

Choosing Web Technologies for Website Development

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Abstract— There are many reasons to have a website for your business or Organization. Nowadays the internet is used all over the world to access multiple resources and to know about other organization with ease. Many organizations grow exponentially because of websites. Everyone should take advantage of this communication tool to maximize their organization. Day by day internet in reaching to more number of people. Information about your company, products and services is available to any visitor, at any time of the day and can be accessed from anywhere in the world. By having a website, you can provide detailed information about products, catalogues, brochures, etc., over the Internet. In addition, not only does it promote your business, you can also receive information from your visitors through a contact form. Thus, your visitors can express their interest, doubts or comments through your website. In this way, the website becomes a powerful tool of communication of your company, organization with your potential stakeholders. This paper identifies most popular technologies used in website development and gives brief overview of these technologies. It will help beginners for getting started with website development.

Keywords— Web technology, LAMP, CMS, Web Survey, Joomla

I. INTRODUCTION

The technologies used in website development can be widely divided into operating systems, web servers, character encoding, markup language, server-side languages, client-side languages, content management system etc. But they are not limited to these. Different options available under these heading includes Operating System- Unix, Windows, OS X Web servers-apache, Nginx, Microsoft-IIS etc.

Character encoding- UTF-8, ISO-8859-1, Windows-1251 etc. Markup language-HTML, XHTML Server-side languages- PHP, ASP.NET, Java, ColdFusion, Ruby, Perl etc. Client-side languages- JavaScript, Flash, Silverlight, Java Content management system- WordPress, Joomla, Drupal, Magento, Blogger etc.

II. WEB TECHNOLOGIES SURVEY

W3Techs carries out extensive and reliable web technology surveys. W3Techs provides information about the usage of various types of technologies on the web. Below are the result of surveys carried out by w3techs.com.

A. Operating System

OS resides on top of hardware. It acts as a platform for all other application program.

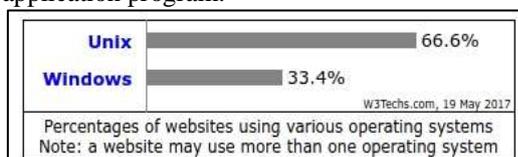


Fig. 1: Operating System Survey
Unix is used by 66.6% of all the websites surveyed out of which 55.6% use Linux operating system

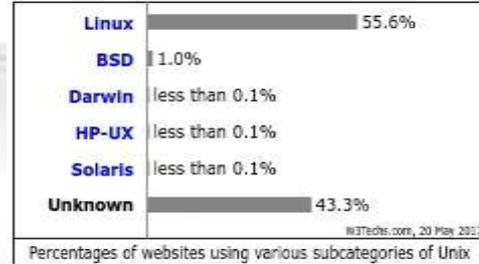


Fig. 2: Unix subcategories Survey
Debian distribution of Linux, Ubuntu makes share of 35.9% under subcategories of Linux.

B. Web Servers

Web servers are programs that enable a computer to present web pages on the Internet.

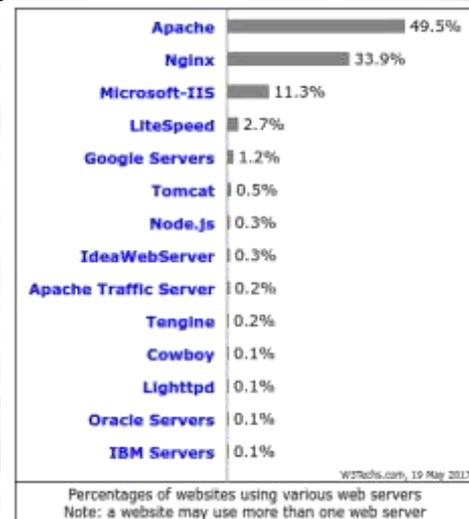


Fig. 3: Web Servers Survey
Apache is used by 49.5% of all the websites surveyed.

C. Character Encoding

A character encoding system assigns a computer-internal representation (e.g. a number) to every character of an alphabet.

UTF-8 is used by 89.1% of all the websites surveyed.

D. Markup Language

A markup language is a computer language used to describe web pages. HTML is used by 75.7% of all the websites surveyed.

E. Server-side Languages

A programming language defines the computer instructions which are used to write programs that perform some task, e.g. composing a web page.

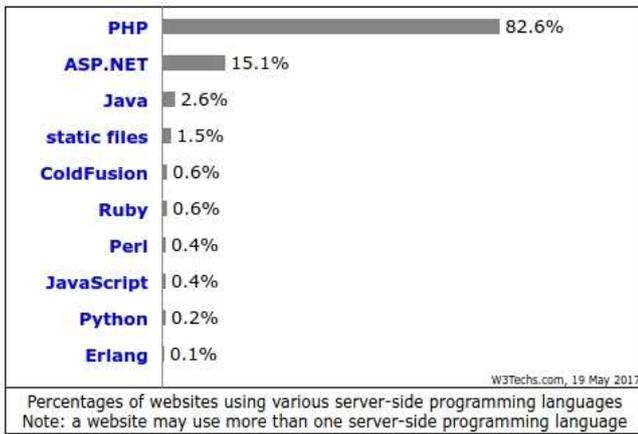


Fig. 4: Server-side language Survey
PHP is used by 82.6% of all the websites surveyed.

F. Client-side Languages

Client-side programs are executed within a web browser in order to directly interact with the user.

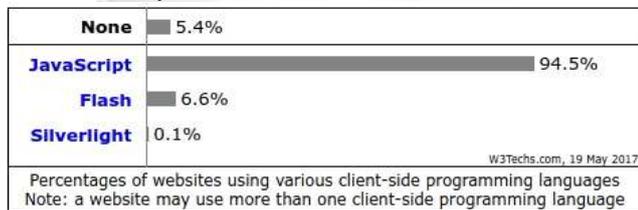


Fig. 5: Client-side language Survey
JavaScript is used by 94.5% of all the websites surveyed. JavaScript library-jQuery is used by 72.4% of all the websites surveyed.

G. Content Management System

Content management systems are web-based applications for creating and managing the content of a website.

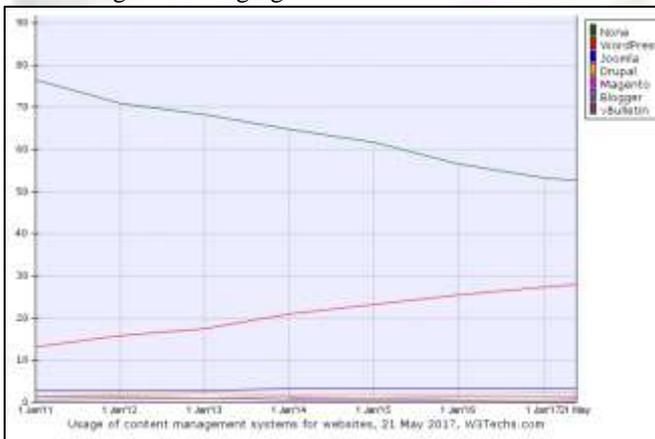


Fig. 6: CMS usage trend Survey
The trend shows that over the years the usage of CMS has increased and sites are shifting from non cms to cms based sites. The present scenario is that 52.6% of the websites use none of the content management systems and WordPress is used by 28.0% followed by joomla which is used by 3.3 % of all the websites surveyed.[1]

III. OVERVIEW

A. Content Management System

Joomla, Drupal, and WordPress are most efficient CMS compare to others as they show highest installations, better documentation support and highest page rank . Joomla is best content management system for novice.[2] Joomla is easy to use, extensible and freely available open source content management system. Joomla is used to build, organize, manage and publish content for websites, blogs, Intranets and mobile applications. The latest version of Joomla is 3.7.1. [3]

B. Operating System

Linux is most reliable, stable, easy to install Operating system. Linux software or server licensing bears no cost. Linux work with no trouble for lifetime with no issues of malware, viruses, or random computer slow-downs. Linux needs reboot only if kernel is updated. The rest of the Linux server won't be affected by restarting, re-configuring, upgrading etc. of any service on server. [4] Latest version of Linux distribution ubuntu is 16.04 LTS. [5]

C. Web Server

Apache HTTP server is fast, efficient and widely used web server. It is a powerful, flexible, HTTP/1.1 compliant web server that implements the latest protocols, including HTTP/1.1. It is highly configurable and extensible with third-party modules which can be customized by writing 'modules' using the Apache module API. Full source code of Apache is provided along with license that does not restrict on any front. Apache runs on Windows 2000, Netware 5.x and above, OS/2, and many flavors of Unix, as well as several other OS. Apache is actively being developed and encourages user feedback through new ideas, bug reports and patches. Apache HTTP Server Stable Release - Latest Version is 2.4.25 (released 2016-12-20) [6]

D. Database

MySQL is easy to use, famous open source database that supports over 20 platforms and operating systems including Linux, Unix, Mac and Windows. MySQL cost-effectively delivers high performance, scalable Online Transaction Processing (OLTP) applications along with industrial strength performance and reliability. MySQL is fully integrated transaction-safe, ACID compliant, reliable, secure database . MySQL is easy to administer with workbench that provides an integrated development, design and administration environment and make developers and DBAs more productive by enabling them to manage more servers. MySQL uses standard SQL. MySQL is developed, distributed, and supported by Oracle Corporation MySQL Community Server latest version available for download is 5.7.18. [7]

E. Server-side Language

PHP is a popular general-purpose scripting language that is especially suited to web development. Fast, flexible and pragmatic, PHP powers everything from your blog to the most popular websites in the world. Current Stable PHP version is 7.1.5 [8]

F. Client-side Language

JavaScript library-jQuery is a fast, small, and feature-rich JavaScript library. It makes things like HTML document traversal and manipulation, event handling, animation, and Ajax much simpler with an easy-to-use API that works across a multitude of browsers.[9]

G. LAMP Stack

B,C,D and E combined for a LAMP stack. A LAMP stack is a group of software typically installed together and are open source software that enable a server to host dynamic websites and web apps. LAMP is an acronym which represents the Linux operating system, with the Apache web server. The site data is stored in a MySQL database, and dynamic content is processed by PHP.

IV. CONCLUSIONS

It is observed that most common technologies used for website development are LAMP stack with UTF-8 character encoding, HTML markup language, JavaScript client side programming language and Joomla as content management system (CMS). In case one has better understanding of CMS then use WordPress.

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REFERENCES

- [1] Technology usage statistics Available at: <https://w3techs.com/technologies> (accessed on 21 -may-2017)
- [2] Savan K.Patel, Dr.V.R.Rathod and Jigna B Prajapati. Article: Performance Analysis of Content Management Systems- Joomla, Drupal and WordPress. International Journal of Computer Applications 21(4):39-43, May 2011.
- [3] Joomla core features Available at:<https://www.joomla.org/core-features.html>(accessed on 19-may-2017)
- [4] why use linux? Answer Available at: <https://www.linux.com/what-is-linux>(accessed on 19-may-2017)
- [5] Ubuntu latest release version Available at: <https://wiki.ubuntu.com/XenialXerus/ReleaseNotes>(accessed on 19-may-2017)
- [6] Features of Apache Available at: https://wiki.apache.org/httpd/FAQ#What_is_Apache.3F (accessed on 19-may-2017)
- [7] Features of MySQL Available at: <https://www.mysql.com/products/>(accessed on 19-may-2017)
- [8] Features of PHP Available at: <http://php.net/> (accessed on 19-may-2017)
- [9] Features of jQuery Available at:<https://jquery.com/> (accessed on 19-may-2017)