

Concept of WWW.

- **WWW** is stands for World Wide Web.
- The **World Wide Web (WWW)** is a global information medium which users can read and write via computer connected to the internet.
- The Web, or World Wide Web, is basically a system of Internet servers that support specially formatted documents. The documents are formatted in a markup language called HTML (Hypertext Markup Language) that supports links to other documents, as well as graphics, audio, and video files.
- In short, **World Wide Web (WWW)** is collection of text pages, digital photographs, music files, videos, and animations you can access over the Internet.
- Web pages are primarily text documents formatted and annotated with Hypertext Markup Language (HTML). In addition to formatted text, web pages may contain images, video, and software components that are rendered in the user's web browser as coherent pages of multimedia content.
- The terms Internet and World Wide Web are often used without much distinction. However, the two are not the same.
- The Internet is a global system of interconnected computer networks. In contrast, the World Wide Web is one of the services transferred over these networks. It is a collection of text documents and other resources, linked by hyperlinks and URLs, usually accessed by web browsers, from web servers.
- There are several applications called **Web browsers** that make it easy to access the World Wide Web; For example: Firefox ,Microsoft's Internet Explorer, Chrome Etc.
- Users access the World-Wide Web facilities via a client called a browser, which provides transparent access to the WWW servers. User can access WWW via two way such us :

History of WWW:

- Tim Berners-Lee, in 1980 was investigating how computer could store information with random links. In 1989, while working at European Particle Physics Laboratory, he proposed to idea of global hypertext space in which any network-accessible information could be referred to by single “**universal Document Identifier**”. After that in 1990, this idea expanded with further program and knows as **World Wide Web**.

Internet and WWW

- The Internet, linking your computer to other computers around the world, is a way of transporting content. The Web is software that lets you use that content...or contribute your own. The Web, running on the mostly invisible Internet, is what you see and click on in your computer's browser.

What is The Internet?

- The Internet is a massive network of networks, a networking infrastructure. It connects millions of computers together globally, forming a network in which any computer can communicate with any other computer as long as they are both connected to the Internet. Information that travels over the Internet does so via a variety of languages known as protocols. So we can says that Internet is network of computer which connect to together and any computer communicate with any other computer.

What is The Web (World Wide Web)?

- The World Wide Web, or simply Web, is a way of accessing information over the medium of the Internet. It is an information-sharing model that is built on top of the Internet.
- The Web uses the HTTP protocol, only one of the languages spoken over the Internet, to transmit data. The Web also utilizes browsers, such as Internet Explorer or Firefox, to access Web documents called Web pages that are linked to each other via hyperlinks. Web documents also contain graphics, sounds, text and video.

Different between Internet and WWW

- **The Web** is a Portion of The Internet. The Web is just one of the ways that information can be disseminated over the Internet. **The Internet**, not the Web, is also used for email, which relies on SMTP, Usenet news groups, instant messaging and FTP. So the Web is just a portion of the Internet.

HTTP Protocol: Request and Response.

- HTTP stands for Hypertext Transfer Protocol.
- HTTP is based on the client-server architecture model and a stateless request/response protocol that operates by exchanging messages across a reliable TCP/IP connection.
- An HTTP "client" is a program (Web browser) that establishes a connection to a server for the purpose of sending one or more HTTP request messages. An HTTP "server" is a program (generally a web server like Apache Web Server) that accepts connections in order to serve HTTP requests by sending HTTP response messages.
- Errors on the Internet can be quite frustrating – especially if you do not know the difference between a 404 error and a 502 error. These error messages, also called HTTP status codes are response codes given by Web servers and help identify the cause of the problem.
- For example, "404 File Not Found" is a common HTTP status code. It means the Web server cannot find the file you requested. The file -- the webpage or other document you try to load in your Web browser has either been moved or deleted, or you entered the wrong URL or document name.
- HTTP is a stateless protocol means the HTTP Server doesn't maintain the contextual information about the clients communicating with it and hence we need to maintain sessions in case we need that feature for our Web-applications
- HTTP header fields provide required information about the request or response, or about the object sent in the message body. There are four types of HTTP message headers:
 - **General-header:**
These header fields have general applicability for both request and response messages.
 - **Request-header:**
These header fields have applicability only for request messages.
 - **Response-header:**
These header fields have applicability only for response messages.
 - **Entity-header:**
These header fields define Meta information about the entity-body.
- As mentioned, whenever you enter a URL in the address box of the browser, the browser translates the URL into a request message according to the specified protocol; and sends the

1 - Introduction

request message to the server.

- For example, the browser translated the URL **http://www.test101.com/doc/index.html** into the following request message:

```
GET /docs/index.html HTTP/1.1
Host: www.test101.com
Accept: image/gif, image/jpeg, */*
Accept-Language: en-us
Accept-Encoding: gzip, deflate
User-Agent: Mozilla/4.0 (compatible; MSIE 6.0; Windows NT 5.1)
```

Here, Step by step communication between client and server mention into following figure.

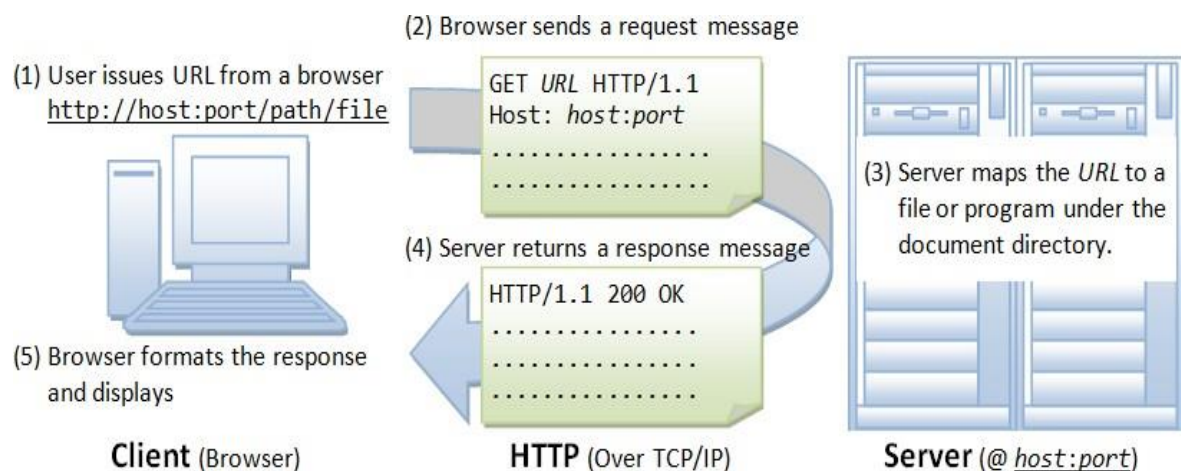


Fig 1: Communication between HTTP Client and HTTP Server

Web Browser and Web Server.

- Webserver and web browser are the terms which are commonly used for website. The basic purpose of both is to develop a platform for internet web directory. So that any users can anytime access any kind of website. Major difference between them is on their function and how they perform their functions. Check for the detail of both topics before understanding the differences between them.

Web Browser

- Web browser is a client, program, software or tool through which we sent HTTP request to web server. The main purpose of web browser is to locate the content on the World Wide Web and display in the shape of web page, image, audio or video form.
- We can also call it a client server because it contacts the web server for desired information. If the requested data is available in the web server data then it will send back the requested information again via web browser.
- Microsoft Internet Explorer, Mozilla Firefox, Safari, Opera and Google Chrome are examples of web browser and they are more advanced than earlier web browser because they are capable to understand the HTML, JavaScript, AJAX, etc. Now days, web browser for mobiles are also

1 - Introduction

available, which are called micro browser.

Web Server

- **Web server** is a computer system, which provides the web pages via HTTP (Hypertext Transfer Protocol). IP address and a domain name is essential for every web server.
- Whenever, you insert a URL or web address into your web browser, this sends request to the web address where domain name of your URL is already saved. Then this server collects the all information of your web page and sends to browser, which you see in form of web page on your browser.
- Lot of web server software is available in the market in shape of NCSA, Apache, Microsoft and Netscape. Storing, processing and delivering web pages to clients are its main function. All the communication between client (web browser) and server takes place via HTTP.
- Here, we can easily understand concept of web browser and web server by following figure.

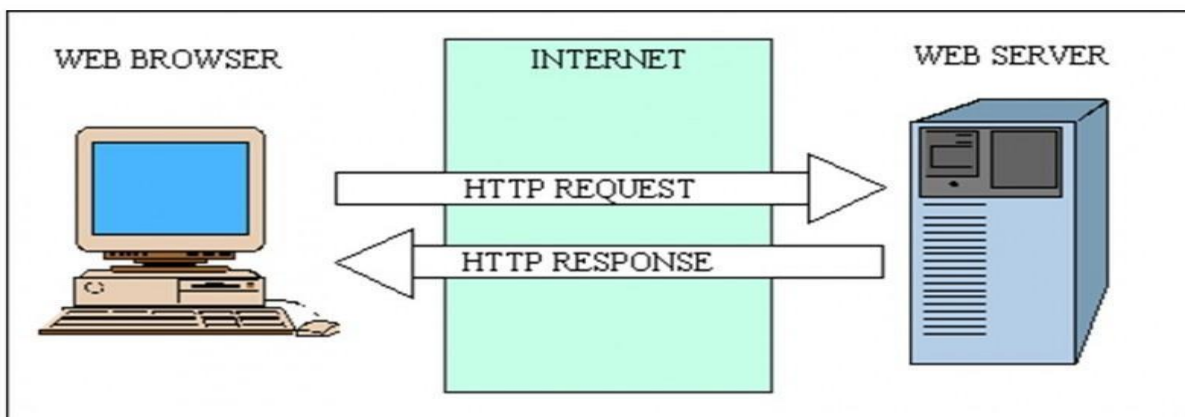


Fig 2: Communication between web Browser and Web Server

Feature of Web 2.0.

- Web 2.0 is a term that was introduced in 2004 and refers to the second generation of the World Wide Web. The term "2.0" comes from the software industry, where new versions of software programs are labeled with an incremental version number.
- Some examples of features considered to be part of Web 2.0 are listed below:
 - **Blogs :**
It also known as Web logs, these allow users to post thoughts and updates about their life on the Web.
 - **Wikis:**
Wikis - sites like Wikipedia and others enable users from around the world to add and update online content.
 - **Social Networking:**
Sites like Facebook and MySpace allow users to build and customize their own profile and communicate with friends.
 - **Web Application:**
Web application is a broad range of new applications make it possible for users to run programs directly in a Web browser. as Web logs, these allow users to post thoughts and updates about their life on the Web.
 - **User Participation:**
In traditional web the contents are solely provided by the website owner or company, but in

1 - Introduction

web 2.0 the users participate in content sourcing. This is also known as Crowd sourcing.
Examples: Wikipedia & You Tube.

- **Long Tail:**

The traditional web was like a retail business the product is sold directly to user and the revenue generated. But in web 2.0 the niche product is not sold directly but offered as a service on demand basis and income is generated as monthly fee and pay per consumption.

- **Rich User Experience :**

Traditional web are built with HTML and CSS CGI and had been offered as a static page. On the other hand Web 2.0 uses Ajax Asynchronous JavaScript + XML) presenting dynamic, rich user experience to users.

Example: Google Provided Google Maps and Google Suggest.

- Web 2.0 technologies provide a level user interaction that was not available before. Websites have become much more dynamic and interconnected, producing "online communities" and making it even easier to share information on the Web. Because most Web 2.0 features are offered as free services, sites like Wikipedia and Facebook have grown at amazingly fast rates.