USER ACCOUNTS

A user account is identified by a user name and defines the user’s attributes, including the following:

* Password for database authentication
* Privileges and roles
* Default tablespace for database objects
* Default temporary tablespace for query processing work space

When you create a user, you are also implicitly creating a schema for that user. A schema is a logical container for the database objects (such as tables, views, triggers, and so on) that the user creates. The schema name is the same as the user name, and can be used to unambiguously refer to objects owned by the user. For example, HR.EMPLOYEES refers to the table named EMPLOYEES in the HR schema. (The EMPLOYEES table is owned by HR.) The terms database object and schema object are used interchangeably.

When you drop (delete) a user, you must either first drop all the user’s schema objects, or use the cascade feature of the drop operation, which simultaneously drops a user and all of that user’s schema objects.

User Privileges and Roles

When creating a user, you grant privileges to enable the user to connect to the database, to run queries and make updates, and to create schema objects. There are two main types of user privileges:

*System privileges*—A system privilege is the right to perform a particular action, or to perform an action on any schema objects of a particular type. For example, the privileges to create tables and to delete the rows of any table in a database are system privileges.

*Object privileges*—An object privilege is a right to perform a particular action on a specific schema object. Different object privileges are available for different types of schema objects. The privilege to delete rows from the DEPARTMENTS table is an example of an object privilege.

Managing and controlling privileges is made easier by using roles, which are named groups of related privileges. You create roles, grant system and object privileges to the roles, and then grant roles to users. Unlike schema objects, roles are not contained in any schema.

Table 7.1 lists three roles that are predefined in Oracle Database XE. You can grant these roles when you create a user with the Oracle Database XE graphical user interface.

Table 7.1 Oracle Database Express Edition Predefined Roles

***Role Name Description***

CONNECT Enables a user to connect to the database. Grant this role to any

user or application that needs database access.

RESOURCE Enables a user to create certain types of schema objects in that

user’s own schema. Grant this role only to developers and to

other users that must create schema objects. This role grants a

subset of the create object system privileges. For example, it

grants the CREATE TABLE system privilege, but does not grant the CREATE VIEW system privilege. It grants only the following privileges: CREATE CLUSTER, CREATE INDEXTYPE, CREATE OPERATOR, CREATE PROCEDURE, CREATE SEQUENCE, CREATE TABLE, CREATE TRIGGER, CREATE TYPE.

DBA Enables a user to perform most administrative functions,

including creating users and granting privileges; creating and

granting roles; creating and dropping schema objects in other

users’ schemas; and more. It grants all system privileges, but

does not include the privileges to start up or shut down the

database. It is by default granted to user SYSTEM.