

# LU09.A02 - SQL- DCL: CREATE USER

It is high time to mess a litte around with our new SQL powers, don't you think? So, let's try it directly on our Webstorm.

As the database administrator, we want to create a new user and only grant this user the necessary rights to operate the web application, which includes DML operations such as INSERT, UPDATE, DELETE, but not DDL operations such as CREATE or DROP of tables. After all, we don't want the webapplication take control over our database, are we?

## Requirements

- Work type: individual
- Timeframe: 10 Minutes
- Means of aid:
  - only teaching materials, no websearch, no use of ai.
  - Webstorm with connection to the MySQL-DB
- Expected result: Semantically and syntactically correct SQL statements according to the requirements of the case studies.

## Case studies / Assignments

As a database administrators we are assigned to create a AppUser, which has for security reasons only the right for DML operations, but must not be allowed for DDL operation. We don't want a hacker to delete our entire webshop, do we?

To get the job done, follow the instructions below:

1. Create as the sysdba (systemadministrator of the databaswe) a new user
2. Grant this role only the necessary rights
3. Create as a sysdba a test table and fill it with some testdata
4. Establish a new connection within the webstorm by using the credentials of this new user
5. Try out the DML operations, which should be possible (insert, update, delete)
6. Try out to DDL operations, which should result in errors due to missing permissions for that particular user
7. Drop the newly created user finally

### Task 2.1

**Create the User:** Create a user named *restrictedUser* with the password *SafePassword123* using the *mysql\_native\_password* plugin.

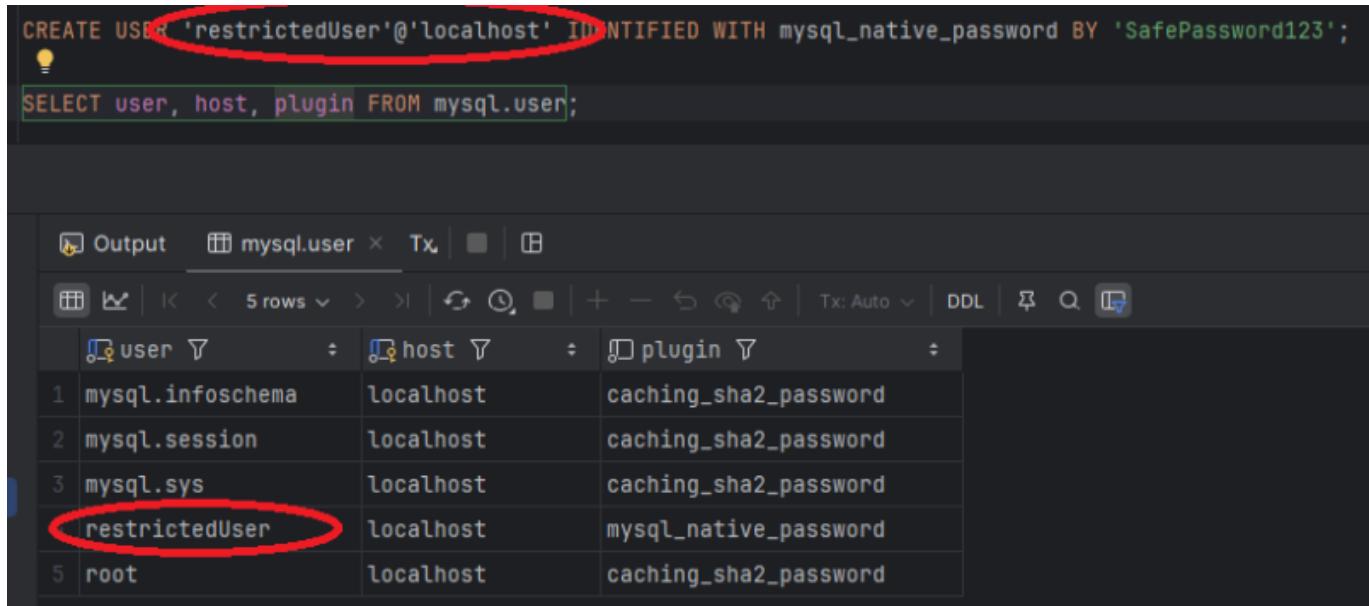
```
CREATE USER 'restrictedUser'@'localhost' IDENTIFIED WITH
mysql_native_password BY 'SafePassword123';
```

## Task 2.2

**Overview of the current privileges:** Display all users.

```
SELECT user, host, plugin FROM mysql.user;
```

The result set should look like:



The screenshot shows the MySQL Workbench interface. In the SQL tab, the creation of a user 'restrictedUser' is shown, with the command 'CREATE USER 'restrictedUser'@'localhost'' circled in red. Below it, a SELECT statement is run on the 'mysql.user' table. In the Results tab, the table structure is shown with columns 'user', 'host', and 'plugin'. There are 5 rows of data, with the row containing the user 'restrictedUser' circled in red. The data is as follows:

user	host	plugin
mysql.infoschema	localhost	caching_sha2_password
mysql.session	localhost	caching_sha2_password
mysql.sys	localhost	caching_sha2_password
restrictedUser	localhost	mysql_native_password
root	localhost	caching_sha2_password

## Task 2.3

**Grant Privileges Without Table Management:** Grant the user *restrictedUser* the ability to read and write data but not to create, alter, or drop tables. Use the following commands to give only the required privileges.

```
GRANT SELECT, INSERT, UPDATE, DELETE ON myDatabase.* TO
'restrictedUser'@'localhost';
```

## Task 2.4

**Revoke Privileges:** To be certain that nothing unintended can happen revoke the CREATE, ALTER, and DROP privileges explicitly.

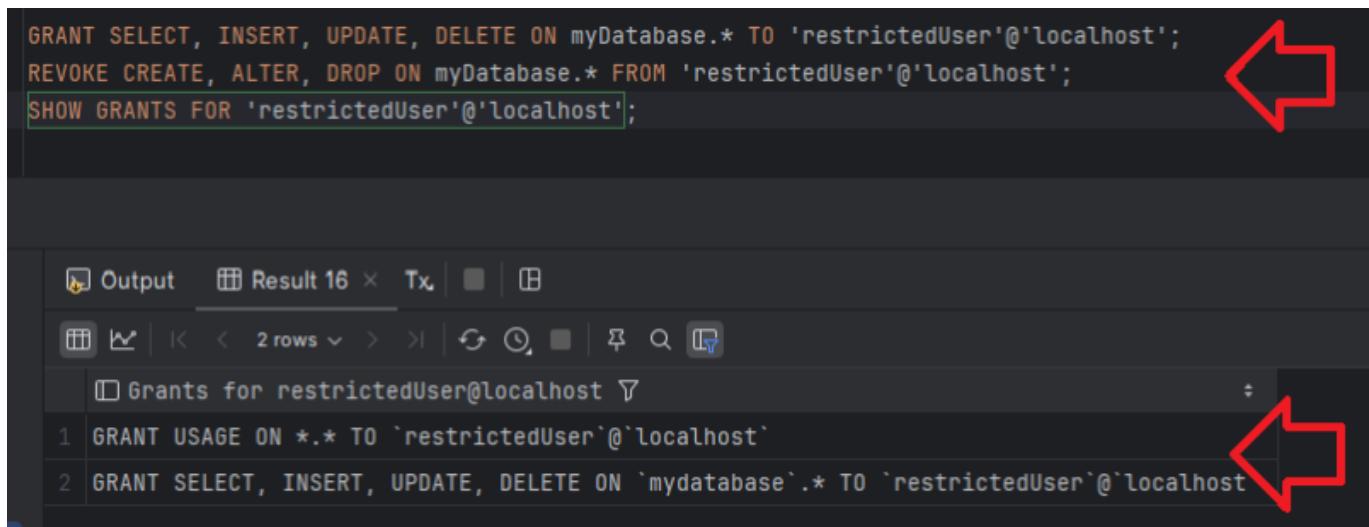
```
REVOKE CREATE, ALTER, DROP ON myDatabase.* FROM
'restrictedUser'@'localhost';
```

## Task 2.5

**View the User's Privileges:** Check the privileges to ensure that the user cannot manage tables.

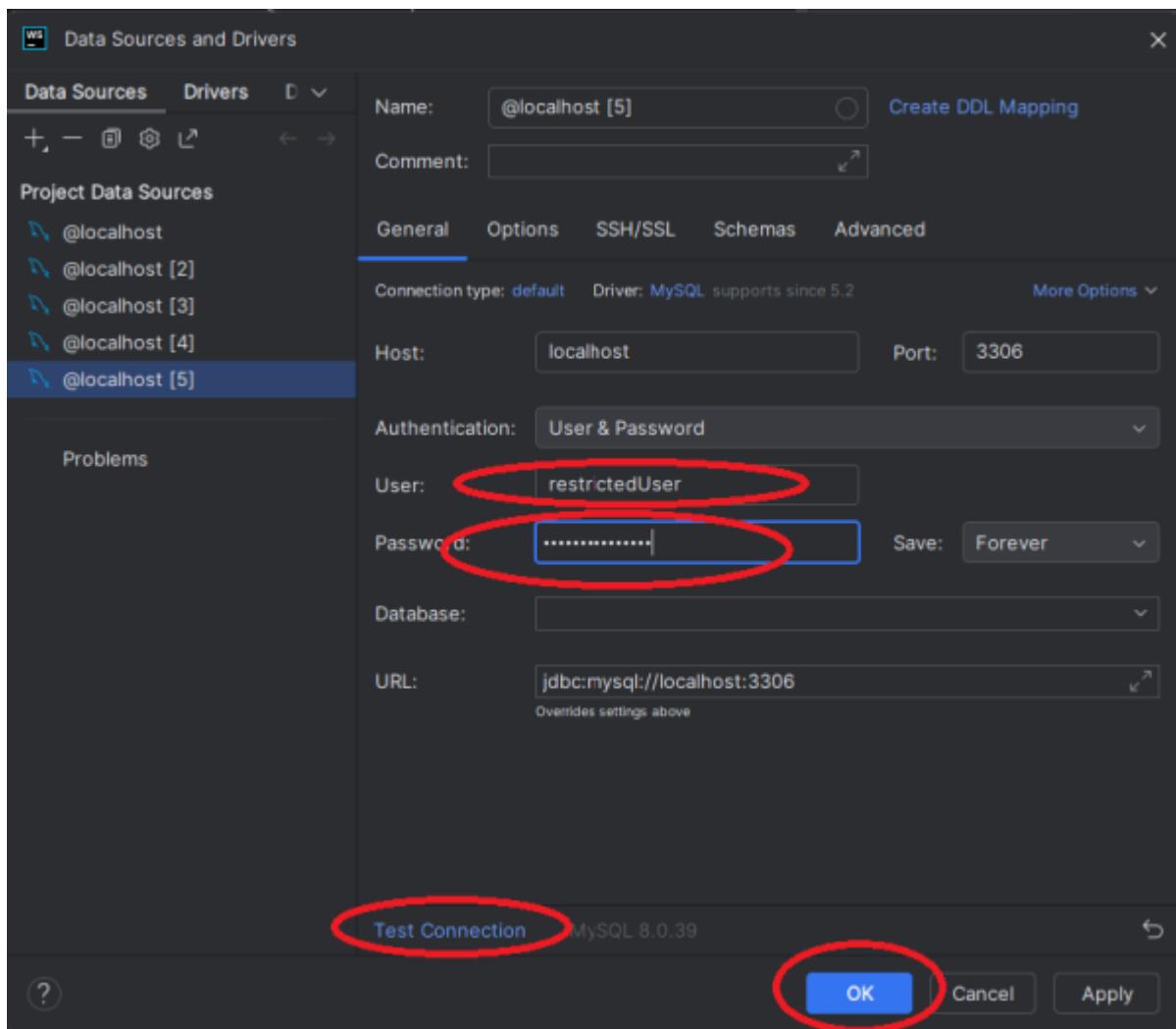
```
SHOW GRANTS FOR 'restrictedUser'@'localhost';
```

```
GRANT SELECT, INSERT, UPDATE, DELETE ON myDatabase.* TO 'restrictedUser'@'localhost';
REVOKE CREATE, ALTER, DROP ON myDatabase.* FROM 'restrictedUser'@'localhost';
SHOW GRANTS FOR 'restrictedUser'@'localhost';
```



## Task 2.6

**Test the User's Access:** Establish a new console connection to the database by using *restrictedUser* + *password*.



## Task 2.7

Finally, try to perform a CREATE TABLE or DROP TABLE operation. The attempt should result in a permission error als displayed in the image below.

The screenshot shows a MySQL Workbench interface with the following components:

- Console Tab:** Displays the following SQL code:

```
1 USE myDatabase;
2
3 SELECT * FROM users;
4
5 DROP TABLE users;
```

A red arrow points to the `DROP TABLE users;` line.
- Database Tree:** Shows the database structure:
  - mydatabase
  - localhost [2]
  - localhost [3]
  - localhost [4]
  - localhost [5]A red arrow points to the `users` table under the `mydatabase` node.
- Output Tab:** Shows the results of a `SELECT * FROM users;` query:

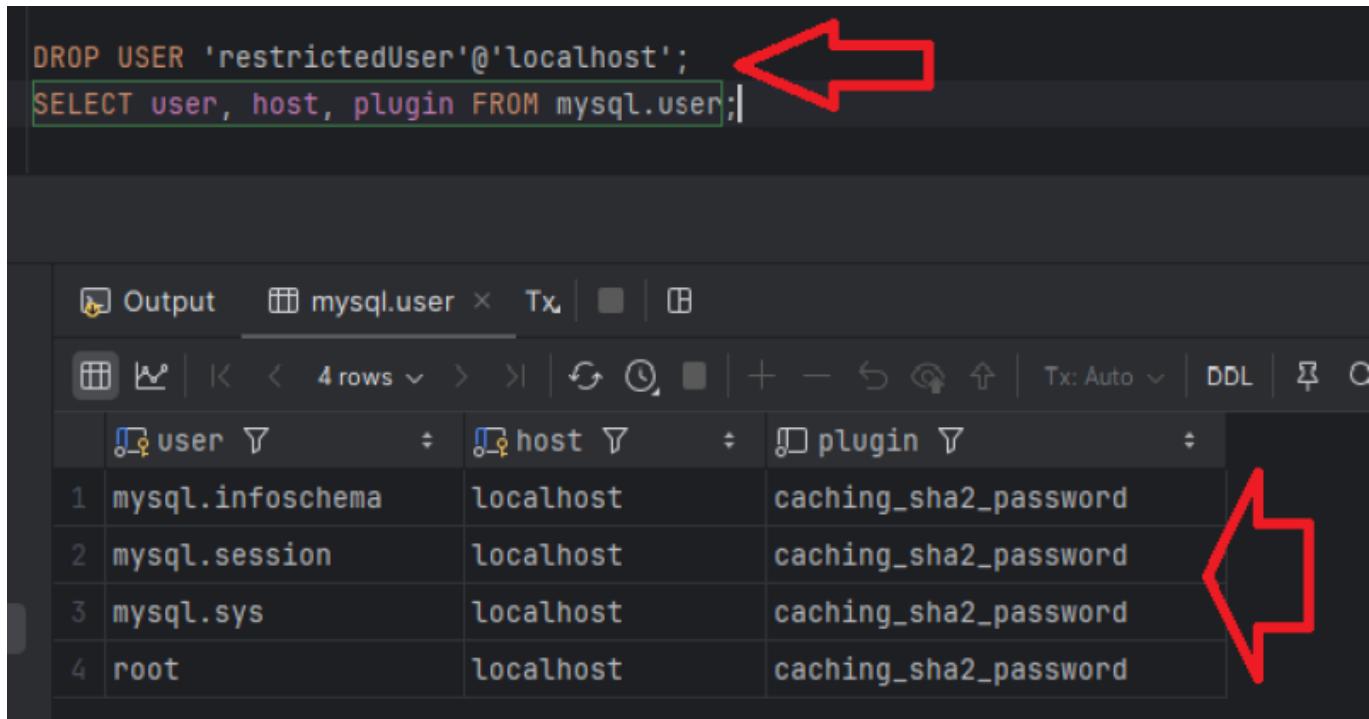
	user_id	username	email
1	1	john_doe	john.doe@example.com
2	2	jane_smith	jane.smith@example.com
3	3	michael_brown	michael.brown@example.com
4	4	sarah_johnson	sarah.johnson@example.com
5	5	chris_williams	chris.williams@example.com
6	6	anna_lee	anna.lee@example.com
7	7	david_kim	david.kim@example.com
8	8	laura_clark	laura.clark@example.com
9	9	jake_lewis	jake.lewis@example.com
10	10	emily_martinez	emily.martinez@example.com
11	11	john_doe	john.doe@example.com
12	12	jane_smith	jane.smith@example.com
13	13	michael_brown	michael.brown@example.com
14	14	sarah_johnson	sarah.johnson@example.com
15	15	chris_williams	chris.williams@example.com
16	16	anna_lee	anna.lee@example.com
17	17	david_kim	david.kim@example.com
18	18	laura_clark	laura.clark@example.com
19	19	jake_lewis	jake.lewis@example.com
20	20	emily_martinez	emily.martinez@example.com

A red arrow points to the output window, which displays the error message: `[42000][1142] DROP command denied to user 'restrictedUser'@'localhost' for table 'users'`.

## Task 2.8

**Delete the User (optional):** After testing, you can delete the user if they are no longer needed.

```
DROP USER 'restrictedUser'@'localhost';
SELECT user, host, plugin FROM mysql.user;
```



	user	host	plugin
1	mysql.infoschema	localhost	caching_sha2_password
2	mysql.session	localhost	caching_sha2_password
3	mysql.sys	localhost	caching_sha2_password
4	root	localhost	caching_sha2_password

## Vocabulary

English	German
..	..



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