

# Database Security practical

(IT 252)



Btech/22/10/14

```
XAMPP for Windows - mysql -h localhost -u root -p

Setting environment for using XAMPP for Windows.
user@DESKTOP-LBIGAU9 c:\xampp
# mysql -h localhost -u root -p
Enter password:
Welcome to the MariaDB monitor.  Commands end with ; or \g.
Your MariaDB connection id is 8
Server version: 10.4.32-MariaDB mariadb.org binary distribution

Copyright (c) 2000, 2018, Oracle, MariaDB Corporation Ab and others.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

MariaDB [(none)]> CREATE DATABASE example_db;
Query OK, 1 row affected (0.001 sec)

MariaDB [(none)]> USE example_db;
Database changed
MariaDB [example_db]> CREATE TABLE employees (
    ->     employee_id INT AUTO_INCREMENT PRIMARY KEY,
    ->     first_name VARCHAR(50),
    ->     last_name VARCHAR(50),
    ->     email VARCHAR(100),
    ->     hire_date DATE
    -> );
Query OK, 0 rows affected (0.015 sec)

MariaDB [example_db]>
```

The screenshot shows the phpMyAdmin interface for the 'example\_db' database. The left sidebar lists databases: New, example\_db (selected), New, employees, information\_schema, it300, mysql, performance\_schema, phpmyadmin, test, and vendor. The main area displays the 'Structure' tab for the 'employees' table. The table structure is defined as follows:

Table	Action	Rows	Type	Collation	Size	Overhead
employees	Browse Structure Insert Empty Drop	0	InnoDB	utf8mb4_general_ci	16.0 KiB	-
	Sum	0	InnoDB	utf8mb4_general_ci	16.0 KiB	0 B

Below the table list are buttons for Print and Data dictionary.

The screenshot shows the phpMyAdmin interface for the database 'example\_db'. On the left, the database structure tree shows 'example\_db' expanded, containing 'employees' and other system databases like 'information\_schema' and 'mysql'. The main panel has a tab bar with 'Structure', 'SQL', 'Search', 'Query', 'Export', 'Import', 'Operations', 'Privileges', 'Routines', 'Events', 'Triggers', 'Tracking', and 'Designer'. The 'SQL' tab is active. A query window titled 'Run SQL query/queries on database example\_db:' contains the following SQL code:

```
1 CREATE USER 'test_user'@'localhost' IDENTIFIED BY 'password123';
```

This screenshot shows the same phpMyAdmin interface after the SQL query has been run. The message area at the top right indicates: 'MySQL returned an empty result set (i.e. zero rows). (Query took 0.0014 seconds.)'. Below this, the results of the 'GRANT' command are shown:

```
GRANT SELECT, INSERT ON example_db.employees TO 'test_user'@'localhost';
```

Below the results, there are links for '[Edit inline]', '[Edit]', and '[Create PHP code]'. The left sidebar shows the database structure tree.

```
Setting environment for using XAMPP for Windows.
user@DESKTOP-LBIGAU9 c:\xampp
# mysql -u test_user -p
Enter password: *****
Welcome to the MariaDB monitor. Commands end with ; or \g.
Your MariaDB connection id is 425
Server version: 10.4.32-MariaDB mariadb.org binary distribution

Copyright (c) 2000, 2018, Oracle, MariaDB Corporation Ab and others.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

MariaDB [(none)]> use example_db;
Database changed
MariaDB [example_db]> INSERT INTO employees (first_name, last_name, email, hire_date)
    -> VALUES ('Malintha', 'Rukshan', 'ruki.d2@yahoo.com', '2025-02-21');
Query OK, 1 row affected (0.010 sec)

MariaDB [example_db]>
```

phpMyAdmin

Server: 127.0.0.1 » Database: example\_db

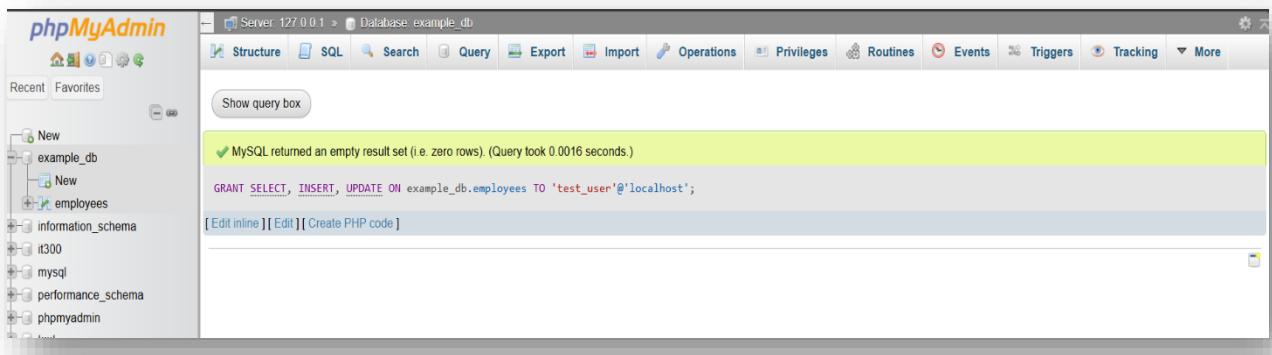
Structure SQL Search Query Export Import Operations Privileges Routines Events Triggers Tracking More

Show query box

MySQL returned an empty result set (i.e. zero rows). (Query took 0.0016 seconds.)

```
GRANT SELECT, INSERT, UPDATE ON example_db.employees TO 'test_user'@'localhost';
```

[Edit inline] [Edit] [Create PHP code]



```
Setting environment for using XAMPP for Windows.  
user@DESKTOP-LBIGAU9 c:\xampp  
# mysql -u test_user -p  
Enter password: *****  
Welcome to the MariaDB monitor. Commands end with ; or \g.  
Your MariaDB connection id is 425  
Server version: 10.4.32-MariaDB mariadb.org binary distribution  
  
Copyright (c) 2000, 2018, Oracle, MariaDB Corporation Ab and others.  
  
Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.  
  
MariaDB [(none)]> use example_db;  
Database changed  
MariaDB [example_db]> INSERT INTO employees (first_name, last_name, email, hire_date)  
    -> VALUES ('Malintha', 'Rukshan', 'ruk.d2@yahoo.com', '2025-02-21');  
Query OK, 1 row affected (0.010 sec)  
  
MariaDB [example_db]> UPDATE employees  
    -> SET email = 'malintha.r@example.com'  
    -> WHERE first_name = 'Malintha' AND last_name = 'Rukshan';  
Query OK, 1 row affected (0.011 sec)  
Rows matched: 1  Changed: 1  Warnings: 0  
  
MariaDB [example_db]>
```

SELECT \* FROM `employees`

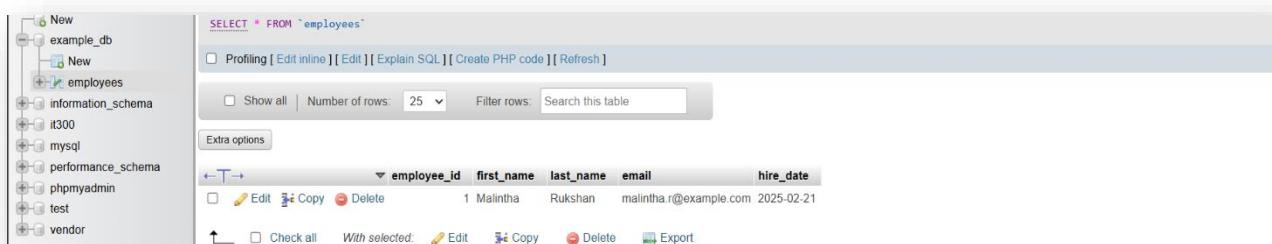
Profiling [Edit inline] [Edit] [Explain SQL] [Create PHP code] [Refresh]

Show all Number of rows: 25 Filter rows: Search this table

Extra options

employee_id	first_name	last_name	email	hire_date
1	Malintha	Rukshan	malintha.r@example.com	2025-02-21

Check all With selected: Edit Copy Delete Export



The screenshot shows the phpMyAdmin interface. On the left is a tree view of databases: New, example\_db, New, employees, information\_schema, it300, mysql, and performance\_schema. The 'employees' table under 'example\_db' is selected. The main panel displays a green success message: "MySQL returned an empty result set (i.e. zero rows). (Query took 0.0014 seconds.)". Below it is the SQL query: "REVOKE UPDATE ON example\_db.employees FROM 'test\_user'@'localhost';". At the bottom are links: [Edit inline] [Edit] [Create PHP code].

The screenshot shows the phpMyAdmin interface. The database tree is identical to the first screenshot. The 'employees' table under 'example\_db' is selected. A warning message at the top says: "Current selection does not contain a unique column. Grid edit, checkbox, Edit, Copy and Delete features are not available." Below it is a green success message: "Your SQL query has been executed successfully.". The SQL query shown is: "SHOW GRANTS FOR 'test\_user'@'localhost';". Underneath the query are buttons: Profiling [Edit inline] [Edit] [Create PHP code] [Refresh]. A "Extra options" button is also present. A "Grants for test\_user@localhost" section shows the results of the grant query.

```
GRANT USAGE ON *.* TO 'test_user'@'localhost' IDENTIFIED BY '' WITH GRANT OPTION;
GRANT SELECT, INSERT ON `example_db`.`employees` TO 'test_user'@'localhost';
GRANT SELECT, INSERT, UPDATE, DELETE ON `example_db`.`employees` TO 'test_user'@'localhost';
GRANT SELECT, INSERT, UPDATE, DELETE ON `example_db`.`employees` TO 'test_user'@'localhost' WITH GRANT OPTION;
```