**SOFTWARE PROFILE**

**INTRODUCTION**:

With the varied topic in existence in the fields of computers, Client Server is one, which has generated more heat than light, and also more hype than reality. This technology has acquired a certain critical mass attention with its dedication conferences and magazines. Major computer vendors such as IBM and DEC, have declared that Client Servers is their main future market. A survey of DBMS magazine reveled that 76% of its readers were actively looking at the client server solution. The growth in the client server development tools from $200 million in 1992 to more than $1.2 billion in 1996.

Client server implementations are complex but the underlying concept is simple and powerful. A client is an application running with local resources but able to request the database and relate the services from separate remote server. The software mediating this client server interaction is often referred to as MIDDLEWARE.

The typical client either a PC or a Work Station connected through a network to a more powerful PC, Workstation, Midrange or Main Frames server usually capable of handling request from more than one client. However, with some configuration server may also act as client. A server may need to access other server in order to process the original client request.

The key client server idea is that client as user is essentially insulated from the physical location and formats of the data needs for their application. With the proper middleware, a client input from or report can transparently access and manipulate both local database on the client machine and remote databases on one or more servers. An added bonus is the client server opens the door to multi-vendor database access indulging heterogeneous table joins.

**WHAT IS A CLIENT SERVER**

Two prominent systems in existence are client server and file server systems. It is essential to distinguish between client servers and file server systems. Both provide shared network access to data but the comparison dens there! The file server simply provides a remote disk drive that can be accessed by LAN applications on a file by file basis. The client server offers full relational database services such as SQL-Access, Record modifying, Insert, Delete with full relational integrity backup/ restore performance for high volume of transactions, etc. the client server middleware provides a flexible interface between client and server, who does what, when and to whom.

**WHY CLIENT SERVER**

Client server has evolved to solve a problem that has been around since the earliest days of computing: how best to distribute your computing, data generation and data storage resources in order to obtain efficient, cost effective departmental an enterprise wide data processing. During mainframe era choices were quite limited. A central machine housed both the CPU and DATA (cards, tapes, drums and later disks). Access to these resources was initially confined to batched runs that produced departmental reports at the appropriate intervals. A strong central information service department ruled the corporation. The role of the rest of the corporation limited to requesting new or more frequent reports and to provide hand written forms from which the central data banks were created and updated. The earliest client server solutions therefore could best be characterized as “SLAVE-MASTER”.

Time-sharing changed the picture. Remote terminal could view and even change the central data, subject to access permissions. And, as the central data banks evolved in to sophisticated relational database with non-programmer query languages, online users could formulate adhoc queries and produce local reports with out adding to the MIS applications software backlog. However remote access was through dumb terminals, and the client server remained subordinate to the Slave\Master.

**FRONT END OR USER INTERFACE DESIGN**

The entire user interface is planned to be developed in browser specific environment with a touch of Intranet-Based Architecture for achieving the Distributed Concept.

The browser specific components are designed by using the HTML standards, and the dynamism of the designed by concentrating on the constructs of the Java Server Pages.

**COMMUNICATION OR DATABASE CONNECTIVITY TIER**

The Communication architecture is designed by concentrating on the Standards of Servlets and Enterprise Java Beans. The database connectivity is established by using the Java Data Base Connectivity.

The standards of three-tire architecture are given major concentration to keep the standards of higher cohesion and limited coupling for effectiveness of the operations.

**FEATURES:**

In my project, I have chosen *PHP* language for developing the code.

***PHP***

PHP is an open-source, interpreted, and object-oriented scripting language that can be executed at the server-side. PHP is well suited for web development. Therefore, it is used to develop web applications (an application that executes on the server and generates the dynamic page.). PHP was created by Rasmus Lerdorf in 1994 but appeared in the market in 1995. PHP 7.4.0 is the latest version of PHP, which was released on 28 November.

**Why use PHP**

PHP is a server-side scripting language, which is used to design the dynamic web applications with MySQL database.

* It handles dynamic content, database as well as session tracking for the website.
* You can create sessions in PHP.
* It can access cookies variable and also set cookies.
* It helps to encrypt the data and apply validation.
* PHP supports several protocols such as HTTP, POP3, SNMP, LDAP, IMAP, and many more.
* Using PHP language, you can control the user to access some pages of your website.
* As PHP is easy to install and set up, this is the main reason why PHP is the best language to learn.
* PHP can handle the forms, such as - collect the data from users using forms, save it into the database, and return useful information to the user. For example - Registration form.

***PHP Features***

**Performance:**

PHP script is executed much faster than those scripts which are written in other languages such as JSP and ASP. PHP uses its own memory, so the server workload and loading time is automatically reduced, which results in faster processing speed and better performance.

**Open Source:**

PHP source code and software are freely available on the web. You can develop all the versions of PHP according to your requirement without paying any cost. All its components are free to download and use.

**Familiarity with syntax:**

PHP has easily understandable syntax. Programmers are comfortable coding with it.

**Embedded:**

PHP code can be easily embedded within HTML tags and script.

**Platform Independent:**

PHP is available for WINDOWS, MAC, LINUX & UNIX operating system. A PHP application developed in one OS can be easily executed in other OS also.

**Database Support:**

PHP supports all the leading databases such as MySQL, SQLite, ODBC, etc.

**Error Reporting -**

PHP has predefined error reporting constants to generate an error notice or warning at runtime. E.g., E\_ERROR, E\_WARNING, E\_STRICT, E\_PARSE.

**Loosely Typed Language:**

PHP allows us to use a variable without declaring its datatype. It will be taken automatically at the time of execution based on the type of data it contains on its value.

**Web servers Support:**

PHP is compatible with almost all local servers used today like Apache, Netscape, Microsoft IIS, etc.

**Security:**

PHP is a secure language to develop the website. It consists of multiple layers of security to prevent threads and malicious attacks.

**Control:**

Different programming languages require long script or code, whereas PHP can do the same work in a few lines of code. It has maximum control over the websites like you can make changes easily whenever you want.

**A Helpful PHP Community:**

It has a large community of developers who regularly updates documentation, tutorials, online help, and FAQs. Learning PHP from the communities is one of the significant benefits.

## Web Development

PHP is widely used in web development nowadays. PHP can develop dynamic websites easily. But you must have the basic the knowledge of following technologies for web development as well.

* HTML
* CSS
* JavaScript
* Ajax
* XML and JSON
* jQuery

**JAVASCRIPT**

JavaScript is a script-based programming language that was developed by Netscape Communication Corporation. JavaScript was originally called Live Script and renamed as JavaScript to indicate its relationship with Java. JavaScript supports the development of both client and server components of Web-based applications. On the client side, it can be used to write programs that are executed by a Web browser within the context of a Web page. On the server side, it can be used to write Web server programs that can process information submitted by a Web browser and then updates the browser’s display accordingly

Even though JavaScript supports both client and server Web programming, we prefer JavaScript at Client side programming since most of the browsers supports it. JavaScript is almost as easy to learn as HTML, and JavaScript statements can be included in HTML documents by enclosing the statements between a pair of scripting tags

<SCRIPTS>..</SCRIPT>.

<SCRIPT LANGUAGE = “JavaScript”>

JavaScript statements

</SCRIPT>

Here are a few things we can do with JavaScript :

* Validate the contents of a form and make calculations.
* Add scrolling or changing messages to the Browser’s status line.
* Animate images or rotate images that change when we move the mouse over them.
* Detect the browser in use and display different content for different browsers.
* Detect installed plug-ins and notify the user if a plug-in is required.

We can do much more with JavaScript, including creating entire application.

**JavaScript Vs Java**

JavaScript and Java are entirely different languages. A few of the most glaring differences are:

* Java applets are generally displayed in a box within the web document; JavaScript can affect any part of the Web document itself.
* While JavaScript is best suited to simple applications and adding interactive features to Web pages; Java can be used for incredibly complex applications.

There are many other differences but the important thing to remember is that JavaScript and Java are separate languages. They are both useful for different things; in fact they can be used together to combine their advantages.

**ADVANTAGES**

* JavaScript can be used for Sever-side and Client-side scripting.
* It is more flexible than VBScript.
* JavaScript is the default scripting languages at Client-side since all the browsers supports it.

**HYPER TEXT MARKUP LANGUAGE**

Hypertext Markup Language (HTML), the languages of the World Wide Web (WWW), allows users to produces Web pages that include text, graphics and pointer to other Web pages (Hyperlinks).

HTML is not a programming language but it is an application of ISO Standard 8879, SGML (Standard Generalized Markup Language), but specialized to hypertext and adapted to the Web. The idea behind Hypertext is that instead of reading text in rigid linear structure, we can easily jump from one point to another point. We can navigate through the information based on our interest and preference. A markup language is simply a series of elements, each delimited with special characters that define how text or other items enclosed within the elements should be displayed. Hyperlinks are underlined or emphasized works that load to other documents or some portions of the same document.

HTML can be used to display any type of document on the host computer, which can be geographically at a different location. It is a versatile language and can be used on any platform or desktop.

HTML provides tags (special codes) to make the document look attractive. HTML tags are not case-sensitive. Using graphics, fonts, different sizes, color, etc., can enhance the presentation of the document. Anything that is not a tag is part of the document itself.

**Basic HTML Tags :**

<!-- --> Specifies comments

<A>……….</A> Creates hypertext links

<B>……….</B> Formats text as bold

<BIG>……….</BIG> Formats text in large font.

<BODY>…</BODY> Contains all tags and text in the HTML document

<CENTER>...</CENTER> Creates text

<DD>…</DD> Definition of a term

<DL>...</DL> Creates definition list

<FONT>…</FONT> Formats text with a particular font

<FORM>...</FORM> Encloses a fill-out form

<FRAME>...</FRAME> Defines a particular frame in a set of frames

<H#>…</H#> Creates headings of different levels

<HEAD>...</HEAD> Contains tags that specify information about a document

<HR>...</HR> Creates a horizontal rule

<HTML>…</HTML> Contains all other HTML tags

<META>...</META> Provides meta-information about a document

<SCRIPT>…</SCRIPT> Contains client-side or server-side script

<TABLE>…</TABLE> Creates a table

<TD>…</TD> Indicates table data in a table

<TR>…</TR> Designates a table row

<TH>…</TH> Creates a heading in a table

**ADVANTAGES**

* A HTML document is small and hence easy to send over the net. It is small because it does not include formatted information.
* HTML is platform independent.
* HTML tags are not case-sensitive.

***XAMPP***

XAMPP is a [free and open source](https://en.wikipedia.org/wiki/Free_software) [cross-platform](https://en.wikipedia.org/wiki/Cross-platform) [web server](https://en.wikipedia.org/wiki/Web_server) [solution stack](https://en.wikipedia.org/wiki/Solution_stack) package developed by Apache Friends,[[1]](https://en.wikipedia.org/wiki/XAMPP#cite_note-kaiseidlerinterview-1) consisting mainly of the [Apache HTTP Server](https://en.wikipedia.org/wiki/Apache_HTTP_Server), [MariaDB](https://en.wikipedia.org/wiki/MariaDB) [database](https://en.wikipedia.org/wiki/Database), and [interpreters](https://en.wikipedia.org/wiki/Interpreter_%28computing%29) for scripts written in the [PHP](https://en.wikipedia.org/wiki/PHP) and [Perl](https://en.wikipedia.org/wiki/Perl) [programming languages](https://en.wikipedia.org/wiki/Programming_language).[[2]](https://en.wikipedia.org/wiki/XAMPP#cite_note-x_mariadb-2)[[3]](https://en.wikipedia.org/wiki/XAMPP#cite_note-3) XAMPP stands for Cross-Platform (X), Apache (A), MariaDB (M), PHP (P) and Perl (P). It is a simple, lightweight Apache distribution that makes it extremely easy for developers to create a local web server for testing and deployment purposes. Everything needed to set up a web server – server application (Apache), database (MariaDB), and scripting language (PHP) – is included in an extractable file. XAMPP is also cross-platform, which means it works equally well on Linux, Mac and Windows. Since most actual web server deployments use the same components as XAMPP, it makes transitioning from a local test server to a live server extremely easy as well.

***Apache***

The Apache HTTP Server, commonly referred to simply as Apache is a web server notable for playing a key role in the initial growth of the World Wide Web. The majority of all web servers using Apache are Linux web servers.

Apache is developed and maintained by an open community of developers under the auspices of the Apache Software Foundation. The application is available for a wide variety of operating systems, including UNIX, FreeBSD, Linux, Solaris, Novell NetWare, Mac OS X, Microsoft Windows, OS/2, TPF, and eComStation. Released under the Apache License, Apache is characterized as free software and open source software.

* Apache is primarily used to serve both static content and dynamic Web pages on the World Wide Web. Many web applications are designed expecting the environment and features that Apache provides. Apache is the web server component of the popular LAMP web server application stack, alongside MySQL, and the PHP/Perl/Python (and now also Ruby) programming languages.
* Apache is redistributed as part of various proprietary software packages including the Oracle Database or the IBM WebSphere application server. Mac OS X integrates Apache as its built-in web server and as support for its WebObjects application server. It is also supported in some way by Borland in the Kylix and Delphi development tools. Apache is included with Novell NetWare 6.5, where it is the default web server. Apache is also included with many Linux distributions.
* Apache is used for many other tasks where content needs to be made available in a secure and reliable way. One example is sharing files from a personal computer over the Internet. A user who has Apache installed on their desktop can put arbitrary files in the Apache's document root which can then be shared.
* Programmers developing web applications often use a locally installed version of Apache in order to preview and test code as it is being developed.
* Microsoft Internet Information Services (IIS) is the main competitor to Apache, trailed by Sun Microsystems' Sun Java System Web Server and a host of other applications such as Zeus Web Server. Some of the biggest web sites in the world are run using Apache. Google's search engine front end is based on a modified version of Apache, named Google Web Server (GWS).

***MySQL***

MySQL is a relational database management system (RDBMS) which has more than 11 million installations. The program runs as a server providing multi-user access to a number of databases.

MySQL is owned and sponsored by a single for-profit firm, the Swedish company MySQL AB, now a subsidiary of Sun Microsystems, which holds the copyright to most of the codebase. The project's source code is available under terms of the GNU General Public License, as well as under a variety of proprietary agreements.

MySQL is popular for web applications and acts as the database component of the LAMP, BAMP, MAMP, SAMP, and WAMP platforms and for open-source bug tracking tools like Bugzilla. Its popularity for use with web applications is closely tied to the popularity of PHP, which is often combined with MySQL. Several high-traffic web sites (including Flickr, Facebook, Wikipedia, Google, Nokia and YouTube) use MySQL for its data storage and logging of user data.