

Connect the database as user <DBxxx>

1. Revoke all object privileges on the STUDENT table from the user <DEVxxx>. You should verify the granted privilege on the STUDENT table first by checking data from data dictionary views.

revoke all on student from dev099;

2. Create a role named **R_DEVxxx** and grant the SELECT and UPDATE privileges on the STUDENT table to the **R_DEVxxx** role.

CREATE ROLE R_DEV099;

grant select, update on student to R_DEV099;

3. Create a role named **R_MGRxxx** and grant the INSERT and DELETE privileges on the STUDENT table to the **R_MGRxxx** role.

CREATE ROLE R_MGR099;

grant insert, delete on student to R_MGR099;

4. Grant the role **R_DEVxxx** to the **R_MGRxxx** role.

grant R_DEV099 to R_MGR099;

5. Grant the **R_DEVxxx** role to user <DEVxxx> that can be passed the granted role to other users and roles.

grant R_DEV099 to DEV099 with admin option;

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6. Verify the granted role by checking data from data dictionary views.

select * from user_role_privs;

7. Now, Can user <DEVxxx> select all columns of DBxxx.STUDENT table? Y|N

Y

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8. Revoke the **R_DEVxxx** role from user <DEVxxx> and grant the **R_MGRxxx** role to user <DEVxxx>.

revoke R_DEV099 from dev099;

grant R_MGR099 to DEV099;

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9. Verify the granted role by checking data from data dictionary view.

select * from user_role_privs;

10. Now, Can user <DEVxxx> delete a row of DBxxxx.STUDENT table? Y|N

Hint: If you can delete it, please rollback the deletion.

Y

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11. Revoke ONLY the UPDATE privilege from the **R_DEVxxx** role.

How does this revoke effects to the user <DEVxxx>? Please verify

revoke update on student from R_DEV099;

Yes, effects to user DEV099 because DEV099 can revoke so DEV099 cannot update anymore

12. User <DBxxx> wants to limit the role **R_DEVxxx** to update data ONLY column FNAME of the DBxxx.STUDENT table.

How does user <DBxxx> do for supporting the requirement? Please do it.

grant update(fname) on student to R_DEV099;

13. User <DBxxx> wants to limit the user <DEVxxx> to select ONLY column FNAME of the DBxxx.STUDENT table.

How does user <DBxxx> do for supporting the requirement? Please do it.

create view student_fname as select fname from student;

grant select on student_fname to dev099;