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Wrox Programmer to Programmer™

PHP and MySQL

24-Hour Trainer

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Section I

Getting Started with PHP

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In this section, you learn the basics of working with PHP. In the first lesson, you learn what PHP requires on your computer before PHP will run. If your computer does not have the necessary software, you can use the instructions provided to download the free software, install it, and configure it to work. In the next lesson, you learn how HTML and PHP work together as you add your first PHP code to a web page. You are also introduced to the Case Study website you use throughout the book.

You learn in the third lesson about the syntax of PHP and how to write PHP statements. In the fourth lesson, you learn what variables are and how to use them. At this point, you will have learned enough to start making mistakes, so in the next lesson you learn about how to find your errors and debug your code. You need to know about debugging as you work with more complex data in the final lesson of this section.

Lesson 1

Setting Up Your Workspace

Your computer needs to be able to run as a web server with PHP and MySQL. XAMPP is a package of software that installs the web server, PHP, and MySQL for you. You learn how to download and install XAMPP in this lesson.

If you already have a web server with PHP and MySQL running on your computer, you do not need XAMPP. Other packages that fulfill the same need are WAMPServer and MAMP.

You also need a text editor that can produce plain-text files. You learn how to download and install Eclipse PDT in this lesson. Some other text editors that you can use are Adobe's Dreamweaver in code mode, Notepad, TextWrangler, or NetBeans.

Installing XAMPP

XAMPP stands for whatever operating system you have: (X), Apache (A), MySQL (M), PHP (P), and Perl (P). Separate packages are available for each of the different operating systems such as Windows, Mac OS X, or Linux. This lesson covers installing the Windows and Mac versions.

Perl is another programming language. It's popular for housekeeping tasks and for communications between different programs and programming languages. You won't need to use it for the lessons in this book.

XAMPP is intended for local development work. It is not set up for running production websites.

Do not use XAMPP to host websites on the Internet. Although it uses the same building blocks as production hosts, it is not set up to be secure. You will get hacked if you try it.

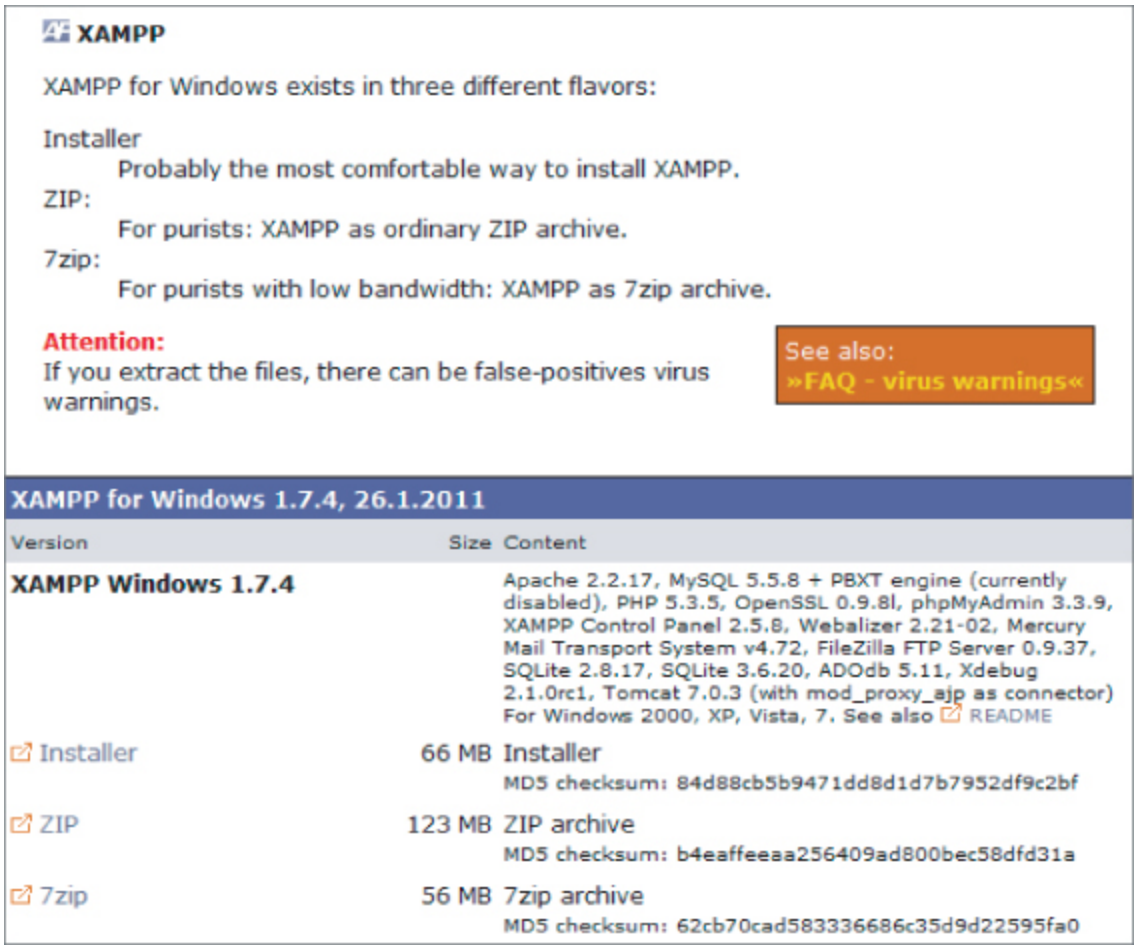
Installing XAMPP on a Windows PC

This section walks you through downloading the proper XAMPP package and installing it on your Windows PC. If you have a Mac, skip forward to the section “Configuring XAMPP on Mac OS X.”

1. Go to the Apache Friends website at www.apachefriends.org/en/xampp.html.

2. Locate the section labeled XAMPP for Windows and click the title. Scroll down to the Download section that lists the versions available for download. See Figure 1-1.

Figure 1-1



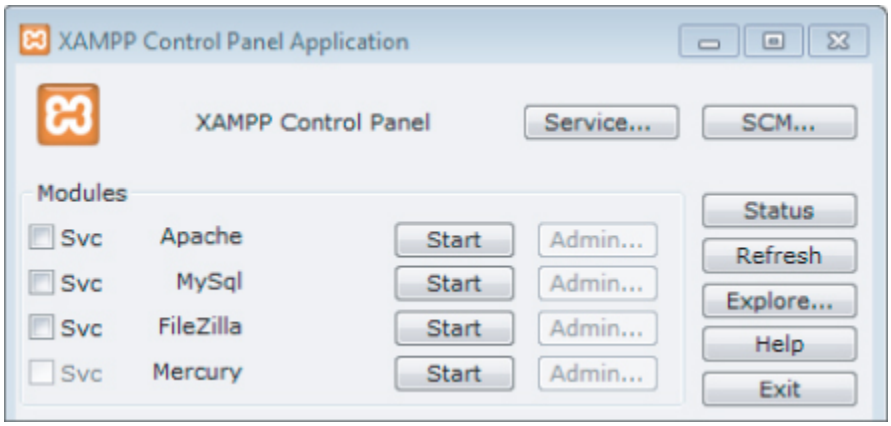
3. You have a choice of three ways to install this package: via the installer, via a ZIP file, or via a 7zip file. The easiest way to change options is to use the installer, but you are more likely to encounter problems. Because you are using the defaults, use the ZIP version. Click the ZIP link and save the ZIP file.

4. Unzip all the files to `c:\`. The ZIP file contains a folder called xampp that holds all the folders and files so unzipping to the `c:` drive creates the `c:\xampp` folder.

5. The program you use is `c:\xampp\xampp-control.exe`. In Windows Explorer, right-click the file and select Create Shortcut. Drag that shortcut to your desktop.

6. Double-click the XAMPP Control desktop icon you just created. The Control Panel is displayed. See Figure 1-2.

Figure 1-2

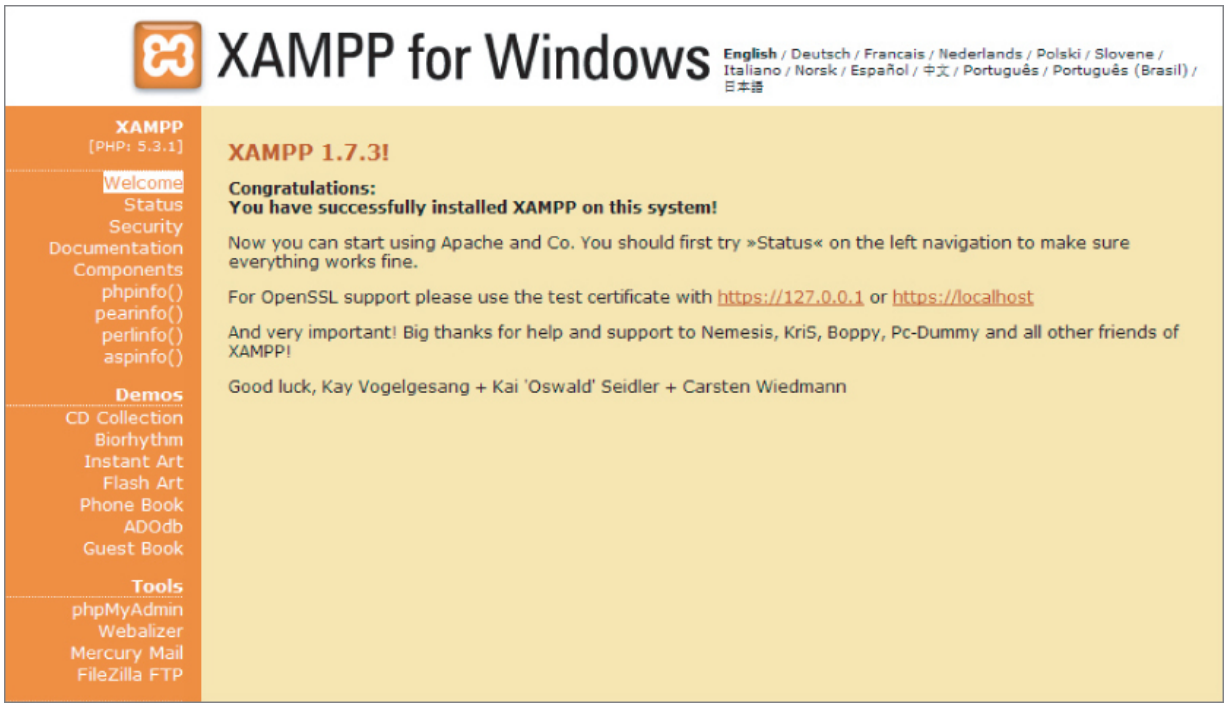


7. To start XAMPP, first start the Apache web service by clicking the Start button next to Apache. Then start MySQL by clicking the Start button next to MySQL. You do not need to start FileZilla or Mercury. When you click the Start buttons, they change to Stop buttons to indicate that the processes are running.

8. To stop XAMPP, click the Stop button next to MySQL and then click the Stop icon next to Apache.

9. To test that XAMPP is properly working, go to your browser and enter **http://localhost/xampp**. You should see a screen similar to Figure 1-3.

Figure 1-3



If the installation is successful, skip to the “Configuring XAMPP” section later in this lesson. Otherwise, check out the “Troubleshooting Your XAMPP Installation” section that follows the “Installing XAMPP on Mac OS X” section.

Installing XAMPP on Mac OS X

This section walks you through downloading the proper XAMPP package and installing it on your Mac OS X system. If you are using a Windows PC, you used the prior section to install XAMPP so you can jump forward to the “Configuring XAMPP” section.

1. Go to the Apache Friends website at www.apachefriends.org/en/xampp.html.

2. Locate the section labeled XAMPP for Mac OS X and click the title. Scroll down to find the section labeled Installation in 4 Steps. See Figure 1-4.

Figure 1-4

Installation in 4 Steps

Step 1: Download

Simply click on the link below. It's a good idea to get the latest version. :)

A complete list of downloads (older versions) is available at SourceForge.
There are none yet, but there will be.

XAMPP for Mac OS X 1.7.3, 2010/03/04

Version	Size	Notes
XAMPP Mac OS X 1.7.3 Universal Binary	86 MB	Apache 2.2.14, MySQL 5.1.44, PHP 5.3.1, Perl 5.10.1, ProFTPD 1.3.3, phpMyAdmin 3.2.4, OpenSSL 0.9.8k, GD 2.0.35, Freetype 2.3.5, libjpeg 6b, libpng 1.2.32, libungif-4.1.4, zlib 1.2.3, expat 2.0.1, Ming 0.4.2, Webalizer 2.01-10, pdf class 009e, mod_perl 2.0.4, SQLite 3.6.3, gdbm-1.8.3, libxml-2.7.2, libxslt-1.1.24, openldap-2.3.43, imap-2004g, gettext-0.16.1, libmcrypt-2.5.8, mhash-0.9.9, zziplib-0.13.48, bzip2-1.0.5, freetds-0.64 MD5 checksum: fcbd4b14461a5b9e7a817f99defd0be2
Developer package	32 MB	Developer package MD5 checksum: f31a0619a35507a0e4305b674ae1159b

3. Click XAMPP Mac OS X. You want the Universal Binary, not the Developer Package. Click OK to save the file when asked.

4. Open the `.dmg` file you just saved. Drag the XAMPP icon over to the Applications icon as shown in Figure 1-5.

5. Find the XAMPP `Control.app` in `/Applications/XAMPP/Xamppfiles`. This is the application file that you use to start and stop XAMPP and you will find it convenient to add it to your dock. The first time you open it you receive the standard warning about using files from the Internet. Click the Open button to start the Control Panel. The Control Panel looks like Figure 1-6.

6. To start XAMPP, first start the Apache web service by clicking the Start button next to Apache. Then start MySQL by clicking the Start button next to MySQL. You do not need to start FTP. When you click the Start buttons, they change to Stop buttons to indicate that the processes are running.

Figure 1-5

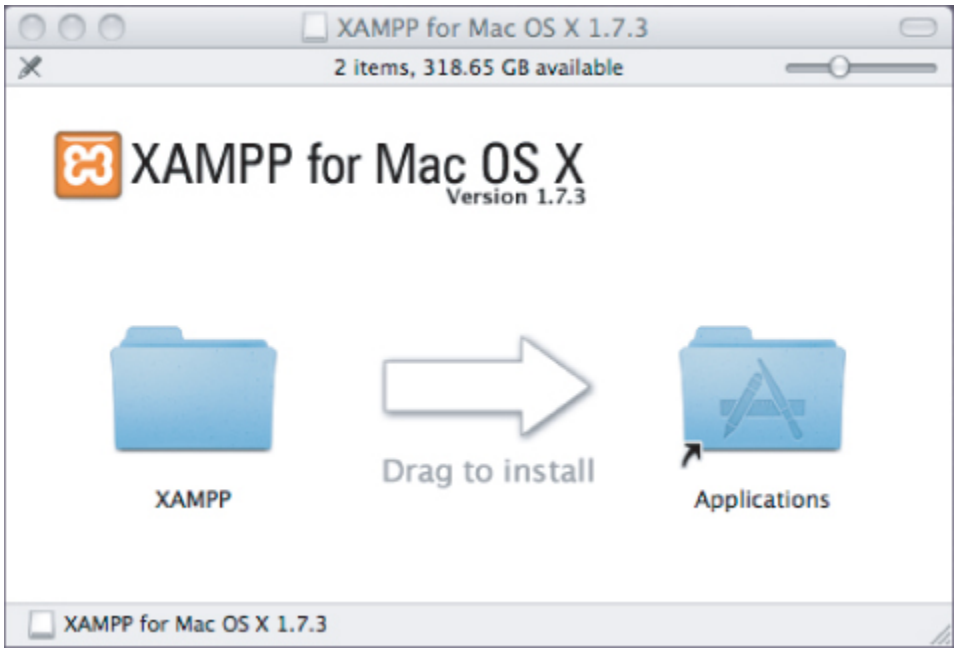
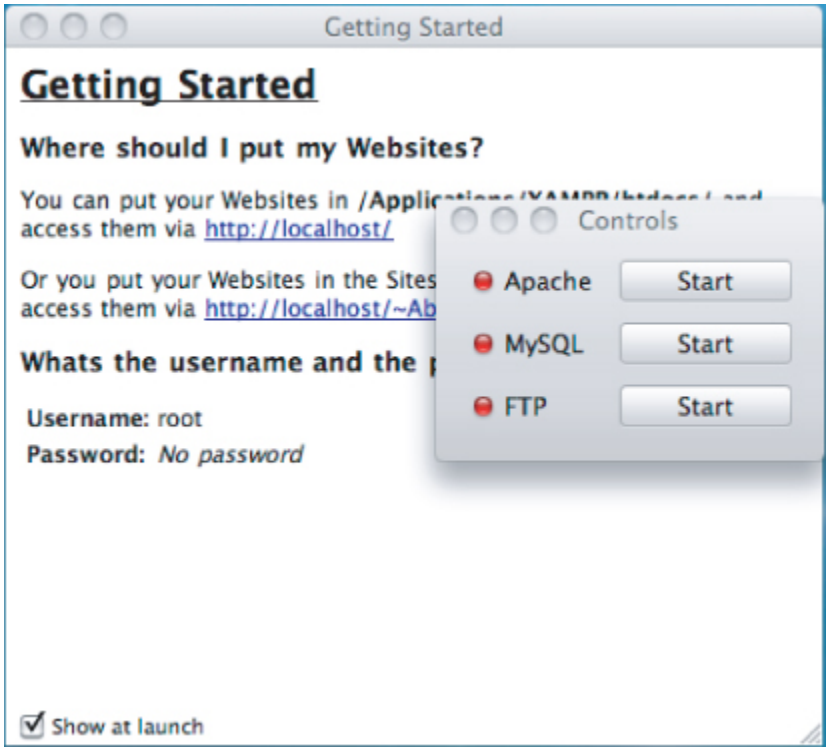


Figure 1-6



7. To stop XAMPP, click the Stop button next to MySQL and then click the Stop button next to Apache.

Apache needs to be running for `http://localhost` *and PHP to work. If you get an error that the server cannot be found, check that you've started Apache.*

8. To test that XAMPP is properly working, go to your browser and enter **`http://localhost/xampp`**. You should see a screen similar to Figure 1-7.

Figure 1-7

Troubleshooting Your XAMPP Installation

Usually, XAMPP installs easily. Sometimes, however, you can run into issues. The Apache Friends have a forum where you can find answers to many problems at `www.apachefriends.org/f/viewforum.php?f=34`.

The Mac OS X ships with Apache. Apache works by listening on a specific port. If you run two copies of Apache, both listening to the same port, you will have problems. The default port is 80 and the common alternate port to use is

8080. If you need both, change the port on one of them and restart Apache.

If you want to change the port in XAMPP, go to `/Applications/XAMPP/xamppfiles/etc/httpd.conf` and change `Listen 80` to **`Listen 8080`**. Stop and restart Apache for the change to take effect. If you cannot get into the XAMPP control to stop and start Apache, shut down your Mac and restart it.

If you want to change the port in the pre-installed Apache, go to `etc/Apache2/http.conf` and change `Listen 80` to **`Listen 8080`**. To get to this hidden file, go to Finder and press Shift+Command+G and then enter **`\etc`**. You need to restart the pre-installed Apache. The easiest way to do that is to shut down your Mac and restart it.

If you changed the port that Apache listens to, you need to enter it as part of the address. If you changed the port to 8080, the address is http://localhost:8080/xampp.

Skype is another program that might conflict with port 80. If you have problems, look in the Skype Advanced section of Tools/Options (on the PC) or Preferences (on the Mac) and be sure it isn't using port 80 for incoming or alternative ports.

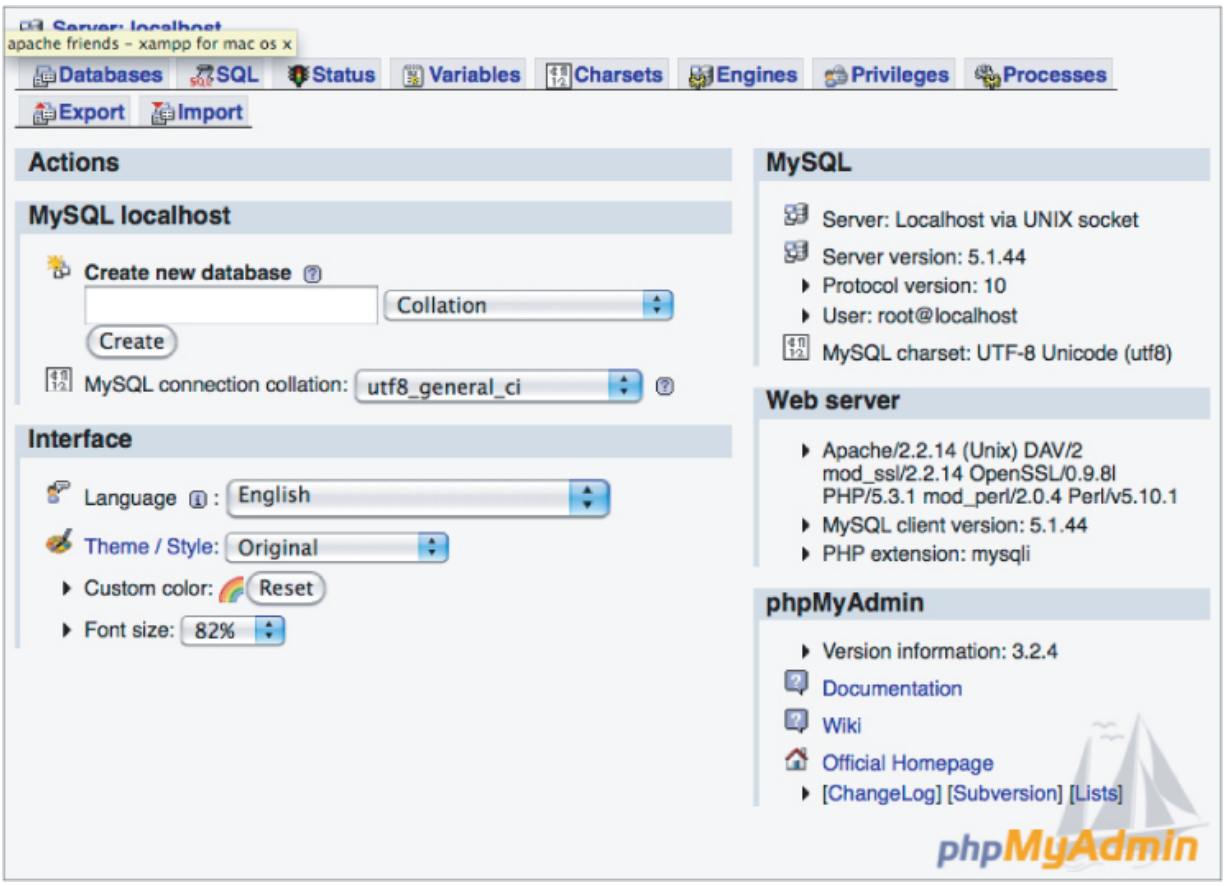
Configuring XAMPP

Now that you have successfully installed XAMPP on your Windows PC or Mac, make sure XAMPP is running and then call up XAMPP in your browser. The address to call up XAMPP is http://localhost/xampp. A screen similar to Figure 1-8 displays.

Figure 1-8

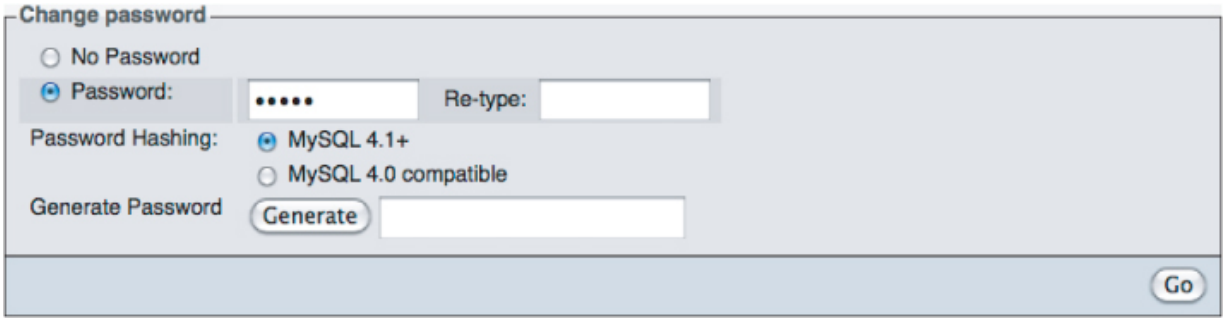
You need to create a password on MySQL. Some programs do not allow you to use MySQL unless MySQL has a password, for security reasons. Click the phpMyAdmin link on the left-side navigation under Tools to open the page shown in Figure 1-9.

Figure 1-9



Click Privileges on the top menu. You see a table of the users. Click the Edit icons next to the users. Scroll down to find the Change Password box as shown in Figure 1-10.

Figure 1-10



Enter a password and click Go. Do this for each of the users with All Privileges.

Now that you've added a password to MySQL, you need to change the configuration in XAMPP for phpMyAdmin so that it can access the database. The configuration file is in

`c:\xampp\phpMyAdmin\config.inc.php` on the Windows PC or in `/Applications/XAMPP/xamppfiles/phpmyadmin/config.inc.php` on the Mac. Find the following code:

```
/* Authentication type */
$cfg['Servers'][$i]['auth_type'] = 'config';
/* Server parameters */
$cfg['Servers'][$i]['host'] = 'localhost';
$cfg['Servers'][$i]['user'] = 'root';
$cfg['Servers'][$i]['password'] = '';
```

Change the password to your new password. For instance, if your new password is `!xYz72g`, the change looks like the following:

```
$cfg['Servers'][$i]['password'] = '!xYz72g';
```

Restart the XAMPP server by going into the Control Panel and stopping first MySQL and then Apache. Restart by starting Apache and then restarting MySQL.

Call up XAMPP in your browser and see that you can open phpMyAdmin.

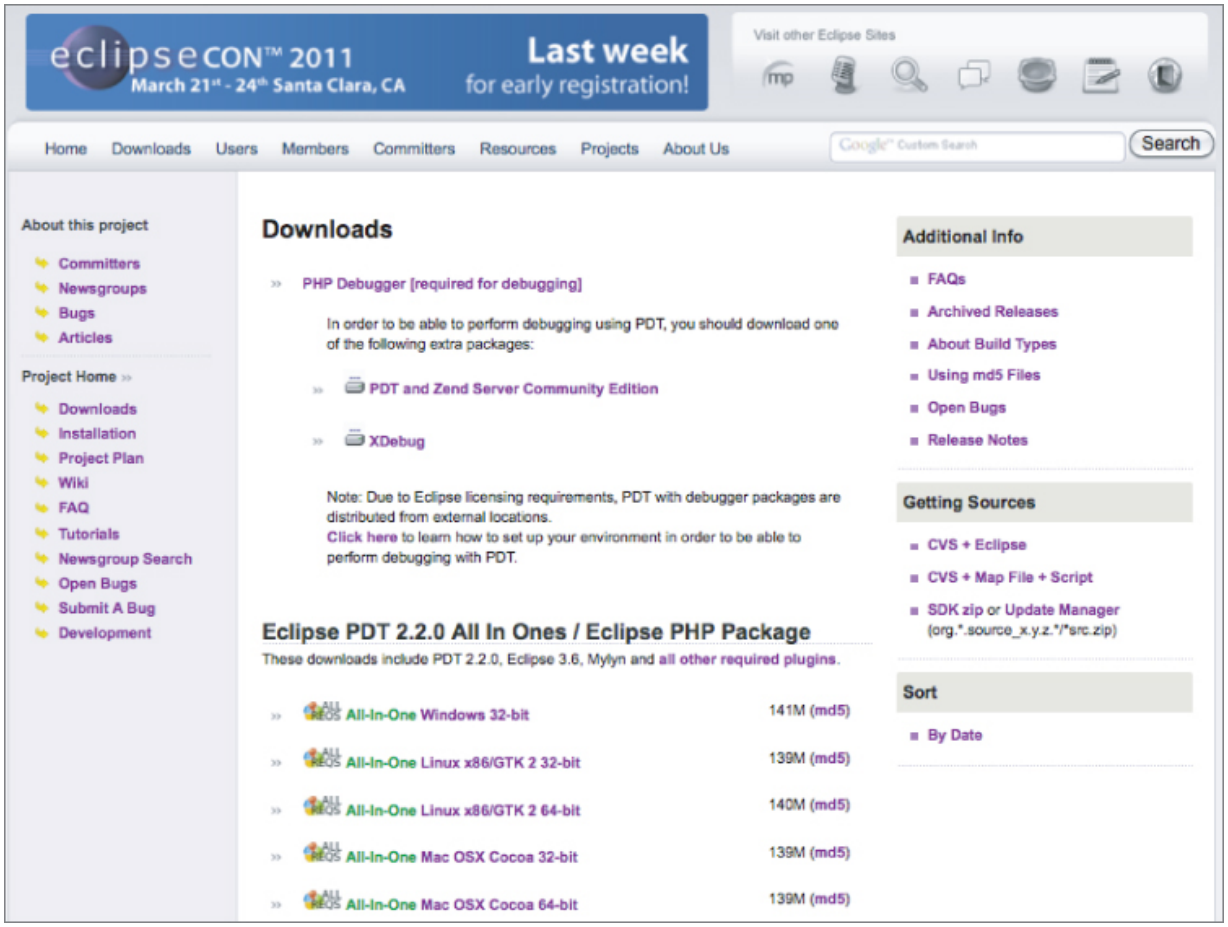
Installing Your Editor

You need a text editor for programming. Word processing editors such as Word change your code and add extraneous codes and characters that invalidate your program, so you should not use them. Possible text editors are Notepad, TextWrangler, Dreamweaver in the code mode, NetBeans, or Eclipse.

A good text editor for PHP is Eclipse PDT. It has syntax checking, auto-completion for commands, color syntax coding, debugging, and other features that become important as you do more complex PHP programming.

To install Eclipse PDT, go to http://www.eclipse.org/pdt/downloads/ to download the program. You see a screen similar to Figure 1-11.

Figure 1-11



Find the All-in-One package for your operating system and click it. You are given a choice of mirrors from which you can download the package, as shown in Figure 1-11. Click the mirror displayed (which in this figure is Georgia Tech) and save the file when requested.

Unzip the file in an appropriate folder. In Windows a good folder is `c:\eclipse`. It does not need to be installed. On the Mac, put it in the Applications directory.

The program file is `eclipse.exe` in the `eclipse` folder. Make a shortcut on your desktop or add it to your dock (on the Mac) so you can find it easily.

Configuring Your Workspace

Now that you've installed the programs, you need to do some configuring.

Preparing a Place to Put Your Files

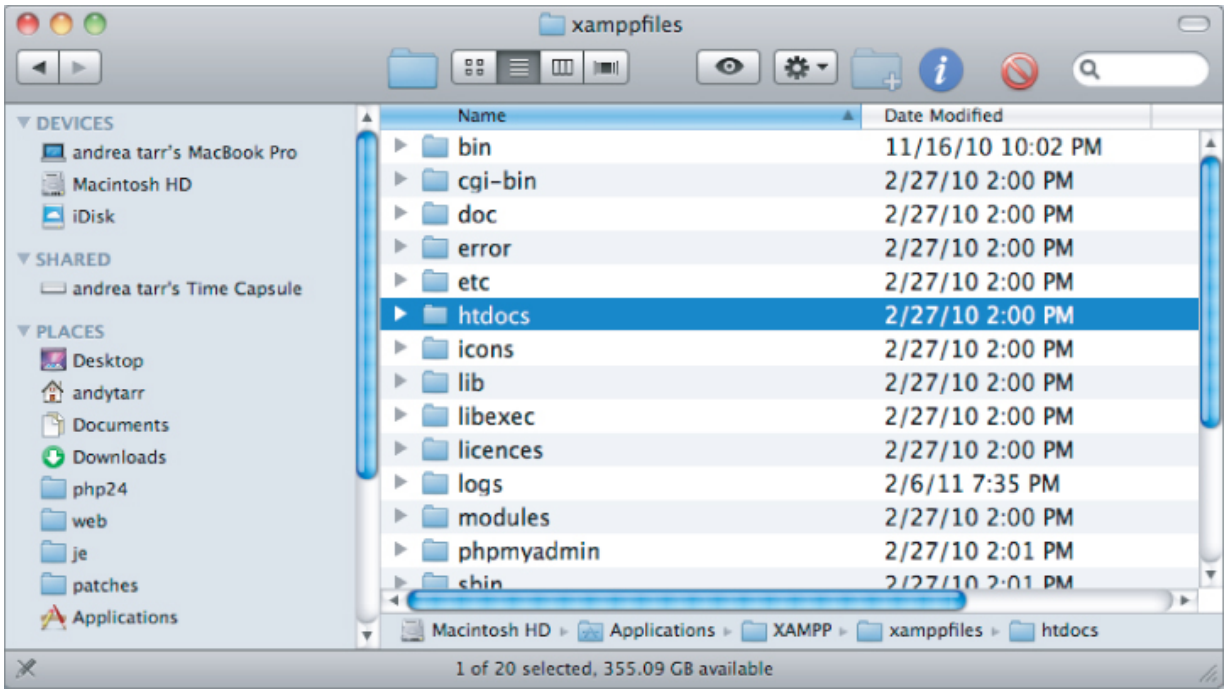
The first thing you need to do is decide where you are going to put your files. By default the Apache web server looks for web files in the htdocs folder. On a Windows PC, this is directly off where you installed XAMPP. If you installed XAMPP in `c:/xampp`, then your htdocs file is in the `c:/xampp/htdocs` folder. On a Mac the path is `/Applications/XAMPP/xamppfiles/htdocs`.

If you are going to be doing a lot of development work, you should change this default and set up virtual hosts so that you can put your files in more convenient places. However, setting up virtual hosts is beyond the scope of this book, so use the default htdocs folder.

If you are on a Windows PC, skip forward to the next section, “Using Eclipse for the First Time.”

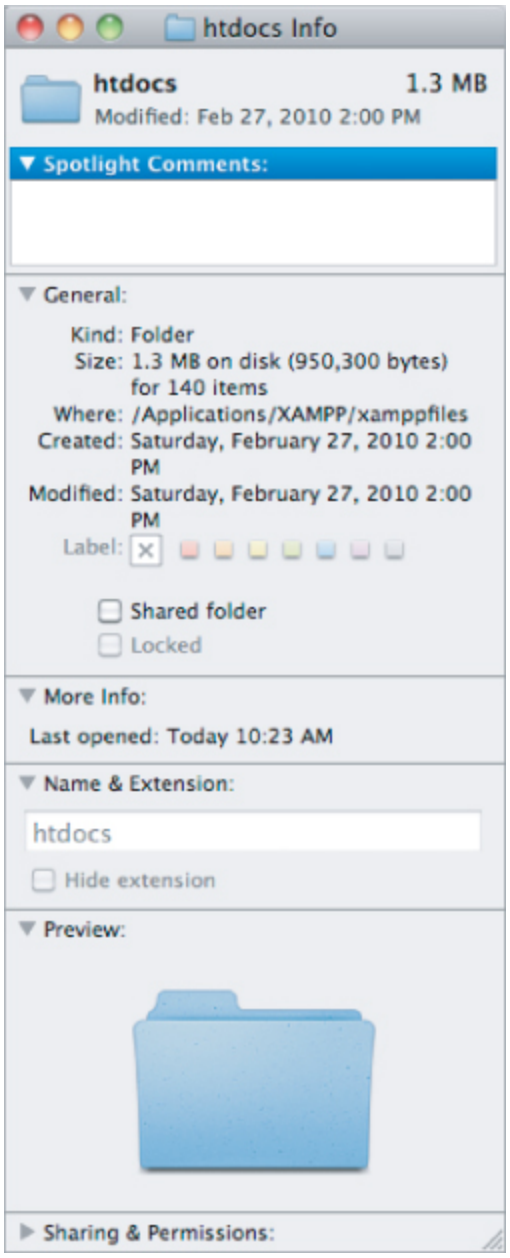
On the Mac OS X you need to change the permissions to the htdocs folder in order to add folders and files to it. Open Finder, browse to `/Applications/XAMPP/xamppfiles`, and select htdocs as shown in Figure 1-12.

Figure 1-12



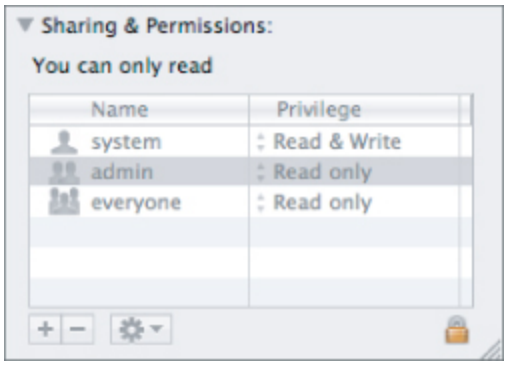
Press Command+I to display the htdocs Info as shown in Figure 1-13.

Figure 1-13



Click the arrow next to Sharing & Permissions to expand the section as shown in Figure 1-14.

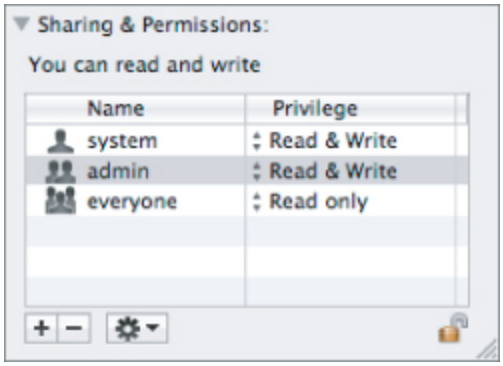
Figure 1-14



You need to unlock the padlock before you are allowed to make changes to the permissions. Click the padlock in the lower-right corner. Enter your administrator password for the Mac when asked.

Now you can click the Privilege drop-down for the admin. Change from Read Only to Read & Write. Your permissions should look similar to Figure 1-15.

Figure 1-15

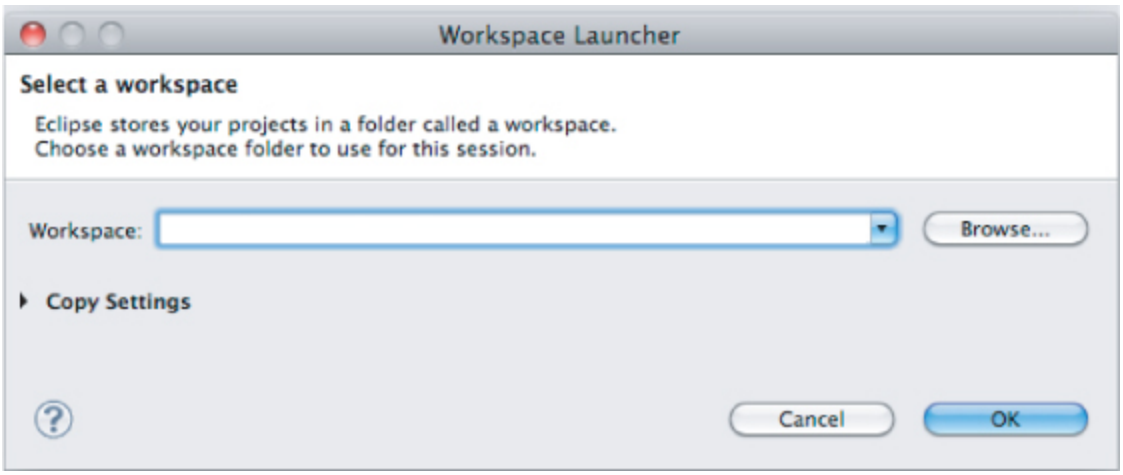


Click the padlock again to relock the permissions.

Using Eclipse for the First Time

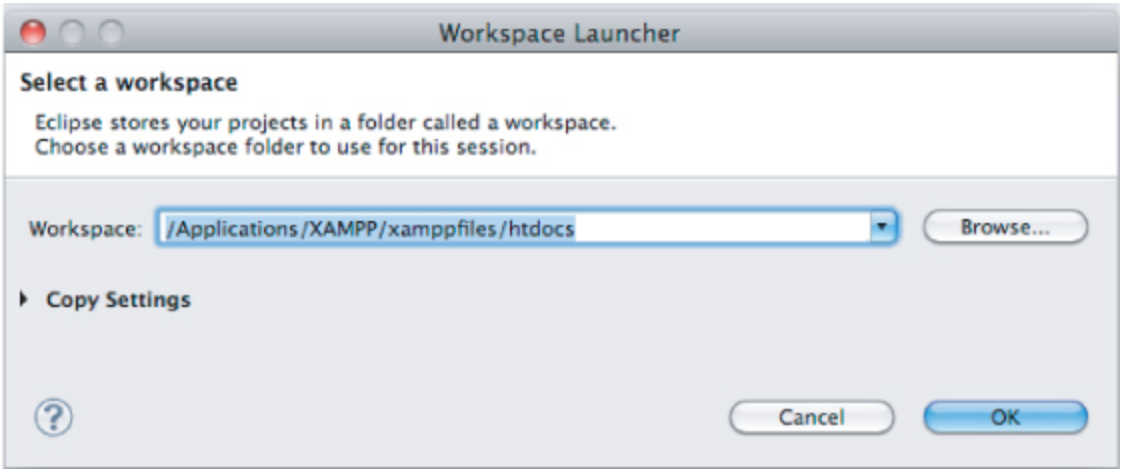
The first time you go into Eclipse, you have to identify an Eclipse workspace. See Figure 1-16. This workspace is the place that you put your files. You use the htdocs folder.

Figure 1-16



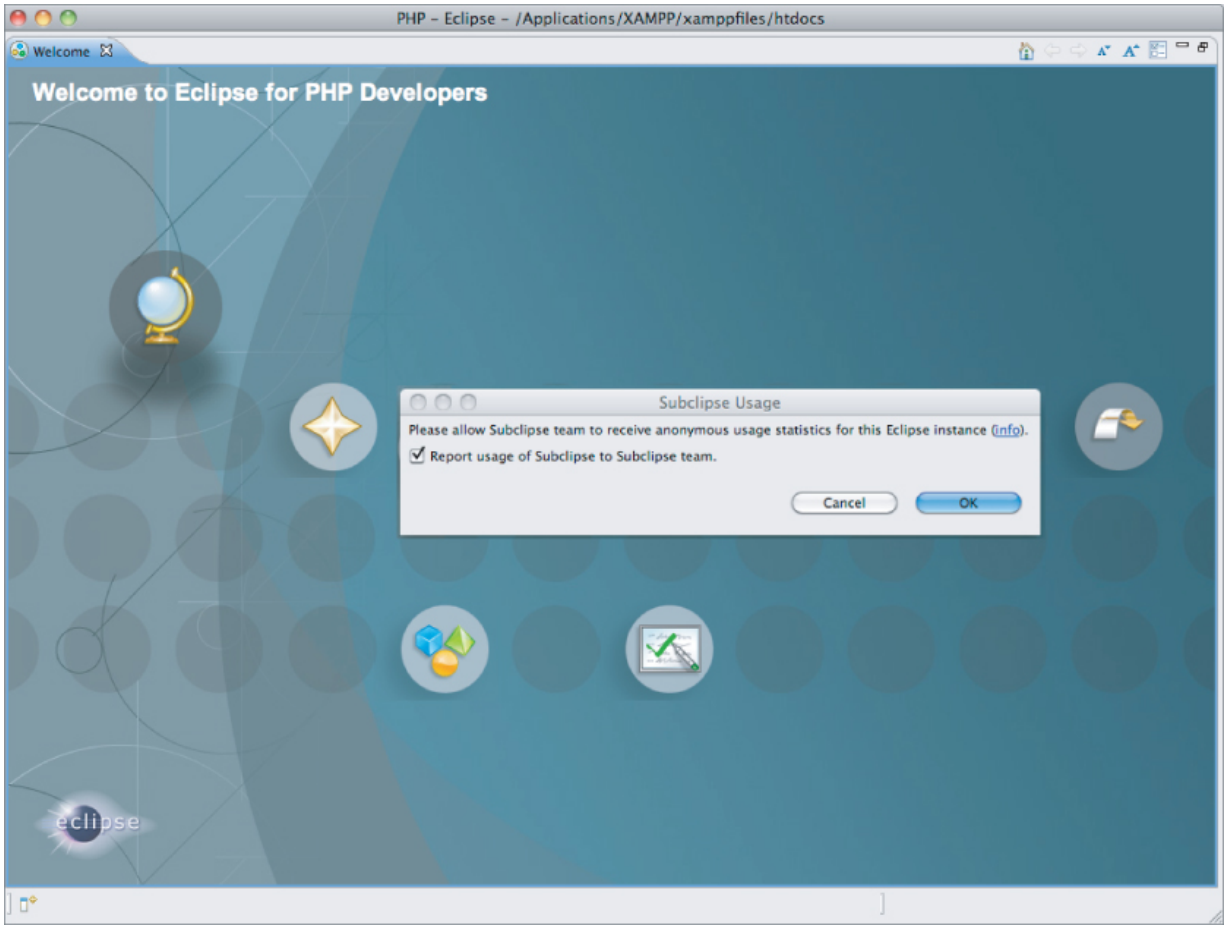
Use the Browse button to locate and accept the htdocs folder. On the PC, if you installed XAMPP in `c:/xampp`, your htdocs file is in the `c:/xampp/htdocs` folder. On a Mac, the path is `/Applications/XAMPP/xamppfiles/htdocs`. See Figure 1-17. Click OK.

Figure 1-17



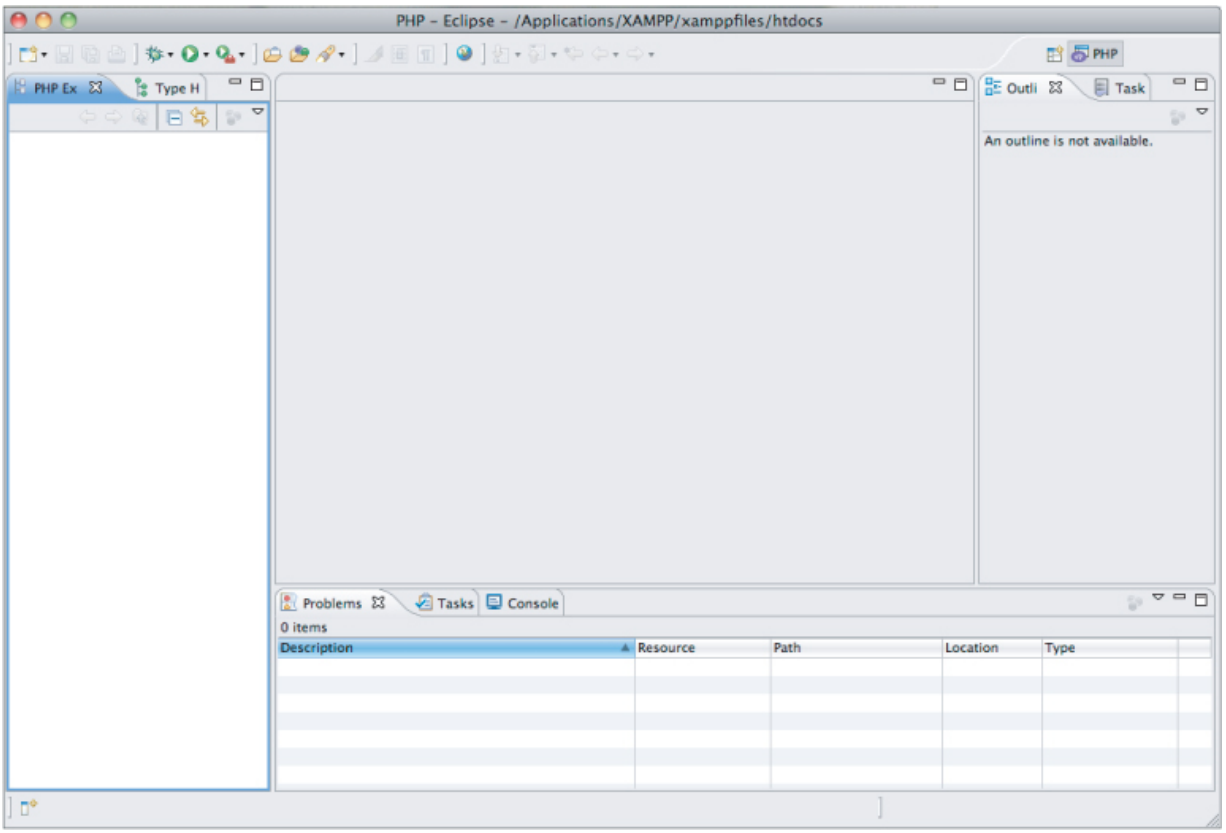
Eclipse displays a splash screen along with a request for permission for Eclipse to collect and send usage information, as shown in Figure 1-18.

Figure 1-18



Uncheck the box if you do not want to have this information collected and sent. Click OK and then close the tab for the splash screen. You see the main workspace for Eclipse, as shown in Figure 1-19.

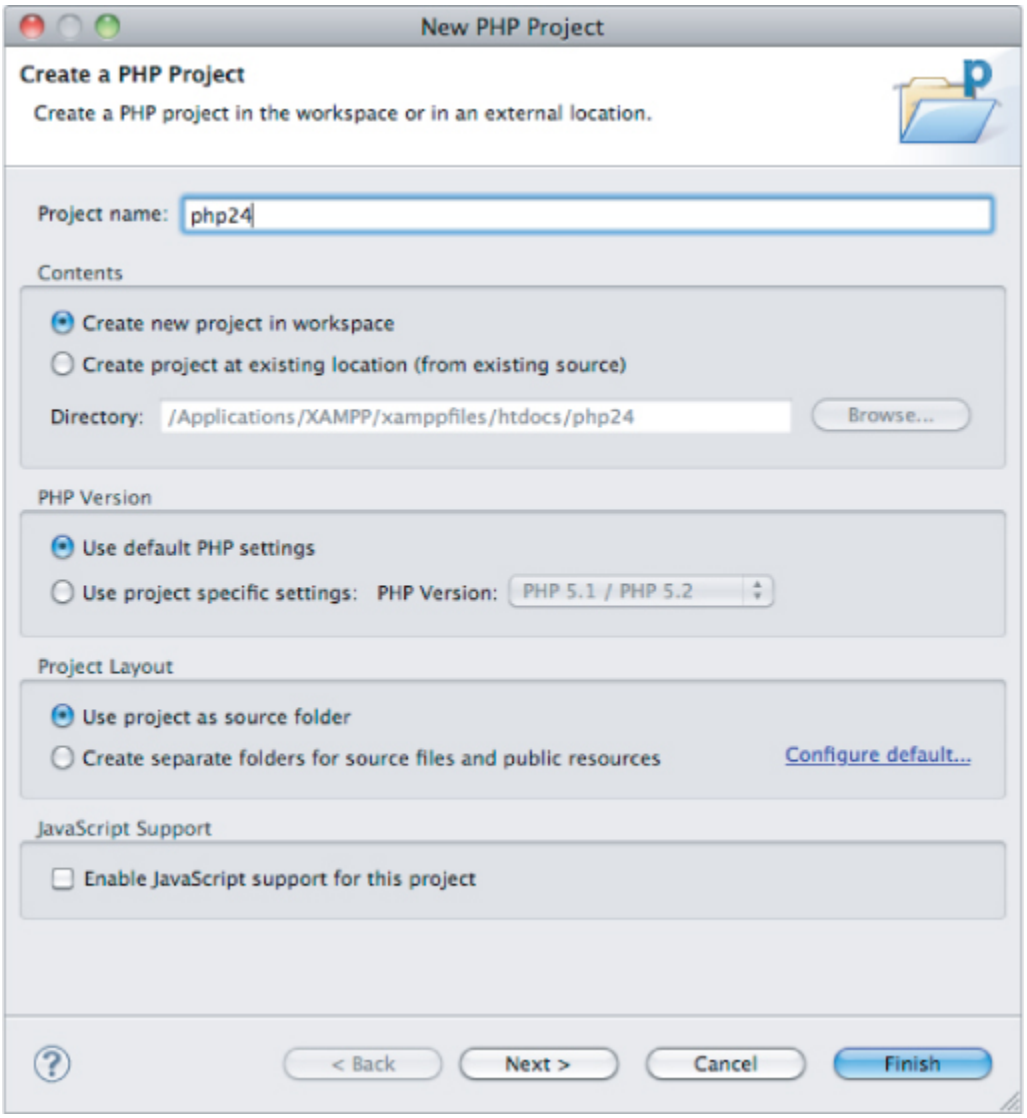
Figure 1-19



Across the top of the window, Eclipse lists the path to the workspace you are in. If you use virtual hosts you can create multiple workspaces, although you can have only one open at a time. To switch between workspaces, or to add a new workspace, use File ⇒ Switch Workspaces. You use only one workspace in this book.

Within the workspace, you have projects. All your folders and files are created inside these projects. To create a project for this book, click File ⇒ New ⇒ PHP Project. You see a screen similar to Figure 1-20.

Figure 1-20



Type in a project name of **`php24`**. You can use what you want here, but this is part of the address you use to call your programs, so short and uncomplicated is best. Leave all the rest as the defaults and click Finish. You should see a screen similar to Figure 1-21.

Figure 1-21