MySQLTUTORIAL

MySQL SELECT

Summary: in this tutorial, you will learn how to use the basic form of the MySQL `SELECT` statement to query data from a table.

Introduction to MySQL SELECT statement

The `SELECT` statement allows you to select data from one or more tables. To write a `SELECT` statement in MySQL, you use this syntax:

```
SELECT select_list
FROM table_name;
```

In this syntax:

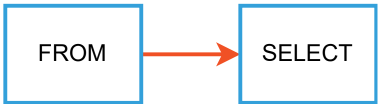
- First, specify one or more columns from which you want to select data after the `SELECT` keyword. If the `select_list` has multiple columns, you need to separate them by a comma (`,`).
- Second, specify the name of the table from which you want to select data after the `FROM` keyword.

The semicolon (`;`) is optional. It denotes the end of a statement. If you have two or more statements, you need to use the semicolon(`;)` to separate them so that MySQL will execute each statement individually.

The `SELECT` and `FROM` are the keywords. By convention, you write the SQL keywords in uppercase. However, it's not mandatory. Because SQL is case-insensitive, you can write the SQL statement in lowercase, uppercase, etc. For example:

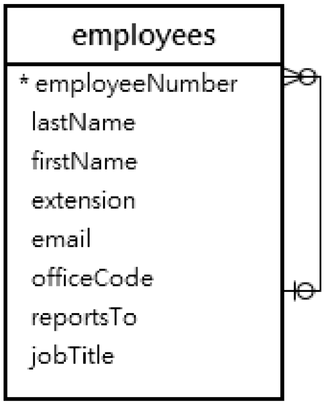
```
select select_list
from table_name;
```

When executing the `SELECT` statement, MySQL evaluates the `FROM` clause before the `SELECT` clause:

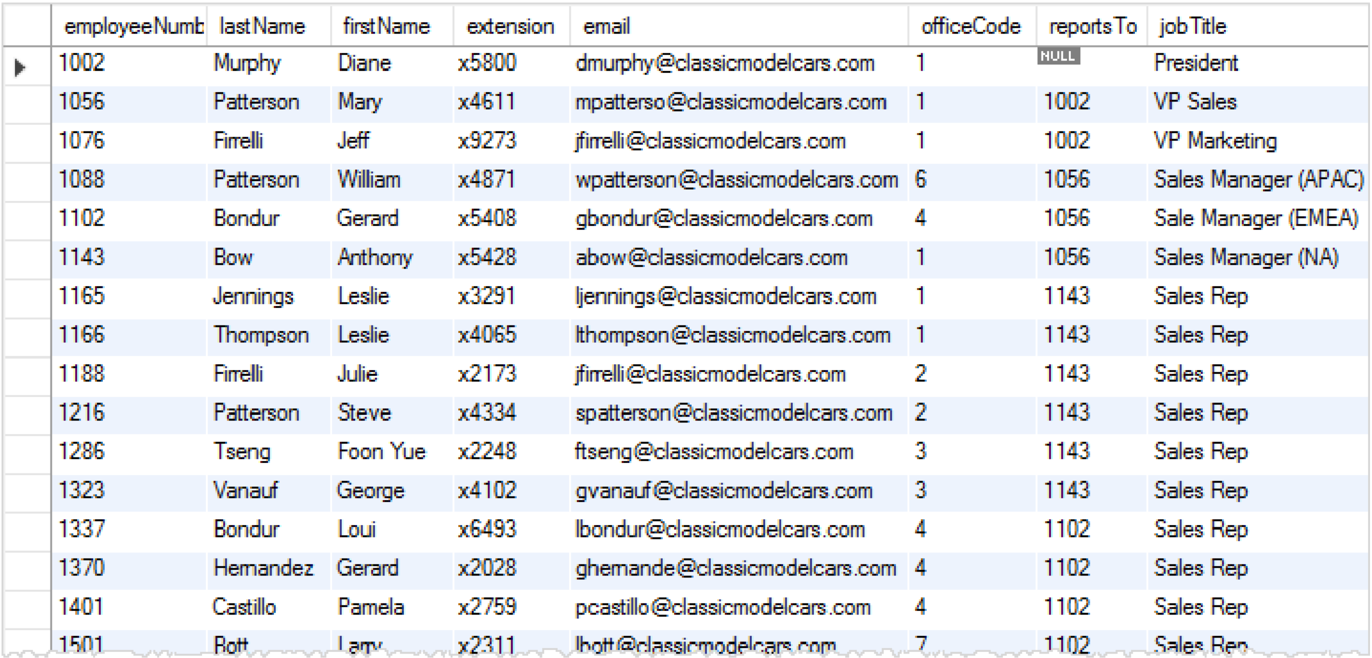


MySQL SELECT statement examples

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



The `employees` table has eight columns: employeeNumber, lastName, firstName, extension, email, officeCode, reportsTo, and jobTitle. The table also has many rows as shown in the following picture:



employeeNumb	lastName	firstName	extension	email	officeCode	reportsTo	jobTitle
1002	Murphy	Diane	x5800	dmurphy@classicmodelcars.com	1	NULL	President
1056	Patterson	Mary	x4611	mpatterso@classicmodelcars.com	1	1002	VP Sales
1076	Firrelli	Jeff	x9273	jfirrelli@classicmodelcars.com	1	1002	VP Marketing
1088	Patterson	William	x4871	wpatterson@classicmodelcars.com	6	1056	Sales Manager (APAC)
1102	Bondur	Gerard	x5408	gbondur@classicmodelcars.com	4	1056	Sale Manager (EMEA)
1143	Bow	Anthony	x5428	abow@classicmodelcars.com	1	1056	Sales Manager (NA)
1165	Jennings	Leslie	x3291	ljennings@classicmodelcars.com	1	1143	Sales Rep
1166	Thompson	Leslie	x4065	lthompson@classicmodelcars.com	1	1143	Sales Rep
1188	Firrelli	Julie	x2173	jfirrelli@classicmodelcars.com	2	1143	Sales Rep
1216	Patterson	Steve	x4334	spatterson@classicmodelcars.com	2	1143	Sales Rep
1286	Tseng	Foon Yue	x2248	ftseng@classicmodelcars.com	3	1143	Sales Rep
1323	Vanauf	George	x4102	gvanauf@classicmodelcars.com	3	1143	Sales Rep
1337	Bondur	Loui	x6493	lbondur@classicmodelcars.com	4	1102	Sales Rep
1370	Hernandez	Gerard	x2028	ghernande@classicmodelcars.com	4	1102	Sales Rep
1401	Castillo	Pamela	x2759	pcastillo@classicmodelcars.com	4	1102	Sales Rep
1501	Bott	Larry	x2311	lbott@classicmodelcars.com	7	1102	Sales Rep

A) Using the MySQL SELECT statement to retrieve data from a single column example

The following example uses the `SELECT` statement to select the last names of all employees:

```
SELECT lastName
FROM employees;
```

Try It Out ❯

Here’s the partial output:

```
+-----------+
| lastName  |
+-----------+
| Murphy    |
| Patterson |
| Firrelli  |
| Patterson |
| Bondur    |
| Bow       |
| Jennings  |
...
```

The result of a `SELECT` statement is called a result set as it’s a set of rows that results from the query.

B) Using the MySQL SELECT statement to query data from multiple columns example

The following example uses the `SELECT` statement to get the first name, last name, and job title of employees:

```
SELECT
    lastName,
    firstName,
    jobTitle
FROM
    employees;
```

Try It Out ❯

Even though the `employees` table has many columns, the `SELECT` statement returns data of three columns `lastName`, `firstName`, and `jobTitle` specified in the `SELECT` clause:

```
+-----------+-----------+----------------------+
| lastname  | firstname | jobtitle             |
+-----------+-----------+----------------------+
| Murphy    | Diane     | President            |
| Patterson | Mary      | VP Sales             |
| Firrelli  | Jeff      | VP Marketing         |
| Patterson | William   | Sales Manager (APAC) |
| Bondur    | Gerard    | Sale Manager (EMEA)  |
...
```

C) Using the MySQL SELECT statement to retrieve data from all columns example

If you want to select data from all the columns of the `employees` table, you can specify all the column names in the `SELECT` clause like this:

```
SELECT employeeNumber,
       lastName,
       firstName,
       extension,
       email,
       officeCode,
       reportsTo,
       jobTitle
FROM   employees;
```

Alternatively, you can use the asterisk (*) which is the shorthand for all columns. For example:

```
SELECT *
FROM employees;
```

Try It Out ❯

The query returns data from all the columns of the `employees` table.

The `SELECT *` is often called "select star" or "select all" since it selects data from all columns of the table. In practice, you should use the `SELECT *` for the ad-hoc queries only.

If you embed the `SELECT` statement in the code such as PHP (https://www.mysqltutorial.org/php-mysql/) , Java (https://www.mysqltutorial.org/mysql-jdbc-tutorial/) , Python (https://www.mysqltutorial.org/python-mysql/) , Node.js (https://www.mysqltutorial.org/mysql-nodejs/) , you should explicitly specify the columns from which you want to select data.

Summary

- Use the `SELECT` statement to select data from a table.
- Use the `SELECT *` to select data from all columns of a table.