Webpage Generation from Enhanced Content Management System using PHP Data Objects

Pardeep Kumar[*], Anupama Kaur
CSE Department, SUSCET Tangori Punjab, Punjab Technical University,
Jalandhar, Punjab, India

Abstract— Databases, what would web applications be without them, especially when we're working with Hyper Text Pre Processor (PHP). For Modern Applications there is a wide variety of data sources that are available in market. For managing data or information there's flat files, like Comma Separated Values (CSV) or text files. There's databases, like My Structured Query Language (MySQL), PostgreSQL, Oracle, Firebase, Sybase, and MS SQLServer etc. Then there's the newer NoSQL data sources, which include Hadoop, Redis, Cassandra, and MongoDb, amongst a range of other options. The safer way of sending the data to MySQL is using the prepared statements, as it prevent from getting hacked using SQL injection. This is the main reason why one should always prefer MySQLi or PDO method over MySQL. MySQLi is procedural as well as object oriented whereas PDO in Object Oriented Method. For programming object oriented programming, MySQLi and PDO and we know a lot has already been talked about how useful Object method is very much useful. MySQLi and PDO supports multiple Statements, Complex Transaction statements and has enhanced debugging capabilities and embedded server support. In this research, it is preferred to use PHP Data objects (PDO) over MySQLi as MySQLi method works on a single database which is MySQL whereas PDO method supports over 12 type of Databases. That means for shifting information from one database to another is quite easy. In research it is also found that the performance of using PDO method is far better as compared with MySQLi method.

Keywords— HyperText Pre-Processor (PHP), PHP Data Objects (PDO), My Structured Query Language (MySQLi), MySQL, Database

I. INTRODUCTION

From the beginning when WWW - World Wide Web is invented i.e. in 1990 by a CERN – Conseil Européen pour la Recherche Nucléaire physicist named Tim Berners-Lee (Berners-Lee & Fischetti 1999), it has been playing an important role in people's life and growing day by day. It started from a file sharing method i.e. on 2008, nowadays web services play multiple roles such Amazon defining service on online store, a place where to share different ideas (i.e. in forum), a place where anyone can upload his/ her own video and share it with worldwide (i.e. with the help of Youtube), a place like community centre (i.e. Facebook), and many more are exists. In the field of business i.e. for an organisation, a website helps in the promotion of its services and products, the company's background, and news related to the organisations activity. As developing and maintaining a website is technically not done for many people working in that organisations and it is the major problem for same, the CMS - Content Management System comes in to help organisations to manage their website.

Basically a Content Management System is a computer program that helps us or users to manage, publish, edit and modify the content as well as maintain it from a central interface (Boiko 2005; Rockley, Kostur, & Manning 2003; White 2005). One of the main features is a Web CMS which revolves around different contents of organisations that are deployed on the Web. Also this feature allows all non-technical users to control easily and manage website of an organisation with ease. Further CMS also has other features to its name, this thesis will focus on the Web part of this computer program.

II. MY STRUCTURED QUERY LANGUAGE IMPROVED (MYSQLI)

My Structured Query Language Improved (MySQLi) is an extension for PHP Language, and often it is referred to as MySQL improved. It was introduced in PHP 5.0, and till now it will be in every version of PHP following (until something better comes along). It also allows you to use all of the MySQL database (i.e. version 4.1.3 or newer) servers features. Some features of MySQLi are (from the PHP manual):

- It's object oriented interface, making it easier to use
- Support for prepared statements, helping secure you code
- Support for multiple statements, allowing you to run more than one query at a time

MySQLi has procedural as well as object oriented interface. Making it even more widely usable.

Example of connection with the object oriented method:

```
<?php
$sql = new mysqli('localhost', 'username', 'password', 'database');
?>
```

Example of connection with the procedural method:

```
<?php
$link = mysqli_connect('localhost', 'username', 'password', 'database');
?>
```

III. PHP DATA OBJECTS (PDO)

PDO is an acronym for PHP Data Objects. PDO is a lean, consistent way to access databases. This means developers can write portable code much easier. PDO is not an abstraction layer like PearDB. PDO is a more like a data access layer which uses a unified API (Application Programming Interface).

Database Support:-

The extension can support any database that a PDO driver has been written for. At the time of this writing, the following database drivers are available:

- PDO_DBLIB (FreeTDS / Microsoft SQL Server / Sybase)
- PDO_FIREBIRD (Firebird/Interbase 6)
- PDO_IBM (IBM DB2)
- PDO_INFORMIX (IBM Informix Dynamic Server)
- PDO_MYSQL (MySQL 3.x/4.x/5.x)
- PDO_OCI (Oracle Call Interface)
- PDO_ODBC (ODBC v3 (IBM DB2, unixODBC and win32 ODBC))
- PDO_PGSQL (PostgreSQL)
- PDO_SQLITE (SQLite 3 and SQLite 2)
- PDO_4D (4D)

All of these drivers are not necessarily available on your system.

Different databases may have slightly different connection methods. Below, the method to connect to some of the most popular databases are shown. You'll notice that the first three are identical, other than the database type - and then SQLite has its own syntax.

```
try {
# MS SQL Server and Sybase with PDO_DBLIB
$DBH = new PDO("mssql:host=$host;dbname=$dbname, $user, $pass");
$DBH = new PDO("sybase:host=$host;dbname=$dbname, $user, $pass");
# MySQL with PDO_MYSQL
$DBH = new PDO("mysql:host=$host;dbname=$dbname", $user, $pass);
# SQLite Database
$DBH = new PDO("sqlite:my/database/path/database.db");
}
catch(PDOException $e) {
echo $e->getMessage();
}
```

IV. CONCLUSIONS

Content Management System is important during the development of a web application. As it manages the content that is provided by user and which is then saved in the Database. Front-end is defined for the user to view the content that is accessed from the Database and displayed the content in HTML format by using PHP Data Objects. Enhanced CMS as compared to other CMS available in using the concept of Enhanced CMS whereas others are using Sequential Query Language. The performance on the basis of Response time and Webserver Load Performance Stress Test, Enhanced CMS works better as compared with CMS using MySQLi method.

V. FUTURE SCOPE

This research outlined the way of providing the environment of PHP Data Objects to the Content Management System. In this work author used MySQL as a Database. This technique can be used for more complex and bigger applications. In future, the approach can be employed to other Databases too, as PHP Data Objects support 12 different databases. In this research author have taken the parameters of response time and Webserver Load Performance Stress Test. In future research can be extended by introducing new parameters like fault coverage in the presence of other parameters as well.

REFERENCES

[1]   Antonio Tapiador, Joaquín Salvachúa (2010) CONTENT MANAGEMENT IN RUBY ON RAILS.

[2]   Bandor, M. S. (2006). Quantitative Methods for Software Selection and Evaluation. Acquisition Support Program.

[3]   Berners-Lee, T., & Fischetti, M. (1999). Weaving the Web: The Original Design and Ultimate Destiny of the World Wide Web by its inventor. Britain: Orion Business.

[4]   Boiko, B. (2005). Content Management Bible. John Wiley & Sons.

[5]   Byeong Jeong Kim & Seop Hyeong Park Advanced Science and Technology Letters Vol.90 (Multimedia 2015), pp.62-67.

[6]   Carpp, J. (2009). Enterprise Software Selection. ISACA Conference.

[7]   Castro, J., & Alves, C. (2013, February 18). Selecting COTS Products Using a Requirements-Based Approach.

[8]   Lee, B. (2006). Content Management Systems (Vol. 24). Bradford, Great Britain: Emerald Group Publishing Ltd.