**PROJECT ONE Roles and Privileges and Rollbacks, Save Points and Commits**

**Objective** To examine both DCL and TCL statements and procedures.

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***PROJECT DESCRIPTION***

This series of SQL projects pertain to Roles and Privileges ( DCL ) and Rollbacks, Save Points and Commits ( TCL ) .

This first project is an illustration of the DCL statements to grant roles and privileges.

Explain the following DCL statements, then execute the statements. Report your findings in the textbox provided and place these findings into your MS Word submittal document.

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***Information about This Project***

This particular project revolves around roles and privileges associated with database users. Here is a link with some information pertaining to DCL and TCL procedures.

<https://docs.oracle.com/cd/B19306_01/server.102/b14200/statements_6012.htm>

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***Steps to Complete This Project***

**STEP 1** **Using DCL ( Data Control Languages ) Statements**

Explain the following DCL statements, then execute the statements.

Report your findings in your lab submittal MS Word document.

**(1) GRANT SELECT**

**On dept**

**TO sam, lynnette;**

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**PROJECT ONE Roles and Privileges and Rollbacks, Save Points and Commits**

**(2) GRANT INSERT**

**On dept**

**TO scott;**

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**(3) REVOKE SELECT, INSERT**

**ON dept**

**TO scott;**

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**(4)** Create the role of Director of IT and assign the role to Tim Stokes.

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**(5)** Create a new role named order\_entry with the password xyz123 .

Then, grant object privileges on the orders and order\_items tables to the order\_entry role.

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**PROJECT TWO Rollbacks, Save Points and Commits**

**Objective** To examine both DCL and TCL statements and procedures.

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***PROJECT DESCRIPTION***

This next project is an illustration of various TCL statements.

Perform the requested actions and place your results in your MS Word submittal document.

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***Information about This Project***

This particular project revolves roles and privileges associated with database users.

Here is a link with some information pertaining to DCL and TCL procedures.

<https://docs.oracle.com/cd/B19306_01/appdev.102/b14261/savepoint_statement.htm>

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***Steps to Complete This Project***

**STEP 1** **Using Rollbacks, Save Points and Commits**

Perform each of these actions, queries.

**(1)** Create the table **countries** and then execute the Commit.

**DROP TABLE countries; -- perform only when necessary**

**CREATE TABLE countries**

**(COUNTRY\_ID CHAR(2) NOT NULL,**

**COUNTRY\_NAME VARCHAR2(40),**

**REGION\_ID NUMBER);**

**(2)** Populate the table **countries** with the following inserts:

**INSERT INTO countries(COUNTRY\_ID, COUNTRY\_NAME, REGION\_ID)**

**VALUES ('CA','Canada', 2);**

**INSERT INTO countries(COUNTRY\_ID, COUNTRY\_NAME, REGION\_ID)**

**VALUES ('DE','Germany', 1);**

**INSERT INTO countries(COUNTRY\_ID, COUNTRY\_NAME, REGION\_ID)**

**VALUES ('UK','United Kingdom', 1);**

**INSERT INTO countries(COUNTRY\_ID, COUNTRY\_NAME, REGION\_ID)**

**VALUES ('US','United States of America', 2);**

**INSERT INTO countries(COUNTRY\_ID, COUNTRY\_NAME, REGION\_ID)**

**VALUES ('IN','India', 3);**

**PROJECT TWO Rollbacks, Save Points and Commits**

**(3)** Execute a Commit and then select all fields from the table.   
 Paste a snapshot of the table into your lab submittal document.

**Commit;**

**SELECT \* FROM countries;**

**(3a)** Insert the country Greece and execute a Commit statement.

**INSERT INTO countries(COUNTRY\_ID, COUNTRY\_NAME, REGION\_ID)**

**VALUES ('GR', 'Greece',1);**

**Commit;**

**(3b)** Create a **SAVEPOINT** using the initials of your first and last name as a prefix to the word **SAVEPOINT** ( e.g., fl\_countries\_1 ) .

**SAVEPOINT fl\_countries\_1;**

**(3c)** Now perform the following tasks:

**INSERT INTO countries(COUNTRY\_ID, COUNTRY\_NAME, REGION\_ID)**

**VALUES ('MX', 'Mexico',2);**

**SELECT \* FROM countries;**

**ROLLBACK to fl\_countries\_1**

**SELECT \* FROM countries;**

**INSERT INTO countries(COUNTRY\_ID, COUNTRY\_NAME, REGION\_ID)**

**VALUES ('MX', 'Mexico', 2);**

**Commit;**

Then, explain what is happening here, when these statements are executed.

**(3d)** Select all the fields from the table and, in your lab submittal document, place a snapshot below of your entire session for number **(3c)** .

**(4)** Insert a record for the country of Spain, add a second **SAVEPOINT** ( remember to use your initials ) , and perform a select for all the fields of the table ( paste a snapshot! )

**INSERT INTO countries(COUNTRY\_ID, COUNTRY\_NAME, REGION\_ID)**

**VALUES ('SP', 'Spain', 1);**

**PROJECT TWO Rollbacks, Save Points and Commits**

**SAVEPOINT lp\_countries\_2;**

**SELECT \* FROM countries;**

**(5)** Insert another record for the country of The Netherlands, then

**INSERT INTO countries(COUNTRY\_ID,COUNTRY\_NAME,REGION\_ID)**

**VALUES ('NT', 'Netherlands',1);**

**(5a)** Perform a rollback to the second **SAVEPOINT**, and then perform a select ( all fields ) for the table. Paste your snapshot into your submittal document.

**Rollback to fl\_countries\_2;**

**SELECT \* FROM countries;**

**(5b)** Perform a rollback to the first **SAVEPOINT** and paste your snapshot of the message received from the server.

**PROJECT THREE Reflections on Your Projects**

**Objective** To examine both DCL and TCL statements and procedures.

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***PROJECT DESCRIPTION***

Answer each of the following questions, which refer to topics from the previous projects.

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***Information about This Project***

This particular project revolves around roles and privileges associated with database users.

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***Steps to Complete This Project***

**STEP 1** **Using Grants, Privileges, Rollbacks, Save Points and Commits**

Answer the following questions. Place your responses in your lab submittal document.

**(1)** For each of the following scenarios, suggest what steps the DBA the IT Director should perform:

(a) Tammy Smyth, a loyal employee who has worked for DDD Incorporated for ten years, announced her retirement and gave the " usual " two weeks’ notice.

(b) Jennie Sanders, as soon as she was suspected of employee theft, was immediately terminated. She ran the retail department for Big Blue Mart.

(c) Marina Pappas, who currently works at the research and development facility as a chemist and formulates new products, has been recruited by another department to development the operations research program for the company. She has accepted the new position.

**(2)** What are the best practices to ensure security on a database using such an IDE as SQL Developer?

**PROJECT THREE Reflections on Your Projects**

**(3)** Distinguish between a role, a profile and a privilege. Support your answer ( please use APA for your citations ) .

**(4)** What is the danger to assigning / granting to PUBLIC ?

**(5)** Charles was given the order to grant specific privileges to Nick on Charles’ table named food\_club\_members. Nick is a new - hire and will be working with Charles to maintain and manipulate important database files for the Eats - a - Lot Corporation.

Instead of using the following code for Nick

**grant All on food\_club\_members to nick\_01\_user;**

Charles used the code

**grant All on food\_club\_members to public;**

which he immediately executed. Some unscrupulous employee began to download the entire food\_club\_members to their flash drive.

What actions should the DBA and Charles’ supervisor perform?

**STEP 2** **Submit Your Completed Projects**

When completed, submit your submittal document, which includes your answers and screen snapshots.