

Oracle Database 11g Express Edition Demo Scenario

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1. Installing and configuring Oracle Database

Go to <http://www.oracle.com/technetwork/products/express-edition/overview/index.html>, download and install Oracle Database 11g Express Edition (or most recent version available):

- Follow the installation instructions
- When prompted for a password for SYS and SYSTEM accounts, please enter “dba”.

Important: Since the Oracle installation is not available for Windows 64-bit, follow the instructions that can be found at <https://forums.oracle.com/forums/thread.jspa?messageID=9951790&tstart=0#9951790>.

2. Using the Oracle SQL*Plus client to execute SQL statements

Open a command line tool and start the SQL*Plus client with the command *sqlplus*. Use the system/dba account to connect. The client will prompt:

```
SQL*Plus: Release 11.2.0.2.0 Production on Tue Sep 11 11:43:52 2012

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Enter user-name: system
Enter password:

Connected to:
Oracle Database 11g Express Edition Release 11.2.0.2.0 - Production

SQL>
```

Create a new user with credentials scott/tiger and grant roles and privileges as follows:

```
SQL> CREATE USER scott IDENTIFIED BY tiger;

User created.

SQL> GRANT CONNECT, RESOURCE, DBA, CREATE VIEW to scott;

Grant succeeded.
```

Exit SQL*Plus.

```
SQL> QUIT;

Disconnected from Oracle Database 11g Express Edition Release 11.2.0.2.0 - Production
```

Use the *sqlplus* client again but connect as scott/tiger.

```
SQL*Plus: Release 11.2.0.2.0 Production on Tue Sep 11 11:58:56 2012

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Enter user-name: scott
Enter password:

Connected to:
Oracle Database 11g Express Edition Release 11.2.0.2.0 - Production
```

Enter the following SQL statements one by one (letter case is not important) and understand the result of their execution:

```
- SELECT USERNAME FROM ALL_USERS;
- SELECT TABLE_NAME FROM USER_TABLES;
- SELECT TABLE_NAME FROM ALL_TABLES WHERE OWNER='SCOTT';
- CREATE TABLE Student (id INT PRIMARY KEY, name VARCHAR(30) NOT NULL, age INT);
- SELECT TABLE_NAME FROM USER_TABLES;
- DESCRIBE Student;
- SELECT * FROM Student;
- INSERT INTO Student VALUES (1,'Edgar Codd', 20);
- SELECT * FROM Student;
- INSERT INTO Student (age, name, id) VALUES (21,'Jim Gray', 2);
- SELECT * FROM Student;
- INSERT INTO Student (name, id) VALUES ('John Smith', 3);
- SELECT * FROM Student;
- INSERT INTO Student VALUES (1,'Lily Smith', 28);
- SELECT * FROM Student;
- -- try to insert other tuples that violate integrity constraints
- DELETE FROM Student WHERE age IS NULL;
- SELECT * FROM Student;
- UPDATE Student SET age = 79 WHERE name = 'Edgar Codd';
- SELECT * FROM Student;
- UPDATE Student SET age = NULL WHERE id = 1;
- SELECT * FROM Student;
- -- learn about different SQL*Plus settings;
- SHOW ALL;
- -----
- COMMIT; -- Commit everything (transaction) we executed before
- SELECT * FROM Student;
- INSERT INTO Student VALUES (100,'ABC', 100);
- INSERT INTO Student VALUES (200,'ABC', 100);
- SELECT * FROM Student;
- ROLLBACK; -- rollbacks the transaction
- SELECT * FROM Student;
- -- try other SQL statements that we studied (e.g., CREATE VIEW, CREATE INDEX, etc.)
- QUIT; -- This is SQL*Plus command (not an SQL statement)
```

Refer to “SQL*Plus User's Guide and Reference”

(http://docs.oracle.com/cd/E11882_01/server.112/e16604/toc.htm) to learn more about the SQL*Plus utility.

3. Executing an SQL script

Refer to “SQL*Plus User's Guide and Reference”, i.e. section on running scripts

(http://docs.oracle.com/cd/E11882_01/server.112/e16604/toc.htm).

4. Exploring the physical data level of DBMS Oracle Database

Go to the folder *C:\oracle\app\oracle\product\11.2.0\server\bin* using your favorite file manager software and find various utilities to work with the DBMS, including *sqlplus.exe*.

Go to the folder *C:\oracle\oradata\XE* using your favorite file manager software and find several database files (.DBF). Each file corresponds to a tablespace, e.g.,

- SYSTEM tablespace contains the system catalogs, stored PL/SQL programs (i.e., triggers)
- USER tablespace stores user data, such as our table Student

- TEMP tablespace is used for temporary storage; for example, for sorts and intermediate results of ORDER BY, GROUP BY, joins and index creation
- Find out what other tablespaces are for.

5. Exploring the system catalog

Use the *sqlplus* client and connect as scott/tiger.

Explore view ALL_TABLES using DESCRIBE ALL_TABLES and SELECT owner, table_name FROM all_tables. Locate table *Student* in the system catalog.