**DATABASE MANAGEMENT SYSTEMS (DBMS)**

A special software program that helps users create and maintain a database.

Makes it easy to manage large amounts of information

Handles security

Backups

Importing/exporting data

Concurrency

Interacts with software applications

C.R.U.D

CREATE - READ - UPDATE - DELETE

**Relational databases (SQL)**

Organize data into one or more tables

Each table has columns and rows

A unique key identifies each row

Non-relational (noSQL / not just SQL)

Organize data is anything but a traditional table

**SQL – Structures query language**

**Primary keys**

**Foreign keys**

**Compound Keys**

**You can use SQL to get the RDBMS to do things for you**

* **Create, retrieve, update & delete data**
* **Create and manage DB’s**
* **Design and create DB tables**
* **Perform admin tasks (security, user management, import/export, etc)**

**SQL IMPEMENTATION VARY BETWEEN SYSTEMS**

* **Not all RDBMS follow the SQL standard to a T**
* **The concepts are the same, but the implementation may vary**

**SQL is actually a hybrid language, its 4 types of languages in one**

**Data query language (DQL)**

* **Used to query the database for information**
* **Get information that is already stored there**

**Data Definition Language (DLL)**

* **Used for defining DB schemas**

**Data control Language (DCL)**

* **Used for controlling access to the data in the DB**
* **User and permissions management**

**Data Manipulation Language ( DML)**

* **Used for inserting, updating and deleting data from the DB**

**QUERIES**

**Set of instructions given to the RDBMS (written in SQL) that tell the RDBMS what information you want it to retrieve for you.**

* **TONS of data in a DB**
* **Often hidden in a complex schema**
* **Goal is to only get the data you need**

**1 SELECT employee.name, employee.age**

**2 FROM employee**

**3 WHERE employee.salary >30 000:**

**d**

**SQL SHELL Codex**

**<mysql>**

**create database giraffe;**

**Creating tables**

**Data types:**

**INT -- Whole numbers**

**DECIMAL (M,N) -- Decimal numbers – Exact value**

**VARCHAR(1) -- String of texto length 1**

**BLOB -- Binary large object, Stores large data**

**DATE -- YYYY-MM-DD**

**TIMESTAMP -- YYYY-MM-DD HH:MM:SS Used for recording dates**