

COMP 2714 – RELATIONAL DATABASE SYSTEMS

Lab04 Exercise – Introduction to Oracle Database Application Using PHP

This lab exercise provides a brief introduction to using PHP as a front-end tool to develop a database application using Oracle as the backend database. The PHP built-in web server is used on lab computers. You are to work individually.

Read the complete lab exercise description before starting, especially the last section on what to submit !! Also, SUBMIT a version 1 of your work (in zip file) before the end of today's lab !!

0. Copy all required files to local workstation drive folder D:\work\2714

1. If necessary, create folder D:\work\2714 and copy all files for Lab04_PhpOracle to D:\work\2714
2. Open a command prompt and change to D:\work\2714 as the current folder.
3. Start up the PHP built-in web server: `php -S localhost:8888` [using port 8888 for this lab]

1. Unlocking the hr Schema in the Oracle database (This needs to be done every time the lab computer is rebooted)

1. If necessary, update both tnsnames.ora and listener.ora to use the correct hostname.
2. If necessary, start the database, using the start menu:
Start -> O (section) -> Oracle -> Oracle Database Express Edition 11g -> Start Database.
3. Start up SQL*Plus in the opened command prompt:
4. Unlock the hr schema with the following statement:
ALTER USER hr IDENTIFIED BY hr ACCOUNT UNLOCK;
5. Connect to the hr schema to test that it is unlocked. Exit SQL*Plus.

2. Setting up PHP to work with Oracle 11g Express in the lab

1. Lab computers have PHP (version 7.1.7 x64) already installed to C:\PHP. To test:
 - a. [If necessary,] Copy file phpinfo.php to D:\work\2714 folder
 - b. Start a web browser: Internet Explorer / Chrome / Firefox.
 - c. In the URL field, type in: `http://localhost:8888/phpinfo.php`
 - d. Review the page: Look at "**Loaded Configuration File**" (9th item down): In which folder is php.ini?
 - e. Review the page: Is there any **section header** that refers to the configuration of Oracle oci8? _____
2. Copy necessary Oracle Instant Client files to required folders:
 - a. [If necessary,] Copy file `php_oci8_12c.dll` into C:\PHP\ext subfolder [the path specified in 2.1.d. above].
 - b. Copy all files in instantclient-basiclite-nt-12.1.0.2.0-subset-x64.zip into C:\PHP [the folder in 2.1.d above].
3. Make a backup copy of the php.ini file in C:\PHP [the folder in 2.1.d above]; use a text editor to edit it. Ensure the following line is included under section "Dynamic Extensions" (use text search to locate this section):
`extension=php_oci8_12c.dll`
and that it is not commented out. Edit changes if needed. Save and close the php.ini file.
4. If necessary, Ctrl-C to exit the PHP web server, and restart it again: `php -S localhost:8888`
5. Refresh the browser page: `http://localhost:8888/phpinfo.php` and locate the configuration **section header** on Oracle oci8. If there is such a section, you have successfully completed the setup.
6. Test the setup using oratest.php:
 - a. Ensure file oratest.php is in your current folder D:\Work\2714
 - b. If needed, use a text editor to change the Oracle database SID specified in the connect string in oratest.php to match your lab installation (e.g. in SE12-321, use SID of **xe** in oci_connect function)

- c. Open browser, type in: `http://localhost:8888/oratest.php`, and you should see a list of data from the hr database schema

3. For this Lab Exercise:

1. Refer to Lab04_PHP_Oracle_02Details.pdf for the lab exercise details.
2. Read the page content to gain an understanding of the subject matter as you work through the tutorial.
3. For this lab exercise, login with user id **hr** and with password **hr** (as set in section 1.4 above).

4. For Submission

1. When completed, demonstrate your finished work to your lab instructor to have it marked.
2. Create a zip file and name it Lab04<Lastname><Initial>V1.zip.
3. Add to it all the files you created in D:\work\2714 (see diagram).
4. Submit the zip file to the proper dropbox in D2L.
5. If lab is not completed during lab class, then submit a version 2 (e.g. Lab04<Lastname><Initial>V2.zip) when the lab exercise is completed, as instructed by your lab instructor.

