

A.Y. 2023-24
Class: SE-ITA/B, Semester: III
Subject: **Structured Query Lab**

Experiment – 7: Perform Authorization using Grant and Revoke.

1. **Aim:** To Implement DCL commands and Perform Authorization using Grant and Revoke.

2. **Objective:**

After performing the experiment, the students will be able to write DCL queries for authorization

3. **Outcome:** L303.4: To Formulate query using SQL commands.

4. **Prerequisite:** Understanding data control language commands and basic authorization concepts

5. **Requirements:** PC, Oracle 11g/SQL Server 2008 R2, Microsoft Word, Internet, MySQL, JDK Netbeans,

6. **Pre-Experiment Exercise:**

Brief Theory :(To be handwritten)

Explain DCL commands with example

7. **Laboratory Exercise**

A. Procedure:(Refer additional attachment for commands and details)

- a. Create Database
- b. Create Tables
- c. Create user(enter username and password)
- d. Transfer privileges using Grant and Revoke
- e. For select, insert , delete

B. Result/Observation/Program code: Attach codes and query of commands that are executed

To check Current user:

```
mysql> select user();
```

```
+-----+  
| user() |  
+-----+  
| root@localhost |  
+-----+
```

Creating New user
syntax:

mysql> create user 'user_name'@'localhost' identified by 'password';

mysql> create user 'lakshmi'@'localhost' identified by 'vijaya';

Query OK, 0 rows affected (0.51 sec)

To check Grants on user:

mysql> show grants for 'lakshmi'@'localhost';

```
+-----+
| Grants for lakshmi@localhost |
+-----+
| GRANT USAGE ON *.* TO `lakshmi`@`localhost` |
+-----+
1 row in set (0.02 sec)
```

mysql> grant select on *.* to 'lakshmi'@'localhost';

Query OK, 0 rows affected (0.07 sec)

mysql> grant insert on vijayadb1.employee to 'lakshmi'@'localhost';

Query OK, 0 rows affected (0.07 sec)

mysql> show grants for 'lakshmi'@'localhost';

```
+-----+
| Grants for lakshmi@localhost |
+-----+
| GRANT SELECT ON *.* TO `lakshmi`@`localhost` |
| GRANT INSERT ON `vijayadb1`.`employee` TO `lakshmi`@`localhost` |
+-----+
```

mysql> grant update(SSN) on vijayadb1.employee to 'lakshmi'@'localhost';

Query OK, 0 rows affected (0.19 sec)

Switch to normal user

mysql> system mysql -u lakshmi -p

Enter password: *****

mysql> select user();

```
+-----+
| user() |
+-----+
| lakshmi@localhost |
+-----+
1 row in set (0.00 sec)
```

mysql> use vijayadb1;

Database changed

mysql> select * from employee;

```
+----+-----+-----+-----+
| SSN | Bdate   | fname | deptno |
+----+-----+-----+-----+
| 100 | 2000-02-20 | VIJAYA | 101 |
```

| 200 | 2000-04-20 | VIJA | 1011 |

+-----+-----+-----+-----+

2 rows in set (0.03 sec)

mysql> insert into employee values(300,'2001-09-26','lakshmi',101);

Query OK, 1 row affected (0.15 sec)

mysql> update employee set SSN=111 where fname='lakshmi';

Query OK, 1 row affected (0.23 sec)

mysql> update employee set deptno=101 where fname='lakshmi';

ERROR 1143 (42000): UPDATE command denied to user 'lakshmi'@'localhost' for column 'deptno' in table 'employee'

mysql> system mysql -u root -p

—(Switch to super User)

Enter password: *****

mysql> select user();

+-----+

| user() |

+-----+

| root@localhost |

+-----+

1 row in set (0.00 sec)

mysql> revoke update(SSN) on vijayadb1.employee from 'lakshmi'@'localhost';

Query OK, 0 rows affected (0.04 sec)

mysql> revoke insert on vijayadb1.employee from 'lakshmi'@'localhost';

Query OK, 0 rows affected (0.04 sec)

mysql> show grants for 'lakshmi'@'localhost';

+-----+

| Grants for lakshmi@localhost |

+-----+

| GRANT SELECT ON *.* TO 'lakshmi'@'localhost' |

+-----+

1 row in set (0.00 sec)

mysql> revoke select on *.* from 'lakshmi'@'localhost';

Query OK, 0 rows affected (0.10 sec)

mysql> show grants for 'lakshmi'@'localhost';

+-----+

| Grants for lakshmi@localhost |

+-----+

| GRANT USAGE ON *.* TO 'lakshmi'@'localhost' |

+-----+

1 row in set (0.00 sec)

mysql> grant all privileges on *.* to 'lakshmi'@'localhost' with grant option;

Query OK, 0 rows affected (0.06 sec)

mysql> show grants for 'lakshmi'@'localhost';

mysql> alter user 'lakshmi'@'localhost' identified by 'root';

Query OK, 0 rows affected (0.07 sec)

```
mysql> alter user 'lakshmi'@'localhost' identified by 'root' account lock;  
Query OK, 0 rows affected (0.04 sec)
```

```
mysql> select user,host from mysql.user;
```

8. Post Experimental Exercise-(To be handwritten)

A. Questions:

1. Explain the term Access control in SQL.
2. What is role based access control?
3. Perform TCL commands and Explain TCL commands with examples

B. Conclusion:

1. Write what was performed in the experiment
2. Mention a few applications of what was studied.
3. Write the significance of the studied topic

C. References:

- [1] Elmasri and Navathe, “Fundamentals of Database Systems”, 5th Edition, PEARSON Education.
- [2] Korth, Silberchatz, Sudarshan, “Database System Concepts”, 6th Edition, McGraw – Hill
- [3] https://www.w3schools.com/sql/sql_default.asp