**Subject : Web Development**

**WWW (World Wide Web)**

**What is WWW ?**

World Wide Web, which is also known as a Web, is a collection of websites or web pages stored in web servers and connected to local computers through the internet. These websites contain text pages, digital images, audios, videos, etc.

The WWW, along with internet, enables the retrieval and display of text and media to your device.

**How it works ?**

The Web works as per the internet's basic client-server format as shown in the following image. The servers store and transfer web pages or information to user's computers on the network when requested by the users. A web server is a software program which serves the web pages requested by web users using a browser. The computer of a user who requests documents from a server is known as a client. Browser, which is installed on the user' computer, allows users to view the retrieved documents.

All the websites are stored in web servers. Just as someone lives on rent in a house, a website occupies a space in a server and remains stored in it. The server hosts the website whenever a user requests its Web Pages, and the website owner has to pay the hosting price for the same.

The moment you open the browser and type a URL in the address bar or search something on Google, the WWW starts working. There are three main technologies involved in transferring information (web pages) from servers to clients (computers of users). These technologies include Hypertext Markup Language (HTML), Hypertext Transfer Protocol (HTTP) and Web browsers.Diagram

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**HTTP (Hyper Text Transfer Protocol)**

**What is HTTP ?**

**Hypertext Transfer Protocol (HTTP)** is an [application-layer](https://en.wikipedia.org/wiki/Application_Layer) protocol for transmitting hypermedia documents, such as HTML. It was designed for communication between web browsers and web servers, but it can also be used for other purposes. HTTP follows a classical [client-server model](https://en.wikipedia.org/wiki/Client%E2%80%93server_model), with a client opening a connection to make a request, then waiting until it receives a response. HTTP is a [stateless protocol](https://en.wikipedia.org/wiki/Stateless_protocol), meaning that the server does not keep any data (state) between two requests.

**How it Works ?**

As a request-response protocol, HTTP gives users a way to interact with web resources such as HTML files by transmitting hypertext messages between clients and servers. HTTP clients generally use [Transmission Control Protocol (TCP)](https://www.extrahop.com/resources/protocols/tcp/) connections to communicate with servers.

HTTP utilizes [specific request methods](https://tools.ietf.org/html/rfc2616#section-5.1.1) in order to perform various tasks. All HTTP servers use the GET and HEAD methods, but not all support the rest of these request methods:

* GET requests a specific resource in its entirety
* HEAD requests a specific resource without the body content
* POST adds content, messages, or data to a new page under an existing web resource
* PUT directly modifies an existing web resource or creates a new URI if need be
* DELETE gets rid of a specified resource
* TRACE shows users any changes or additions made to a web resource
* OPTIONS shows users which HTTP methods are available for a specific URL
* CONNECT converts the request connection to a transparent TCP/IP tunnel
* PATCH partially modifies a web resource

Diagram

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**FTP (File Transfer Protocol)**

**What is FTP ?**

**File transfer protocol (FTP)**is an Internet tool provided by TCP/IP. The first feature of FTP is developed by Abhay Bhushan in 1971. It helps to transfer files from one computer to another by providing access to directories or folders on remote computers and allows software, data, text file to be transferred between different kinds of computers. The end-user in the connection is known as localhost and the server which provides data is known as the remote host.

**How it Works ?**

The FTP connection is established between two systems and they communicate with each other using a network. So, for the connection, the user can get permission by providing the credentials to the FTP server or can use anonymous FTP.

When an FTP connection is established, there are two types of communication channels are also established and they are known as command channel and data channel. The command channel is used to transfer the commands and responses from client to server and server to client. FTP uses the same approach as TELNET or SMTP to communicate across the control connection. It uses the NVT ASCII character set for communication. It uses port number 21. Whereas the data channel is used to actually transfer the data between client and server. It uses port number 20.

The FTP client using the URL gives the FTP command along with the FTP server address. As soon as the server and the client get connected to the network, the user logins using User ID and password. If the user is not registered with the server, then also he/she can access the files by using the anonymous login where the password is the client’s email address. The server verifies the user login and allows the client to access the files. The client transfers the desired files and exits the connection. The figure below shows the working of FTP.

