

# **Oracle Academy**

## **Database Programming with SQL**

### **Instructor Resource Guide**

#### **Notes From PowerPoint Slides:**

#### **SECTION 12 LESSON 1 – Looking for a Job**

##### **Slide 1: Looking for a Job**

###### **Lesson Preparation**

Use the Career Exploration Worksheet that students completed in Section 1. If the worksheet was not created have the students identify areas of interest to complete this lesson. If the worksheet was created have students use the worksheet to help them identify jobs that match the areas of interest previously identified.

Internet access is required for this lesson. The following Internet sites are good places for students to begin looking (search-engine keywords: best colleges, trade schools):

[http://www.usnews.com/usnews/edu/college/rankings/rankindex\\_brief.php](http://www.usnews.com/usnews/edu/college/rankings/rankindex_brief.php) -- United States listings

<http://univ.cc/> -- worldwide listings

<http://www.scholarstuff.com/colleges/colleges.htm>

[http://www.myfuture.com/t2\\_milops.html](http://www.myfuture.com/t2_milops.html) -- military careers

###### **What to Watch For**

Discourage students from searching for "professional skateboarder," "rock star," and "pro soccer player" types of jobs. Help them to be realistic in their choices -- at least in their search here!

###### **Connections**

Encourage students to always be looking at current job offerings and reading about new types of jobs and jobs of the future. Ask students to bring to class articles and news stories about jobs and the job market.

##### **Slide 2: What Will I Learn?**

**No instructor notes for this slide**

##### **Slide 3: Why Learn It?**

**No instructor notes for this slide**

##### **Slide 4: Tell Me / Show Me – Although you are probably a few years away...**

Explain to students that the purpose of this activity is to begin looking at what job skills are needed in the current job market in the areas of their interest. For those students who still have another year or two before graduation, encourage them to look at the job qualifications. What additional courses in school could they take to make themselves more marketable? Let students know it's not too late to improve their math skills, take an advanced-placement course, add a foreign language, etc. before graduation.

##### **Slide 5: Tell Me / Show Me – Tasks To Accomplish**

**No instructor notes for this slide**

**Slide 6: Tell Me / Show Me – PREPARING THE FINAL-DRAFT PROFESSIONAL RESUME**

A suitable job to apply for in the latter part of this lesson would be an entry level one where the student might be able to gain some of the skills required in their dream job.

**Slide 7: Tell Me / Show Me – DANIELLE JEFFREY**

**No instructor notes for this slide**

**Slide 8: Tell Me / Show Me – PREPARING A COVER LETTER**

**Try It / Solve It**

Explain that the cover letter is not a rewrite of the resume. The cover letter needs to highlight those skills from the resume that will be of unique interest to the person making the hiring decision. Help students identify which skills the person hiring would be looking for based on the description. Then assist them as they write out how they have related experiences that demonstrate these skills.

**Slide 9: Tell Me / Show Me – Ms First Name Last Name**

**No instructor notes for this slide**

**Slide 10: Tell Me / Show Me – PREPARING A FOLLOW-UP LETTER**

**No instructor notes for this slide**

**Slide 11: Tell Me / Show Me – Jamie Smith**

**No instructor notes for this slide**

**Slide 12: Summary – In this lesson you have learned to:**

**No instructor notes for this slide**

**Slide 13: Summary - Practice Guide**

**No instructor notes for this slide**

## **SECTION 12 LESSON 2 – Controlling User Access**

### **Slide 1: Controlling User Access**

#### **Lesson Preparation**

None.

#### **What to Watch For**

Students granting privileges to other students on their objects can have disastrous results. Begin the practice exercises granting SELECT on a copy of the d\_songs table using WITH GRANT OPTION. After students have had a chance to regrant this privilege to others in the class, you can discuss the other privileges (INSERT, DELETE) and what they mean if someone else can access and change your tables. Tell students that they, not the teacher, are in charge of maintaining the integrity of their own tables.

### **Slide 2: What Will I Learn?**

**No instructor notes for this slide**

### **Slide 3: Why Learn It?**

**No instructor notes for this slide**

### **Slide 4: Tell Me / Show Me – CONTROLLING USER ACCESS**

**No instructor notes for this slide**

### **Slide 5: Tell Me / Show Me – DATABASE SECURITY**

**No instructor notes for this slide**

### **Slide 6: Tell Me / Show Me – PRIVILEGES AND SCHEMAS**

Relate schema to each student's Oracle Application Express logon account. Students only have access to their own tables, views and database objects. Each student's schema has its own copy of the DJs on Demand and Global Fast Foods database objects.

### **Slide 7: Tell Me / Show Me – SYSTEM SECURITY**

Discuss with students the differences between system and object privileges. Students should be able to give examples of each and answer the question, "Why are these different types of privileges used?"

Discuss with students why a DBA would want to run periodic reports listing who has access to objects in the database. If a user needs access to an object, the DBA's job is to make sure that this person should have access to the object and then, if appropriate, to grant access. However, how does the DBA know when someone no longer needs access? How does the person in charge of your school's database keep track of students who transfer to another school? When does the account become inactive or when should logon privileges be stopped or the account deleted?

Demo SELECT \* FROM SESSION\_PRIVS to show what privileges students have on the database. A partial list of privileges includes create table, create cluster, create synonym, create view.

**Slide 8: Tell Me / Show Me – SYSTEM PRIVILEGES**

Review the sample list of system privileges shown in the table. Students will not be able to execute these statements.

**Slide 9: Tell Me / Show Me – SYSTEM PRIVILEGES (continued)**

**No instructor notes for this slide**

**Slide 10: Tell Me / Show Me – USER SYSTEM PRIVILEGES**

Explain that the CREATE USER statement does not include any system privileges. The DBA must explicitly grant privileges as shown in the graphic.

**Slide 11: Tell Me / Show Me – USER SYSTEM PRIVILEGES (continued)**

**No instructor notes for this slide**

**Slide 12: Tell Me / Show Me – OBJECT SECURITY**

**No instructor notes for this slide**

**Slide 13: Tell Me / Show Me – Each object has a particular set of...**

Review the list of privileges associated with the table. It is a good review for each object and how each is altered or deleted and re-created.

Warn students that giving privileges other than SELECT can have detrimental effects for their tables. Tell students to grant privileges only on their copy\_tablenames.

**Slide 14: Tell Me / Show Me – (2) You can grant UPDATE**

**No instructor notes for this slide**

**Slide 15: Tell Me / Show Me – (4) A privilege granted on a**

**No instructor notes for this slide**

**Slide 16: Tell Me / Show Me – The PUBLIC Keyword**

**No instructor notes for this slide**

**Slide 17: Tell Me / Show Me – The PUBLIC Keyword (continued)**

**No instructor notes for this slide**

**Slide 18: Tell Me / Show Me – Confirming Granted Privileges**

**No instructor notes for this slide**

**Slide 19: Tell Me / Show Me – You can access the data dictionary**

**No instructor notes for this slide**

**Slide 20: Tell Me / Show Me - Terminology**

Schema-a collection of objects, such as tables, views, and sequences

System privileges-the right to access the database and its objects

Role-a named group of related privileges that can be granted to the user

Database link-a pointer that defines a one-way communication path

from one Oracle database to another Oracle database

PUBLIC privilege-The right of an owner of a table to grant access to all Users

Object privileges-the right to manipulate the content of the objects in the database

System security-covers access and use of the database at the system level

Privilege-the right to execute particular SQL statements

CREATE SESSION privilege-the right to connect to the database

Object security-covers access and use of the database objects and the actions users can have on those objects

WITH GRANT OPTION-allows the grantee to grant the object privileges to other users and roles

GRANT privilege-the right to grant specific system privileges to a user

**Slide 21: Summary – In this lesson you have learned to:**

**No instructor notes for this slide**

**Slide 22: Summary - Practice Guide**

**No instructor notes for this slide**

## **SECTION 12 LESSON 3 – Creating and Revoking Object Privileges**

### **Slide 1: Creating and Revoking Object Privileges**

#### **What to Watch For**

Students granting privileges to other students on their objects can have disastrous results. Begin the practice exercises granting SELECT on a copy of the d\_songs table using WITH GRANT OPTION. After students have had a chance to regrant this privilege to others in the class, you can discuss the other privileges (INSERT, DELETE) and what they mean if someone else can access and change your tables. Tell students that they, not the teacher, are in charge of maintaining the integrity of their own tables.

### **Slide 2: What Will I Learn?**

**No instructor notes for this slide**

### **Slide 3: Why Learn It?**

**No instructor notes for this slide**

### **Slide 4: Tell Me / Show Me – Roles**

Explain the graphic. Assigning privileges for a few people would not be a difficult task, but having to assign privileges for 1,000 employees would be very time consuming. The role of manager makes it easier to assign employee privileges.

### **Slide 5: Tell Me / Show Me – Roles (continued)**

**No instructor notes for this slide**

### **Slide 6: Tell Me / Show Me – CHARACTERISTICS OF ROLES**

**No instructor notes for this slide**

### **Slide 7: Tell Me / Show Me – GRANTING OBJECT PRIVILEGES**

**No instructor notes for this slide**

### **Slide 8: Tell Me / Show Me – OBJECT PRIVILEGE Guidelines:**

Ask students what considerations a DBA must make when granting object privilege. Possible responses: Does the person want the privilege or does he/she require the privilege? How will the DBA know if the privilege should be revoked?

### **Slide 9: Tell Me / Show Me – GRANT Examples**

**No instructor notes for this slide**

### **Slide 10: Tell Me / Show Me – GRANT Examples (continued)**

**No instructor notes for this slide**

### **Slide 11: Tell Me / Show Me – WITH GRANT OPTION**

**No instructor notes for this slide**

**Slide 12: Tell Me / Show Me – THE PUBLIC KEYWORD**

If a statement does not use the full name of an object, the Oracle Server implicitly prefixes the object name with the current user's name (or schema). If user Scott King (scott\_king) queries the DEPARTMENTS table, for example, the system selects from the scott\_king.DEPARTMENTS table.

If a statement does not use the full name of an object, and the current user does not own an object of that name, the system prefixes the object name with PUBLIC. For example, if user Scott queries the USER\_OBJECTS table, and Scott does not own such a table, the system selects from the data dictionary view by way of the PUBLIC.USER\_OBJECTS public synonym.

Explain that the WITH GRANT OPTION means that when you invite friends to a party at your house, they can invite others, too. End result: Your house is packed and you're suddenly out of food!

**Slide 13: Tell Me / Show Me – If you attempt to perform an unauthorized...**

**No instructor notes for this slide**

**Slide 14: Tell Me / Show Me – You can access the data dictionary to view**

**No instructor notes for this slide**

**Slide 15: Tell Me / Show Me – REVOKING OBJECT PRIVILEGES**

**No instructor notes for this slide**

**Slide 16: Tell Me / Show Me – REVOKING OBJECT PRIVILEGES (continued)**

**No instructor notes for this slide**

**Slide 17: Tell Me / Show Me – The example below revokes SELECT and INSERT...**

**No instructor notes for this slide**

**Slide 18: Tell Me / Show Me – For example, if user A grants SELECT...**

**No instructor notes for this slide**

**Slide 19: Tell Me / Show Me – However, if user A revokes privileges from user B...**

**No instructor notes for this slide**

**Slide 20: Tell Me / Show Me – DATABASE LINKS**

Let the students know that using distributed databases encompasses much more than what is shown in the graphic.

**Slide 21: Tell Me / Show Me – DATABASE LINKS (continued)**

**No instructor notes for this slide**

**Slide 22: Tell Me / Show Me – Typically, the DBA is responsible for creating...**

**No instructor notes for this slide**

**Slide 23: Summary – In this lesson you have learned to:**  
**No instructor notes for this slide**

**Slide 24: Summary - Practice Guide**  
**No instructor notes for this slide**



## **Notes For Practice Activities:**

### **Controlling User Access S12 L02**

#### ***Try It / Solve It***

1. System privileges are concerned with access to the database at the system level such as creating users, usernames and passwords, allocating disk space to users, and granting the system privileges that users can perform such as creating tables, views and sequences. (DDL and DCL)

2. Object privileges are concerned with access and use of the database objects and the actions that those users can have on the objects. (DML and basic SQL)

3. Object security is also known as data security.

4. CREATE USER scott  
IDENTIFIED BY tiger ;

GRANT create session TO scott;

5. GRANT select, update ON d\_clients TO scott;

6. GRANT select ON d\_songs TO PUBLIC;

7. Use the HTML DB SQL Workshop Data Dictionary Browser to enter the search for USER\_TAB\_PRIVS\_RECD. Click the magnifying glass to view table privileges received.

or

SELECT \* FROM user\_tab\_privs\_recd ;

8. The CREATE TABLE privilege

9. You grant them the SELECT privilege.

10. GRANT SELECT  
ON copy\_employees  
TO username;

11. Query the USER\_COLS\_PRIVS\_RECD

### **Looking for a Job S12 L01**

#### ***Try It / Solve It***

1. Require each student to list the qualifications for one job in the area of their interest that is currently being advertised. Where is the job? What benefits does the job offer? What is the pay range?

Go to the Monster Board, Dice, Hot Jobs, or specific company web sites such as Google, click on "jobs" and preview the current jobs being advertised or Costco and click on "employment opportunities." Try to find jobs in your local area. Search jobs with the keywords: "SQL" or "database," "data modeling," "DBA" or "database administrator." Discuss various types of jobs, locations, pay, etc. List the results of various jobs students found in a chart or map on the board. Which regions have more jobs? Why? How does the local job market compare with other areas in the country?

2. Discuss with students the possibility that they may be offered a job in some location distant from their city. What factors are important in making a decision to take the job? Tell students that often to get the job they want they may have to move a long way from home. Consider cost of living and how to assess that; friends and family; activities that they can do in this location; challenges they may face in this location -- cold weather, hot weather, rural setting, urban setting.

3. Have students complete the IT Job Application. Discuss with students the importance of preparing a neat, complete, and accurate application. Suggest ways to obtain permission to use personal references. Mention the need to prepare a cover letter and/or resume that accompanies the application. Tell students to avoid negative comments on an application and to never leave a required box blank.

### **Creating and Revoking Object Privileges S12 L03**

#### ***Try It / Solve It***

1. A role is a named group of related privileges that can be granted to the user

2. Easier to grant, maintain and revoke privileges thus saving time.

3. GRANT select ON tablename

TO username

WITH GRANT OPTION;

4. Create a ROLE containing the system privileges and grant the role to users.

5. a CREATE ROLE manager

GRANT select, insert, update, delete ON employees

TO manager ;

b CREATE ROLE clerk ;

GRANT select, insert ON employees

TO clerk;

c GRANT manager TO scott ;

d REVOKE delete ON employees  
FROM manager ;

6. A database link is a pointer that defines a one-way communication path from one Oracle database to another Oracle database.