

SQL: MIN

The `MIN()` function in SQL is used to find the smallest value in a specified column. It is an aggregate function that returns the minimum value from a set of values. This function is useful when you want to determine the lowest value in a numeric or date column.

Syntax

The basic syntax for using the `MIN()` function is:

```
SELECT MIN(column_name)
FROM table_name
WHERE condition;
```

Examples of Using `MIN()`

Let's look at some examples to understand how the `MIN()` function works.

Example Table: Products

product_id	product_name	price	quantity	release_date
1	Widget A	20.00	100	2024-01-01
2	Widget B	15.00	150	2024-01-15
3	Widget C	25.00	200	2024-02-01
4	Widget D	10.00	50	2024-03-01
5	Widget E	30.00	120	2024-01-20

1. Finding the Minimum Price:

Suppose you want to find the cheapest product price:

```
SELECT MIN(price)
FROM Products;
```

Result:

MIN(price)

10.00

This query returns the lowest price in the `price` column, which is **10.00**.

2. Finding the Minimum Quantity in Stock:

Suppose you want to find the product with the smallest quantity in stock:

```
SELECT MIN(quantity)
FROM Products;
```

Result:

MIN(quantity)

50

This query returns the minimum quantity available in the `quantity` column, which is **50**.

3. Finding the Earliest Release Date:

Suppose you want to find out which product has the earliest release date:

```
SELECT MIN(release_date)
FROM Products;
```

Result:

MIN(release_date)

2024-01-01

This query returns the earliest date in the `release_date` column, which is **2024-01-01**.

4. Using `MIN()` with a `WHERE` Clause:

Suppose you want to find the cheapest product that was released after January 15, 2024:

```
SELECT MIN(price)
FROM Products
WHERE release_date > '2024-01-15';
```

Result:

MIN(price)

10.00

This query filters the products to include only those released after January 15, 2024, and then finds the minimum price among those products. The minimum price is **10.00**.

5. Combining `MIN()` with `GROUP BY` :

Suppose you want to find the minimum price for each product category. Let's assume we have a `category` column:

Example Table with Category:

product_id	product_name	category	price
1	Widget A	Gadgets	20.00
2	Widget B	Gadgets	15.00
3	Widget C	Tools	25.00
4	Widget D	Tools	10.00
5	Widget E	Gadgets	30.00

Query:

```
SELECT category, MIN(price)
FROM Products
GROUP BY category;
```

Result:

category	MIN(price)
Gadgets	15.00
Tools	10.00

This query groups the products by category and then calculates the minimum price for each category.

Key Points

- **Returns the Minimum Value:** `MIN()` finds the smallest value in a column.

- **Ignores `NULL` Values:** The function automatically ignores `NULL` values in the column when calculating the minimum.
- **Can Be Combined with `GROUP BY` :** You can use `MIN()` with `GROUP BY` to find the minimum value for different groups of data, like categories or departments.
- **Can Include `WHERE` Clause:** Use the `WHERE` clause to filter the rows that contribute to the minimum, allowing you to calculate conditional minimums.

The `MIN()` function is a valuable tool for identifying the lowest values in your data, making it useful for reporting, analysis, and decision-making.