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CODE  >  OPENCART

# From Beginner To Advanced in OpenCart: Understanding MVC

by Zaman Riaz   14 Aug 2014

Difficulty: Intermediate   Length: Short   Languages:  English ▾

OpenCart    Back-End    PHP    MVC    CMS

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This post is part of a series called From Beginner To Advanced in OpenCart.

◀◀  From Beginner To Advanced in OpenCart: The Architecture

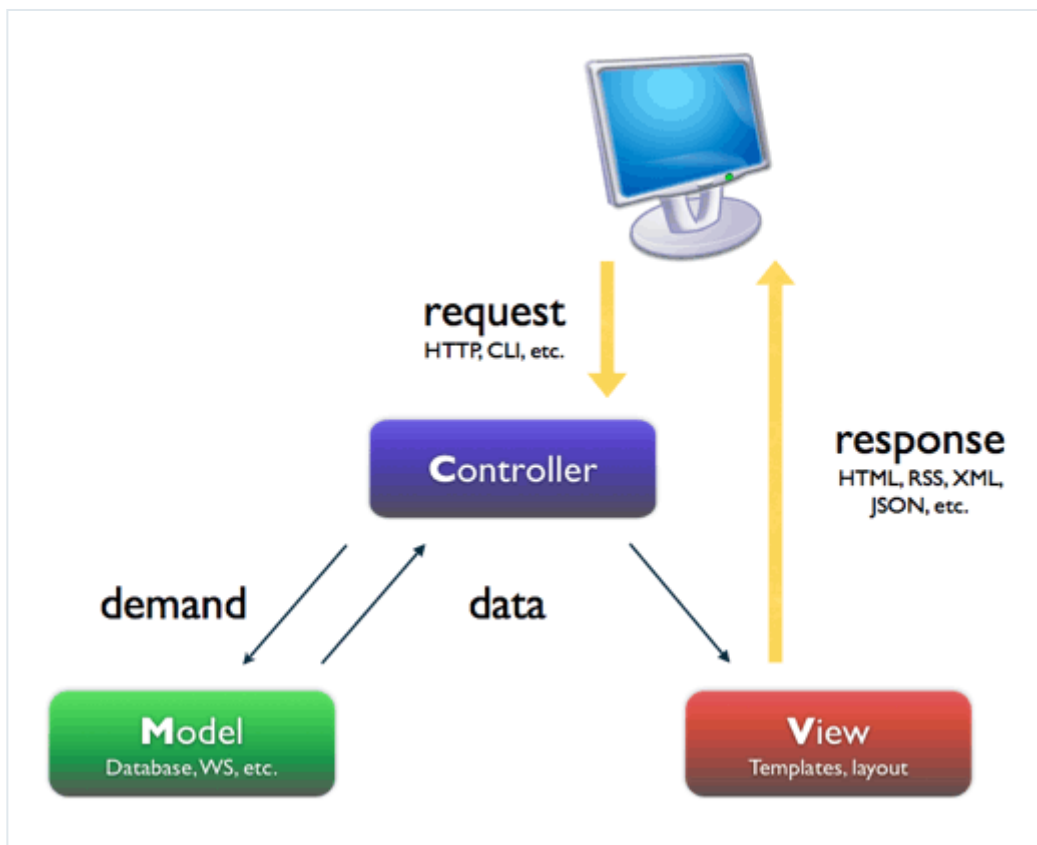▶▶  From Beginner to Advanced in OpenCart: Module Development

In the previous tutorial, we discussed some of the basics for understanding the core OpenCart application. In this article, we are going to continue the discussion of the design pattern employed by OpenCart and even write our own controller.

Before understanding the code architecture in OpenCart, We'll first examine the Model-View-Controller (MVC) Architecture.

# What is MVC?

In modern web programming, the MVC architecture is widely used. Many of the most popular frameworks employ MVC; however, it is not an application, it is a design pattern - a prescribed solution to a common problem organized in code.

Similarly, It is also known as an architectural pattern. MVC can be considered as layer based architecture. That is, the controller, model, and view are three layers all of which are related to one another.



## 1. Controllers

Controllers hold the main control of the program. A controller is responsible for the program flow. In web-based MVC applications, it is also the first layer which is called when the browser hits the URL.

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## 2. Models

Models hold the main data of the program such as information from database objects and SQL queries. All data is gained from the models; however, the models cannot be directly called - it is a controller who requests a model for specific data and the model performs the request and returns the data to that controller.

## 3. Views

A view is the last layer of the MVC Architecture which holds the user interface of the program. In web applications, a view contains HTML, CSS, JavaScript, XML or JSON, etc. The view is a visible layer to the user whereas the models and controllers are hidden from the user.

Let's understand that with the help of conversation form when a user hits the URL:

- **Controller:** Hey ABC Model: The user wants the XYZ Data, please pass it to me.
- **Model:** Got the XYZ Data! Here it is.
- **Controller:** Hey ABC View, I am passing the XYZ Data to you.
- **View:** Renders the information on the page for the user to see.

# Understanding MVC in OpenCart

## 1. Controllers

As discussed above, A controller is the first layer of MVC Architecture. So let's take a look at this within the context of our site. We are going to create a new controller to help us gain a better understanding.

1. Create a empty `test` directory in controllers directory i.e., `catalog/controller/test`.
2. Create a `abc.php` PHP File inside the `test` directory i.e., `catalog/controller/test/abc.php`.
3. Edit the `abc.php` in your IDE and add the following code:

```php
<?php
class ControllerTestAbc extends Controller{
        public function index()
        {
                echo 'Hello World';
                exit;
        }
}
?>
```

In above example, there are some OpenCart Framework constraints that should be strictly followed by the programmer.

1. For a controller class name, It should be Like `Controller(FolderName)(Filename)`. Things to Remember: The first case of folder name and filename must be in uppercase, and don't include file extension as a class name.
2. The `index()` is the main function that is executed automatically on controller call
3. `index()` function must be public.
4. Don't use HTML, JavaScript, or CSS in the controller

Now go to your browser and type the URL: `http://localhost/Opencart/index.php?route=test/abc`

# Summary

Bingo! You've made your first controller. Isn't it easy? This is fair enough for this tutorial as we created our first controller! A controller is the first and most important layer of MVC because MVC can exist without the model and view but not without the controller.

In our next article, we'll be creating models and views as well as taking a look the route parameter with respect to controller. I hope that you've enjoyed this article. Happy Coding!

## Zaman Riaz

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Zaman Riaz is a Young Entrepreneur, Author, Problem Solver, Passionate in IT Business & Top-Notch Web Developer. He is passionate about programming & Business. He is also running a leading Software Design & Development company (Querylogics) and providing the Excellent Services to his Clients around the Globe.

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Short and to the point tutorial about MVC. Looking forward to next article.
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    **zamanriaz** ➜ Milan Kaneria • 5 years ago
    Thank you **@Milan Kaneria**
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**Sam Sahoo** • 4 years ago
OMG I always felt sleepy when reading about controllers, in other tutorials. But you just woke me up. Thanks a Ton!!!
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    Thanks **@Sam Sahoo**! you got it bro!
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**OnIn Store** • 5 years ago • edited
Hi Zaman,

Really loved your article. This is the information I was after. Really glad that someone did it.

Thanks again for your article.
Mike.
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**Vijay Joshi** • 5 years ago

Looking forward to the next tutorial... I hope in next tutorial I get to lear about model and views also...

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**Keos** • 2 years ago • edited

Sorry... I make a mistake! Is working...

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Thank you very much. how about view and model where can i get good tutorials ?

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**Robert Ji** • 3 years ago

good tutorial for OPENCART! I like it!

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**Ashish Dhamala** • 3 years ago

Wow. This was the only article that helped me to understand MVC. Thanks a lot

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**anurag** • 3 years ago

i am working in order.php page in controller

so i am create new function

so how to get order_id and seller-id of another function in same file

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I want to add vehicle delivery detail but igot some errors

1)Notice: Undefined variable: vehicle_id in /var/www/html/Dinesh/opencart_2.2/admin/view/template/sale/order_info.tpl on line 218

2)Notice: Undefined variable: entry_vehicle in /var/www/html/Dinesh/opencart_2.2/admin/view/template/sale/order_info.tpl on line 230

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you make things easy bro thanks again

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**stdps1080** • 5 years ago

Another Great tutorial !

surprised to see all Indians in this thread , LOL !

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**Divya** • 5 years ago

How to use library in opencart extensions. i am developing a messaging notification module.
and written sendsms() function in library now how to use it in my extension
http://springedge.com

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**Vishwa** • 5 years ago

Hi, Where is the model & view creation tutorial? The next article says "we examined and
created our first controller, model, and view" while in this article, we have created controllers
only. Did I miss something?

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**ranjeet** • 5 years ago

nice article.. but result rendering in next page, if we want to render same page(home) page then
what we have to do?

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