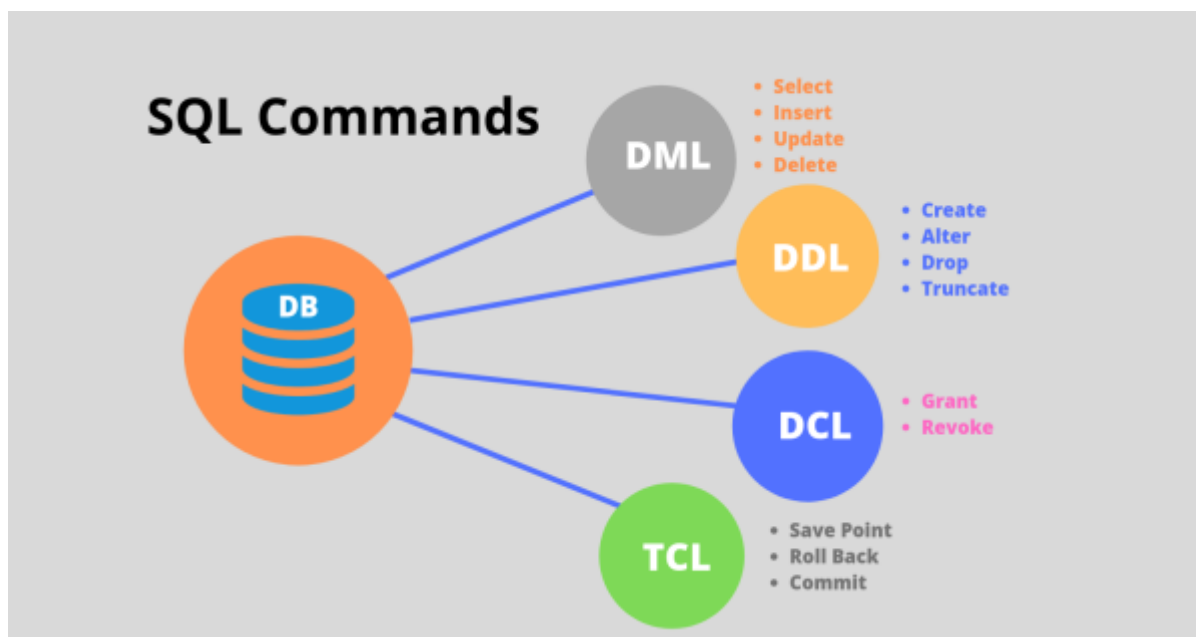


LU02c - SQL and its sub-types

SQL (Structured Query Language) is a standard language for managing and manipulating relational databases. It provides a set of commands for defining, querying, manipulating, and controlling data.

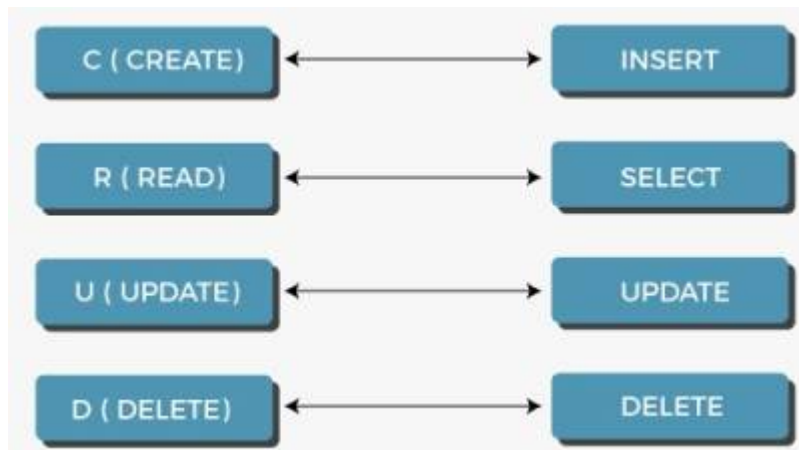
In detail, SQL consists of four sub-languages, each of which is responsible for one specific set of operations:

- **DDL = Data Definition Language:** DDL commands are used to create, modify, and delete database structures, e.g. to create database instances and tables, to alter table structures or to drop databases and tables.
- **DQL = Data Query Language:** DQL commands are used to retrieve data from the database, e.g. to select table contents with and without filters and in a specific order.
- **DML = Data Manipulation Language:** DML commands are used to insert, update and delete data in tables. DML commands are therefore used to manage table content: to insert new content or to update and delete using certain filters.
- **DCL = Data Control Language:** DCL commands are used to control access to the database. This includes the management of authorisations and the administration of user profiles. The central questions here are: „Which user is allowed to access which database object?“



Correlation of SQL and CRUD

CRUD operations are to be applied in all three layers of a three-layers-web-architecture (presentation layer, logic layer/server, data layer). Within the data layer the CRUD operations are realised as follows:



Vocabulary

| English | German |
|------------------|----------------------|
| to provide | bereitstellen |
| to query | (an-)fragen |
| to consists of | bestehen aus |
| instance | Exemplar, Komponente |
| to alter | verändern |
| therefore | daher |
| to access | zugreifen |
| to be allowed to | darf |

M290-LU02



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