

MySQL Users and Privileges (LAB Lecture)



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Contents

- **Users and Roles in MySQL**
- **Syntax of Creating a USER in MySQL**
- **Privileges**
 - **Granting Privileges to Users**
 - **Revoking Privileges from Users**

Syntax of Creating USER in MySQL

```
CREATE USER 'user_name'@'host_name' IDENTIFIED BY 'password';
```

- If you plan to have this user access the database locally, you can specify *localhost* as the host_name.
- Example:

```
CREATE USER 'ali'@'localhost' IDENTIFIED BY 'abc123';
```

GRANT Privileges to USER

- After creating a user, grant some privileges to the user.
 - **GRANT** statement
 - Main functionality of **GRANT** :
 - Managing the privileges of users.
- Syntax for **GRANT** privileges to Users:

GRANT privilege **ON** database.table **TO** 'user_name'@'host_name';

GRANT SELECT **ON** hospital.patient **TO** 'ali'@'host_name';

mysql.user Table

- The **mysql.user** table contains information about users that have permission to access the MySQL server, and their privileges.
- To see all users and their hosts in your MySQL instance:

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

- How to see the current user:

```
SELECT current_user();
```

USER Privileges

Privilege	Description
SELECT	Ability to perform SELECT statements on the table.
INSERT	Ability to perform INSERT statements on the table.
UPDATE	Ability to perform UPDATE statements on the table.
DELETE	Ability to perform DELETE statements on the table.
REFERENCES	Ability to create a constraint that refers to the table.
ALTER	Ability to perform ALTER TABLE statements to change the table definition.
INDEX	Ability to create an index on the table with the create index statement.
ALL	All privileges on table.

Example

- Create **University** database, and activate it.
- Create **Student** table with the following schema:

student (ID, stuName, Database, AI)

<u>ID</u>	stuName	DatabaseSystems	AI
1	Saya	55	50
2	Mina	60	75

Example

```
create database university;
```

```
use university;
```

```
create table student
```

```
(ID int auto_increment primary key,
```

```
stuName varchar(100),
```

```
DatabaseSystems int,
```

```
AI int);
```

```
insert into student(stuName, DatabaseSystems, AI)
```

```
values ('Saya', 55, 50), ('Mina', 60, 75);
```

Example of Creating Users

- Create a user for a teacher named **'Ahmed'**, with password **'edi1234tor'**.
- Give the **'Ahmed'** **SELECT**, **UPDATE** and **INSERT** privileges on **student** table.
- Take back **UPDATE** privilege from **'Ahmed'** user.

<u>ID</u>	stuName	DatabaseSystems	AI
1	Saya	55	50
2	Mina	60	75

Example of Creating Users

```
create user 'Ahmed'@'localhost' identified by 'edi1234tor';
```

```
grant select, update, insert on university.student to 'Ahmed'@'localhost';
```

```
revoke update on university.student from 'Ahmed'@'localhost';
```

Example of Creating a Role

- Create another user for a teacher named **'Shirin'** , with password **'shirin1234'**.
- Create a Role named **'Teacher'**.
- Give the **'Teacher'** role **all privileges** on all tables in the **university** database, **except the DELETE privilege.**
- Assign both users **'Ahmed'** and **'Shirin'** to the **'Teacher'** role.

Example of Creating a Role

```
create role 'Teacher';
```

```
create user 'Ahmed'@'localhost' identified by 'edi1234tor';
```

```
create user 'Shirin'@'localhost' identified by 'shirin1234';
```

```
grant all on university.* to 'Teacher';
```

```
revoke delete on university.* from 'Teacher';
```

```
grant 'Teacher' to 'Ahmed'@'localhost', 'Shirin'@'localhost';
```