

LU05b - Creating databases and tables (SQL-DDL)

Learning objectives

- I can create, select and delete a database using SQL.
- I can create and delete a table with columns and data types using SQL.
- I am familiar with the naming conventions for tables and columns.

All commands on this page are part of the **Data Definition Language (DDL)** – the part of SQL used to define the **structure** of a database is defined.

An overview of the entire process

Silent demo video: The complete process in WebStorm. The following steps are shown in sequence: opening a new Query Console, creating a database using `CREATE DATABASE`, making it active with `USE`, creating a table with two columns and data types using `CREATE TABLE`, and finally entering data via the WebStorm interface and saving it with 'Submit'.

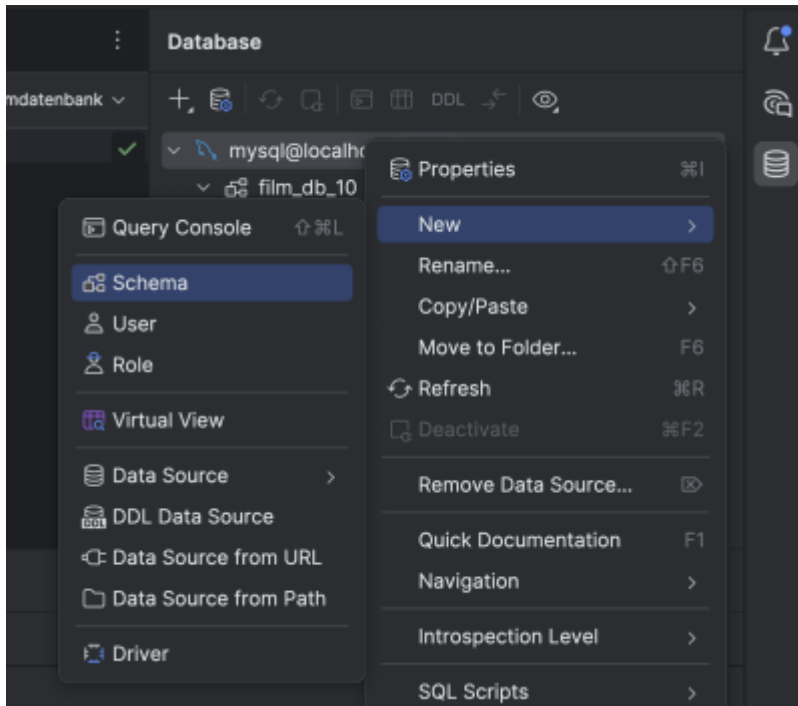
The keyword **PRIMARY KEY**. This is what's known as a constraint – we'll cover that on the next page. When watching for the first time, concentrate on the sequence of steps.

Creating a database

A database is like a folder containing tables.

```
CREATE DATABASE bibliothek;
```

Up to now, we've done this in WebStorm by right-clicking on the connection: **New → Schema**. The SQL command does exactly the same thing.



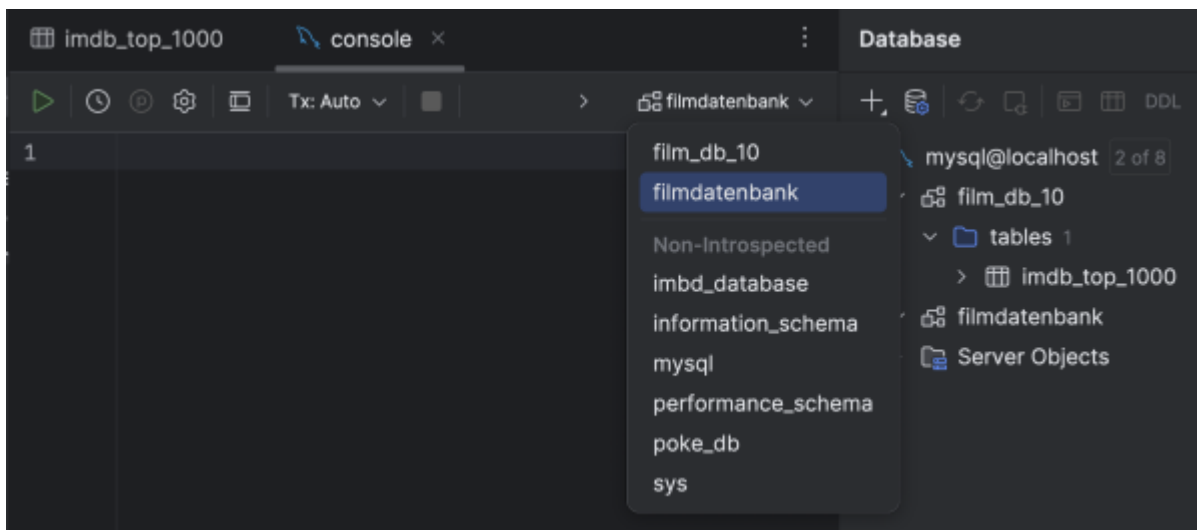
Select a database

Several databases can co-exist on a MySQL server – for example *library* and *filmsammlung*. They are located within the same system but manage their data separately.

To ensure MySQL knows which database you are working in, select it first:

```
USE bibliothek;
```

From this point onwards, all subsequent commands will apply to this database. In WebStorm, we have previously used the drop-down field at the top of the console window for this – the command *USE* does the same thing in SQL.



Create a table

Using **CREATE TABLE** you create a table in the currently selected database.

```
CREATE TABLE tabellenname (  
    spaltenname1 DATENTYP,  
    spaltenname2 DATENTYP  
);
```

Please note: After the **last** column, there is **no comma** .

Example: Table buch

```
CREATE TABLE buch (  
    buch_id INT,  
    titel VARCHAR(100),  
    isbn CHAR(13),  
    seiten INT,  
    preis DECIMAL(6,2),  
    erschienen DATE,  
    ausgeliehen BOOLEAN  
);
```

The data types are taken directly from the discussion on the previous page. This table works – but it isn't perfect yet: at present, two books could have the same *book_id* , and a book with no title at all would also be permitted. We'll sort that out on the next page.

Naming conventions

- no spaces, no umlauts, no special characters
- lower-case letters only
- separate words with an underscore: *buch_id*, not *BuchID*
- Within a database, every table name must be unique

Deletion

```
DROP TABLE buch;  
  
DROP DATABASE bibliothek;
```

Please note: Both commands will delete **immediately and irrevocably** – including all data. *DROP DATABASE* also removes all tables within it. Only use in production systems after a backup has been taken.

Overview

Command	Meaning
CREATE DATABASE	Create a new database
USE	Switch to the active database
DROP DATABASE	Delete the database and all its tables
CREATE TABLE	Create a new table in the active database
DROP TABLE	Delete the table and all its data

M290-LU05

 Guido Koch

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