MySQLTUTORIAL

MySQL WHERE

Summary: in this tutorial, you will learn how to use the MySQL `WHERE` clause in the `SELECT` statement to filter rows from the result set.

Introduction to MySQL WHERE clause

The `WHERE` clause allows you to specify a search condition for the rows returned by a query. The following shows the syntax of the `WHERE` clause:

```
SELECT
    select_list
FROM
    table_name
WHERE
    search_condition;
```

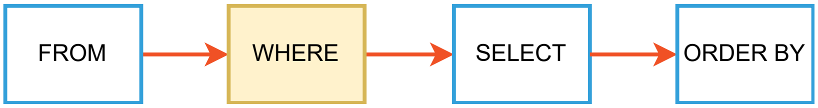
The `search_condition` is a combination of one or more expressions using the logical operator `AND (https://www.mysqltutorial.org/mysql-and/)`, `OR (https://www.mysqltutorial.org/mysql-or/)` and `NOT`.

In MySQL, a predicate is a Boolean expression that evaluates to `TRUE`, `FALSE`, or `UNKNOWN`.

The `SELECT` statement will include any row that satisfies the `search_condition` in the result set.

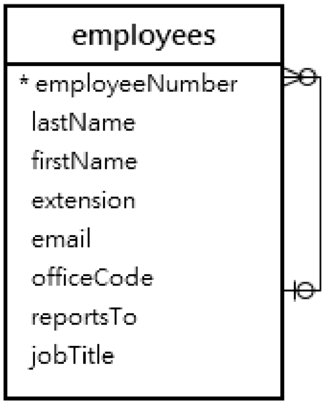
Besides the `SELECT` statement, you can use the `WHERE` clause in the `UPDATE (https://www.mysqltutorial.org/mysql-update-data.aspx)` or `DELETE` (https://www.mysqltutorial.org/mysql-delete-statement.aspx) statement to specify which rows to update or delete.

When executing a `SELECT` statement with a `WHERE` clause, MySQL evaluates the `WHERE` clause after the `FROM` clause and before the `SELECT` and `ORDER BY` clauses:



MySQL WHERE clause examples

We'll use the `employees` table from the sample database (https://www.mysqltutorial.org/mysql-sample-database.aspx) for the demonstration.



1) Using MySQL WHERE clause with equality operator example

The following query uses the `WHERE` clause to find all employees whose job titles are `Sales Rep`:

```
SELECT
    lastname,
    firstname,
    jobtitle
FROM
    employees
WHERE
    jobtitle = 'Sales Rep';
```

Try It Out ❯

```
+-----------+-----------+-----------+
| lastname  | firstname | jobtitle  |
+-----------+-----------+-----------+
| Jennings  | Leslie    | Sales Rep |
| Thompson  | Leslie    | Sales Rep |
| Firrelli  | Julie     | Sales Rep |
| Patterson | Steve     | Sales Rep |
| Tseng     | Foon Yue  | Sales Rep |
| Vanauf    | George    | Sales Rep |
| Bondur    | Loui      | Sales Rep |
| Hernandez | Gerard    | Sales Rep |
| Castillo  | Pamela    | Sales Rep |
| Bott      | Larry     | Sales Rep |
| Jones     | Barry     | Sales Rep |
| Fixter    | Andy      | Sales Rep |
| Marsh     | Peter     | Sales Rep |
| King      | Tom       | Sales Rep |
| Nishi     | Mami      | Sales Rep |
| Kato      | Yoshimi   | Sales Rep |
| Gerard    | Martin    | Sales Rep |
+-----------+-----------+-----------+
17 rows in set (0.00 sec)
```

n this example, the `SELECT` statement examines all rows of the `employees` table and selects only rows whose values in the `jobTitle` column are `Sales Rep`.

2) Using MySQL WHERE clause with the AND operator

The following example uses the `WHERE` clause to find employees whose job titles are `Sales Rep` and office codes are 1:

```
SELECT
    lastname,
    firstname,
    jobtitle,
    officeCode
FROM
    employees
WHERE
    jobtitle = 'Sales Rep' AND
    officeCode = 1;
```

Try It Out ›

```
+----------+-----------+-----------+------------+
| lastname | firstname | jobtitle  | officeCode |
+----------+-----------+-----------+------------+
| Jennings | Leslie    | Sales Rep | 1          |
| Thompson | Leslie    | Sales Rep | 1          |
+----------+-----------+-----------+------------+
2 rows in set (0.00 sec)
```

In this example, the expression in the `WHERE` clause uses the `AND (https://www.mysqltutorial.org/mysql-and/)` operator to combine two conditions:

```
jobtitle = 'Sales Rep' AND officeCode = 1;
```

The `AND` operator evaluates to `TRUE` only if both expressions evaluate to `TRUE`. Therefore, the query returns rows whose values in the `jobTitle` column is `Sales Rep` and `officeCode` is 1.

3) Using MySQL WHERE clause with OR operator

This query finds employees whose job title is `Sales Rep` or employees who locate the office with office code 1:

```
SELECT
    lastName,
    firstName,
    jobTitle,
    officeCode
FROM
    employees
WHERE
    jobtitle = 'Sales Rep' OR
    officeCode = 1
ORDER BY
    officeCode ,
    jobTitle;
```

Try It Out ›

```
+-----------+-----------+--------------------+------------+
| lastName  | firstName | jobTitle           | officeCode |
+-----------+-----------+--------------------+------------+
| Murphy    | Diane     | President          | 1          |
| Bow       | Anthony   | Sales Manager (NA) | 1          |
| Jennings  | Leslie    | Sales Rep          | 1          |
| Thompson  | Leslie    | Sales Rep          | 1          |
| Firrelli  | Jeff      | VP Marketing       | 1          |
| Patterson | Mary      | VP Sales           | 1          |
| Firrelli  | Julie     | Sales Rep          | 2          |
| Patterson | Steve     | Sales Rep           | 2           |
| Tseng     | Foon Yue  | Sales Rep           | 3           |
| Vanauf    | George    | Sales Rep           | 3           |
| Bondur    | Loui      | Sales Rep           | 4           |
| Hernandez | Gerard    | Sales Rep           | 4           |
| Castillo  | Pamela    | Sales Rep           | 4           |
| Gerard    | Martin    | Sales Rep           | 4           |
| Nishi     | Mami      | Sales Rep           | 5           |
| Kato      | Yoshimi   | Sales Rep           | 5           |
| Fixter    | Andy      | Sales Rep           | 6           |
| Marsh     | Peter     | Sales Rep           | 6           |
| King      | Tom       | Sales Rep           | 6           |
| Bott      | Larry     | Sales Rep           | 7           |
| Jones     | Barry     | Sales Rep           | 7           |
+-----------+-----------+--------------------+------------+
21 rows in set (0.00 sec)
```

The `OR (https://www.mysqltutorial.org/mysql-or/)` operator evaluates to `TRUE` only if one of the expressions evaluates to `TRUE`:

```
jobtitle = 'Sales Rep' OR officeCode = 1
```

Therefore, the query returns any employee who has the job title Sales Rep or office code 1.

4) Using MySQL WHERE clause with the BETWEEN operator example

The `BETWEEN (https://www.mysqltutorial.org/mysql-between)` operator returns `TRUE` if a value is in a range of values:

```
expression BETWEEN low AND high
```

The following query finds employees who locate in offices whose office code is from 1 to 3:

```
SELECT
    firstName,
    lastName,
    officeCode
FROM
    employees
```

```
WHERE
    officeCode BETWEEN 1 AND 3
ORDER BY officeCode;
```

Try It Out ❯

```
+-----------+-----------+------------+
| firstName | lastName  | officeCode |
+-----------+-----------+------------+
| Diane     | Murphy    | 1          |
| Mary      | Patterson | 1          |
| Jeff      | Firrelli  | 1          |
| Anthony   | Bow       | 1          |
| Leslie    | Jennings  | 1          |
| Leslie    | Thompson  | 1          |
| Julie     | Firrelli  | 2          |
| Steve     | Patterson | 2          |
| Foon Yue  | Tseng     | 3          |
| George    | Vanauf    | 3          |
+-----------+-----------+------------+
10 rows in set (0.00 sec)
```

5) Using MySQL WHERE clause with the LIKE operator example

The `LIKE (https://www.mysqltutorial.org/mysql-like/)` operator evaluates to `TRUE` if a value matches a specified pattern.

To form a pattern, you use the `%` and `_` wildcards. The `%` wildcard matches any string of zero or more characters while the `_` wildcard matches any single character.

The following query finds the employees whose last names end with the string `'son'`:

```
SELECT
    firstName,
    lastName
FROM
    employees
WHERE
    lastName LIKE '%son'
ORDER BY firstName;
```

Try It Out

```
+-----------+-----------+
| firstName | lastName  |
+-----------+-----------+
| Leslie    | Thompson  |
| Mary      | Patterson |
| Steve     | Patterson |
| William   | Patterson |
+-----------+-----------+
4 rows in set (0.00 sec)
```

6) Using MySQL WHERE clause with the IN operator example

The `IN` (https://www.mysqltutorial.org/mysql-basics/mysql-in/) operator returns `TRUE` if a value matches any value in a list.

```
value IN (value1, value2,...)
```

The following example uses the `WHERE` clause with the `IN` operator to find employees who locate in the office with office code 1.

```
SELECT
    firstName,
    lastName,
    officeCode
FROM
    employees
WHERE
    officeCode IN (1 , 2, 3)
ORDER BY
    officeCode;
```

Try It Out

```
+-----------+-----------+------------+
| firstName | lastName  | officeCode |
+-----------+-----------+------------+
| Diane     | Murphy    | 1          |
| Mary      | Patterson | 1          |
| Jeff      | Firrelli  | 1          |
| Anthony   | Bow       | 1          |
| Leslie    | Jennings  | 1          |
| Leslie    | Thompson  | 1          |
| Julie     | Firrelli  | 2          |
| Steve     | Patterson | 2          |
| Foon Yue  | Tseng     | 3          |
| George    | Vanauf    | 3          |
+-----------+-----------+------------+
10 rows in set (0.00 sec)
```

7) Using MySQL WHERE clause with the IS NULL operator

To check if a value is `NULL` (https://www.mysqltutorial.org/mysql-null/) or not, you use the `IS NULL` (https://www.mysqltutorial.org/mysql-is-null/) operator, not the equal operator (`=`). The `IS NULL` operator returns `TRUE` if a value is `NULL`.

```
value IS NULL
```

> In the database world, `NULL` is a marker that indicates that a value is missing or unknown. And NULL is not equivalent to the number 0 or an empty string.

The following statement uses the `WHERE` clause with the `IS NULL` operator to get the rows with the values in the `reportsTo` column are `NULL`:

```
SELECT
    lastName,
    firstName,
    reportsTo
FROM
    employees
WHERE
    reportsTo IS NULL;
```

Try It Out ❯

```
+----------+-----------+-----------+
| lastName | firstName | reportsTo |
+-----------+-----------+-----------+
| Murphy    | Diane     |      NULL |
+-----------+-----------+-----------+
1 row in set (0.01 sec)
```

8) Using MySQL WHERE clause with comparison operators

The following table shows the comparison operators that you can use to form the expression in the `WHERE` clause.

Operator	**Description**
=	Equal to. You can use it with almost any data type.
<> or !=	Not equal to
<	Less than. You typically use it with numeric and date/time data types.
>	Greater than.
<=	Less than or equal to
>=	Greater than or equal to

The following query uses the not equal to (<>) operator to find all employees who are not the `Sales Rep`:

```
SELECT
    lastname,
    firstname,
    jobtitle
FROM
    employees
WHERE
    jobtitle <> 'Sales Rep';
```

Try It Out ❯

```
+-----------+-----------+----------------------+
| lastname  | firstname | jobtitle             |
+-----------+-----------+----------------------+
| Murphy    | Diane     | President            |
| Patterson | Mary      | VP Sales             |
| Firrelli  | Jeff      | VP Marketing         |
| Patterson | William   | Sales Manager (APAC) |
| Bondur    | Gerard    | Sale Manager (EMEA)  |
| Bow       | Anthony   | Sales Manager (NA)   |
+-----------+-----------+----------------------+
6 rows in set (0.00 sec)
```

The following query finds employees whose office code is greater than 5:

```
SELECT
    lastname,
    firstname,
    officeCode
FROM
    employees
WHERE
    officecode > 5;
```

Try It Out ❯

```
+-----------+-----------+------------+
| lastname  | firstname | officeCode |
+-----------+-----------+------------+
| Patterson | William   | 6          |
| Bott      | Larry     | 7          |
| Jones     | Barry     | 7          |
| Fixter    | Andy      | 6          |
| Marsh     | Peter     | 6          |
| King      | Tom       | 6          |
+-----------+-----------+------------+
6 rows in set (0.00 sec)
```

The following query returns employees with office code less than or equal to 4 (<=4):

```
SELECT
    lastname,
    firstname,
    officeCode
FROM
    employees
WHERE
    officecode <= 4;
```

Try It Out ❯

```
+-----------+-----------+------------+
| lastname  | firstname | officeCode |
+-----------+-----------+------------+
| Murphy    | Diane     | 1          |
| Patterson | Mary      | 1          |
| Firrelli  | Jeff      | 1          |
| Bondur    | Gerard    | 4          |
| Bow       | Anthony   | 1          |
| Jennings  | Leslie    | 1          |
| Thompson  | Leslie    | 1          |
| Firrelli  | Julie     | 2          |
| Patterson | Steve     | 2          |
| Tseng     | Foon Yue  | 3          |
| Vanauf    | George    | 3          |
| Bondur    | Loui      | 4          |
| Hernandez | Gerard    | 4          |
| Castillo  | Pamela    | 4          |
| Gerard    | Martin    | 4          |
+-----------+-----------+------------+
15 rows in set (0.00 sec)
```

Summary

- Use the `WHERE` clause to filter rows by a condition.
- MySQL evaluates the `WHERE` clause after the `FROM` clause and before the `SELECT` and `ORDER BY` clauses.