

Database Design

Limit Rows Selected



ACADEMY

Objectives

This lesson covers the following objectives:

- Apply SQL syntax to restrict the rows returned from a query
- Demonstrate application of the WHERE clause syntax
- Explain why it is important, from a business perspective, to be able to easily limit data retrieved from a table
- Construct and produce output using a SQL query containing character strings and date values

Purpose

Have you ever had “information overload”? The television is on, your Mom is asking you how school went today, the phone rings, and the dog is barking. Wouldn't it be nice to be able to restrict the amount of information you have to process at one time? In SQL, this is the job of the **WHERE** clause.

It is important to be able to choose the information you need to see from a table. Tables can have millions of rows of data, and it is a waste of resources to search and return data you don't need or want.

SELECT Statement

You use SELECT to retrieve information from the database. A SELECT statement must include at a minimum a SELECT clause and a FROM clause. The WHERE clause is optional.

```
SELECT*|{[DISTINCT] column | expression alias}..  
FROM table  
[WHERE condition(s)];
```

WHERE Clause

When retrieving data from the database, you may need to limit the rows of data that are displayed. You can accomplish this using the WHERE clause. A WHERE clause contains a condition that must be met, and it directly follows the FROM clause in a SQL statement.

The syntax for the WHERE clause is:

```
WHERE column_name comparison_condition comparison_value
```

Note: An alias cannot be used in the WHERE clause!

WHERE Clause (cont.)

Examine the following SQL statement from the
DJs on Demand database:

```
SELECT id, first_name, last_name  
FROM   d_partners;
```

ID	FIRST_NAME	LAST_NAME
11	Jennifer	cho
22	Jason	Tsang
33	Allison	Plumb

Note how by adding a WHERE clause, the rows are limited to those rows where the value of ID is 22.

```
SELECT first_name, last_name, expertise  
FROM   d_partners  
WHERE  id = 22;
```

ID	FIRST_NAME	LAST_NAME
22	Jason	Tsang

Comparison Operators in the WHERE Clause

As you saw on the previous slide, the = sign can be used in the WHERE clause. In addition to the “equal to” operator (=), other comparison operators can be used to compare one expression to another:

- = equal to
- > greater than
- >= greater than or equal to
- < less than
- <= less than or equal to
- <> not equal to (or != or ^=)

Comparison Operators in the WHERE Clause (cont.)

In the example below, which column name is used in the WHERE clause? What comparison operator is used? Is "90" a column name or a constant?

```
SELECT employee_id, last_name, department_id
FROM   employees
WHERE  department_id = 90 ;
```


Character and Date Strings in the WHERE Clause

Character strings and dates in the WHERE clause must be enclosed in single quotation marks ' '. But this does NOT make them literal strings. They are still just character and date strings.

Numbers, however, should not be enclosed in single quotation marks.

Character and Date Strings in the WHERE Clause (cont.)

Look at the following example from the DJs on Demand database. The WHERE clause contains a string and is enclosed in single quotation marks.

```
SELECT first_name, last_name  
FROM   d_clients  
WHERE  last_name = 'Jones';
```

Character and Date Strings in the WHERE Clause (cont.)

What do you think will happen if the WHERE clause is written as:

```
WHERE last_name = 'jones';
```

All character searches are case-sensitive. Because the D_CLIENTS table stores all the last names in the proper case, no rows are returned in this example.

Character and Date Strings in the WHERE Clause (cont.)

This is an important point to remember. In another lesson, you will learn to use other SQL keywords UPPER, LOWER, and INITCAP that will make it easier to avoid a case-sensitive mistake.

Comparison Operators in the WHERE Clause

Comparison operators can be used in all of the following ways in the WHERE clause:

```
WHERE event_date = '01-JAN-2004'  
WHERE rental_fee >= 2000  
WHERE cd_title = 'White Rose'
```

In the following example from the DJs on Demand database, which rows will be selected? Will salaries of 3000 be included in the result set?

```
SELECT last_name, salary  
FROM employees  
WHERE salary <= 3000;
```

Summary

In this lesson, you should have learned how to:

- Apply SQL syntax to restrict the rows returned from a query
- Demonstrate application of the WHERE clause syntax
- Explain why it is important, from a business perspective, to be able to easily limit data retrieved from a table
- Construct and produce output using a SQL query containing character strings and date values