**Introduction to SQL and DDL**

SQL (Structured Query Language) is used to perform operations on a database such as ***creating, deleting, updating, altering or viewing*** tables in a database.

However it is ***not*** a programming language.

Acronyms:

* Data Define Language – DDL
* Data Manipulation Language – DML
* Data Query Language – DQL
* Data Control language – DCL
* Data administration commands
* Transaction control commands
* Concurrency controls

**Rules and syntax for SQL**

* ***Not*** case sensitive
* ***Generally*** keywords are written in ***uppercase***.
* SQL statements can be placed on ***multiple lines***.
* Statements ***start*** with ***SQL commands*** and end with a ***semicolon***.

**Naming convention**

Defines the ***style*** you name your objects in your database.

Rules:

* ***Can’t*** start with ***numbers***
* ***Can’t*** use ***spaces*** in names
* ***Can’t*** use ***keywords*** e.g. SELECT

**Data Definition Language (DDL)**

Used to define database ***structures.***

Statements include:

* ***CREATE*** – create database objects.
* ***ALTER*** – introduce ***modifications*** to structure or ***characteristics*** of database objects.
* ***DROP*** – ***remove*** a database object.
* ***TRUNCATE*** –***remove*** ***data*** in tables but ***retain*** the structure of it.

**CREATE DATABASE**

Syntax:  
CREATE DATABASE db\_name

**CREATE TABLE**

Syntax:  
CREATE TABLE table\_name(

AttributeName Domain [CONSTRAINTS] …

AttributeName Domain [CONSTRAINTS]…);

Example:

CREATE TABLE hacker(

name varchar(60) PRIMARY KEY,

port int,

skill varchar(60),

gender char(1));

**ALTER TABLE**

Can be used to:

* ***Add, modify or delete*** columns in an existing table.
* ***Rename*** a table
* Add or drop ***constraints***.

Syntax for ***ADD***:

ALTER TABLE table\_name ADD column\_name column\_definition;

Example:

ALTER TABLE Student ADD age *INT NOT NULL*;

// adds a column age to the Student table we create earlier.

Syntax for ***MODIFY***:

ALTER TABLE table\_name MODIFY column\_name column\_type;

Example:

ALTER TABLE hacker port int;

Syntax for **RENAME**:

ALTER TABLE table\_name RENAME COLUMN old\_name to new\_name;

Example:

ALTER TABLE hacker RENAME COLUMN port to portNumber;

// Rename port to portNumber

Syntax for **DROP**:

ALTER TABLE table\_name DROP\_COLUMN column\_name;

Example:

ALTER TABLE hacker DROP\_COLUMN port;

// removes the column **port**

**DROP**

Used to **remove** a **table definition** and **all** data in it.

Syntax:

DROP TABLE table\_name;

Example:

DROP TABLE hacker;

**TRUNCATE**

**Remove** all data from a **table** but **retain** its structure.

Syntax:  
TRUNCATE TABLE table\_name;

Example:

TRUNCATE TABLE hacker;