Magento 2 Development Essentials

Magento, used by thousands of merchants for their transactions worth billions, provides the flexibility to customize the content and functionality of your website. By strengthening your fundamentals in Magento development, you can develop the best solutions and take advantage of the growing market.

This fast-paced tutorial will provide you with the skills you need to successfully create themes, extensions, and solutions to Magento 2 projects. This book begins by showing you how to set up Magento 2 before gradually moving on to setting the basic options of the Sell System. You will take advantage of Search Engine Optimization aspects, create, design, and customize theme layout, develop new extensions, and adjust the Magento system to achieve great performance. By the end of the book, you will have quickly explored all the features of Magento 2 to create great solutions.

With ample examples and a practical approach, this book will ensure your success with this astonishing e-commerce management system.

Who this book is written for
If you are a PHP developer who wants to improve your skills in e-commerce development by creating themes and extensions for Magento 2, then this book is for you.

What you will learn from this book
- Install and set up the Magento ecosystem
- Choose the best options for Magento’s Sell System features
- Work with Search Engine Optimization in Magento
- Create and customize themes for Magento
- Develop extensions for new Magento functionalities
- Package extensions to publish in the Magento Connect network
- Create Magento solutions for mobile devices
- Carry out performance adjustments to speed up your Magento system

Get up and running with Magento 2 to create custom solutions, themes, and extensions effectively
In this package, you will find:

- The author biography
- A preview chapter from the book, Chapter 1 'Magento Fundamentals'
- A synopsis of the book’s content
- More information on *Magento 2 Development Essentials*
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Digital buyers are improving economies around the world, and information technology (IT) provides the necessary subsides to allow customers to buy services and products over the Internet. According to the research conducted by Statista (http://goo.gl/BSCiuO), in 2016, 1.12 billion people worldwide are expected to buy goods and services online.

Since the launch of Amazon.com, the first commercial-free 24-hour e-commerce website, the universe of software development techniques has evolved, and new approaches are emerging, such as cloud computing—previously no more than an embryonic idea, today a concrete application.

The Magento Commerce company, recognized as the leading e-commerce platform in the 2015 Internet Retailer Top 1000, B2B 300, and Hot 100 lists, is in constant evolution since the first Magento Community Edition (CE) system version in 2008. Launched recently, Magento CE 2.0 has great features and takes advantage of the newest client-server techniques providing a mature e-commerce system and a promising professional area to explore.

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Preface

With ample examples and a practical approach, this book will ensure your success with this astonishing e-commerce management system.

Enjoy the read.

What this book covers

Chapter 1, Magento Fundamentals, teaches you how to create a basic environment, install Magento 2.0, and study some Magento concepts.

Chapter 2, Magento 2.0 Features, helps you discover the features of Magento 2.0 and configure some basic Magento options.

Chapter 3, Working with Search Engine Optimization, provides you with some configuration tips to tweak the Magento options for SEO purposes.

Chapter 4, Magento 2.0 Theme Development – the Developers’ Holy Grail, gives you an overview of theme development and techniques of customizing Magento 2.0.

Chapter 5, Creating a Responsive Magento 2.0 Theme, implements a practical project to create your custom theme.

Chapter 6, Write Magento 2.0 Extensions – a Great Place to Go, provides you with development techniques by implementing a practical project to create your own Magento extension.

Chapter 7, Go Mobile with Magento 2.0!, covers techniques of working with Magento on mobile devices.

Chapter 8, Speeding up Your Magento 2.0, explains good practices to fine-tune your Magento system and environment to gain performance.

Chapter 9, Improving Your Magento Skills, explores the tools and ways to improve your skills in the Magento universe.
Magento Fundamentals

Magento is a highly customizable e-commerce platform and content management system. Magento is one of the most used e-commerce systems to create online stores around the world by providing management of inventory, orders, customers, payments, and much more. It has a powerful scalable architecture.

Are you ready to start on the world of Magento development?

First of all, we will need to set up our environment. In this book, we will cover how to set up a local environment. It is very important to have this local ecosystem development to work smoothly and in an agile way.

In every chapter of this book, we will work with a mini project. It’s kind of a sprint to learn the path. In this chapter, our mission is to create a work environment and understand the basic concepts of Magento (http://magento.com/).

After setting up the environment, you’ll study the Magento folder structure and work on a basic Model View Controller (MVC) software architecture pattern and Magento basic setup.

Basically, we will work on this chapter with the following topics:

- XAMPP PHP development environment
- Magento e-commerce system
- Magento system structure
- Magento basic setup

Are you ready for fun some? Let’s go!
**XAMPP PHP development environment**

The **XAMPP** is a complete web development environment. On its install package, we can find **Apache, MySQL, PHP, and Perl.** This is everything that you will want to develop your solutions!

At this time, you can imagine the meaning of XAMPP, but the X before the AMPP has the meaning of cross or cross-platform. So, we have XAMMP: (X) Cross-platform, Apache, Maria DB, PHP, and Perl.

The goal of XAMPP is to build an easy-to-install distribution for developers to get into the world of Apache. XAMPP is a project of **Apache Friends** (Apache Friends is a non-profit project to promote the Apache web server).

Why we are working with this software? Let’s find out:

- **Apache** ([http://httpd.apache.org/](http://httpd.apache.org/)): This has been the most popular web server on the Internet since April 1995 providing secure, efficient, and extensible HTTP services in sync with the current HTTP standards
- **MariaDB** ([https://mariadb.org/](https://mariadb.org/)): This strives to be the logical choice for database professionals looking for a robust, scalable, and reliable SQL server
- **PHP** ([http://php.net/](http://php.net/)): This is a popular general-purpose scripting language that is especially suited to web development; and, most importantly, it is the main language of Magento
- **Perl** ([https://www.perl.org/](https://www.perl.org/)): This is a highly capable, feature-rich programming language with over 27 years of development

So far so good, but how about doing some action?
XAMPP installation
First of all, let’s access the XAMPP website on https://www.apachefriends.org/.

XAMPP has three distinct versions for different operating systems (OS): Windows, Linux, and OS X. Choose your preferred version to download, and start the installation process.

**XAMPP for Windows installation**
XAMPP for Windows has three different kinds of installation files:

- **Installer**: This is a classic Windows installation method
- **Zip**: This method uses compressed files to install manually
- **7zip**: This method uses compressed files to install manually
The (.exe) installer is the most popular process to install. Download it and execute to start the installation process, shown as follows:


2. On XAMPP, we have the option to use Bitnami (https://bitnami.com/xampp), but for learning purposes, we will install Magento in a classic way.
3. Complete the installation by pressing the **Finish** button.

4. In order to start XAMPP for Windows, you can execute `xampp-control.exe` and start the **Apache** web server.

5. To test if everything is working, type `http://localhosturl` in your favorite web browser. You will see the XAMPP start page:
XAMPP for Linux installation

XAMPP for Linux has two main versions of installation files:

- 32-bit version
- 64-bit version

Choose the file according to your architecture and follow these steps:

1. Change the permissions to the installer:
   ```
   chmod 755 xampp-linux-*installer.run
   ```

2. Run the installer:
   ```
   sudo ./xampp-linux-*installer.run
   ```
   XAMPP is now installed below the `/opt/ampp` directory.

3. To start XAMPP, execute this command on terminal:
   ```
   sudo /opt/ampp/lampp start
   ```

4. To test if everything is working, type the `http://localhost` URL in your favorite web browser. You will see the XAMPP start page:
XAMPP for OS X installation

To install XAMPP for OS X, you simply need to follow these steps:

1. Download the DMG image file.
2. Open the image file to start the installation process.
3. The steps are pretty much the same as Windows installation.
4. To test if everything is working, type the http://localhost URL in your favorite web browser. You will see the XAMPP start page:

   ![XAMPP Welcome Page](image)

   The XAMPP htdocs folder is the docroot folder of your server. Everything that you save on htdocs can be accessed via any browser. For example, if you save index.php inside the htdocs root, you can access this script by entering http://localhost/index.php. If you save your file in the packt folder, you can access it by http://localhost/packt/index.php. Piece of cake!

Magento

Magento is an open source content management system for e-commerce websites. It's one of the most important e-commerce systems, which has grown fast since its launch in 2008.

Basically, Magento works with two different types of Magento: Community Edition (CE) and Enterprise Edition (EE). In this book, we will cover CE.
On a study provided by aheadWorks (https://aheadworks.com/) in October 2014, Magento CE has taken the leading position among examined e-commerce platforms.

Now, we have solid concepts about "where we are going". It's very important to have solids concepts about every aspect that you are working on in this moment. Globally, e-commerce shows a remarkable potential market and Magento professionals are welcome.
Magento installation

First of all, we need to create a user account on the Magento website (http://www.magento.com) to download Magento CE. Click on the top-menu link My Account and after clicking the button labeled Register, fill out the form and confirm your registration.

Once registered, you gain access to download Magento CE. You can access the Products | Open Source/CE and VIEW AVAILABLE DOWNLOADS menus.

<table>
<thead>
<tr>
<th>Download</th>
<th>Release Archive</th>
<th>How to Get Started</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Full Release (ZIP with no sample data)</strong></td>
<td>This is version 2.0.0 of Magento Community Edition. Learn More »</td>
<td></td>
</tr>
<tr>
<td><img src="image" alt="ver 2.0.0 - Added Nov 17, 2015" /></td>
<td>Select your format</td>
<td>DOWNLOAD</td>
</tr>
</tbody>
</table>

| **Full Release with Sample Data (ZIP with sample data)** | This is version 2.0.0 of Magento Community Edition that contains Sample Data. Learn More » |
| ![ver 2.0.0 - Added Nov 17, 2015](image) | Select your format | DOWNLOAD |

| **Download with Composer** | For the first time, the Magento software uses Composer for dependency management. This provides a better overall in-app experience and improved ability to manage processes such as upgrading or managing Magento and third-party components (modules, themes, languages). Learn how to download the Magento 2.0 software archive (built using Composer). |

On this page, we have three important options:

- **Full Release (ZIP with no sample data)**: This is a complete download of the last and stable Magento version
- **Full Release with Sample Data (ZIP with sample data)**: This is important to create example products to our store for testing.
- **Download with Composer**: This is the dependency management installation tool
Choose the **Full Release with Sample Data (ZIP with sample data)** option for downloading Magento. Extract the compressed files in the XAMPP `htdocs` folder and rename the folder to `packt`.

Remember to start Apache and MySQL services on the XAMPP panel before the installation.

Before starting the Magento installation, we'll need to create a new MySQL database instance to store the Magento data. **phpMyAdmin** is a MySQL web app to manage your database and can be accessed at `http://localhost/phpmyadmin/`.

Click on the **Databases** menu and the **Create database** option to create the `packt` database.

Now, let's start our Magento installation. On your browser, access `http://localhost/packt/setup`. 
By now, you will see this installation page on your browser:

Let’s start the Magento installation by following these steps:

1. **Readiness Check**: Check the environment for the correct PHP version, PHP extensions, file permissions, and compatibility.

2. **Add a Database**: Fill the database form with your connection information. By default, you can follow the suggestions given here:

<table>
<thead>
<tr>
<th>Database Server Host</th>
<th>localhost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Database Server Username</td>
<td>root</td>
</tr>
<tr>
<td>Database Server Password</td>
<td>(not always necessary)</td>
</tr>
<tr>
<td>Database Name</td>
<td>packt</td>
</tr>
<tr>
<td>Table prefix</td>
<td>pkt_</td>
</tr>
</tbody>
</table>
3. **Web Configuration**: Enter you store address and admin address here:

![Step 3: Web Configuration](image)

4. **Customize Your Store**: In this step you provide the time zone, currency, and language information:

![Step 4: Customize Your Store](image)

5. **Create an Admin Account**: Enter with personal login information and set the admin address to `packt-admin`.

After all these steps, we are done! Congratulations! We have our first Magento installation!

You can access your new site by accessing the URL at `http://localhost/packt`:
And you can access the admin area by accessing the URL at http://localhost/packt/admin-packt:

For more information about Magento installation, access http://devdocs.magento.com/guides/v2.0/install-gde/bk-install-guide.html.

**Magento MVC architecture**

MVC is an architectural software pattern that works with three different but interconnected parts. Its principal mission is to abstract the development work into interdependent layers providing the best practices to documentation and organization of software projects.

The Magento e-commerce solution is written with the PHP Zend framework, which is one of the most powerful PHP frameworks. For more information, access http://framework.zend.com/.
Magento is a configuration-based MVC System. For example, when you develop a module (we will check this in the next chapters), besides creating new files and classes to your module, you need to also create a config.xml file. This file contains all the configuration data for Magento module. These practices abstract some important information that you can easily edit to set the module as you need.

In this book, we will cover only the very basic Magento software architecture concepts, but it's highly recommended that you to study more software design patterns, especially in our case MVC software architecture needs to be understood well to best experience the field of software development.

Summary
You’ve now seen what Magento can do; you have installed Magento too. You started to understand the basic concepts of Magento, and certainly, you’ll get more experience in developing your own Magento solutions by working in the projects of this book.

In the next chapter, we'll work with some Magento Sell System features.
Where to buy this book

You can buy Magento 2 Development Essentials from the Packt Publishing website.

Alternatively, you can buy the book from Amazon, BN.com, Computer Manuals and most internet book retailers.

Click here for ordering and shipping details.