

SQL

2.0

SQL SELECT Statement

The SELECT statement is used to select data from a database.

Syntax

```
SELECT column1, column2, ...
```

```
FROM table_name;
```

SQL SELECT Statement

```
SELECT CustName, Country  
FROM Customers;
```

Select ALL columns

If you want to return all columns, without specifying every column name, you can use the SELECT * syntax:

```
SELECT * FROM Customers;
```

SQL SELECT DISTINCT Statement

The SELECT DISTINCT statement is used to return only distinct (different) values.

Inside a table, a column often contains many duplicate values; and sometimes you only want to list the different (distinct) values.

Syntax

```
SELECT DISTINCT column1, column2, ...
```

```
FROM table_name;
```

SQL SELECT DISTINCT Statement

```
SELECT DISTINCT Country FROM Customers;
```

SQL WHERE Clause

The WHERE clause is used to filter records.

It is used to extract only those records that fulfill a specified condition.

Syntax

```
SELECT column1, column2, ...
```

```
FROM table_name
```

```
WHERE condition;
```

SQL WHERE Clause

Text Fields vs. Numeric Fields

SQL requires single quotes around text values (most database systems will also allow double quotes).

However, numeric fields should not be enclosed in quotes:

```
SELECT * FROM Customers WHERE CustID=1;
```

```
SELECT * FROM Customers WHERE Country='Germany';
```

Operators in WHERE Clause

= Equal

> Greater than

< Less than

>= Greater than or equal

<= Less than or equal

<> Not equal.

Note: In some versions of SQL this operator may be written as !=

BETWEEN Between a certain range

LIKE Search for a pattern

IN To specify multiple possible values for a column

Operators in WHERE Clause

```
SELECT * FROM Customers
```

```
WHERE CustID > 2;
```

```
SELECT * FROM Customers
```

```
WHERE CustID BETWEEN 3 AND 5;
```

The WHERE clause is not only used in SELECT statements, it is also used in UPDATE, DELETE, etc.!

SQL ORDER BY Keyword

The ORDER BY keyword is used to sort the result-set in ascending or descending order.

Syntax

```
SELECT column1, column2, ...
```

```
FROM table_name
```

```
ORDER BY column1, column2, ... ASC|DESC;
```

SQL ORDER BY Keyword

```
SELECT * FROM Products
```

```
ORDER BY Price;
```

The ORDER BY keyword sorts the records in ascending order by default. To sort the records in descending order, use the DESC keyword.

```
SELECT * FROM Products
```

```
ORDER BY Price DESC;
```

SQL ORDER BY Keyword

For string values the ORDER BY keyword will order alphabetically:

```
SELECT * FROM Products
```

```
ORDER BY ProductName;
```

To sort the table reverse alphabetically, use the DESC keyword:

```
SELECT * FROM Products
```

```
ORDER BY ProductName DESC;
```

ORDER BY Several Columns

The following SQL statement selects all customers from the "Customers" table, sorted by the "Country" and the "CustName" column. This means that it orders by Country, but if some rows have the same Country, it orders them by CustName:

```
SELECT * FROM Customers
```

```
ORDER BY Country, CustName;
```

Using Both ASC and DESC

The following SQL statement selects all customers from the "Customers" table, sorted ascending by the "Country" and descending by the "CustName" column:

```
SELECT * FROM Customers
```

```
ORDER BY Country ASC, CustName DESC;
```

The SQL AND Operator

The WHERE clause can contain one or many AND operators.

The AND operator is used to filter records based on more than one condition.

Syntax

```
SELECT column1, column2, ...
```

```
FROM table_name
```

```
WHERE condition1 AND condition2 AND condition3 ...;
```

The SQL AND Operator

If you want to return all customers from Germany that starts with the letter 'Z':

```
SELECT * FROM Customers
```

```
WHERE Country = 'Germany' AND CustName LIKE 'Z%';
```


All Conditions Must Be True

```
SELECT * FROM Customers
```

```
WHERE Country = 'Germany'
```

```
AND Address = 'Berlin'
```

```
AND PINCODE > 12000;
```

AND vs OR

The AND operator displays a record if all the conditions are TRUE.

The OR operator displays a record if any of the conditions are TRUE.

AND vs OR

You can combine the AND and OR operators.

The following SQL statement selects all customers from Spain that starts with a "G" or an "R".

Make sure you use parenthesis to get the correct result.

```
SELECT * FROM Customers WHERE Country = 'INDIA' AND  
(CustName LIKE 'R%' OR CustName LIKE 'G%');
```