

Overview

The purpose of this lab is to become familiar with users, profiles, privileges and roles. This is based on the information in Chapter 8 – User Management.

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- Part 1 - User Management

Due Date:

The lab is due no later than Friday Nov 3rd. You must **hand in** PDF of your work to the dropbox on D2L.

Scoring:

Lab is worth 30 marks.

Part 1 – User Management

The following lab is to be completed using SQL Developer, SQL*Plus, and the XE edition of Oracle with the SYS account. You will not be able to complete this lab work on the babbage server because your babbage accounts have student profiles.

- ☐ 1. Create a new user called **New_User** with a password set to **New_Password**. Include the SQL and the results below. (1 Mark)

```
CREATE USER New_User  
IDENTIFIED BY New_Password;
```

User NEW_USER created.

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- ☐ 2. Login into SQL*Plus with **New_User**. Indicate below what happens. (1 Mark)

Enter user-name: New_User
Enter password:

ERROR:

ORA-01045: user NEW_USER lacks CREATE SESSION privilege; logon denied

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- ☐ 3. Grant the **New_User** the **CONNECT** role. Login as **New_User** and attempt each of the following. If any of them fails, explain why. (3 Marks)

1. Can you do a **describe** of **DUAL**?
2. Can you do a **SELECT * from DUAL**?
3. Can you do a **CREATE TABLE TEST AS SELECT * FROM DUAL**;

HAND IN

1. **DESCRIBE dual;**

Name	Null?	Type

DUMMY		VARCHAR2(1)

2. **SELECT * FROM dual;**

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3. **GRANT connect TO New_User;**

Grant succeeded.

CREATE TABLE test AS select * from dual;

ERROR at line 1:
ORA-01031: insufficient privileges

The connect role only allows the CREATE SESSION privilege.

- ☐ 4. Grant the **New_User** the **RESOURCE** role. Login as **New_User** and attempt to create the TEST table from question 3.3. What happens this time and why? What privileges does the RESOURCE role have? (4 Marks)

GRANT resource TO New_User;

Grant succeeded.

CREATE TABLE test AS select * from dual;
*

Table created.

The table test is created because resource role gives the ability to create objects.
CREATE CLUSTER, PROCEDURE, SEQUENCE, TABLE, TRIGGER

- ☐ 5. Create a PROFILE called **TEMP_USER**. For this profile make the password expiry equal to 5 and the login attempts equal to 1. Include your SQL below. (1 mark)

HAND IN

```
CREATE PROFILE TEMP_USER LIMIT
FAILED_LOGIN_ATTEMPTS 1
PASSWORD_REUSE_MAX 5;

Profile TEMP_USER created.
```

- ☐ 6. Display all the information on the new **TEMP_USER** profile. Include below this text the SQL you used to display that information **and** a screenshot of the results. Hint: use one of the **DBA_** views. (2 Marks)

HAND IN

```
SELECT * FROM DBA_PROFILES
WHERE PROFILE = 'TEMP_USER';
```

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PROFILE	RESOURCE_NAME	RESOURCE LIMIT	
TEMP_USER	COMPOSITE_LIMIT	KERNEL	DEFAULT
TEMP_USER	SESSIONS_PER_USER	KERNEL	DEFAULT
TEMP_USER	CPU_PER_SESSION	KERNEL	DEFAULT
TEMP_USER	CPU_PER_CALL	KERNEL	DEFAULT
TEMP_USER	LOGICAL_READS_PER_SESSION	KERNEL	DEFAULT
TEMP_USER	LOGICAL_READS_PER_CALL	KERNEL	DEFAULT
TEMP_USER	IDLE_TIME	KERNEL	DEFAULT
TEMP_USER	CONNECT_TIME	KERNEL	DEFAULT
TEMP_USER	PRIVATE_SGA	KERNEL	DEFAULT
TEMP_USER	FAILED_LOGIN_ATTEMPTS	PASSWORD	1
TEMP_USER	PASSWORD_LIFE_TIME	PASSWORD	DEFAULT
PROFILE	RESOURCE_NAME	RESOURCE LIMIT	
TEMP_USER	PASSWORD_REUSE_TIME	PASSWORD	DEFAULT
TEMP_USER	PASSWORD_REUSE_MAX	PASSWORD	5
TEMP_USER	PASSWORD_VERIFY_FUNCTION	PASSWORD	DEFAULT
TEMP_USER	PASSWORD_LOCK_TIME	PASSWORD	DEFAULT
TEMP_USER	PASSWORD_GRACE_TIME	PASSWORD	DEFAULT

- ☐ 8. Assign the **Temp_User** profile to **New_User**, show your SQL and the results below. (1 Mark)

HAND IN

```
ALTER USER New_User  
PROFILE TEMP_USER;
```

User NEW_USER altered.

- ☐ 9. Log into SQL*Plus as **New_User** and this time enter an incorrect password. Attempt to login again with the correct password for **New_User**. What happens? Include your results below. (1 Mark)

Enter user-name: New_User

Enter password:

ERROR:

ORA-01017: invalid username/password; logon denied

Enter user-name: New_User

Enter password:

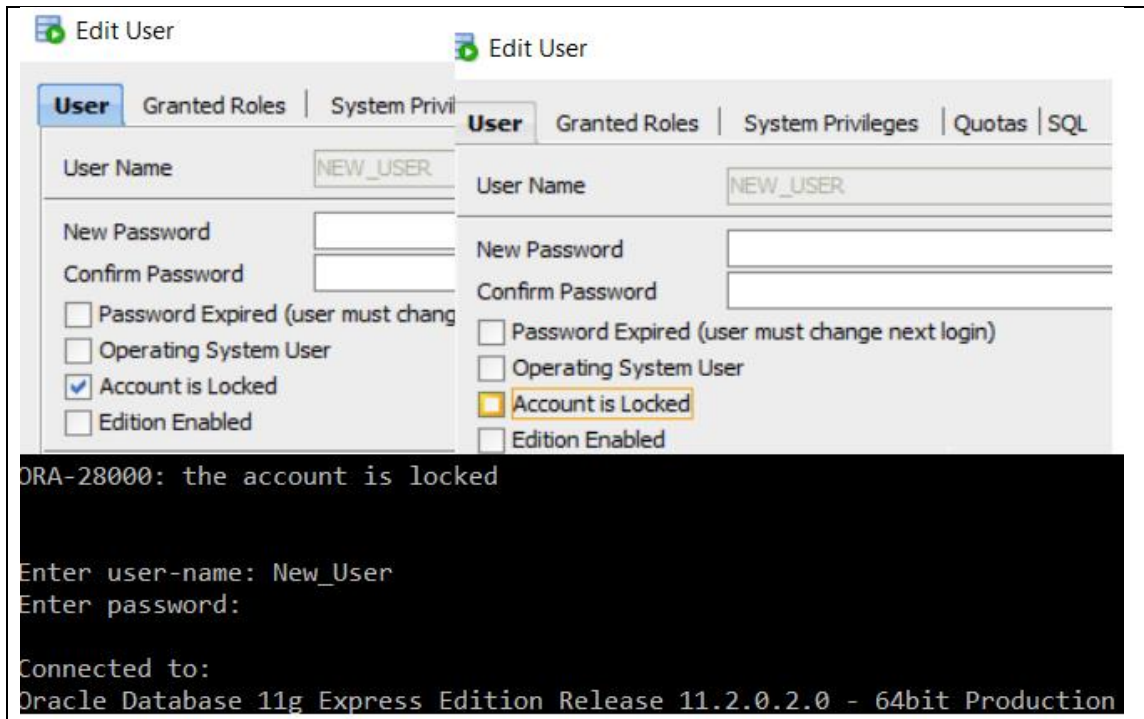
ERROR:

ORA-28000: the account is locked

The account is locked after one unsuccessful attempt as specified in the profile.

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- ☐ 10. Using one of the pop-up windows in SQL Developer, unlock the **New_User** account. Include the screen shot below. (2 Marks)

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- ☐ 11. Create another account called **User_2** with password **Password_2** and grant it the **CONNECT** role.
- ☐ Connect as **User_2** and attempt to select from the **New_User.Test** table. What happens?
- ☐ Grant **User_2** select privilege to the **New_User.Test** table. Then retry the select, what happens?

Include your results below. What role did we **not** have to give **User_2** that we gave **New_User**? (4 Marks)

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```
CREATE USER User_2  
IDENTIFIED BY Password_2;
```

```
GRANT connect TO User_2;
```

User USER_2 created.

Grant succeeded.

```
SELECT * FROM New_User.Test;
```

ERROR at line 1:

ORA-00942: table or view does not exist

```
GRANT SELECT ON NEW_USER.TEST TO User_2
```

Grant succeeded.

```
SELECT * FROM New_User.Test;
```

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We did not need to assign the resource role to user_2. This ensure the data can be viewed but remain unchanged by other users.

12. Step 6 of DBCA (see below) shows the option of using either the same or different administrative passwords for all of SYS, SYSTEM, etc. What would you consider to be the advantages and disadvantages of both of these approaches? (4 Marks)

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	Advantages	Disadvantages
Same pw	<ul style="list-style-type: none"> - easily connect/swap to either schema when needed - better flow when performing administrative tasks 	<ul style="list-style-type: none"> - less secure - could potentially log into wrong account - make changes to the wrong account which could be devastating
Different pw	<ul style="list-style-type: none"> - more secure - less likely to alter wrong schema - easy to distinguish which account you are using for changes 	<ul style="list-style-type: none"> - longer time to login - potentially forget either password and have to reset

- ☐ 13. In most business systems, security roles are designed to provide an appropriate separation of responsibility and authority. Suppose you are the DBA responsible for the database behind D2L. Consider at least **three** roles that you might be implementing. Describe the functionality (not code) for each role and why you would need them. (6 Marks)

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Roles Name	Role Functionality
administrative	Full access to system create / update / maintain all programs / users
department chair	Few limitations to system maintain / update permissions for faculty for specified department
instructors	More restricted access views specific to courses / program taught update / maintain student records
student	Restricted access / view only for course content and related pages