

# LU06b - SQL-DDL: Table Management

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## Learning Objectives

In this learning unit, we will learn how to manage database tables, i.e.

1. how to create
2. how to modify and
3. how to delete database tables

## CREATE TABLE

Let's start by creating a table based on the ERD of the student management tool, as shown below:

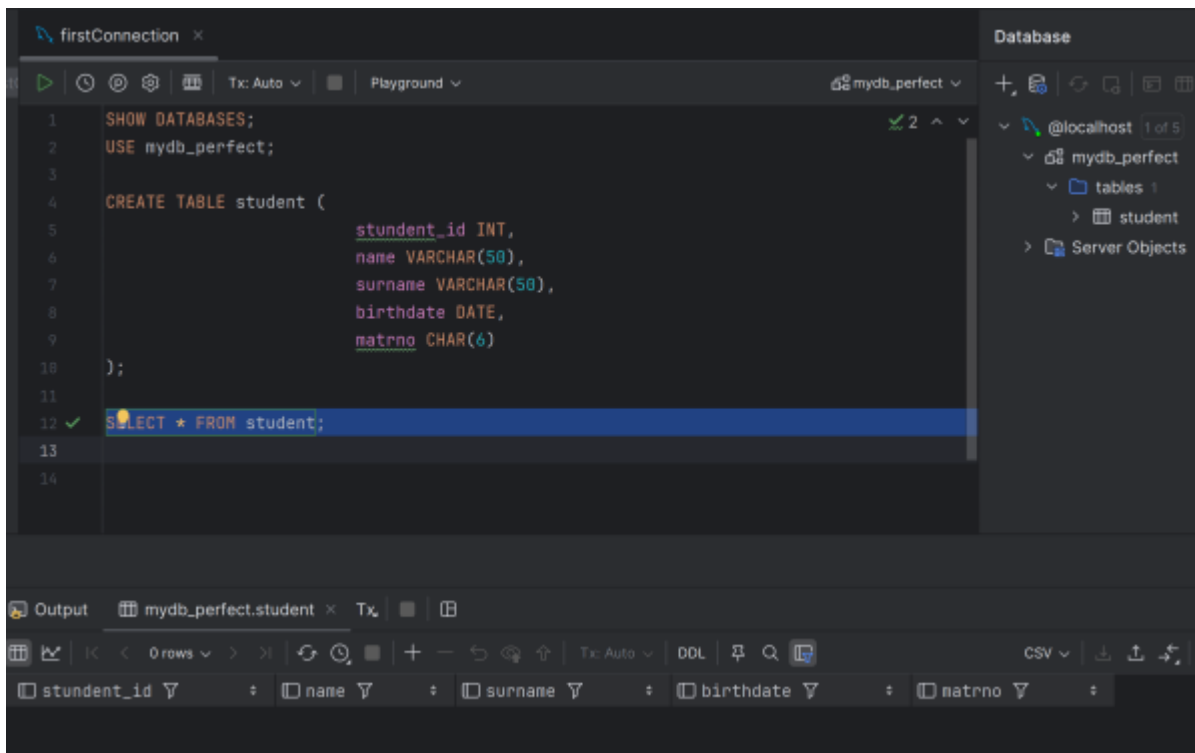
Our goal is to create the table „student“ on our database. For that we need to know how the basic syntax for creating table is.

```
CREATE TABLE table_name (  
    column1 datatype,  
    column2 datatype,  
    column3 datatype,  
    ....  
);
```

In our example the our concrete CREATE statement would look like: "

```
CREATE TABLE student (  
    student_id INT,  
    name VARCHAR(50),  
    surname VARCHAR(50),  
    birthdate DATE,  
    matrno CHAR(6)  
);
```

After executing the DDL create command, the result would look like the following illustration.



### Hints:

- On the right upper side you can see, that the table „student“ has actually been created.
- After a select on this table, we can see that the table does not yet contain any data.
- It's not a big deal so far, is it? 😎

## ALTER TABLE

It may happen that we need to change something, e.g. the change the attribute name or add a new attribute. In this case, the ALTER TABLE commands will do the work.

The basic syntax of the DDL „ALTER TABLE“ syntax is:

```
ALTER TABLE table_name
ADD column_name datatype;
```

### ADD COLUMN

In practical use, if we want to add an email to the student's data our SQL command would look like:

```
ALTER TABLE student
ADD Email varchar(255);
```

### DROP COLUMN

If we can add a column, it should come as no surprise that we also can delete a column. The syntax for deleting an entire column from a table is:

```
ALTER TABLE table_name
DROP COLUMN column_name;
```

The following DDL statement removes the currently added column email from the table student.

```
ALTER TABLE Customers
DROP COLUMN Email;
```

## RENAME COLUMN

Naturally, we also can just rename a wrongly spelled column name. The syntax in that case is:

```
ALTER TABLE table_name
RENAME COLUMN old_name to new_name;
```

Or more practical, if we want to change the name of the column matrno in studentno, we need the following DDL command:

```
ALTER TABLE student
RENAME COLUMN matrno to studentno;
```

## MODIFY DATATYPE

We also can change the datatype of columns. The basic syntax would be:

```
ALTER TABLE table_name
ALTER COLUMN column_name datatype;
```

And of course, as a concrete practical example, in which we change the length of the column „name“ from 50 characters to 100:

```
ALTER TABLE student
```

```
MODIFY COLUMN name VARCHAR(100);
```

## DROP TABLE

If, for whatever reason, we have created a table incorrectly or want to get rid of an obsolete table, we need the command DROP TABLE:

```
DROP TABLE table_name;
```

**Hint: Be careful with this command, as it also deletes the entire contents of this table.**

## Vocabulary

English	Deutsch
column	Spalte

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