

Databases

SQL

Relational databases

- A relational database is a collection of data items with pre-defined relationships between them. These items are organized as a set of tables with columns and rows. Tables are used to hold information about the objects to be represented in the database. Each column in a table holds a certain kind of data and a field stores the actual value of an attribute. The rows in the table represent a collection of related values of one object or entity. Each row in a table could be marked with a unique identifier called a primary key, and rows among multiple tables can be made related using foreign keys. This data can be accessed in many different ways without reorganizing the database tables themselves.

Relational database example - internet shop

- products
- orders
- customers

DBMS

- MySQL
- PostgreSQL
- Oracle
- SQL Server
- More:

https://en.wikipedia.org/wiki/List_of_relational_database_management_systems

SQL - Structured Query Language

- SQL is a standard language for storing, manipulating and retrieving data in databases.

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

Some of The Most Important SQL Commands

- SELECT - extracts data from a database
- UPDATE - updates data in a database
- DELETE - deletes data from a database
- INSERT INTO - inserts new data into a database
- CREATE DATABASE - creates a new database
- ALTER DATABASE - modifies a database
- CREATE TABLE - creates a new table
- ALTER TABLE - modifies a table
- DROP TABLE - deletes a table
- CREATE INDEX - creates an index (search key)
- DROP INDEX - deletes an index

Tables

- Creating table: https://www.w3schools.com/sql/sql_create_table.asp
- Dropping table: https://www.w3schools.com/sql/sql_drop_table.asp
- Changing table: https://www.w3schools.com/sql/sql_alter.asp
- MySql data types (for columns):
 - <https://dev.mysql.com/doc/refman/8.0/en/data-types.html>
 - <https://www.tutorialspoint.com/mysql/mysql-data-types.htm>