



Web Developers' Guide

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About the Tutorial

This tutorial provides a simple and practical way of understanding the essential areas of developing a website. It also provides elementary insights and an overview of the subject that is necessary to understand the world of web technologies.

This tutorial covers all that is required to become a good Web Developer.

Audience

This tutorial is aimed at students who are interested in learning website development. It provides an in-depth coverage – starting from basics to Hosting concepts. In addition, it throws light on emerging concepts like E-commerce.

Prerequisites

It is an elementary tutorial and you can easily understand the concepts explained here with a basic knowledge of computers.

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1. Web - Basic Concepts

What is Internet?

The Internet is essentially a global network of computing resources. You can think of the Internet as a physical collection of routers and circuits as a set of shared resources.

Some common definitions given in the past include:

- A network of networks based on the TCP/IP communications protocol.
- A community of people who use and develop those networks.
- A community of people who use and develop those networks.

Internet-Based Services

Some of the basic services available to Internet users are:

- **Email:** A fast, easy, and inexpensive way to communicate with other Internet users around the world.
-
- **Telnet:** Allows a user to log into a remote computer as though it were a local system.
-
- **FTP:** Allows a user to transfer virtually every kind of file that can be stored on a computer from one Internet-connected computer to another.
-
- **UseNet news:** A distributed bulletin board that offers a combination news and discussion service on thousands of topics.
-
- **World Wide Web (WWW):** A hypertext interface to Internet information resources.

What is WWW?

WWW stands for **World Wide Web**. A technical definition of the World Wide Web is: All the resources and users on the Internet that are using the Hypertext Transfer Protocol (HTTP).

A broader definition comes from the organization that Web inventor Tim Berners-Lee helped found, the World Wide Web Consortium (W3C): The World Wide Web is the universe of network-accessible information, an embodiment of human knowledge.

In simple terms, The World Wide Web is a way of exchanging information between computers on the Internet, tying them together into a vast collection of interactive multimedia resources.

What is HTTP?

HTTP stands for **H**ypertext **T**ransfer **P**rotocol. This is the protocol being used to transfer hypertext documents that makes the World Wide Web possible.

A standard web address such as <http://www.yahoo.com/> is called a URL and here the prefix **http** indicates its protocol

What is URL?

URL stands for **U**niform **R**esource **L**ocator, and is used to specify addresses on the World Wide Web. A URL is the fundamental network identification for any resource connected to the web (e.g., hypertext pages, images, and sound files).

A URL will have the following format:

`protocol://hostname/other_information`

The protocol specifies how information is transferred from a link. The protocol used for web resources is HyperText Transfer Protocol (HTTP). Other protocols compatible with most web browsers include FTP, telnet, newsgroups, and Gopher.

The protocol is followed by a colon, two slashes, and then the domain name. The domain name is the computer on which the resource is located.

Links to particular files or subdirectories may be further specified after the domain name. The directory names are separated by single forward slashes.

What is Website?

Currently you are on our website <http://www.tutorialspoint.com> which is a collection of various pages written in HTML markup language. This is a location on the web where people can find tutorials on latest technologies. Similarly, there are millions of websites available on the web.

Each page available on the website is called a *web page* and first page of any website is called *home page* for that site.

What is Web Server?

Every Website sits on a computer known as a Web server. This server is always connected to the internet. Every Web server that is connected to the Internet is given a unique address made up of a series of four numbers between 0 and 256 separated by periods. For example, 68.178.157.132 or 68.122.35.127.

When you register a Web address, also known as a domain name, such as tutorialspoint.com you have to specify the IP address of the Web server that will host the site.

We will see different type of Web servers in a separate chapter.

What is Web Browser?

Web Browsers are software installed on your PC. To access the Web you need a web browsers, such as Netscape Navigator, Microsoft Internet Explorer or Mozilla Firefox.

Currently you must be using any sort of Web browser while you are navigating through my site tutorialspoint.com. On the Web, when you navigate through pages of information this is commonly known as *browsing or surfing*.

We will see different type of Web browsers in a separate chapter.

What is SMTP Server?

SMTP stands for **S**imple **M**ail **T**ransfer **P**rotocol Server. This server takes care of delivering emails from one server to another server. When you send an email to an email address, it is delivered to its recipient by a SMTP Server.

What is ISP?

ISP stands for **I**nternet **S**ervice **P**rovider. They are the companies who provide you service in terms of internet connection to connect to the internet.

You will buy space on a Web Server from any Internet Service Provider. This space will be used to host your Website.

What is HTML?

HTML stands for **H**yper **T**ext **M**arkup **L**anguage. This is the language in which we write web pages for any Website. Even the page you are reading right now is written in HTML.

This is a subset of Standard Generalized Mark-Up Language (SGML) for electronic publishing, the specific standard used for the World Wide Web.

What is Hyperlink?

A hyperlink or simply a link is a selectable element in an electronic document that serves as an access point to other electronic resources. Typically, you click the hyperlink to access the

linked resource. Familiar hyperlinks include buttons, icons, image maps, and clickable text links.

What is DNS?

DNS stands for **D**omain **N**ame **S**ystem. When someone types in your domain name, `www.example.com`, your browser will ask the Domain Name System to find the IP that hosts your site. When you register your domain name, your IP address should be put in a DNS along with your domain name. Without doing it your domain name will not be functioning properly.

What is W3C?

W3C stands for **W**orld **W**ide **W**eb **C**onsortium which is an international consortium of companies involved with the Internet and the Web.

The W3C was founded in 1994 by Tim Berners-Lee, the original architect of the World Wide Web. The organization's purpose is to develop open standards so that the Web evolves in a single direction rather than being splintered among competing factions. The W3C is the chief standards body for HTTP and HTML.

2. Web – How it Works?

On the simplest level, the Web physically consists of the following components:

- **Your personal computer** - This is the PC at which you sit to see the web.
- **A Web browser** - A software installed on your PC which helps you to browse the Web.
- **An internet connection** - This is provided by an ISP and connects you to the internet to reach to any Website.
- **A Web server** - This is the computer on which a website is hosted.
- **Routers & Switches** - They are the combination of software and hardware who take your request and pass to appropriate Web server.

The Web is known as a *client-server* system. Your computer is the client and the remote computers that store electronic files are the servers.

How the Web Works

When you enter something like <http://www.google.com>, the request goes to one of many special computers on the Internet known as *Domain Name Servers (DNS)*. All these requests are routed through various routers and switches. The domain name servers keep tables of machine names and their IP addresses, so when you type in <http://www.google.com>, it gets translated into a number, which identifies the computers that serve the Google Website to you.

When you want to view any page on the Web, you must initiate the activity by requesting a page using your browser. The browser asks a domain name server to translate the domain name you requested into an IP address. The browser then sends a request to that server for the page you want, using a standard called Hypertext Transfer Protocol or HTTP.

The server should constantly be connected to the Internet, ready to serve pages to visitors. When it receives a request, it looks for the requested document and returns it to the Web browser. When a request is made, the server usually logs the client's IP address, the

document requested, and the date and time it was requested. This information varies server to server.

An average Web page actually requires the Web browser to request more than one file from the Web server and not just the HTML / XHTML page, but also any images, style sheets, and other resources used in the web page. Each of these files including the main page needs a URL to identify each item. Then each item is sent by the Web server to the Web browser and Web browser collects all this information and displays them in the form of Web page.

In Short

We have seen how a Web client - server interaction happens. We can summarize these steps as follows:

A user enters a URL into a browser (for example, <http://www.google.com>). This request is passed to a domain name server.

The domain name server returns an IP address for the server that hosts the Website (for example, 68.178.157.132).

The browser requests the page from the Web server using the IP address specified by the domain name server.

The Web server returns the page to the IP address specified by the browser requesting the page. The page may also contain links to other files on the same server, such as images, which the browser will also request.

The browser collects all the information and displays to your computer in the form of Web page.

3. Web - Browser Types

Web Browsers are software installed on your PC. To access the Web, you need a web browser, such as Netscape Navigator, Microsoft Internet Explorer or Mozilla Firefox.

Currently you must be using any sort of Web browser while you are navigating through our site [tutorialspoint.com](#). On the Web, when you navigate through pages of information, this is commonly known as web browsing or web surfing.

There are four leading web browsers: Explorer, Firefox, Netscape, and Safari, but there are many others browsers available. You might be interested in knowing [Complete Browser Statistics](#). Now we will see these browsers in bit more detail.

While developing a site, we should try to make it compatible to as many browsers as possible. Especially sites should be compatible to major browsers like Explorer, Firefox, Chrome, Netscape, Opera, and Safari.



Internet Explorer

Internet Explorer (IE) is a product from software giant Microsoft. This is the most commonly used browser in the universe. This was introduced in 1995 along with Windows 95 launch and it has passed Netscape popularity in 1998.

You can download latest version of this browser from Microsoft site [Download Internet Explorer](#)



Netscape

Netscape is one of the original Web browsers. This is what Microsoft designed Internet Explorer to compete against. Netscape and IE comprise the major portion of the browser market. Netscape was introduced in 1994.

You can download latest copy of this browser from [Download Netscape](#)



Mozilla

Mozilla is an open-source Web browser, designed for standards compliance, performance and portability. The development and testing of the browser is coordinated by providing discussion forums, software engineering tools, releases and bug tracking. Browsers based on Mozilla code is the second largest browser family on the Internet today, representing about 30% of the Internet community.

You can download latest copy of this browser from [Download Mozilla](#)



Konqueror

Konqueror is an Open Source web browser with HTML 4.01 compliance, supporting Java applets, JavaScript, CSS 1, CSS 2.1, as well as Netscape plugins. This works as a file manager as well as it supports basic file management on local UNIX filesystems, from simple cut/copy and paste operations to advanced remote and local network file browsing.

You can download latest copy of this browser from [Download Konqueror](#)



Firefox

Firefox is a new browser derived from Mozilla. It was released in 2004 and has grown to be the second most popular browser on the Internet.

You can download a latest version of this browser from [Download Firefox](#)



Safari

Safari is a web browser developed by Apple Inc. and included in Mac OS X. It was first released as a public beta in January 2003. Safari has very good support for latest technologies like XHTML, CSS2 etc.

You can download a latest version of this browser from [Download Safari](#)



Opera

Opera is smaller and faster than most other browsers, yet it is full- featured. Fast, user-friendly, with keyboard interface, multiple windows, zoom functions, and more. Java and non Java-enabled versions available. Ideal for newcomers to the Internet, school children, handicap and as a front-end for CD-Rom and kiosks.

You can download a latest version of this browser from [Download Opera](#)



Lynx

Lynx is a fully-featured World Wide Web browser for users on Unix, VMS, and other platforms running cursor-addressable, character-cell terminals or emulators.

You can download a latest version of this browser from [Download Lynx](#)

4. Web – Server Types

Every Website sits on a computer known as a Web server. This server is always connected to the internet. Every Web server that is connected to the Internet is given a unique address made up of a series of four numbers between 0 and 255 separated by periods. For example, 68.178.157.132 or 68.122.35.127.

When you register a web address, also known as a domain name, such as tutorialspoint.com you have to specify the IP address of the Web server that will host the site. You can load up with Dedicated Servers that can support your web-based operations.

There are four leading web servers: Apache, IIS, lighttpd and Jigsaw. Now we will see these servers in bit more detail.

Apart from these Web Servers, there are other Web Servers also available in the market but they are very expensive. Major ones are Netscape's iPlanet, Bea's Web Logic and IBM's WebSphere.



Apache HTTP Server

This is the most popular web server in the world developed by the Apache Software Foundation. Apache web server is an open source software and can be installed on almost all operating systems including Linux, Unix, Windows, FreeBSD, Mac OS X and more. About 60% of the web server machines run the Apache Web Server.

You can have Apache with **tomcat module** to have JSP and J2EE related support.

You can have detailed information about this server at [Apache HTTP Server](#)



Internet Information Services

The Internet Information Server (IIS) is a high performance Web Server from Microsoft. This web server runs on Windows NT/2000 and 2003 platforms (and may be on upcoming new Windows version also). IIS comes bundled with Windows NT/2000 and 2003; Because IIS is tightly integrated with the operating system so it is relatively easy to administer it.

End of ebook preview

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