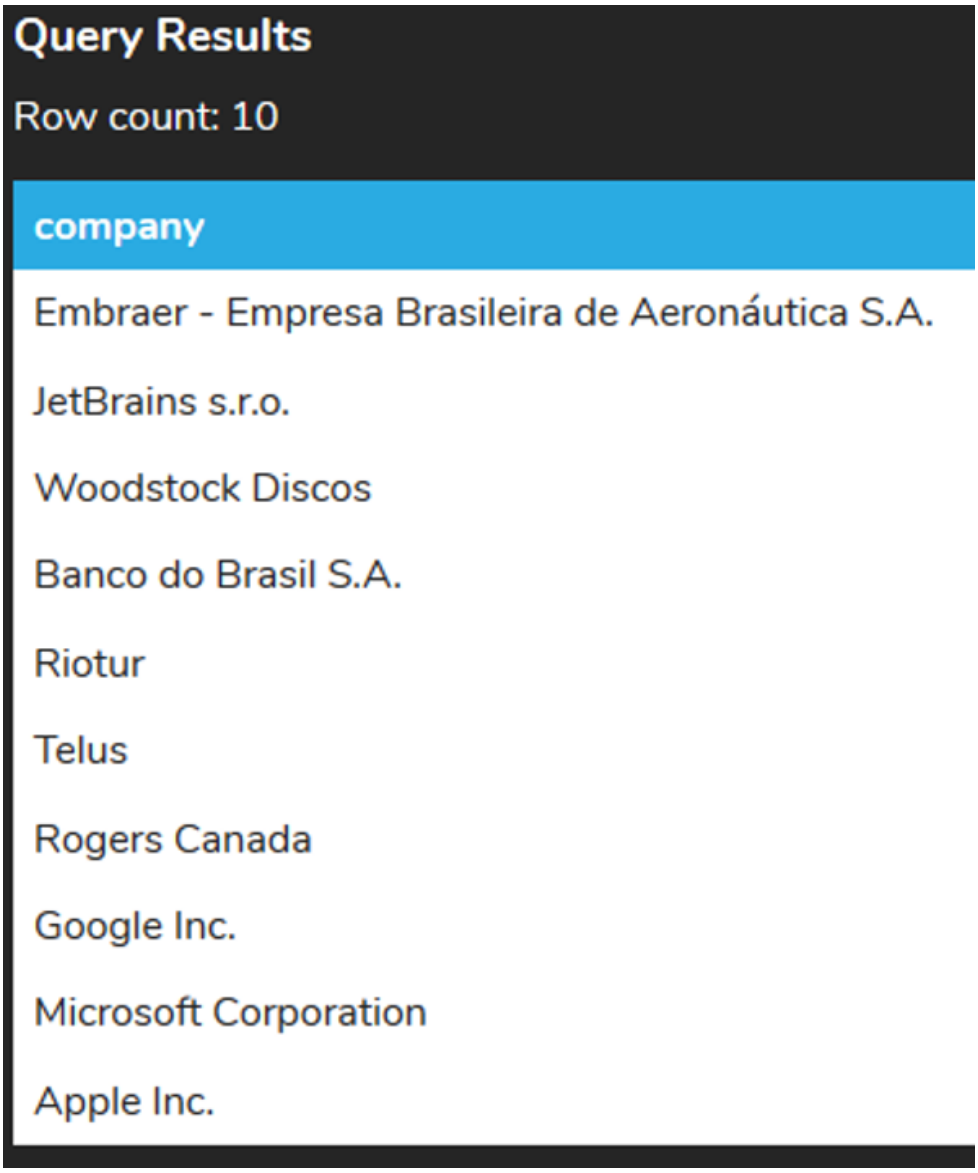
Row count: 1

count
10

You could verify that count by filtering for records that don't have a null value for the company column:

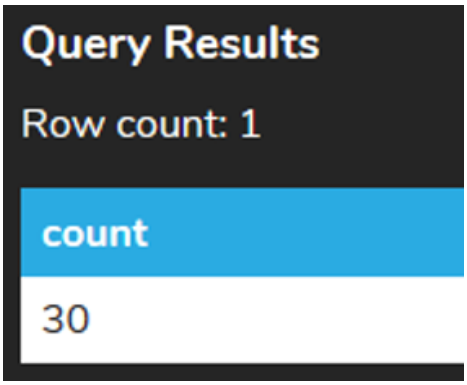
```
SELECT company
```

```
FROM customer
WHERE company IS NOT null;
```



As another example, we could look at the state column's count, which contains some null values. This statement counts only the records in which the state column is not null. That's because it counts the entries in that column.

```
SELECT COUNT(state)
FROM customer;
```



TERM TO KNOW

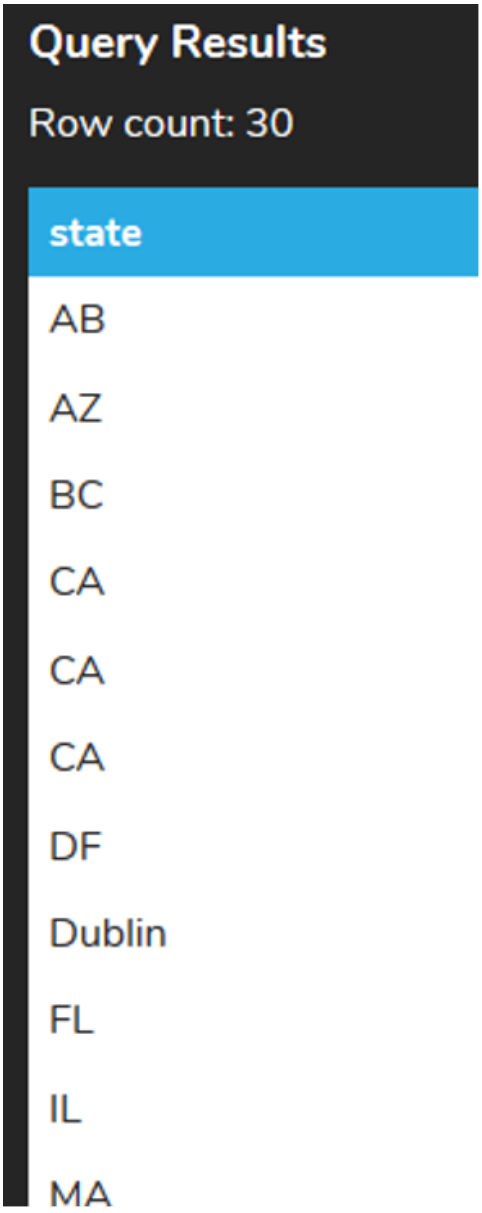
COUNT

A function that counts the number of records that meet the criteria you specify.

2. Counting Distinct Values

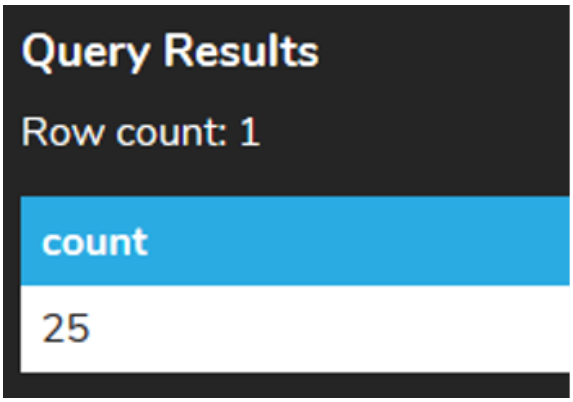
If we look more closely at the state column, we notice some repeating items:

```
SELECT state
FROM customer
WHERE state IS NOT NULL
ORDER BY state;
```



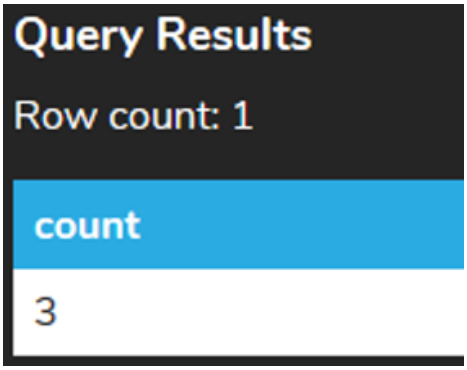
For example, the value “CA” is repeated. There may be times when you want to find a count of all of the unique occurrences using the DISTINCT keyword. It would look like the following:

```
SELECT COUNT (DISTINCT state)
FROM customer;
```



As a final example, we want to identify how many of our employees are supporting customers using the support_rep_id. We can use the following query using the COUNT function to do so:

```
SELECT COUNT(DISTINCT support_rep_id)
FROM customer;
```



WATCH

TRY IT

Your turn! Open the SQL tool by clicking on the LAUNCH DATABASE button below. Then, enter in one of the examples above and see how it works. Next, try your own choices for which columns you want the query to provide.

SUMMARY

In this lesson, you learned that the **COUNT function** is a SQL function that counts the number of rows in a table or occurrences of a particular value in a column. The count is returned as an integer value. Using the COUNT function without any arguments will return the total number of rows in the specified table. You also learned that you can provide specific columns or expressions as arguments to count the occurrences of **distinct values**, or the number of non-null values in those columns. The COUNT function provides valuable insights into the size and distribution of data by retrieving counts quickly and efficiently from tables.

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TERMS TO KNOW

COUNT
A function that counts the number of records that meet the criteria you specify.