SQL DCL Commands for Granting and Revoking User Privileges

A privilege is a right to execute an SQL statement or to access another user's object.

In Oracle, there are two types of privileges
    System Privileges
    Object Privileges

System Privileges

are those through which the user can manage the performance of database actions. It is normally granted by DBA to users. Eg: Create Session,Create Table,Create user etc.

Object Privileges

allow access to objects or privileges on object, i.e. tables, table columns. tables,views etc..It includes alter,delete,insert,select update etc. (After creating the user, DBA grant specific system privileges to user)

GRANT Command

It is employed to grant a privilege to a user. GRANT command allows specified users to perform specified tasks

> Syntax

```
GRANT privilege_name on objectname to user;
```

REVOKE Command

It is employed to remove a privilege from a user. REVOKE helps the owner to cancel previously granted permissions.

> Syntax

```
REVOKE privilege_name on objectname from user;
```

Experiment

 # check current user
select user();

 # create new user
create database testdcl;
use testdcl;

 # create a table
create table Emp(EMP_no int primary key, Emp_name varchar(10), Job varchar(10), Hiredata date, Salary float, Comm Float, Depno int);
show tables;

 # create a new user
create user 'user_test@localhost' identified by "Test@123";

 # list users list and verify user_test exists.
select user from mysql.user;

 # check what all privileges allotted by default on creating new user.
show grants for 'user_test@localhost';

 # grant all privileges to new user
*grant select on *.* to 'user_test@localhost';*

 # grant privileges to a specific table for (insert)
grant insert on testdcl.Emp to 'user_test@localhost';

 # grant update privilege to a specific attribute on a table
grant update (Emp_name) on testdcl.Emp to 'user_test@localhost';

#show grants for new user
show grants for 'user_test@localhost';

#Verify
 # logoff mysql and login using below command, it will prompt for password and enter the same password.

```
mysql -u 'user_test@localhost' -p

# verify user is user_test
slect user();

# list the grants
show grants for 'user_test@localhost';

# select databse and list tables
show databases;
use testdcl;
show tables;

# insert into tables
INSERT INTO Emp VALUES(1,'Steven', 'Marketing', STR_TO_DATE('06-
jan-1995', '%d-%M-%Y'),24000, NULL,2);
select * from Emp;

# logoff mysql and login to super user,
mysql -u root -p

#change password of new user
alter user 'user_test@localhost' identified by '123456#';

# verify by logging with new password.
#logoff and login with user_test with newly modified password.
mysql -u 'user_test@localhost' -p
```