Introduction to SQL Server DENSE\_RANK() function

The DENSE\_RANK() is a [window function](https://www.sqlservertutorial.net/sql-server-window-functions/) that assigns a rank to each row within a partition of a result set. Unlike the [RANK()](https://www.sqlservertutorial.net/sql-server-window-functions/sql-server-rank-function/) function, the DENSE\_RANK() function returns consecutive rank values. Rows in each partition receive the same ranks if they have the same values.

The syntax of the DENSE\_RANK() function is as follows:

DENSE\_RANK() OVER (

[PARTITION BY partition\_expression, ... ]

ORDER BY sort\_expression [ASC | DESC], ...

)

Code language: SQL (Structured Query Language) (sql)

The DENSE\_RANK() function is applied to the rows of each partition defined by the PARTITION BY clause, in a specified order, defined by ORDER BY clause. It resets the rank when the partition boundary is crossed.

The PARITION BY clause is optional. If you omit it, the function will treat the whole result set as a single partition.

SQL Server DENSE\_RANK() function illustration

The following statements [create a new table](https://www.sqlservertutorial.net/sql-server-basics/sql-server-create-table/) named dense\_rank\_demo and [insert](https://www.sqlservertutorial.net/sql-server-basics/sql-server-insert/) some rows into that table:

CREATE TABLE sales.dense\_rank\_demo (

v VARCHAR(10)

);

INSERT INTO sales.dense\_rank\_demo(v)

VALUES('A'),('B'),('B'),('C'),('C'),('D'),('E');

SELECT \* FROM sales.dense\_rank\_demo;

Code language: SQL (Structured Query Language) (sql)

The following statement uses both DENSE\_RANK() and RANK() functions to assign a rank to each row of the result set:

SELECT

v,

DENSE\_RANK() OVER (

ORDER BY v

) my\_dense\_rank,

RANK() OVER (

ORDER BY v

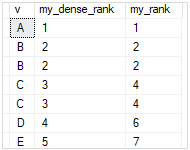
) my\_rank

FROM

sales.dense\_rank\_demo;

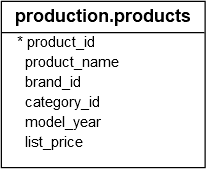
Code language: SQL (Structured Query Language) (sql)

Here is the output:



SQL Server DENSE\_RANK() function examples

We will use the production.products table to demonstrate the DENSE\_RANK() function:



Using SQL Server DENSE\_RANK() over a result set example

The following example uses the DENSE\_RANK() function to rank products by list prices:

SELECT

product\_id,

product\_name,

list\_price,

DENSE\_RANK () OVER (

ORDER BY list\_price DESC

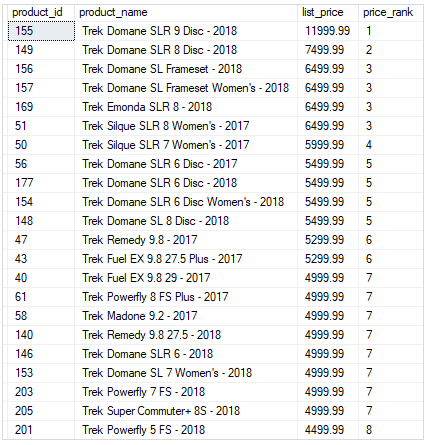
) price\_rank

FROM

production.products;

Code language: SQL (Structured Query Language) (sql)

Here is the output:



Using SQL Server DENSE\_RANK() over partitions example

The following statement ranks products in each category by list prices. It returns only the top 3 products per category by list prices.

SELECT \* FROM (

SELECT

product\_id,

product\_name,

category\_id,

list\_price,

DENSE\_RANK () OVER (

PARTITION BY category\_id

ORDER BY list\_price DESC

) price\_rank

FROM

production.products

) t

WHERE price\_rank < 3;

Code language: SQL (Structured Query Language) (sql)

The following picture shows the output:

