***HYPER TEXT TRANSFER PROTOCOL***

Protocol for transfer of various data formats ( like plaintext, hypertext, images, video, sound) between server and client ,meta information also transferred.

***HTTP/1.1***

* HTTP/1.1 is the version of the original HTTP/1.0.
* HTTP1.1 was creaded in 1997
* HTTP 1.1 provides faster delivery of Web pages than the original HTTP and reduces Web traffic.
* Instead of opening and closing a connection for each application request, HTTP 1.1 provides a persistent connection that allows multiple requests to be batched or pipelined to an output buffer .

The underlying TCP layer can put multiple requests (and responses to requests) into one TCP segment that gets forwarded to the Internet Protocol layer for packet transmission.

* Because the number of connection and disconnection requests for a sequence of "get a file" requests is reduced, fewer packets need to flow across the Internet.
* Since requests are pipelined, TCP segments are more efficient.
* The overall result is less Internet traffic and faster performance for the user.
* Persistent connection is similar to Netscape's HTTP 1.0 extension called KeepAlive, but provides better handling of requests that go through proxy servers.
* When a browser supporting HTTP 1.1 indicates it can decompress HTML files, a server will compress them for transport across the Internet, providing a substantial aggregate savings in the amount of data that has to be transmitted.
* In addition to persistent connections and other performance improvements, HTTP 1.1 also provides the ability to have multiple domain names share the same Internet address (IP address).
* This simplifies processing for Web servers that host a number of Web sites in what is sometimes called virtual hosting.

***HTTP/2.0***

* HTTP2 was created by 2015.
* HTTP2 is much faster and more reliable than HTTP1.
* HTTP1 loads a single request for every TCP connection, while HTTP2 avoids network delay by using multiplexing.
* HTTP is a network delay sensitive protocol in the sense that if there is less network delay, then the page loads faster.
* HTTP/2 is binary, instead of textual meaning it is more compact, travels faster ‘on the wire’ and is less susceptible to errors.
* HTTP/2 is fully multiplexed. This sees it send multiple requests between browsers and servers at the same time over a single TCP connection. This means faster page loading and a fairer spread of network resources because poorly-behaved applications won’t ‘steal’ TCP connections from well-behaved applications as they did using HTTP/1.1.
* It uses HPACK header compression to reduce overhead. Web page HTML headers are data-heavy and compressing them means they can be sent between browser and server in one trip, over one TCP connection.
* It allows servers to ‘push’ responses proactively into browser caches instead of waiting for a new request for each resource. To do this the server ‘speculatively’ sends data which it anticipates the browser needing.
* HTTP/2 incorporates the new ALPN extension allowing for faster-encrypted connections and decreased load times because the application protocol is determined during the initial connection.
* HTTP/2 reduces additional round-trip times (RTT), meaning websites load faster with less optimisation.
* Workarounds like asset concatenation and domain sharding aren’t needed with HTTP/2.