

Database Management System Lab

Name – N Aditya Sai

Register Number- RA1911030010075

Section - O2

Experiment - 3

Aim: To write SQL queries to execute different DCL and TCL commands.

Data base created for this exercise is:

customer_id integer	sale_date date	sale_amount numeric	salesperson character varying (255)	store_state character varying (255)	order_id character varying (255)
1001	2020-05-23	1200	Raj K	KA	1001
1001	2020-05-22	1200	M K	NULL	1002
1002	2020-05-23	1200	Malika Rakesh	MH	1003
1003	2020-05-22	1500	Malika Rakesh	MH	1004
1004	2020-05-22	1210	M K	NULL	1003
1005	2019-12-12	4200	R K Rakesh	MH	1007
1002	2020-05-21	1200	Molly Samberg	DL	1001

Data Control Language (DCL) Commands:

DCL includes commands such as GRANT and REVOKE which mainly deal with the rights, permissions, and other controls of the database system.

List of DCL commands:

- **GRANT**: This command gives users access privileges to the database.

Syntax,

GRANT privileges_names ON object TO user;

Example:

Create user first identified by passwd;

Grant selects on customers to first;

Output:

```
SQL*Plus: Release 11.2.0.4.0 Production on Tue Feb 1 15:09:25 2022
Copyright (c) 1982, 2013, Oracle. All rights reserved.

Enter user-name: RA1911030010070/RA1911030010070@drncsvinoth-o2.c6hfisy3ugy.us-east-1.rds.amazonaws.com:1521/o2
Connected to:
Oracle Database 19c Enterprise Edition Release 19.0.0.0.0 - Production
SQL> GRANT SELECT ON AGENTS to RA1911030010091;
Grant succeeded.

SQL> SELECT * from RA1911030010091.ganesh;

CUSTOMERID SALEDATE SALEAMOUNT
-----
SALESPERSON
-----
STORESTATE
-----
ORDERID
-----
1001 23-MAY-20 1200
Ganesh
KA
1001

CUSTOMERID SALEDATE SALEAMOUNT
-----
SALESPERSON
-----
STORESTATE
-----
ORDERID
-----
1001 22-MAY-20 1200
Pranai
MALL
1002

CUSTOMERID SALEDATE SALEAMOUNT
-----
SALESPERSON
-----
STORESTATE
-----
```

- **REVOKE:** This command withdraws the user's access privileges given by using the GRANT command.

Syntax,

REVOKE privileges ON object FROM user;

Example:

Revoke select on customers from first;

Output:

```
-----
1002 21-MAY-20 1200
Supu
DL
1001

8 rows selected.

SQL> REVOKE SELECT ON AGENTS FROM RA1911030010091
2
SQL> REVOKE SELECT ON AGENTS FROM RA1911030010091;
Revoke succeeded.

SQL>
```

Transaction Control Language (TCL) Commands:

- **COMMIT**: Commits a Transaction.

Syntax:

COMMIT;

Example:

```
INSERT INTO customers
VALUES ('1006','2020-03-04',3200,'DL', '1008');
```

Commit;

Select * from customers;

Output:

```
SQL> INSERT INTO AGENTS VALUES ('RA1911', 'Mikhale', 'Kottayam', '100', '9999999999', '');
1 row created.
SQL> Commit;
Commit complete.
SQL> SELECT *FROM AGENTS;

AGENT_ AGENT_NAME
-----
WORKING_AREA          COMMISSION PHONE_NO
-----
COUNTRY
-----
RA1911 Mikhale
Kottayam          100 9999999999

SQL>
```

ROLLBACK: Rollbacks a transaction in case of any error occurs.

Syntax:

Rollback;

Example:

DELETE FROM customers

WHERE store_state = 'MH'

AND customer_id = '1002';

Select * from customers;

Rollback;

Select * from customers;

Output:

```
SQL> ROLLBACK;
Rollback complete.
```

- **SAVEPOINT:** Sets a savepoint within a transaction.

Syntax:

SAVEPOINT SAVEPOINT_NAME;

This command is used only in the creation of SAVEPOINT among all the transactions.

In general ROLLBACK is used to undo a group of transactions.

Output:

```
SQL> SAVEPOINT dbmsexperiment3;  
  
Savepoint created.  
  
SQL>
```

Syntax for rolling back to Savepoint command:

ROLLBACK TO SAVEPOINT_NAME;

Example:

```
SAVEPOINT SP1;  
  
DELETE FROM customers  
WHERE store_state = 'MH'  
AND customer_id = '1002';  
  
SAVEPOINT SP2;  
  
ROLLBACK TO SP1;  
  
Select * from customers;
```

Result:

Thus the DCL and TCL commands are used to modify or manipulate data records present in the customer database tables.