All About Web Technologies

If you're like most of us, you've been using the Web for a while. But have you ever thought about what goes on behind the scenes when you're working on the Web? Have you ever wondered about the various web technologies working to give you a seamless and superior experience? Probably not…Well, this guide will tell you more about all of the different web technologies as well as what the future holds…

But first, let's talk a little bit about the World Wide Web. The World Wide Web, or simply the Web, is a global information medium which users can read and write via computers connected to the Internet. The term is often mistakenly used for the Internet itself, but the two are different. The Web is a service that operates over the Internet, just as email does.

According to Microsoft, web technologies include the following:

1. Mark-up languages, such as HTML, CSS, XML, CGI, and HTTP (Front-end or Client-side technologies)
2. Programming languages and technologies that help create applications for the web. Some of these are Perl, C#, Java, Visual Basic, and .NET (Back-end or Server-side technologies)
3. Web server and server technologies that enable request handling on a network, where different users have to share the same resources and communicate with each other
4. Databases, which are extremely important for data and information storage on a computer network
5. Business applications that are customized for specific execution of tasks on a network

There are several programming languages and technologies for the Web. Some of the most popular websites, ranging from Google to YouTube and from Amazon to twitter are built using these server-side technologies. The latter include ASP.NET, C, C++, Java, JavaScript, PERL, Python, PHP, Ruby, and more. We shall discuss the

most popular current **website technologies** in this guide. So, without further ado, let's begin…

The top website technologies

1. **HTML5**: If you know this programming language, knowing all the others is a walk in the park. This recent addition to the HTML family is very equipped and potent in assisting in web development activities.
2. **JavaScript**: This programming language lets you make communication for your website. It was developed by Netscape and borrows a lot of its syntax from the C language. Using JavaScript, you can manage your browser, edit content on a document, let client-side scripts interact with users, and also enable asynchronous communication. JavaScript is generally used for including animations on web pages, loading new images, scripts or objects onto a web page, and creating extremely receptive user interfaces.
3. **Java**: This is the top programming language in the industry and is currently the perfect language for web development. Created by Sun Microsystems in the 1990s, this language is not platform dependent, so using Java and creating Java-based applications is extremely easy.
4. **PHP**: This stands for PHP Hypertext Processor. It is one of the widely-used languages for web development and was created in 2004. It is an HTML-embedded scripting language and is useful for creating dynamic web pages. Using this language you can expand a web app very quickly. This language has been used to create websites such as WordPress, Digg, and Facebook.
5. **Python**: This is an advanced programming language and is used for creating websites and mobile apps. It is very flexible and has a broad range of applications. It can run on both Linux and Windows-based servers. Some of the sites powered by Python include Instagram and Pinterest, both social media sites.
6. **Ruby**: This is a user-friendly language for beginners. It is used for the programming of mobile apps and websites. Created in 1993, Ruby is an open-source platform that is not only easy to understand, but also to write. For those who are interested in creating small business software or for those who are into creative designing, Ruby is the perfect programming language.
7. **.NET**: This was created by Microsoft in the year 2000. Though it is used primarily in systems running on Windows, this language is used in scientific research and academic fields, thereby more than making up for this feature.
8. **Perl**: This is an interpreted script language and presents unique tools for system programming.
9. **C**: This is a standard programming language created in the 1970s. It is appreciated for its efficiency and is known for writing system software. It is also used for writing applications. This language can be easily compiled by using a simple compiler. It support cross-platform programming.
10. **C++**: This is an intermediary programming language, initially designed to boost the C language. Created in the year 1979, it is a very powerful language, and is used in very important operating systems, such as Windows.
11. **C#**: This is a multi-paradigm programming language and is a general-purpose language, used to build up software for the Microsoft and Windows platforms.
12. **SQL**: This stands for Structured Query Language and is a necessary part of web development. Using this language, web developers can obtain data from large and multifaceted databases.

What the future holds

These are the top 12 website programming languages and technologies. However, many web developers attest that JavaScript is the future of web development. This is because it is the standard scripting language in our browsers for the foreseeable future. However, with Web 3.0 and Web 4.0 a distinct reality, it is possible that a programming language that is not one of the above 12 will rule the roost in the future.

Also, mobile technology will becoming increasingly popular, with more and more websites becoming responsive and mobile-enabled. Another application will be the proliferation of social media sites, with one or more of these programming languages being used to power these sites.

So, now you know all about the different website technologies and how they are powering the Web. If you're a programmer, there has never been a better time to work in [web development](). With website technologies evolving by the day, the field is increasingly becoming not only more popular but also more exciting, with newer websites being created all the time. Here's to a seamless World Wide Web experience for everyone!

Web Technology

You probably know that computers don't communicate with each other the way that people do. Instead, computers require codes, or directions. These binary codes and commands allow computers to process needed information. Every second, billions upon billions of ones and zeros are processed in order to provide you with the information you need

Introduction

In order to make websites look and function a certain way, web developers utilize different languages. The three core languages that make up the World Wide Web are HTML, CSS, and JavaScript.

In the IT world, the internet is an essential platform, whether its for developing or for consumer use. When developing a website, typically three main languages come into play. These languages are JavaScript, CSS, and HTML. HTML is the backbone of most webpages. Essentially, it is used to create the structure of how a specific website would look like, from the headings, to the paragraphs, the body, links, and even images.

Markup Languages

[Markup]() languages are the languages in which the web is written. The most common markup language used is HTML, which uses tags to annotate text so that a computer can then manipulate the text. Most markup languages are human readable, and use annotations that are distinguishable from the annotated text. There are many different kinds of markups and languages, but all are consistent in the way in which they annotate documents.

Hypertext

Hypertext is defined as the arrangement of information inside a database that allows the user to receive information and to navigate from one document to another by clicking on highlighted words or pictures inside the primary document. Hypertext is the base of the World Wide Web, because it enables user to click on other links to get more information. Hypertext is a term used for all links, whether it appears as texts or other graphical part.

Hypertext Markup Language (HTML)

HTML is the conventional markup language used to create and edit web pages and web applications. HTML is used for creating the basic structure of a website.

HTML consists of different elements preceded by an opening tag, <tag>, and a closing tag, </tag>. The content between the tags, <html> and </html>, is the content of the webpage.

The content between the tags, <head> and </head>, is the title of the webpage.

This text is displayed between the <title> and </title> tags. The content between the tags, <body> and </body>, is the main content of the webpage.

The content can include links , paragraphs, headings, and various other elements.

Here are the most commonly used HTML tags:

Tag	Description
<h1> - <h6>	Gives a web page a heading. 1 is the largest heading you can have and 6 is the smallest.
<p>	Starts a paragraph in your web page.
<i>	Italic font style.
<b>	Bold font style.
<a>	Inserts hyperlinks onto a web page.

&	Starts an unordered or ordered list.
<!DOCTYPE>	Defines the document type of the web page.
<!-- -->	Allows you to insert comments into your HTML code. Comments aren't displayed in on the web page, but are helpful for organization.
<img>	Inserts an image onto a web page.
 	Inserts a line break between bodies of text.

HTML Major versions

HTML

Published in 1995, HTML 2.0 flushed out the RFC system, allowing detailed mechanical explanations of the system.

HTML 3.2

Published in 1997, HTML 3.2 performed major housecleaning on the structure of HTML. It removed mathematical formulas, reconciled code overlap, and adopted Netscape's Visual Markup Tags.

HTML 4.0

Published at the end of 1997, HTML 4.0 introduced 3 different versions and browser specific plugins. 4.0 Allowed custom experiences tailored to specific browsers.

XHTML

Released in 2000, XHTML fused HTML and XML into a language that was very precise, almost too precise. XHTML is widely considered a tedious and difficult language.

HTML 5.0

Released in 2014, HTML 5.0 is the currently used version of HTML. HTML 5.0 removed some of the tedium and severity of XHTML, while keeping its ability to remain precise and detailed.

Hypertext Transfer Protocol (HTTP)

HTTP is the protocol used by the World Wide Web that determines how messages are formatted and transmitted. It also directs web servers and browsers to what actions they should take in reaction to several commands. When you open your web browser and enter a URL, you are using HTTP. The Web server directs it to get and transmit the requested Web page based on the HTTP command that is sent.

HTTP Protocol

HTTP is an application used as the fundamental foundation of communication on the web. HTTP is the first letter you type in when inputting a web address.

HTTP is a request - response protocol.

The client might request something and the http allows the client to access the information. Like when we updated our virtual machines the request we wanted was to go get updates for the software and http request

went out and got updates. If you were on a bank website or the wikibook site it would be https the 's' meaning secure. That means that the computer is communicating on a secure network.

Cascading Stylesheets (CSS)

CSS is a style sheet language standard set by W3C (World Wide Web Consortium) used to create and edit the visual presentation of web pages. CSS allows web developers to isolate a web page's content and visual styles into separate documents and gives better page layout control.

An external CSS sheet is generally linked to HTML and XHTML, it also can be linked to XML, SVG, and XUL.

HTML and Javascript, with CSS, is a vital part of technology used by the majority of interfaces for websites. This is also used in interfaces for mobile devices making the websites more engaging.

Here are the most commonly used CSS tags:

Tag	Description
background	A shorthand property for setting all the background properties in one declaration.
Color	Sets the color of text.
Opacity	Sets the opacity level for an element.
Border	Sets all the border properties in one declaration.
border-color	Sets the color of the four borders.
Float	Specifies whether or not a box should float
padding	Sets all the padding properties in one declaration.
/*...*/	Allows you to insert comments into your CSS code. Comments aren't displayed in on the web page, but are helpful for organization.
Width	Sets the width of an element.

Clear	Specifies which sides of an element where other floating elements are not allowed.

Types of CSS

CSS can be incorporated with HTML in 3 different ways; Inline, Internal, and External.

1. **Inline styles** add style to a single element on the page by placing 'style' after the element you wish to be styled.

    Ex: h2 style = "color: blue"

2. **Internal styles** create a style for a single document because the CSS is stored in the head of the HTML document. Internal styles are placed using a *<style>* tag around all style selectors.

    Ex: <style>
    body {background-color: white;}
    /*This is a comment!
    'Body' is the selector,
    'background-color' is the declaration*/
    h2 {color: blue;}
    </style>

3. **External style sheets** exist in separate documents from HTML documents, allowing for better organization of style and structure. An external style sheet can be linked to all HTML documents making up a web site, allowing a web developer to style the entire site (all pages) using one document.

Web Design Programs

Web Design Programs help the webpage creator manage and create the content of a website. Many Web Design programs have many built in tools that ease the process of creating a website. Such programs are Dreamweaver and Sublime. There are also publishing programs like Wordpress and Ghost that allow the user to have more of a GUI based interface for blogging and managing a website.

Sublime

Sublime is a text editor that allows the web developers, programmers, software engineers, etc. manipulate code. It's not only for HTML and CSS it can be set-up for many different programming languages and new productivity tools. One contribution that Sublime has that many do not is the "Package Control" Tool. The tool gives you full access to an entire library of content to better your coding experience. For example, there is a package you can install called Emmet, helping in typing massive amount of HTML, if you type "html:5" and press "tab" then emmet will push out all the correct syntax for an HTML 5 document.

SASS

SASS is some what like emmet but is more of a language. It is a Ruby engraved language that gives CSS much more capabilities like variables and nesting. Like emmet it makes writing CSS much faster and more efficient saving the programmer lots of time.

Dynamic Web Content

Client-Side Scripting

Generally refers to computer programs on the web that are executed by the user's web browser, instead of on a web server, enabling web pages to be scripted. Client-side scripts do not require additional software on the server but instead utilize the user's web browser to understand the scripting language in which it is written.

Server-Side Scripting

Server-side scripting is a technique used in web development that involves using scripts on a web server which produce a unique response for each user's request to the website.

Combination technologies

When both client side and server side scripting collectively build a webpage it is known as a web application. This web application can manage user interaction, security, and help improve performance between the client and server. Web applications can include anything from online stores to instant messaging services as long as both server and client sides execute scripts to a achieve a common goal in unison.

JavaScript

JavaScript is a scripting language that is used along with HTML and CSS as the three core components of the World Wide Web. JavaScript has first-class functions and is used in most websites. JavaScript does not have any I/O which means that it has to be embedded in the host environment. JavaScript is also used in PDF documents, game development, and desktop and mobile applications. JavaScript is most commonly used to make DHTML by adding client-side behavior to HTML pages.

Worldwide Web Consortium

Worldwide Web Consortium (W3C) is an international community of web members to meet the Web standards. It was founded by Tim Berners-Lee, an inventor of the Web, back in the 20th century. W3C is designed to reach a full potential of the Web and to make it accessible to all users from all over the world. Also, another aim for W3C was to make standards to maintain the growth of the Web in a single direction rather than splitting into competing groups. Here are some of the standards for W3C:

·Accessibility

·Web Authoring

·Web Performance

·Cascading Style Sheets

·HTML5

·Web Fonts

·Widgets

·Media Access

·Mobile Web Applications

·Internationalization of Web Design and Applications

·Mobile Web Authoring

·XML

·Graphics

·RDF

·HTTP

The **PHP Hypertext Preprocessor (PHP)** is a programming language that allows web developers to create dynamic content that interacts with databases. PHP is basically used for developing web based software applications. This tutorial helps you to build your base with PHP.

Why to Learn PHP?

PHP started out as a small open source project that evolved as more and more people found out how useful it was. Rasmus Lerdorf unleashed the first version of PHP way back in 1994.

PHP is a MUST for students and working professionals to become a great Software Engineer specially when they are working in Web Development Domain. I will list down some of the key advantages of learning PHP:

- PHP is a recursive acronym for "PHP: Hypertext Preprocessor".

- PHP is a server side scripting language that is embedded in HTML. It is used to manage dynamic content, databases, session tracking, even build entire e-commerce sites.

- It is integrated with a number of popular databases, including MySQL, PostgreSQL, Oracle, Sybase, Informix, and Microsoft SQL Server.

- PHP is pleasingly zippy in its execution, especially when compiled as an Apache module on the Unix side. The MySQL server, once started, executes even very complex queries with huge result sets in record-setting time.

- 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.

- PHP is forgiving: PHP language tries to be as forgiving as possible.

- PHP Syntax is C-Like.

Characteristics of PHP

Five important characteristics make PHP's practical nature possible −

- Simplicity
- Efficiency
- Security
- Flexibility

- Familiarity

Hello World using PHP.

Just to give you a little excitement about PHP, I'm going to give you a small conventional PHP Hello World program, You can try it using Demo link.

```html
<html>

   <head>
      <title>Hello World</title>
   </head>

   <body>
      <?php echo "Hello, World!";?>
   </body>

</html>
```

Applications of PHP

As mentioned before, PHP is one of the most widely used language over the web. I'm going to list few of them here:

- PHP performs system functions, i.e. from files on a system it can create, open, read, write, and close them.

- PHP can handle forms, i.e. gather data from files, save data to a file, through email you can send data, return data to the user.

- You add, delete, modify elements within your database through PHP.

- Access cookies variables and set cookies.

- Using PHP, you can restrict users to access some pages of your website.

- It can encrypt data.

Audience

This **PHP tutorial** is designed for PHP programmers who are completely unaware of PHP concepts but they have basic understanding on computer programming.

Prerequisites

Before proceeding with this tutorial you should have at least basic understanding of computer programming, Internet, Database, and MySQL etc is very helpful.