LU04a - Syntax of a DQL-Select statement

As we know, **SQL** stands for **S**tructured **Q**uery **L**anguage. Consequently, It should come as no surprise that SQL is indeed consistently structured. The figure below shows the structure of a exhaustive SQL statement.

Order	Keywords	Expression	Purpose
5	SELECT	<select list>	Specifies which columns to return.
1	FROM	<table source>	Defines the table(s) to query
2	WHERE	<search condition>	Filters out the records to return
3	GROUP BY	<group by list>	Arranges records into groups
4	HAVING	<search condition>	Filters down the groups
6	ORDER BY	<order by list>	Sorts the returned records

NOTES

- The content of this chapter is based on the W3School-SQL-tutorial.
- Please note that the use og CAPITAL LETTERS for SQL commands and tabs can make it easier for you to maintain your program code.
- Make sure, that every complete sql statement is finished by a semicolon (;).

The Syntax of DML commands

Every SQL query is composed by three main commands:

- **SELECT** myColumn1, myColumn2, ... [or * for all columns]
- **FROM** myTable
- **WHERE** myCondition.
- **ORDER BY** myColumn2 **ASC|DESC**;

With **SELECT** we specify which columns we want to retrieve, with **FROM** we specify the TABLE from which the columns originate, with **WHERE** we determine the condition under which the data records are selected, and finally, with **ORDER BY** + **[ASC | DESC]** we define the order in which the result set is to be displayed on the screen.

Basic example

Let's take a table **Customers** as shown in the figure below.

CustomerID	CustomerName	ContactName	Address	City	PostalCode	Country
1	Alfreds Futterkiste	Maria Anders	Obere Str. 57	Berlin	12209	Germany
2	Ana Trujillo Emparedados y helados	Ana Trujillo	Avda. de la Constitución 2222	México D.F.	05021	Mexico
3	Antonio Moreno Taquería	Antonio Moreno	Mataderos 2312	México D.F.	05023	Mexico
4	Around the Horn	Thomas Hardy	120 Hanover Sq.	London	WA1 1DP	UK

To retrieve all the information, which are stored in this table, our SQL command would be like follows.

```
SELECT *
FROM Customers;
```

or as a more detailed notation

```
SELECT CustomerID, CustomerName, ContactName, Address, City, PostalCode,
Country
FROM Customers;
```

The result set would include the entire contents of the table, since we we have not defined any preconditions or filters.

Vocabulary

English	German
precondition	Vorbedingung
exhaustive	erschöpfend, vollständig
clause	Abschnitt
to determine	bestimmen
to fetch	abrufen, holen
be composed by	besteht aus
notation	Schreibweise