

## INT207 Lab 4 (Solution)

### **Basic Database Administration: User Management**

#### **Practice: Controlling User Access**

As Username <DBxxxx>:

**\*\*\* Please change your password from <dba> to your new password \*\*\***

1. Create a table named PhoneList with two columns: Friend\_Name and Phone\_Number. Set the Friend\_Name column as a Primary Key. Add two new rows into the PhoneList table with the following command:

```
CREATE TABLE PHONELIST (  
  FRIEND_NAME VARCHAR2(30) PRIMARY KEY,  
  PHONE_NUMBER VARCHAR2(30) NOT NULL);
```

Or

```
CREATE TABLE PHONELIST (  
  FRIEND_NAME VARCHAR2(30) CONSTRAINT PHONELIST_FN_PK PRIMARY KEY,  
  PHONE_NUMBER VARCHAR2(30) CONSTRAINT PHONELIST_PH_NN NOT NULL);
```

```
INSERT INTO PhoneList (Friend_Name,Phone_Number) VALUES ('Bill Gates',088-000-1144);  
INSERT INTO PhoneList (Friend_Name,Phone_Number) VALUES ('Steve Jobs',089-123-5555);  
INSERT INTO PhoneList (Friend_Name,Phone_Number) VALUES ('Your Name',099-888-5555);  
COMMIT;
```

2. Create a new database user named <APPxxxx> with password <int207>. After created, test the new user. Connect the database as user <APPxxxx>.

```
CREATE USER appxxxx  
IDENTIFIED BY int207;
```

What happens? If an error is returned, Please resolve it.

*The error "Lack of CREATE SESSION privilege" is returned*

```
GRANT CREATE SESSION TO APPxxxx ;
```

3. You (as DBxxxx) want the user <APPxxxx> can create view in his schema. Please grant the appropriate privilege to the user.

```
GRANT CREATE VIEW TO APPxxxx ;
```

4. Grant only SELECT privilege on PhoneList table to the user <APPxxxx> with pass along privilege to other users on your table.

```
GRANT SELECT ON PHONELIST TO APPxxxx WITH GRANT OPTION;
```

Is this a system or an object privilege? **an object privilege**

View the granted privilege on the PhoneList table from SQL Developer. See GRANTS tab, the value of GRANTEE column should be <APPxxxx>.

5. **Switch to connect the database as username <APPxxxx>:**

- 5.1) Write a command to view all system privileges are granted to the <APPxxxx> user.

```
SELECT * FROM USER_SYS_PRIVS ;
```

- 5.2) Write a command to change password from <int207> to new password <dbms>.

```
ALTER USER APPxxxx  
IDENTIFIED BY dbms ;
```

- 5.3) Write and execute a command to retrieve the rows with Phone\_Number ending with 5 from the PhoneList table of <DBxxxx> schema.

```
SELECT * FROM DBxxxx.PHONELIST  
WHERE PHONE_NUMBER LIKE '%5' ;
```

Can the user <APPxxxx> select data from the table?  $\gamma$ Y | N/ **Y**

Why? *The user <APPxxxx> have the privilege "SELECT" on the DBxxxx.PHONELIST table.*

- 5.4) Write a command to insert a new record with **Mark Zuckerberg** as friend's name and **087-080-9898** as phone number into the PhoneList table of <DBxxxx> schema.

```
INSERT INTO DBxxxx.PHONELIST(FRIEND_NAME,PHONE_NUMBER)  
VALUES ('Mark Zuckerberg', '087-080-9898') ;
```

Can you insert the new record into the **PhoneList** table of <DBxxxx> schema?  
*No, insufficient privilege.*

- 5.5) Write a command to delete the row with the friend name of **Bill Gates** from the **PhoneList** table of <DBxxxx> schema.

```
DELETE FROM DB9891.PHONELIST  
WHERE FRIEND_NAME = 'Bill Gates' ;
```

Can the user <APPxxxx> delete data from the table of **DBxxxx**?  $\gamma$ Y | N/ **N**

Why? *insufficient privilege.*

- 5.6) In order to complete the tasks in 5.4 and 5.5. What would you do? Write your commands:

```
--Switch to user "DBxxxx"--  
GRANT INSERT ON PHONELIST TO APPxxxx ;  
GRANT DELETE ON PHONELIST TO APPxxxx ;
```

- 5.7) Write a command to grant the SELECT privilege on the <DBxxxx> **PhoneList** table to another friend.

```
GRANT SELECT on DBxxxx.PHONELIST TO SUNISA ;
```

Can the user <APPxxxx> grant the privilege to another user? Y | N

Why? *Y, refer to SQL statement in question 4, the user APPxxxx was granted the SELECT privilege with WITH GRANT OPTION.*

6. Switch to connect the database as an original username <DBxxxx>.

- 6.1) Write a command to revoke the SELECT privilege on the **PhoneList** table from the <APPxxxx> user.

```
REVOKE SELECT ON PHONELIST FROM APPxxxx;
```

- 6.2) After that, the SELECT privilege is revoked from <APPxxxx> user. How about another friend that was granted by <APPxxxx> (in question 5.7).

Can another friend still select data from <DBxxxx> **PhoneList** table? Y | N  
*N, refer to SQL statement in question 6.1, The SELECT privilege on DBxxxx.PHONELIST table was automatically revoked from Sunisa.*

- 6.3) Create a new table named Users with five columns: ID, Fname, Lname, Username and PWD. Please set the constraint(s) that appropriate to the Users table. Add one row into the Users table (data created by your own) and then issue the COMMIT command.

```
CREATE TABLE USERS (  
  ID          VARCHAR2(30) PRIMARY KEY,  
  FNAME       VARCHAR2(30) NOT NULL,  
  LNAME       VARCHAR2(50)  
  USERNAME    VARCHAR2(15) NOT NULL UNIQUE  
  PWD         VARCHAR2(50) NOT NULL );  
  
INSERT INTO USERS  
VALUES ( '123', 'Sunisa', 'Sathaporn', 'Sunisa', '12345' );  
COMMIT;
```

What do you think about the security on the Users table?

*The password was not encrypted.*