

What is SQL?

- SQL stands for Structured Query Language
- SQL lets you access and manipulate databases
- SQL became a standard of the American National Standards Institute (ANSI) in 1986, and of the International Organization for Standardization (ISO) in 1987

What Can SQL do?

- SQL can execute queries against a database
- SQL can retrieve data from a database
- SQL can insert records in a database
- SQL can update records in a database
- SQL can delete records from a database
- SQL can create new databases
- SQL can create new tables in a database
- SQL can create stored procedures in a database
- SQL can create views in a database
- SQL can set permissions on tables, procedures, and views

COUNT() Syntax

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

The **AVG()** function returns the average value of a numeric column.

AVG() Syntax

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

The **SUM()** function returns the total sum of a numeric column.

SUM() Syntax

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

SQL Statement:

```
SELECT Country FROM Customers;
```

Edit the SQL Statement, and click "Run SQL »"

Run SQL »

Result:

Number of Records: 91

Country
Germany
Mexico
Mexico
UK
Sweden
Germany
France
Spain

SQL JOIN

A **JOIN** clause is used to combine rows from two or more tables, based on a related column between them.

Let's look at a selection from the "Orders" table:

OrderID	CustomerID	OrderDate
10308	2	1996-09-18
10309	37	1996-09-19
10310	77	1996-09-20

Then, look at a selection from the "Customers" table:

CustomerID	CustomerName	ContactName	Country
1	Alfreds Futterkiste	Maria Anders	Germany
2	Ana Trujillo Emparedados y helados	Ana Trujillo	Mexico
3	Antonio Moreno Taquería	Antonio Moreno	Mexico

SQL Statement:

```
SELECT Orders.OrderID, Customers.CustomerName, Orders.OrderDate
FROM Orders
INNER JOIN Customers
ON Orders.CustomerID=Customers.CustomerID;
```

Edit the SQL Statement, and click "Run SQL" to see the result.

Run SQL »

Result:

Number of Records: 196

OrderID	CustomerName	OrderDate
10308	Ana Trujillo Emparedados y helados	9/18/1996
10365	Antonio Moreno Taquería	11/27/1996
10383	Around the Horn	12/16/1996
10355	Around the Horn	11/15/1996
10278	Berglunds snabbköp	8/12/1996
10280	Berglunds snabbköp	8/14/1996
10384	Berglunds snabbköp	12/16/1996
10436	Blondel père et fils	2/5/1997

Single Line Comments

Single line comments start with **--**.

Any text between -- and the end of the line will be ignored (will not be executed).

The following example uses a single-line comment as an explanation:

SQL Statement:

```
-- Select all:  
SELECT * FROM Customers;
```

Edit the SQL Statement, and click "Run SQL" to see the result.

Run SQL »

Result:

Error in SQL:

Invalid SQL statement; expected 'DELETE', 'INSERT', 'PROCEDURE', 'SELECT', or 'UPDATE'.

All of these seem straight forward especially with this guide. It would take time and use to get them down to memory but nothing here seems difficult to understand.

SQL Keywords Reference

◀ Previous

This SQL keywords reference contains the reserved words in SQL.

SQL Keywords

Keyword	Description
ADD	Adds a column in an ex
ADD CONSTRAINT	Adds a constraint after
ALL	Returns true if all of th
ALTER	Adds, deletes, or modi
ALTER COLUMN	Changes the data type
ALTERED TABLE	Adds, deletes, or modi

Reference guides are nice.

The SQL CREATE DATABASE Statement

The `CREATE DATABASE` statement is used to create a new SQL database.

Syntax

```
CREATE DATABASE databasename;
```

CREATE DATABASE Example

The following SQL statement creates a database called "testDB":

Example

```
CREATE DATABASE testDB;
```