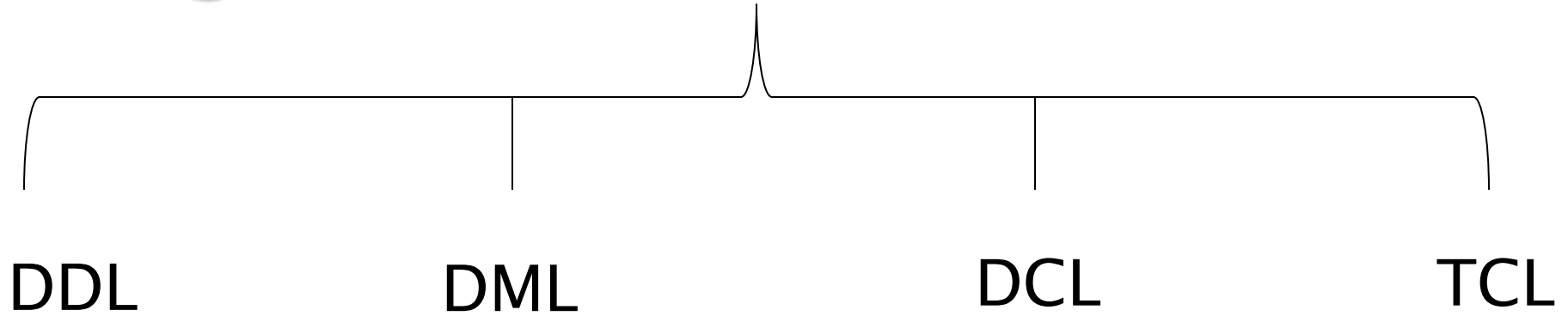# Database concept

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What is SQL

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

What Can SQL do?

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

Categorization of SQL command

DDL   DML   DCL   TCL

DDL(Data definition language)

Consist of SQL commands that can be used to define the database schema.

examples

create

drop

alter

rename

DML(Data manipulation language)

Consist of SQL commands that deal with data present in database.

examples

select

insert

update

delete

DCL(Data control language)

- Consist of SQL commands that deal with the rights and permissions of database.

TCL(Transaction control language)

- Consist of SQL commands that deal with the transactions within database.

Examples of DDL commands

▸ *create database school*

This command allows you to create new database named "*school*"

use school

This command allows you to deal with one of databases in server

create table teacher (id int,name varchar(50), phoneNumber int)

This command allows you to create new table named "*teacher*" with 3 columns "id,name,phonenNumber"

Note:this table will be created in the used DB "school"

Examples of DDL commands

▸ *Alter table teacher*
Add address nvarchar(50)
This command allows you to add a new column named "address"

▸ *Alter table teacher*
Alter address char(20)
This command allows you to change data type of column

▸ *Alter table teacher*
Drop column address
This command allows you to drop column named "address"

Examples of DDL commands

- *exec sp_rename 'teacher.phoneNumber','Mobile','column'*

  tableName   columnName   newName

This command allows you to rename one of the column in table

- *drop table teacher*

This command allows you to delete table from database

Examples of DMLcommands

▸ *insert into teacher values(1,'ahmed',309987)*

This command allows you to insert data into table
"*teacher*" which has 3 column

Note: if the table has 4 column you should insert 4 values

▸ *select * from teacher*

This command allows you to display all column in table

Note: to display the data of one column replace * with columns that you want it to be appearance

Ex: *select id, name from teacher*

Examples of DMLcommands

- *update teacher*
  set name='khaled'
  where name='Ahmed'

This command allows you to replce the name "Ahmed" with the name "khaled"

- *delete from teacher*
  where id =1

This command allows you to delete the row that its id value=1