

→ Tim Berners Lee (1989)

What is WWW?

World Wide Web commonly referred to as web or www, is a system of interlinked hypertext document accessed via internet. The web was invented by Tim Berners Lee in 1989, and now it has become an essential part of modern life transforming the way we communicate, learn and do business.

The web is made up of millions of web pages that are stored on servers all over the world. These pages are created using markup languages such as HTML and CSS which define the structure and appearance of the page. To access a web page users enter a URL into a web browser, which sends a request to the server hosting the page. The server responds by sending the page to the user's browser which then renders it on the user's device.

The web has enabled a wide range of applications and services including social networking, e-commerce, online education and entertainment.

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While the web has many benefits, it also poses challenges related to security, privacy and the reliability of information.

What is Internet?

Internet is a global network of interconnected computer systems that allows users to communicate and share information across the world in real-time. It decentralized and operates on a peer to peer basis, enabling a wide range of applications and services. While it has many benefits it also poses challenges related to security, privacy and the reliability of information.

What is a difference b/w Internet and WWW

Internet  
It is a global network of networks

WWW  
It stands for World Wide Web

It was established in 1960s

It was established in 1989

It emphasizes on hardware

It emphasizes on software

It can be viewed as big book store

It can be viewed as a collection of books on the store

It is independent of www

It ~~is~~ need internet.

It is superset of www

It is subset of Internet

It uses IP address

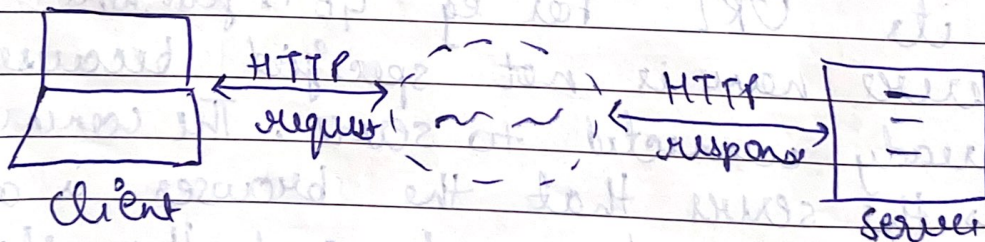
It uses HTTP

First Version of Internet was ARPANET

First version of WWW was NSFNET

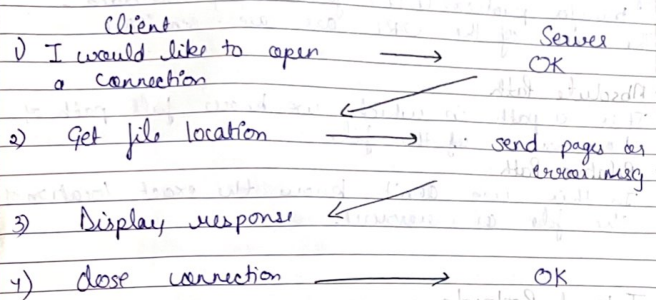
HTTP - (Hyper text transfer protocol)

It is the communication protocol used to transfer the information or the www which was given by Tim Berners's Lee. HTTP is the set of rules governing the format and content of the conversation between a web client and server (Both are applications). It is request / response protocol. It is an application layer of TCP/IP protocol.





## An HTTP conversation



In HTTP protocol server and client both can close the connection following are the steps involved during communication between client & server

1) Connection Setup: The browser opens a standard TCP connection to the server and use port number default 80. The port number is represented as `http://www.xyz.com:8080`

2) Browser Request: Once the TCP connection is established the browser requests the document using its URL. For eg. GET /first.html HTTP/1.1. Here server name is not specified because we are already connected to server. The command GET tells the server that the browser is attempting to retrieve a document and the statement ends with the version of HTTP protocol to be used.

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Other commands are Post / head / Put  
 Post - sends ~~more~~ data to the server  
 head - it gets only the page header and not the contents of the page  
 Put - use to transmit a data file to the server

3) Server Response: It begins with the response ~~code~~ for eg. file successfully found.

HTTP/1.1 200 OK

Server: Apache/1.3

MIME: user on: 1.0

Content type: text/html

Content length: 53

<html>

<head> ... </head>

</html>

400 - Bad Request

401 - Unauthorized

404 - Page not found

500 - Internet server error

200 - OK

201 - Created

204 - No content

301 - Moved permanently

## Features of HTTP

1) Connection less protocol: The HTTP client i.e. the browser initiates http request and after the request is made, the client disconnects from the server & waits for the response then the server re-establishes the connection to send the response back.

2) Media independent: means any type of the data can be send by the http as long as

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client and server knows how to handle the content

3) stateless Protocol: The server and the client are aware of each other only during current request afterwards they forget each other