Lightweight MVC Framework in PHP

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Abstract - *PHP (Hypertext Preprocessor) is widely used open source general purpose scripting language that is especially suited for web development and can be embedded into HTML. In object oriented programming development, model-view-controller (MVC) is the name of methodology or design pattern for successfully and efficiently relating the user interface to underlying data models. This paper introduced a Lightweight Model-View-Controller of PHP programming format. The lightweight MVC format of php is adjustment based on traditional PHP programming format which was added in the MVC architecture.*

Key Words: **PHP, Lightweight MVC, OOPS, HTML, Framework in PHP**

1. INTRODUCTION

Object Oriented Programming, or OOP, refers to the method of programming that invokes the use of classes to organize the data and structure of an application. Object-Oriented Programming (OOP) is a programming model that is based on the concept of classes and objects. As opposed to procedural programming where the focus is on writing procedures or functions that perform operations on the data, in object-oriented programming the focus is on the creations of objects which contain both data and functions together. It is used to manage dynamic content, databases, session tracking, even build entire e-commerce sites. PHP supports a large number of major protocols such as POP3, IMAP, and LDAP. PHP4 added support for Java and distributed object architectures (COM and CORBA), making n-tier development a possibility for the first time.

The MVC pattern has been heralded by many developers as a useful pattern for the reuse of object code and a pattern that allows them to significantly reduce the time it takes to develop applications with user interfaces. The MVC pattern has been heralded by many developers as a useful pattern for the reuse of code and a pattern that allows them to significantly reduce the time it takes to develop applications with user interfaces.

Lightweight MVC development framework, which can not only effectively improve the efficiency of system development and reduce the complexity of the development, but also have good improvements in the security, stability and robustness of the system.

2. PHP AND MVC FORMAT:

The PHP and MVC format has own properties and function which are described below:

2.1. Typically PHP Programming

PHP is probably the most popular scripting language on the web. It is used to enhance web pages. With PHP, you can do things like create username and password login pages, check details from a form, create forums, picture galleries, surveys, and a whole lot more. If you've come across a web page that ends in PHP, then the author has written some programming code to liven up the plain, old HTML.

The PHP software works with the *web server,* which is the software that delivers web pages to the world. When you type a URL into your web browser's address bar, you're sending a message to the web server at that URL, asking it to send you an HTML file. The web server responds by sending the requested file. Your browser reads the HTML file and displays the web page.

You also request a file from the web server when you click a link in a web page. In addition, the web server processes a file when you click a web page button that submits a form. This process is essentially the same when PHP is installed. You request a file, the web server happens to be running PHP, and it sends HTML back to the browser,

According to Fig-1, client web browser is send request to web server. Web server is accept this request and send information to PHP Preprocessor as PHP form. After processing, it shows the output as HTML form on Web Server and Client Web browser accept HTML form from Web Server and it display the HTML page as output.
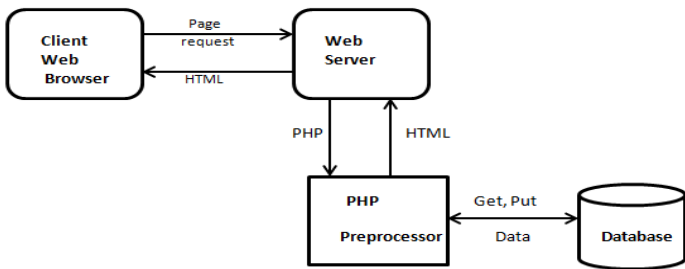
Fig -1 : Work of PHP with HTML

However, PHP's true strength lies in its ability to access databases. PHP can access more than 20 different databases (including MySQL), and can manipulate the information within those databases based on input from an online user. PHP can also be used to output images, PDF files and even Flash movies from your website.

2.2 MVC Format

MVC, or Model-View-Controller is a software architecture, or design pattern, that is used in software engineering, whose fundamental principle is based on the idea that the logic of an application should be separated from its presentation. In this format, MVC has part and each part has it's own function.

Model : This part is manage the business logic and the application data. It can be used to perform data validations, process data and store it. The data can come from flat file, database, XML document and Other valid data sources.

View: This part is suitable for interaction, typically a user interface element. This part deals with presenting the data to the user. Multiple views can exist for a single model for different purposes.

Controller: This part is represents the classes connecting the model and the view, and is used to communicate between classes in the model and view. Controller is receive input from user and instruct model and view perform action and this action is depend on input.
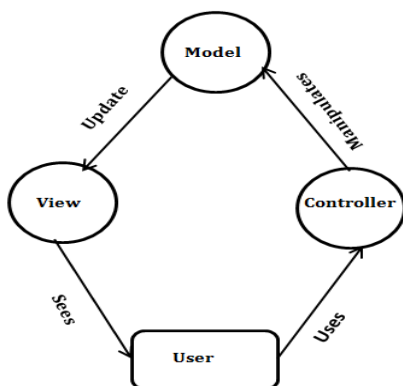

Fig-2: MVC Pattern

In Fig-2, MVC pattern is represents to the user, in a web application as a output. In this pattern, the controller holds a reference to both the model and a data store and is responsible for keeping the model persisted. The controller responds to lifecycle events like Load, Save, Delete, and issues commands to the data store to fetch or update the model. A slightly different take from having a model handle the persistence is to introduce a separate concept of Store and Adapter API. Store, Model and Adapter (in some frameworks it is called Proxy) work hand by hand. Store is the repository that holds the loaded models, and it also provides functions such as creating, querying and filtering the model instances contained within it.

3. Lightweight MVC:

This section is presenting Lightweight MVC which is take those things, readability, maintainability, efficiency, reconfigurable. Lightweight MVC is also called as MVC-Like or L-MVC. By using this framework, the project will be more maintainable, reliable and coding is very clear and easy for understand.
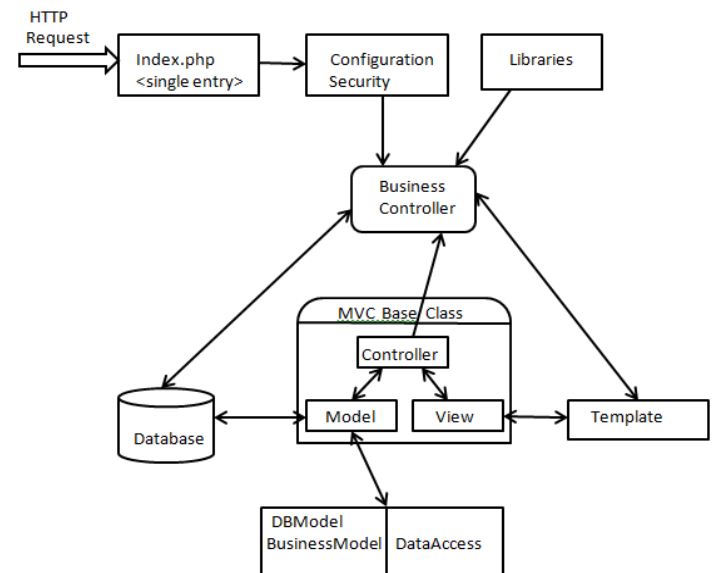

Fig-3: Lightweight MVC Framework

Fig-3 is indicate Lightweight MVC architecture which is consist multiple sections like index page, security, libraries, business controller, MVC base class, database and template. It also can give full advantages of the MVC pattern.

Index.php :

Index file is always initializing resource which is L-MVC framework needed including the configuring file. According to parameter in the URL, the corresponding

controller BusinessController is found. HTTP request and submitted data will be sort before controller loaded.

```php
<?php

 require_once(dirname(_FILE_)."config/config.php");
 require_once(CONFIG_PATH."autoload/autoload.php");
 $App = new App();
 $App -> run();

?>
```

Model Layer :

The model is representing business logic and data of an application. It is responsible for storing, deleting and updating the application data. This operations are included database operations. The logic of operation and business operation will be implemented together.

DataAccess class is included to encapsulated database operation method, in which the database can be automatically linked and released in the lightweight MVC framework.

DataAcess is implement with programming as follows:

```php
Class DataAccess {
protected $host_name ;
protected $user_name ;
protected $password;
protected $database_name;
```

is simply collector of information, which is passes to Model to arranging the storage without containing logic. The controller takes request and execute it and invoke model. The model is send request to presentation layer.

View Layer :

The View is working as presentation layer. This layer is use for formatting data which is received from model. The Controller, Model and View Connected to each other but developed and maintained separately. The View is uses template mechanism and this template mechanism can reuse specific part of page.

3.1. Pros of Lightweight MVC Framework :

• Get exact functionality you want.
• Control over small details important to your project.
• Familiarity with code.
• Fast development.
• Fast modification.
• Low maintenance.
• High speed of execution.

```php
protected $database;
protected $query;
protected $result;
protected $result_array = array();

Function _construct($host_name, $user_name,
$password, $database_name)
{
 $this -> host_name = $host_name;
 $this -> user_name = $user_name;
 $this -> password = $password;
 $this -> database_name = $database_name;

mysql ($this -> host_name, $this -> user_name, $this ->
     password, $this -> database_name);

 if(!$this -> db)
 {
 throw new Exception("Can't connect database");
 }
 $this -> db ->query("set name");
 }
```

The data deal with Model and send back to the Controller then via View to the controller.

Controller Layer :

Controller is handling data that the user inputs or submit and update the Model. The controller accepts the input and view to perform action according on input. The controller is core class of lightweight MVC framework. The controller

• Security.
• Extreme simplicity.
• Reliability in regard to future development.

3.2 Cons of Lightweight MVC Framework :

• You should have real understanding of programming.
• It is tedious task for large and very custom websites.
• Less inbuilt support.

4. CONCLUSION

Lightweight MVC Framework is very useful and most used in IT industry. This paper introduced that the Lightweight MVC Framework is working with PHP and oops concept and Lightweight MVC hast its own functions and properties. This technology can save you a lot of time and effort and provide peace of mind as you develop your PHP application. By studying lightweight MVC framework is an excellent way to learn and improve your craft in software development and help you stay on top of the evolving world of PHP and framework development.

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