A Comparison between Open-Source Server-Side Scriptinglanguage JSP & PHP based on Page Load Time

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ABSTRACT: *Many server-side scripting languages exist for developing client-server architecture-based applications. Some server-side scripting supports open-source development environments. Some server-side scripting languages support license-based development environments. Languages for server-side scripting, such as PHP and JSP are freely available. ASP is a license-based scripting Language The research Papers will focus on a comparison of two open-source JSP and PHP based on their Page Load Time.*

Keywords: *Server-side scripting, Open -Source, Load Time, PHP, JSP, JMeter.*

I.INTRODUCTION

The client-server architectural model is used by the website. One computer function as a server and the other computers function as clients in the client-server architecture. The machine acting as the server answers client computers' HTTP requests. (Nourie, 2006).

The Two languages are used in web development. One is client-side development Which HTML, DHTML, and CSS languages are involved. Other languages are server-side scripting such as PHP, JSP & and ASP. Server-side scripting languages fulfill the HTTP requests of clients

For using the open-source Server-side scripting language like PHP & JSP developers need not purchase a license. They can use it freely. (Botwe & Davis, 2015)

The Server-Side Scripting language like JSP that uses Java as a supporting language. Its goal is to allow the developer to use the features of Java in developing web applications. (Hanna, 2002).

PHP (Hypertext Preprocessor)is used in lightweight web development and is used to access many databases and other middleware. (Lerdorf, 2002).

In this paper, our attention is on the comparison. between two Server-side scripting languages: PHP and JSP based on page load Time. Load testing is performed by using the JMeter Load Test.

II. LITERATURE SURVEY

(RAJENDRAN, et al., 2010) has analyzed the program's various structure of server-side scripting languages and concluded that the choice of programming language will depend on the suitability of programmers.

(Mishra, 2014) has analyzed the difference between ASP.NET and PHP. They have determined that there are certain architectural distinctions between PHP and ASP.

(Sharma, 2015) has tried to relate ASP architecture with PHP and determined that ASP has some debug and deploy issues therefore it is used with Minor scale projects. PHP is IDE-independent. So, it is used with big projects.

(Patel & Pancholi, 2018) have compared the model view controller of ASP & PHP based on certain attributes and concluded that the ASP page has better load time as compared to PHP.

(Haris & Hasim, 2019) have analyzed twenty-three features of dissimilar IDEs. The selection of PHP. server-side scripting language framework depends on the web application requirement.

(R.Pavithra & Kumar, 2019) have explored the advantages of PHP and MYSQL Data Base Server. Also, explore the benefits of PHP frameworks for web development.

(Odeh, 2019) has determined that there are not fixed criteria for selecting any server-side programming language. The comparison is based some facture like cost, editor and deployment.

(Ranjan, et al., 2012) have done Load test on the basis of execution time parameter on four project All projects are coded in predefined functions and built-in code. and determined that no server-side scripting is better based on execution time.

(Trent, et al., 2008) have used the SPECweb2005 benchmarks testing load tools to do a load test on the identical application that was developed in both PHP and JSP. The three-performance metrics are CPU utilization, throughput, and run time. The outcomes for both programming dialects are something very similar.

(Botwe & Davis, 2015) have presented the comparison on the performance of ASP, JSP, and PHP on the amount of time it takes for a network to execute HTTP requests using a network Analyser Tool and concluded that JSP has the better outcome of User HTTP requests through the POST Method and ASP has better performance through the Get Method.

III. PROBLEM STATEMENT

Two open-source server-side scripting languages PHP & JSP are compared based on page Load Time Parameter.

IV.   AIM AND OBJECTIVE

To accomplish the aforementioned goals, the following targets have been set.

1. To compare the server-side scripting languages, PHP and JSP, in terms of page load speed.
2. To suggest the programmer for selecting server-side scripting language based on Page Load Time.

V. MVC Model of Hypertext Preprocessor (PHP)

The acronym for Hypertext Preprocessor is PHP, an open-source scripting language used to create webpages that are directly understood by web browsers. Its programming structure is straightforward, and based on commands and variables.
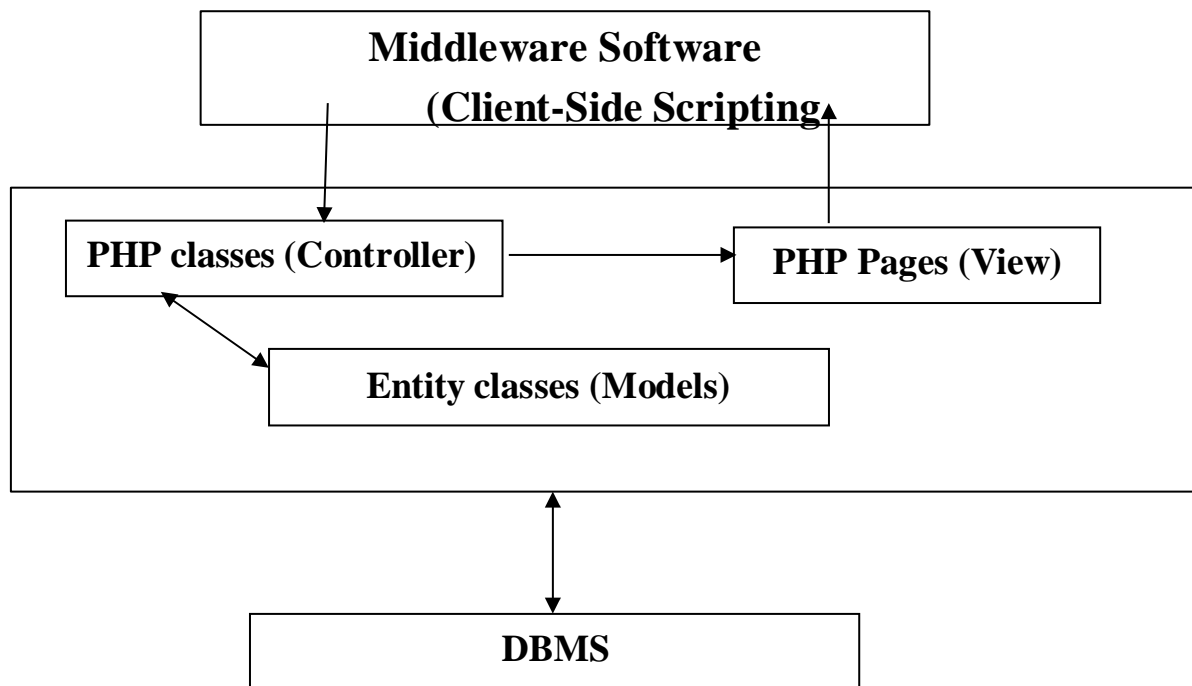
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┌──────────────────────────────────────────────┐
│            Middleware Software               │
│          (Client-Side Scripting)            │
└──────────────────────────────────────────────┘

┌────────────────────────────────────────────────────────┐
│  ┌──────────────────────┐        ┌──────────────────┐  │
│  │ PHP classes (Controller) │ ──→ │ PHP Pages (View) │  │
│  └──────────────────────┘        └──────────────────┘  │
│         ↕                                               │
│     ┌──────────────────────────┐                        │
│     │ Entity classes (Models)  │                        │
│     └──────────────────────────┘                        │
└────────────────────────────────────────────────────────┘

              ┌──────────────────────────┐
              │          DBMS            │
              └──────────────────────────┘
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Figure1:- MVC Model of PHP

Implementation Tools

- Editor: Dreamweaver 8.0
- Language: PHP
- Database Server: MySQL
- web server: XAMAP

VI. Features and MVC Model JAVA SERVER PAGE (JSP)

The server site, not the client site, handles all processing when using the server-side scripting language, JSP. Java has a technology called JSP. (Sharma, 2008)
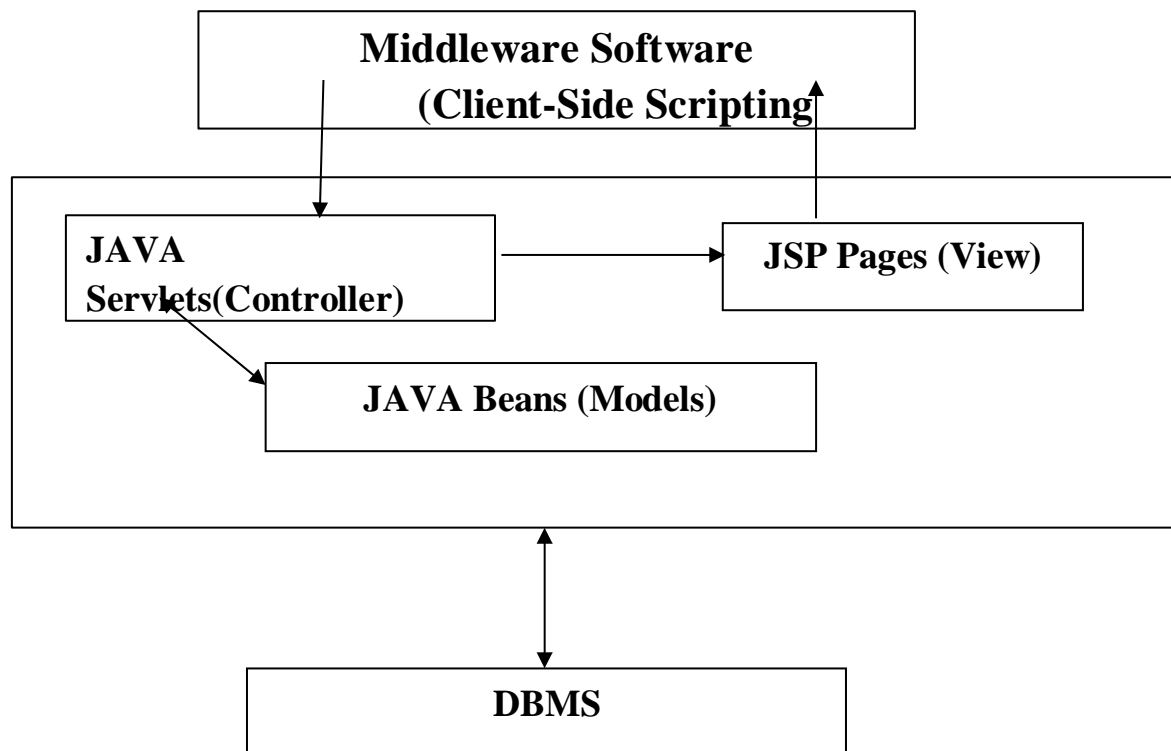
Figure 2: - MVC Model of JSP

Implementation Tools

- Editor: Netbeans8.2 as
- Language: JSP
- Database: MySQL Server
- web server: Apache Glassfish

VI. RESULT & DISCUSSION

For performing the experiment, we have developed same project in different open source server -side scripting language JSP & PHP. Both projects run on same computer configurations. Comparison on based on Page Load Time. For performing Load Test Apache JMETER CASE Tool. Table 1 provides a detailed description of Web Projects.

Web ID	Web Project	URL	Computer Configuration
W1	Hyper Text Pre-processor (PHP)	http:/localhost/wolf safari	Processor: Core (TM) i3 3.00GHz RAM: 8.00 GB HDD:300 GB
W2	Java Server Page (JSP)	http://localhost/vatsya	

Table 1: Description of Web Project

Page load time is the interval of time between the moment the request is sent and the moment the final portion of the response is received. If the page load time is less than that web pages will load fast The Unit of Page load Time is a millisecond(ms) (Holdeew, 2017)**.** Table 2 displays the average page load time for each web project using the POST and GET HTML From tag attributes. Figure 1 also displays the Table 2 data graphically.

Web ID	Average Page Load Time(ms)	
	POST	**GET**
W1	197	164
W2	237	272

Table2: Page Load Time(ms) of Web Project

. According to Figure 1, The web Project that was developed in PHP has a better Page Load Time Compared to the JSP Web Project.
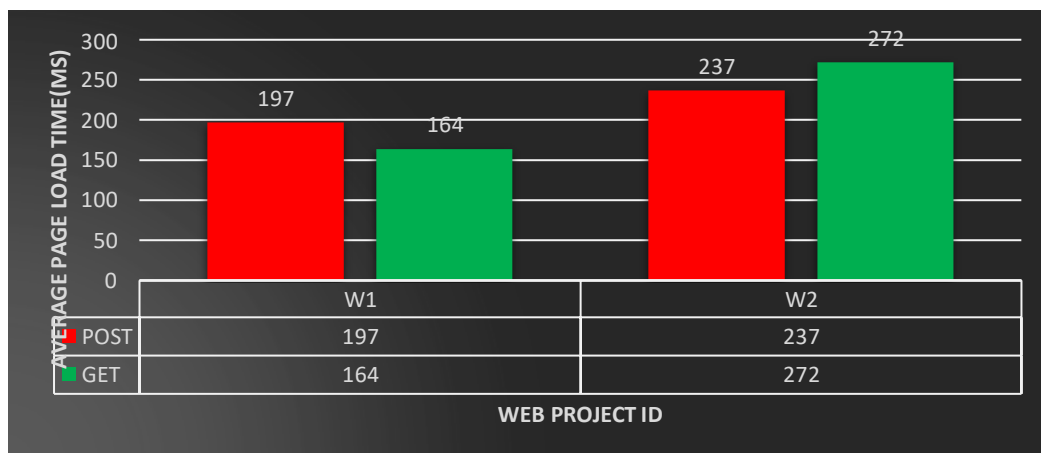

	W1	W2
POST	197	237
GET	164	272

Figure 1: Average Page Load Time of Web Project

VII. CONCLUSION

This research study has contrasted that JSP and PHP on the basis of Load testing of same application which was developed in both server- side. Load testing is performed using Apache JMeter Testing tools. During the writing code, JSP Programming is more complex as compared to PHP. Because JSP pages are translated to Servlets, they require greater compilation time than PHP pages. PHP is directly interpreted by web browsers.

Based on the Load te

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