IMPLEMENTATION GUIDELINES

How to login to your zone?

You have to access your zone through SSH client. The login information is:

Host name: *cs2102-z*.comp.nus.edu.sg
User name: <your nusnet id >
Password: <crse1410>(default)

What to do after login?

The Apache HTTP server and Oracle database are set up already. You can start programming now.

How to start?

Your tasks include the following:

1. Design your database based on your scenario. A good database design is essential for both query performance and system maintenance.
2. Design your HTTP pages as a user-friendly interface for your customers.
3. Write PHP code to connect to, read, and modify your database from HTTP pages.

Here is a simple example:

1. Open the Oracle client under Windows and connect to the Oracle server using your account (the same process as what you did in labs). Create a table called *employee*:

```
create table employee (
       id varchar(5),
       name varchar(30),
primary key (id))
```

2. Create a PHP file called *oracle-test.php* in your PC (you can create a test.txt file first and rename it as *oracle-test.php*). Copy and paste the following content to *oracle-test.php* (remember to put your Oracle account id and password into the following php code):

```
<?php

putenv('ORACLE_HOME=/oraclient');

// connect
$conn = oci_connect('YOUR ORACLE ACCOUNT ID', 'YOUR ORACLE ACCOUNT
PASSWORD', 'sid3');

// insert
$sth = oci_parse($conn, "insert into employee values ('10', 'John')");
if (oci_execute($sth, OCI_DEFAULT))
  echo "<p>Successfully added an employee.</p>";
else echo "<p>Error adding an employee.</p>";

// select
$sth = oci_parse($conn, "select id, name from employee");
oci_execute($sth, OCI_DEFAULT);
while ($row = oci_fetch_array($sth)) {
  echo "<p>Id = ", $row[ID], ", Name = ", $row[NAME], "</p>\n";
}

// delete
$sth = oci_parse($conn, "delete from employee");
if (oci_execute($sth, OCI_DEFAULT))
  echo "<p>Successfully deleted all employees.</p>";
else echo "<p>Error deleting employees.</p>";

// commit
oci_commit($conn);

// disconnect
oci_close($conn);

?>
```

This PHP file essentially connects to your database using your oracle account (do not forget put your actual Oracle id and password), and then performs several database operations including inserting a tuple, viewing the inserted tuple and deleting the tuple. After each operation, you output the execution results to the customer by using *echo* command. Finally, you commit and terminate the connection.

3. Open the file transfer window in SSH client (suppose you have already login to your zone).
   You need to create a directory where all web pages will be placed later on.
   Execute these two commands in the command shell (press Enter after each command):
   mkdir public_html
   chmod 755 public_html

   Drag *oracle-test.php* into the "public_html". To set the above file accessible on the internet, perform this command from the SSH command shell:
   chmod 744 public_html/*

Note: If you have sub-directory inside public_html, change it by these commands:
chmod 755 public_html/sub-directory
chmod 744 public_html/sub-directory/*

Now open a browser and type the address:
http://*cs2102-z*.comp.nus.edu.sg/~your-nusnet-id/oracle-test.php.
You should be able to see the following screen:

> Successfully added an employee.
>
> Id = 10, Name = John
>
> Successfully deleted all employees.

What you should do next is to modify this PHP file based on the actual operations in your project, and associate it to your HTTP pages. You should design a nice HTTP page as the interface. If you do not have experience in web design, you can find some books or online tutorials (e.g., W3C school) to learn more about HTTP and PHP.