CA4201: Database Security

Assignment 1: Create a User

You were just hired as a new junior Oracle database administrator (DBA) to assist a team of five senior database administrators. In your first week, you were handed the task of writing a script for creating database users. The script will perform the following tasks and conform to the following specifications:

1. Create the following two (2) users with their respective passwords. Please use the exact spelling.

User Name	Password
DBSEC	Abc123
VPD_CLERK1	QWE@345

The following parameters apply to the above two (2) users.

2. The default table space is USERS.

3. The temporary table space is TEMP.

4. The user has to change his/her password the first time when he/she log in the database.

5. The user account will be assigned to the DEFAULT profile.

6. The USERS table space has a 30MB quota.

7. At the end of the creation, list the user information that shows a successful creation of the above user account.

Assignment 2: Modify User and Create Tables

Wtite SQL script for following tasks:

1. Connect to SYSTEM user. When you need to connect to SYSTEM users, please use a syntax so that it will ask the user to type the password. A typical example will be: "connect system;"
2. Change the password of the user "DBSEC" to "adgh#12^." Please note that the period "." is not a part of the password specification.

3. Grant the DBSEC user with "CREATE SESSION" and "CREATE TABLE" privileges.
4. Connect to DBSEC with the new password.
5. Create all 14 tables (SUPPLIER, SHIPMENT_METHOD, DEPARTMENT, JOB, EMPLOYEE, SALES_COMMISSION, PRODUCT_SUPPLIER, PRODUCT_PRICE, PRODUCT_INVENTORY, PAYMENT_METHOD, CUSTOMER, ORDER_TAB, ORDER_LINE, and EMPLOYEE_RANK) under DBSEC schema. Assume attributes of each tables as per requirement
6. Populate SUPPLIER table with the data.

Assignment 3: Implement Oracle Profile, Password Policy and Roles

Develop a single SQL script that will perform all the following tasks:

1. Create three (3) users (schema) as follows:

User	Password	Other Parameters
DBSEC_ADMIN	tec5363admin	Tablespace: USERS Temporary tablespace: TEMP
DBSEC_CLERK	tec5363clerk	Same as above
DBSEC_DEV	tec5363$dev	Same as above

2. Create three profiles as specified in the following table:

Profile	Resources	Password
DBSEC_ADMIN_PROF	SESSIONS_PER_USER=5 CONNECT_TIME=8 hours IDLE_TIME=1 hour	PASSWORD_LIFE_TIME= 1 month PASSWORD_GRACE_TIME=7 days
DBSEC_DEV_PROF	CONNECT_TIME=2 hours IDLE_TIME=2 hours CPU_PER_CALL=1 minute	PASSWORD_LIFE_TIME= 1 month PASSWORD_GRACE_TIME=14 days
DBSEC_CLERK_PROF	SESSIONS_PER_USER=1 CPU_PER_CALL=5 seconds CONNECT_TIME=8 hours IDLE_TIME=30 minutes LOGICAL_READS_PER_CALL=10 0 Database Blocks	FAILED_LOGIN_ATTEMPTS=3 PASSWORD_LIFE_TIME= 1 month PASSWORD_LOCK_TIME=3 days

		PASSWORD_GRACE_TIME=14 days

3. Create roles with the following privileges:

Role Name	Privileges
DBSEC_ADMIN_ROLE	SELECT and ALTER on all DBSEC tables
DBSEC_CLERK_ROLE	SELECT, INSERT, and UPDATE on all DBSEC tables
DBSEC_SUPERVISOR_ROLE	SELECT, INSERT, UPDATE and DELETE on all DBSEC tables
DBSEC_QUERY_ROLE	SELECT only on CUSTOMER table owned by DBSEC

4. Assign roles and profile to the users as in the following table:

User Name	Role	Profile
DBSEC_ADMIN	DBSEC_ADMIN_ROLE	DBSEC_ADMIN_PROF
DBSEC_CLERK	DBSEC_CLERK_ROLE	DBSEC_CLERK_PROF
DBSEC_DEV	DBSEC_ADMIN_ROLE plus DBSEC_SUPERVISOR_ROLE	DBSEC_DEV_PROF

5. Connect as DBSEC_CLERK/tec5363clerk.

6. Perform a simple query on SUPPLIER table owned by DBSEC.

Assignment 4: Virtual Private Database by Views

develop a single SQL script that will perform all the following tasks:

1. Connect to DBSEC/secc$1new, the same user you created in previous projects.
2. Create a CUSTOMER table with the following columns:

Column Name	Data Type
SALES_REP_ID	NUMBER(4)
CUSTOMER_ID	NUMBER(8) NOT NULL
CUSTOMER_SSN	VARCHAR2(9)
FIRST_NAME	VARCHAR2(20)

LAST_NAME	VARCHAR2(20)
ADDR_LINE	VARCHAR2(80)
CITY	VARCHAR2(30)
STATE	VARCHAR2(30)
ZIP_CODE	VARCHAR2(9)
PHONE	VARCHAR2(15)
EMAIL	VARCHAR2(80)
CC_NUMBER	VARCHAR2(20)
CREDIT_LIMIT	NUMBER
GENDER	CHAR(1)
STATUS	CHAR(1)
COMMENTS	VARCHAR2(1024)
USER_NAME	VARCHAR2(30)

3. Please note everything is the same as in the script provided from the course download except that a USER_NAME column was added.

4. Populate the CUSTOMER table with the data provided as in course download for Chapter 4. Please modify your the downloaded file so that you can insert USER_NAME. (See the tip below.)

5. Create a VIEW named as MY_VIEW to display only rows that belong to the logged in user.

6. Grant SELECT and INSERT priviledge on MY_VIEW to DBSEC_CLERK.

7. Connect to DBSEC_CLERK/tec5363clerk.

8. Insert one row of data into MY_VIEW as DBSEC_CLERK by using the following data. You may need to make corrections on the statement, but keep the data as they are.

   INSERT INTO DBSEC.MY_VIEW (SALES_REP_ID, CUSTOMER_ID,
   CUSTOMER_SSN, FIRST_NAME, LAST_NAME, ADDR_LINE,
   CITY, STATE, ZIP_CODE, PHONE, EMAIL, CC_NUMBER,
   CREDIT_LIMIT, GENDER, STATUS,
   COMMENTS, USER_NAME)
   VALUES (
   7415, 901340, '969996976', 'Joe', 'Cat', '993888 Moreno St.', 'Champaign', 'IL'

, ' 61801', '2173331613', 'JCat@catu.edu', '2311468327372669', 20000
, 'M', 'A', 'A fun loving student', user);

9. Verify your data insertion by query MY_VIEW. You (as DBSEC_CLERK) should only see one row of data you have inserted. This signifies the success of your implementation.