

PRACTICAL NO. 8

OBJECTIVE (AIM) OF THE EXPERIMENT

To study the various data language commands (DCL, TCL) and implements them on the database.

PROCEDURE

b) Procedure for doing the experiment:

| Step no. | Details of the step |
|----------|--|
| 1 | DCL COMMAND The DCL language is used for controlling the access to the table and hence securing the database. DCL is used to provide certain privileges to a particular user. Privileges are rights to be allocated. |
| 2 | The privilege commands are namely, Grant and Revoke |
| 3 | The various privileges that can be granted or revoked are, Select Insert Delete Update References Execute All |
| 4 | GRANT COMMAND: It is used to create users and grant access to the database. It requires database administrator (DBA) privilege, except that a user can change their password. A user can grant access to their database objects to other users. |
| 5 | REVOKE COMMAND: Using this command, the DBA can revoke the granted database privileges from the user. |
| 6 | TCL COMMAND COMMIT: command is used to save the Records. ROLL BACK: command is used to undo the Records. SAVE POINT command is used to undo the Records in a particular transaction. |

c) SQL Commands DCL Commands GRANT COMMAND

Grant < database_priv [database_priv.....] > to <user_name> identified by <password> [
<password.....>];
Grant <object_priv> | All on <object> to <user | public> [With Grant Option];

REVOKE COMMAND

Revoke <database_priv> from <user [, user] >;
Revoke <object_priv> on <object> from < user | public >;

<database_priv> -- Specifies the system level privileges to be granted to the users or roles. This includes create / alter / delete any object of the system.

<object_priv> -- Specifies the actions such as alter / delete / insert / references / execute / select / update for tables.

<all> -- Indicates all the privileges.

[With Grant Option] – Allows the recipient user to give further grants on the objects.

The privileges can be granted to different users by specifying their names or to all users by using the “Public” option.

TCL COMMANDS:

Syntax:

SAVEPOINT: SAVEPOINT <SAVE POINT NAME>;

ROLLBACK: ROLL BACK <SAVE POINT NAME>;

COMMIT: Commit;

Consider the following Tables:

EMPLOYEE(Emp_id, EMP_name,Job_name,Manager_id,Hire_date,Salary,Deptno)

DEPARTMENT(Deptno, Dname, MGRSSN)

PROJECT(Pname,Pno,Plocation,Deptno)

| emp_id | emp_name | job_name | manager_id | hire_date | salary | E_Bonus | dep_no |
|--------|----------|-----------|------------|------------|---------|---------|--------|
| 68319 | KAYLING | PRESIDENT | | 1991-11-18 | 6000.00 | 300.00 | 1001 |
| 66928 | BLAZE | MANAGER | 68319 | 1991-05-01 | 2750.00 | 200.00 | 3001 |
| 67832 | CLARE | MANAGER | 68319 | 1991-06-09 | 2550.00 | 200.00 | 1001 |
| 65646 | JONAS | MANAGER | 68319 | 1991-04-02 | 2957.00 | 200.00 | 2001 |
| 67858 | SCARLET | ANALYST | 65646 | 1997-04-19 | 3100.00 | 250.00 | 2001 |
| 69062 | FRANK | ANALYST | 65646 | 1991-12-03 | 3100.00 | 250.00 | 2001 |
| 63679 | SANDRINE | CLERK | 69062 | 1990-12-18 | 900.00 | 150.00 | 2001 |
| 64989 | ADELYN | SALESMAN | 66928 | 1991-02-20 | 1700.00 | 180.00 | 3001 |
| 65271 | WADE | SALESMAN | 66928 | 1991-02-22 | 1350.00 | 180.00 | 3001 |
| 66564 | MADDEN | SALESMAN | 66928 | 1991-09-28 | 1350.00 | 180.00 | 3001 |
| 68454 | TUCKER | SALESMAN | 66928 | 1991-09-08 | 1600.00 | 180.00 | 3001 |
| 68736 | ADNRES | CLERK | 67858 | 1997-05-23 | 1200.00 | 150.00 | 2001 |
| 69000 | JULIUS | CLERK | 66928 | 1991-12-03 | 1050.00 | 150.00 | 3001 |
| 69324 | MARKER | CLERK | 67832 | 1992-01-23 | 1400.00 | 150.00 | 1001 |

Department Table

| deptno | dname | Citylocation | dCountry |
|--------|------------|--------------|---------------------------|
| 1001 | Accounting | New York | United States of America, |
| 2001 | Research | Dallas | United States |
| 3001 | Sales | Chicago | United States of America |
| 4001 | Marketing | Los Angeles | United States |

Project Table

| Pno | Pname | PCitylocation | PCountry |
|-----|-------|---------------|---------------------------|
| 111 | P_1 | New York | United States of America, |
| 112 | P_2 | Dallas | United |

| | | | |
|-----|-----|---------|--------------------------|
| | | | States |
| 113 | P_3 | Chicago | United States of America |
| 114 | P_4 | Denmark | northern Europe |
| 115 | P_5 | Paris | France |
| 116 | P_6 | Chicago | United States of America |

Write a query for the following:-

Q1: Develop a query to grant all privileges of employees table into departments table

Ans:

SQL> Grant all on employees to departments; Grant succeeded.

Q2: Develop a query to grant some privileges of employees table into departments table

Ans:

SQL> Grant select, update , insert on departments to departments with grant option; Grant succeeded.

Q3: Develop a query to revoke all privileges of employees table from departments table

Ans:

SQL> Revoke all on employees from departments; Revoke succeeded.

Q4: Develop a query to revoke some privileges of employees table from departments table

Ans:

SQL> Revoke select, update , insert on departments from departments; Revoke succeeded.

Q5: Write a query to implement the save point.

Example:

Example

The following example rolls back the values 102 and 103 that were entered after the savepoint, my_savepoint, was established. Only the values 101 and 104 are inserted at commit.

```
=> INSERT INTO product_key VALUES (101);
=> SAVEPOINT my_savepoint;
=> INSERT INTO product_key VALUES (102);
=> INSERT INTO product_key VALUES (103);
=> ROLLBACK TO SAVEPOINT my_savepoint;
=> INSERT INTO product_key VALUES (104);
=> COMMIT;
```

| | | | | |
|---|---------|------|---|-------|
| 3 | Gugan | ASP | 1 | 15000 |
| 4 | Karthik | Prof | 2 | 30000 |
| 5 | Akalya | AP | 1 | 10000 |

Q6: Write a query to implement the rollback Ans:

SQL> rollback s1;

SQL> select * from emp;

| EMPNO | ENAME | JOB | DEPTNO | SAL |
|-------|---------|------|--------|-------|
| 1 | Mathi | AP | 1 | 10000 |
| 2 | Arjun | ASP | 2 | 15000 |
| 3 | Gugan | ASP | 1 | 15000 |
| 4 | Karthik | Prof | 2 | 30000 |

Q7: Write a query to implement the commit Ans:

SQL> COMMIT;

Commit complete.

d) Result

The DCL,TCL commands was performed successfully and executed.