

Module 18: MySQL User Management

MySQL Access Control System:

- ☐ MySQL implements access control and privilege system that allows user to create access rules for handling client operations and effectively preventing unauthorized access.
- ☐ Access control has two stages:
 - ☐ a) **Connection verification:** client needs to have valid
 - ☐ b) **Request verification:** check if client has sufficient privileges to execute a particular statement.

Root:

- ☐ The highest privilege account in any MySQL server.
- ☐ Enabled by default.
- ☐ Password set during installing procedure.
- ☐ Recommendations:
 - ☐ Should be used when absolutely necessary.
 - ☐ Every user, including admins, should have a separate account.
 - ☐ Even admins should only be assigned the needed privileges.

Create, View & Drop User:

- ☐ Create a user account:
 - ☐ **CREATE**
 - ☐ **IDENTIFIED**
- ☐ View user:
 - ☐ **SELECT user, host**
 - ☐ **FROM mysql.user;**
- ☐ Drop a user account:
 - ☐ **DROP USER user_name;**

Change user name:

- ☐ Rename a user account:
 - ☐ **RENAME USER user_name to new_user_name**

Change password:

- ☐ To change a user's password, we use the SET PASSWORD statement.
- ☐ The syntax is:
 - ☐ **SET PASSWORD FOR 'user_name' = new_password;**

- ☐ Another way of changing the password is to use ALTER USER statement with the IDENTIFIED BY clause.
- ☐ The syntax is:
 - ☐ **ALTER USER user_name IDENTIFIED BY 'new_password';**
- ☐ If the current user wants to change the password use:
 - ☐ **SET PASSWORD = new_password;**

Grant privileges:

- ☐ We use GRANT statement to grant privileges to a user.
- ☐ If user account doesn't exist, the user is created.
- ☐ The syntax is:


```
GRANT privilege_list
ON [db_name.]table
TO user1 [IDENTIFIED BY 'password1'][,
    user2 [IDENTIFIED BY 'password2']]...
[WITH GRANT OPTION]
```
- ☐ The ON clause determines the level at which privileges are granted.
- ☐ We can use * to specify all databases or tables.
- ☐ If we don't specify a database, MySQL will use the current database.
- ☐ The WITH GRANT OPTION clause allows the user to grant their privileges to other users.

Showing & Revoke privileges:

- ☐ We can use SHOW GRANTS statement to display the privileges for a user.
- ☐ To show grant for current user:
 - ☐ **SHOW GRANTS;**
- ☐ To show grants for particular user:
 - ☐ **SHOW GRANTS for username;**
- ☐ To show list of users and privileges:
 - ☐ **Select * from mysql.user;**

Revoke privileges:

- ☐ We can use REVOKE statement to revoke privileges from a user.
- ☐ The syntax is:

```
REVOKE privilege_list
ON [db_name.]table
FROM user1[, user2]...
```

Privilege List:

- ☐ The privilege a user has to work with database controls the operations that the user can perform on the database.
- ☐ Privileges for working with data in a database is given to all users of database including end users.
- ☐ Privileges for modifying the structure of a database are given to DBA and programmers.

Privileges for modifying the database structure

Privilege	Description
CREATE	Create a database or a table.
ALTER	Alter a table.
DROP	Drop a database or a table.
INDEX	Create or drop an index.
CREATE VIEWS	Create views.
CREATE ROUTINE	Create a stored procedure or function.
ALTER ROUTINE	Alter or drop a stored procedure or function.
TRIGGER	Create or drop a trigger on a table.
EVENT	Create, alter, drop, or view an event for a database.

Privileges for working with data

Privilege	Description
SELECT	Select data from a table.
INSERT	Insert data into a table.
UPDATE	Update data in a table.
DELETE	Delete data from a table.
EXECUTE	Execute a stored procedure or function.

Administrative privileges

Privilege	Description
CREATE USER	Create new user accounts.
RELOAD	Reload the tables that store the privileges for the users of the database. This refreshes these tables if they have been modified.
SHOW DATABASES	Show the names of all databases on the server.
SHUTDOWN	Shut down the server.

Other privileges

Privilege	Description
ALL [PRIVILEGES]	All privileges available at the specified level except the GRANT OPTION privilege.
GRANT OPTION	Allows a user to grant his or her privileges to other users.
USAGE	No privileges. It can be used to modify existing accounts without changing the privileges for that account.