WORLD WIDE WEB(www)

In 1989, Tim Berners-Lee invented the World Wide Web, an Internet-based hypermedia initiative for global information sharing while at CERN, the European Particle Physics Laboratory.

Hypertext Transfer Protocol(HTTP)

HTTP -jointly developed by the W3C and the IETF

-typically runs on top of TCP/IP using TCP port 80 by default, or TCP port 443 for HTTPS (HTTP over SSL/TLS)

HTTP is based on a client-server architecture

* Clients are also known as User Agent (UA):

Web browsers, Web crawlers, e-mail clients, and other end user tools and applications

* Servers:

origin servers, proxy servers, getaways, tunnels

HTTP is a stateless communications protocol

* Servers do not keep information about clients in between requests

HTTP provides support for other functionalities such as cache control, content media type (MIME) specification, language and character set specification,  
content/transfer coding, client-server protocol negotiation, persistent connections, request pipelining, authentication/authorization.

HTTP REQUEST METHOD

**GET**- is commonly used in HTTP method, It is used to request from the server the retrieval if the source identified by the request URI and can be combine with conditional and/or range request headers to effect conditional and/or partial resource retrieval.

**HEAD**- is identical to GET method, Method will ask for a response but without the response body this is very useful for retrieving.

**POST**- request that the target resource perform resource specific processing of presentation enclosed.

**PUT**- create or replace the state of the target resource with the state defined

**DELETE**- remove the association between the target

**OPTIONS**- request information about the communication options available for the target

**TRACE**- request a remote application level loop back of the request message (i.e. Request the recipient to echo back to the client the received request message)

**CONNECT**- request the establishment of a tunnel to the destination origin server, and its successful thereafter its behavior to bind-forwarding of packets in both direction, until the tunnel is closed.

METHOD PROPERTIES

**Safe Method**- client does not request

**Idempotent Method**- intended effect on the server of multiple identical request with the method is the same as the effect of a single such request.

**Cacheable Method**- indicates that the response to a method is allowed to be stored for future reuse.

HTTP MESSAGE HEADERS

* General Header Fields

Cache-control

Connection

Date

Pragma

Trailer

Transfer-encoding

Upgrade

Via

Warning

* Request Header Fields

Accept

Accept-charset

Accept-encoding

Accept-Language

Authorization

Expect

From

Host

If-Match

If-Modified-Since

If-None-Match

If-Range

If-Unmodified-Since

Max-forward

Proxy-Authorization

Range

Referrer

User-Agent

* Response Header Fields

Accept-Range

Age

E-Tag

Location

Proxy-Authenticate

Retry-After

Server

Vary

WWW-Authenticate

* Entity Header Fields

Allow

Content-encoding

Content-language

Content-length

Content-location

Content-MD5

Content-range

Content-type

Expires

Last Modified

HTTP Status Codes

* Informational (1xx)

100 Continue

101 Switching Protocols

* Success (2xx)

200 OK

202 Accepted

203 Non-Authoritative Information

204 No Content

205 Reset Content

206 Partial Content

* Redirection (3xx)

300 Multiple Choices

301 Moved Permanently

302 Found

303 See Other

304 Not Modified

305 Use Proxy

307 Temporary Redirect

* Client Error (4xx)

400 Bad Request

401 Unauthorized

402 Payment Required

403 Forbidden

404 Not Found

405 Method not Allowed

406 Not Acceptable

407 Proxy Authentication Required

408 Request Timeout

409 Conflict

410 Gone

411 Length Required

412 Precondition Failed

413 Request Entity Too Large

414 Request-URI Too Long

415 Unsupported Media Type

416 Request Range Not Satisfiable

417 Expectation Failed  Server Error (5xx)

500 Internal Server Error

501 Not Implemented

502 Bad Gateway

503 Service Unavailable

504 Gateway Timeout

505 HTTP Version

HYPERTEXT MARK-UP LANGUAGE(HTML)

* a language used to markup documents (i.e. web pages) in the world wide web
* historically, HTML was used to specify the structure and content of web pages as well as their presentation.
* Modern web development practice however uses HTML solely for semantic specification of web page structure and content with presentational aspect being delegated to style sheets
* Develop at CERN then the IETF, then the W3C, WHATWG

Version history:

* Pre-standardization

-HTML Tags, by Tim Berners-Lee late 1991

-HTML + (HTF) Dave Raggett late 1993

-HTML 3.2

-HTML 4.0

-HTML 4.01

* XHTML- reformulation of HTML in XML

-intended to facilitate the introduction of new HTML elements and or attributes

-XHTML 1.0 (W3C Recommendation, Jan 2000)

-XHTML 1.1 Module- Based XHTML (W3C Recommendation, May 2001)

* HTML 5

-arose from the effort to evolve HTML (instead of replacing it) to address backward compatibility issues that hindered the adoption of XHTML

-work on HTML5 was initially undertaken by the WHATWG (led by Apple, Mozilla and Opera) in 2004 with the W3C signifying interest to participate in the effort in 2006;

-HTML 5 incorporated specifications from HTML4, XHTML1

* HTML 5.1
* HTML 5.2
* HTML Living Standard (WHATWG)