

SQL: ORDER BY

The `ORDER BY` clause in SQL is used to sort the result set of a query in either ascending (`ASC`) or descending (`DESC`) order based on one or more columns. This is particularly useful when you want to organize your data in a specific order for better readability or analysis.

Syntax

The basic syntax for the `ORDER BY` clause is:

```
SELECT column1, column2, ...  
FROM table_name  
ORDER BY column1 [ASC|DESC], column2 [ASC|DESC], ...;
```

Examples of Using `ORDER BY`

Let's look at some examples to understand how the `ORDER BY` clause works:

Example Table: Employees

employee_id	first_name	last_name	department	salary
1	John	Doe	Sales	50000
2	Jane	Smith	Marketing	60000
3	Alice	Johnson	Sales	55000
4	Bob	Brown	IT	70000

1. Sorting by a Single Column in Ascending Order:

To sort employees by their salary in ascending order:

```
SELECT first_name, last_name, salary  
FROM Employees  
ORDER BY salary ASC;
```

Result:

first_name	last_name	salary
John	Doe	50000

Alice	Johnson	55000
Jane	Smith	60000
Bob	Brown	70000

2. Sorting by a Single Column in Descending Order:

To sort employees by their salary in descending order:

```
SELECT first_name, last_name, salary
FROM Employees
ORDER BY salary DESC;
```

Result:

first_name	last_name	salary
Bob	Brown	70000
Jane	Smith	60000
Alice	Johnson	55000
John	Doe	50000

3. Sorting by Multiple Columns:

To sort employees first by department (in ascending order) and then by salary within each department (in descending order):

```
SELECT first_name, last_name, department, salary
FROM Employees
ORDER BY department ASC, salary DESC;
```

Result:

first_name	last_name	department	salary
Bob	Brown	IT	70000
Jane	Smith	Marketing	60000
Alice	Johnson	Sales	55000
John	Doe	Sales	50000

In this example, the `ORDER BY` clause first sorts the results by `department` in ascending order, and within each department, it sorts by `salary` in descending order.

Key Points

- The `ORDER BY` clause allows you to control the order in which rows are returned in the result set.
- You can specify multiple columns to sort by, with each column being sorted independently in either ascending or descending order.
- If no order is specified, `ASC` (ascending order) is the default.
- The `ORDER BY` clause can be used with any SQL statement that retrieves data (`SELECT`), as well as with some statements that modify data (`UPDATE`, `DELETE`) to control the order of operations.

Using the `ORDER BY` clause effectively can help you organize your data in a way that makes it easier to read and analyze.