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SQL (Structured Query Language)

What Is SQL?

- SQL is a standard language for accessing and manipulating databases.
- SQL is an ANSI (American National Standards Institute) standard.

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.

SQL Is a Standard—BUT....

Although SQL is an ANSI standard, there are many different versions of the SQL language. To be compliant with the ANSI standard, they all support at least the major commands (such as SELECT, UPDATE, DELETE, INSERT, and WHERE) in a similar manner. However, most of the SQL databases also have their own proprietary extensions in addition to the SQL standard!

RDBMS (Relational Database Management System)

DBMS is a set of computer programs that controls the creation, maintenance, and the use of a database. RDBMS is the basis for SQL, and

for all modern database systems like MS SQL Server, IBM DB2, Oracle, and MySQL. The data in RDBMS is stored in database objects called tables. A table is a collections of related data entries and it consists of columns and rows.

Demonstration

The following is an SQL test area from W3Schools, which uses the well-known Northwind sample database and the tables are for read only.

The Database includes:

SQL Statement:

Restore Database

```
SELECT  *  FROM  Customers;
```

Edit the SQL statement and click   Run SQL »   to see the result, or

Reset »

Result:

Click **"Run SQL"** to execute the SQL statement above.

W3Schools has created an SQL database in your browser.

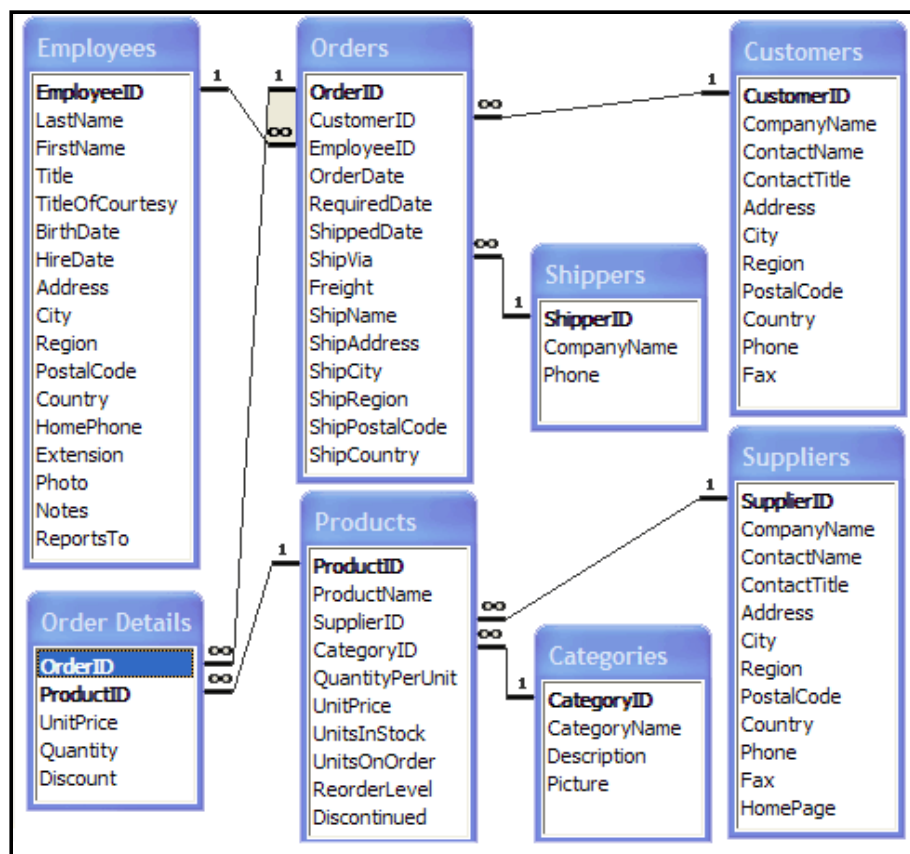The menu to the right displays the database, and will reflect any changes.

Feel free to experiment with any SQL statement.

You can restore the database at any time.

The Database includes:

Tablenames	Records
Customers	91
Categories	8
Employees	10
OrderDetails	518
Orders	196

Products   77
Shippers   3
Suppliers   29

Slide 5.6: MySQL Workbench (cont.)
Slide 5.8: SQL syntax
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