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Moodle as a Curriculum and Information Management System

Use Moodle to manage and organize your administrative duties, monitor attendance records, manage student enrollment, record exam results, and much more

Beginner's Guide

Jason Hollowell

[PACKT] PUBLISHING open source* community experience distilled

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BIRMINGHAM - MUMBAI

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No book is the product of just the author—he just happens to be the one with his name on the cover.

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I am grateful to the Moodle community for continually inspiring me to learn more about educational technologies and fostering an environment where every voice contributes to building that community.

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My wife Hitomi, you fulfill me with peace, love, and happiness; my daughter Hana, you are my sunshine and my daily reminder of the beauty of life.

This book would not have been possible without your love and understanding.

Thank you from the bottom of my heart. 愛しているよ*!*

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Preface

Moodle is the most widely used Learning Management System in the world. Moodle is primarily used as an online learning course platform and few people know how to use it in any other way. However, Moodle can also be used as a management system. By adapting Moodle to become a curriculum and information management system, you can keep your administrative tasks in the same place as your lesson plans by managing student attendance records, recording grades, sharing reports between departments, and much more.

Moodle as a Curriculum and Information Management System will show you how you can use Moodle to set up an environment that enables you to disseminate information about your educational program, provide a forum for communication among all those involved in your institution, and even to control your course registration and enrollment.

This book will show you how to create courses and organize them into categories. You will learn to assign teachers to each course, which will greatly help you to manage timetables and student enrollment, which can otherwise be a very frustrating and time consuming task. You will learn how to display the different aspects of your Curriculum and Information Management System to make it easily accessible and navigable for staff and students alike, ensuring that everyone knows what they are doing and where they are meant to be.

This book is a practical step-by-step guide to expand the functionality of your Moodle Learning Management System.

What this book covers

Chapter 1, *Welcome to Moodle as a Curriculum and Information Management System (CIMS)!*, explains how to expand the use of the Moodle system to function as a portal for information exchange, professional collaboration, and curriculum management.

Chapter 2, *Building the Foundation—Creating Categories and Courses*, explains and demonstrates how to create and organize the courses offered in your curriculum, within Moodle.

Chapter 3, *Student Account Creation and Enrollment*, explains how to create student accounts in bulk and experiment with different ways of enrolling those students in courses on the Moodle site.

Chapter 4, *Incorporating Educational Standards*, introduces and explains some tasks that will enable you to incorporate educational standards in your Moodle CIMS site.

Chapter 5, *Enabling your Moodle Site to Function as an Information Portal*, explores some of the possibilities such as modifying display settings, removing course lists from the category page, increasing the detailed summary settings, and others, through discussion and experimentation.

Chapter 6, *Customized Roles*, explores various methods for monitoring and reporting on student access and performance in the Moodle site.

Chapter 7, *Advanced Data Access and Display*, explores the installation and use of several tools that allow for more advanced methods of accessing data generated and used by your Moodle site.

Chapter 8, *Setting Up a Mini SIS*, explores two different methods of setting up Moodle to function as an SIS.

Chapter 9, *Promoting Efficient Communication*, introduces and explains the strategies for establishing an efficient communication portal through your Moodle CIMS.

Chapter 10, *Advanced Enrollment Plugin*, covers how to enable your site to function as a registration and enrollment system that will allow you to regulate how students matriculate through the set of courses that make up your curriculum.

What you need for this book

- A web browser (Firefox preferred)
- A text editor

Who this book is for

If you are a teacher or head of a department in an institution and are interested in how Moodle can be used to streamline curriculum delivery and information flow in your institution, this book is for you. This book is also useful for Moodle administrators.

Conventions

In this book, you will find a number of styles of text that distinguish between different kinds of information. Here are some examples of these styles, and an explanation of their meaning.

Code words in text are shown as follows: "This will download a compressed package containing all of the files for the block called `myCourses.zip`."

A block of code is set as follows:

```
if (!defined('FRONTPAGECOURSELIMIT')) {
define('FRONTPAGECOURSELIMIT',    200);
```

New terms and **important words** are shown in bold. Words that you see on the screen, in menus or dialog boxes for example, appear in the text like this: "Select your language and click on the **Next** button found at the bottom of the screen."

Warnings or important notes appear in a box like this.

Tips and tricks appear like this.

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1

Welcome to Moodle as a Curriculum and Information Management System (CIMS)!

You are on your way to learn how to expand the use of the Moodle system to function as a portal for information exchange, professional collaboration, and curriculum management.

This chapter will start with the basics by introducing the concepts and helping you to get your site installed and configured. The following topics will be addressed in this chapter:

- A brief explanation of Moodle, its underlying philosophy, and design
- Introduction of the CIMS idea
- Moodle installation
- Basic setup, configuration, and customization of your Moodle site

What is Moodle?

Moodle is a web-based software package that allows you to create an environment in which an educational program can be delivered. What does that mean? Moodle allows you to create course environments where all sorts of education can take place. Moodle is now the most widely used online learning software package with over 49,000 registered Moodle sites as of the first quarter of 2010. It is used by private and public educational institutions ranging from kindergartens to universities as well as by a wide range of businesses, non-profit organizations, governmental bodies, and healthcare facilities for virtually every training and educational program imaginable.

A VLE, LMS, and CMS

There are a multitude of acronyms out there today that claim Moodle as a member of their 'group'. Moodle is categorized as a **VLE** (**Virtual Learning Environment**) or **LMS** (**Learning Management System**) due to its focus on learning and education. Additionally, Moodle is described to be a **CMS** (**Course Management System**), an **LCMS** (**Learning Content Management System**), and sometimes even a **CMS** (**Content Management System**).

Each of these categories of systems has its own unique and defining characteristics but for most of them, there are arguably more similarities than differences. Each is a software package that is installed on a server and set up to be accessed via the Internet or, in some business settings, through an intranet (an in-house network). The majority of them are designed to allow for the creation and maintenance of online learning environments. Two of the most widely used categories of systems that are used to describe Moodle, LMSs, and VLEs, are often used interchangeably, although the term LMS is generally used to describe a system of wider scope that includes the ability to perform administrative tasks involved in education such as reporting, documenting, and analyzing. Moodle's flexibility, in terms of how it can be set up and maintained, is one of the main reasons for its inclusion in virtually every category of online learning software package. In this sense, Moodle is similar to a chameleon that is capable of 'changing its color', or shifting its focus, in order to meet the needs of each institution and user.

Using Moodle as a CIMS

In most institutions, there is a need to maintain data and information related to the education taking place as well as to perform various peripheral tasks that are not directly related to, or are at a macro level to the education itself.

Some examples of this type of peripheral work are:

- Monitoring of student attendance records
- Presenting information of course offerings to students in order that they may make decisions about what courses to take
- Assigning courses to students in programs where students are not allowed to select their own courses
- Controlling which courses, and how many courses, students can register for or enroll in
- Establishing limits on how many students can enroll in a single course
- Delivering and analyzing standardized tests to students within a school or other type of educational or training program and various other educational, administrative, and collaboration-type tasks and activities

As Moodle is designed to be extremely flexible and is provided as an open source package, it is fairly easy to extend, and even stretch Moodle through imaginative uses, installation of third-party contributed plugins, and minor code manipulations to enable it to function as a system that helps to manage an educational curriculum and to support the flow and use of information that is accumulated and digested in such educational settings. As such, Moodle will function as what I call a **Curriculum and Information Management System** (**CIMS**), while simultaneously functioning as an LMS. The CIMS idea encapsulates the various tasks that surround an educational institution and includes functions that are often performed by Portals, **Student Information Systems** (**SIS**), and Content Management Systems (CMS). As a CIMS, Moodle can perform all of the tasks listed in the previous paragraph as well as a host of others that will be introduced in subsequent chapters. Get ready for an exciting adventure in setting up Moodle as your core CIMS and LMS!

Installing Moodle

Moodle installations can be roughly categorized into the following three categories:

- Installation of the XAMPP or MAMP packages
- Simple installation on a hosted web server
- Installation of a LAMP package on an in-house server

For the purpose of demonstrating how Moodle can function as a CIMS, we will walk through the installation and use of Moodle in MAMP and XAMPP packages. It is strongly recommended that you do not use a MAMP or XAMPP Moodle site as a production site (a site that is publicly accessible via the Internet). The MAMP or XAMPP environment is the ideal solution however, for being able to quickly experiment with Moodle on your own computer. If you prefer to experiment on a hosted server or dedicated LAMP installation, please make sure that your site is not available to the public and is not being used by students to ensure that you do not accidentally corrupt data or render your site inaccessible. Once you are comfortable with the methods presented in this book, you can implement them on a live production site. Additionally, the following information is provided as introductory information about preparing an environment in which Moodle can be served. Please visit the documentation area on the Moodle website (`http://docs.moodle.org/en/Main_Page`) for a wealth of information about getting a Moodle site up and running.

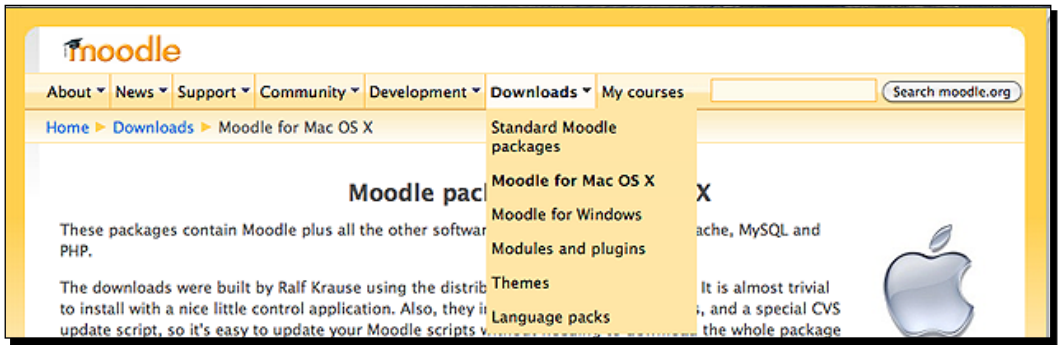
Installing MAMP and XAMPP packages

One of the quickest and easiest ways to get a Moodle site up and running for experimental purposes is to install a MAMP or XAMPP package. These packages consist of web server software (Apache), database server software (MySQL), and PHP and Perl programming language 'interpreters', that all run on your personal computer. This will allow you to run Moodle locally on your own computer. The following instructions will help you get one of these prepackaged local servers running on your desktop or laptop computer.

Time for action – installing the Mac OS X package

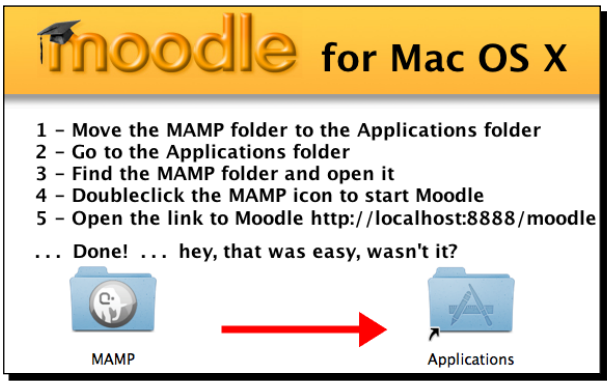
We will install the MAMP variety for Macintosh OS X because it is much more portable than the XAMPP variety. This means that once you have the MAMP folder in your **Applications** folder, all you need to do to use the MAMP package on a different computer is to copy the contents of the directory to the **Applications** folder of another machine running OS X. To install the Mac OS MAMP package, follow these steps:

1. First, go to `www.moodle.org` and move your mouse over the **Downloads** menu item.
2. Mouse over and click on the **Moodle for Mac OS X** link.
3. Then click on the **MAMP package** to start the download as shown in the following screenshot:



4. Once the download has completed, you will have a `Moodle4Mac-MAMP-19.dmg` file to work with. Double-click the file to decompress it. The following screenshot is of the window that will open when the dmg file has been mounted as a folder on your desktop.

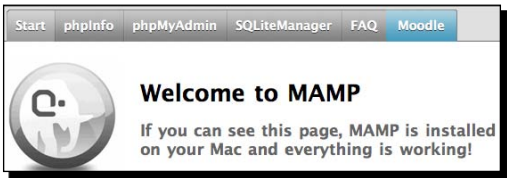
5. Copy the contents of the MAMP package to your **Applications** folder, as instructed in the window.



6. Once all of the contents of the MAMP folder have been copied to your **Applications** folder, double-click on the **MAMP** application, shown in the following screenshot to launch the server control tool:

7. Click the **Start Servers** button to start the servers on your local computer. The Moodle instance contained in the MAMP package is preconfigured to use these servers.

8. The red light, to the left of the server name, will turn green signifying that it is running. The MAMP control tool will automatically open the MAMP startup page in your browser. Click on the **Moodle** tab, shown in the following screenshot, to open your Moodle site in a new page:



What just happened?

You have now installed all of the components necessary to turn your computer into an experimental server for your Moodle site. You also have a prepackaged instance of Moodle that is ready to use the servers you have installed and turned on. You can now jump forward to the *Basic setup and customization of your Moodle site* section in this chapter.

Time for action – installing the Windows package

If you want to install a local instance of Moodle and the required server on a Windows machine, the XAMPP package is the only prepackaged variety available. The installation involves a few more steps than the Mac version but it is a straightforward process. To download and install the Windows version, follow these steps:

1. Click on **Moodle for Windows** from the **Downloads** drop-down menu from `Moodle.org`, and download the latest version.

2. Expand the contents of the package that is downloaded, to the location where you want your Moodle package. You will see a total of four items from the expanded package, as shown in the following screenshot. There will be a **Stop Moodle** icon, a **Start Moodle** icon, a **README** file, and a **server** folder. Detailed instructions can be found in the **README** file.

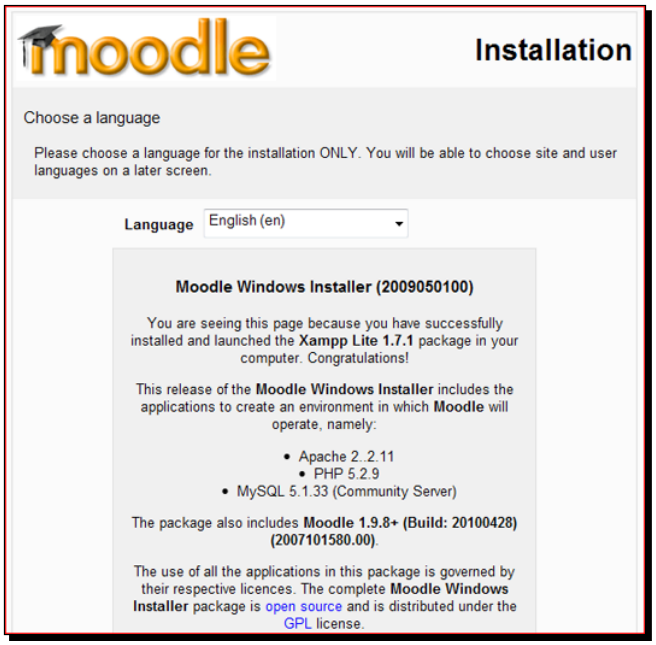
3. Double-click on the **Start Moodle** icon to start the Apache and database servers. A command prompt window with the message "Starting XAMPP" will appear and then after a few seconds the window will disappear. This means the servers are now running. Then proceed to the next step.

4. Navigate to your Moodle site by entering `http://localhost/` into your browser address window.

5. After having started the servers by clicking on **Start Moodle** and typing the local host address into your browser address window, you may get a warning from Windows depending on the browser you are using and how the operating system is configured, about firewall protection. Go ahead and allow the content and bypass any warnings in order to access the site. You have installed the site and are the only one accessing it, so there is no need to worry about it containing possibly malicious content.

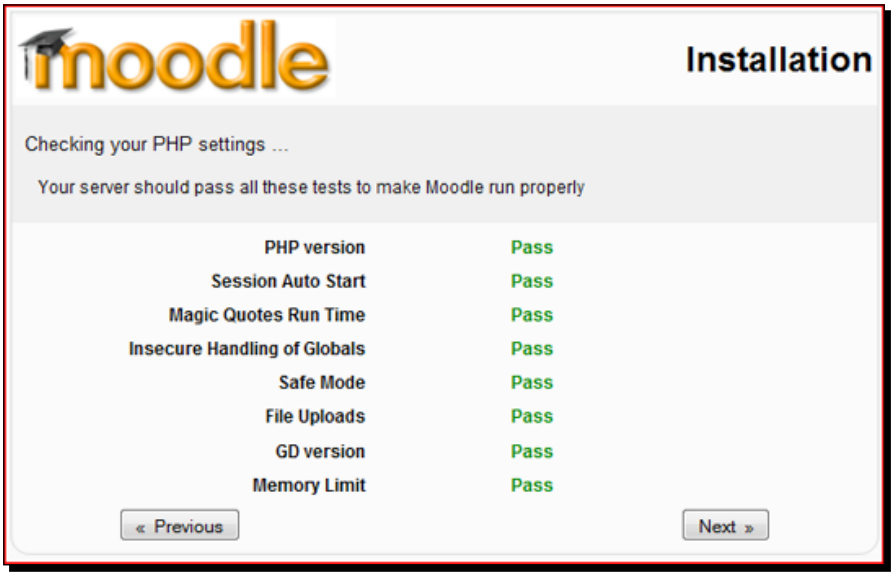
6. You will now be taken to the Moodle installer script. This installation process is the biggest difference between the Mac OS and Windows XAMPP package installations for Moodle. In Windows, you will go through the exact same installation process that you would go through if you were setting up a Moodle site on a hosted or dedicated server. The first screen will prompt you to select a language and provide information about the XAMPP package being used.

7. Select your language and click on the **Next** button found at the bottom of the screen.



8. The next screen, shown in the following screenshot, will display the results of a PHP settings check. Everything should be OK as evidenced by the **Pass** message in green text to the right of each check item. If you get a **Fail** message in red text, you will need to determine the cause of the problem and fix it before you may proceed.

9. Click on the **Next** button to proceed with the installation.



10. The next screen, shown in the following screenshot, will ask you to confirm the locations of the Moodle installation. These will include:

- The web address
- The Moodle directory (where Moodle files are contained)
- The data directory (where Moodle will store data files)

These should be automatically filled in and it is not recommended to change the locations of the two directories unless you know what you are doing

11. If you are using Windows Vista, change the web address setting however, to `http://127.0.0.1`. While localhost and 127.0.0.1 are the same, there is an issue in Windows Vista that sometimes prevents localhost from working properly. As an additional note, once you have these locations set you should not move the Moodle directory or data directory. Doing so will make your site inaccessible until you move the directories back or change the paths in the `config.php` file, which contains directory paths and other fundamental settings for Moodle and is found in the Moodle directory.