UECS2093/UECS2094 WEB APPLICATION DEVELOPMENT

LAB 01: Installation & Configuration of Web Server

To develop and host web applications, we need to install a web server (software) on the server computer. There are various web servers available, the most popular being **Apache Web Server**, **NGINX**, and **Microsoft Internet Information Services (IIS)**. For the purpose of your learning experience, we will use **Apache Web Server** which is free, open source software.

For the purpose of developing server-side web applications, we also need to install the required compiler or interpreter for the programming/scripting language that we will use. We will be using **PHP** for this purpose. PHP is a popular general-purpose scripting language that is especially suited to web development.

In most web applications, we need to store and retrieve data. For such purposes, we may store and retrieve data from text or binary files, or from a database via a Database Management System (DBMS). In this unit, you will be learning to store and retrieve data from files and **MySQL** database.

Apache Web Server, **PHP** and **MySQL** can be downloaded and installed and configured separately, or via a software package that includes all three software in one. For production servers, these software are usually installed and configured separately. However, for development purposes, it is easier to download and install a software package on your own computer. We will be using the **WampServer** software package that includes **Apache Web Server**, **PHP** and **MySQL.** Another alternative to WampServer is **XAMPP**.

Installing WampServer

1. Obtain the installer from http://www.wampserver.com/en/. Depending on your platform, please download either the **WampServer (64-bit & PHP 5.5)** or **WampServer (32-bit & PHP 5.5)**.

2. If you have not done so, download and install **Microsoft Visual C++ Redistributable** following the link shown at the WampServer download page before installing WampServer.

3. Execute the installer file and follow the instructions and recommended settings.

Starting WampServer

1. In the Start Menu or Start Screen, locate and click the shortcut **start WampServer**. WampServer will start the Apache and MySQL services.

2. A WampServer notification icon will be displayed in the notification area. A **red** icon indicates that all services are shut down while a **green** icon indicates all services are up and running. An **orange** icon indicates that some but not all services are running. This could mean one of the services have been shut down individually, or one of the services fail to start due to errors.

3. Clicking on the WampServer icon will display a menu with option to start, restart and stop all services. The Apache & MySQL submenus provide access to start, restart and stop services individually. The Apache, MySQL & PHP submenus also provide access to various files such as configuration files and log files.

Configuring Apache

1. The Apache Web Server configuration is stored in a file named **httpd.conf**. This file may be opened from the Apache submenu. Opening the file will open it in your default text editor (e.g. Notepad).

2. In most cases, you do not need to make any changes to the configuration file. However, in the event you do make any changes to the configuration file, you must save the file and restart the Apache service for changes to take effect.

The web root directory

1. By default, WampServer sets the web root directory to **<wampserver_directory>/www**, in most cases the **<wampserver_directory>** is **c:/wamp**.

2. This is configured in the **httpd.conf** file in the following directives:

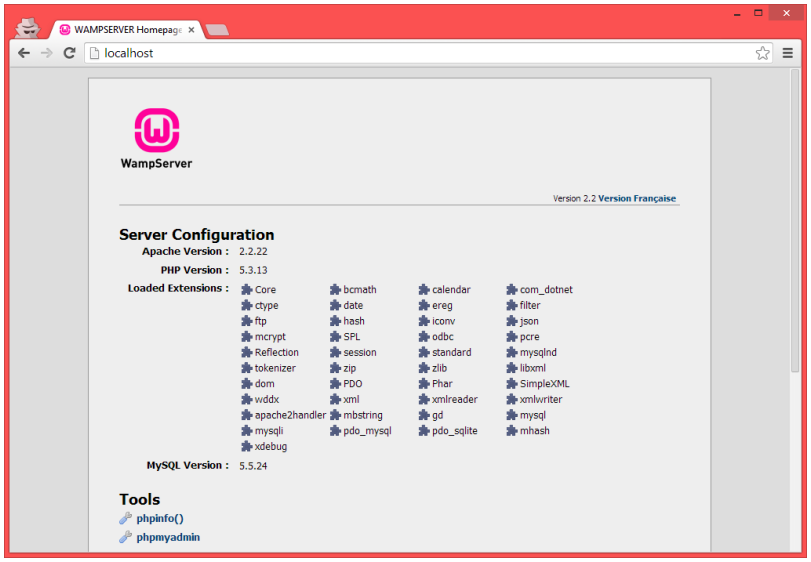
```
DocumentRoot "c:/wamp/www/"
```

3. You may change the value to point the web root to another path. Remember that if you do change the web root directory, you must also make changes to the following:

```
#
# This should be changed to whatever you set DocumentRoot to.
#
<Directory "c:/wamp/www/">
```

Testing WampServer

1. Launch your web browser and enter **http://localhost** in the address bar. You should see the **WampServer Homepage** similar to this:



2. Under the **Tools** section, click on the **phpinfo()** link. This will display details of your web server and PHP installation and settings.

Starting a Web Application Project

1. Create a new directory named **testing** in the web root directory. Refresh the WampServer Homepage and you should see **testing** listed in the section **Your Projects**.

2. Click on **testing** in **Your Projects**. What is displayed?

3. Using **Notepad++**, create a file **hello.html** in the **testing** directory. Type the following HTML code in the file and save it:

```
<html>
<head>
<title>Hello</title>
</head>
<body>
Hello World
</body>
</html>
```

4. How would you display this HTML page on your web browser?

The index.html File

1. You should always have an **index.html** file (or **index.php** if PHP is used) at least in the root directory of your web application. Create an **index.html** file in the **testing** directory. Type the following HTML code in the file and save it:

```
<html>
<head>
<title>Home</title>
</head>
<body>
Testing Homepage
</body>
</html>
```

2. Enter **http://localhost/testing** on your web browser address bar. What is displayed?