HTTP Versions-

HTTP 0.9- Defined as the "one-liner" protocol

- Extremely simple, consist only of GET.
- You can only send HTML files.

HTTP 1.0- Building extensibility

- Introduced in 1996.
- Introduce HTTP verbs and HTTP status code.
- Adds HTTP headers.
- Adds ability to send more than just HTML files like provides ability to send non- HTML documents.

HTTP 1.1- Standardized protocol

- Introduced in 1997.
- The first officially standardized version of HTTP.
- Adds-
    a. reuse connection,
    b. pipelining,
    c. content-negotiation – content negotiation is the mechanism applied for serving different representation of a resoutce at a given URI, so the user agent can specify what is best for them. Eg- language, encoding.

       There are two types-
         1. Server-Driven negotiation
         2. Agent-Driven negotiation

d. host header- that indicate the hostname and port of the requested sever.
   Use- consider you have server and you want to run both
   1. 5mintitoriuals.com
   2. Softwareengine.com

   Both DNS records can resolve to the same IP address, allowing you to only run one server which will use the host header to identify which site to serve. That's huge win- one server for two sites.

- Added cache control mechanism- used to specify directives for caching mechanisms in both request and responses.

HTTP 2.0(SPDY)- Performance improvements(proposed by Google)

- Binary protocol rather than text, multiplexed, has compression.
- Maintains high-level compatibility with HTTP 1.1.
- Improved performance-
  1. Data compression of HTTP headers.
  2. HTTP 2.0 server push.
  3. Pipelining of requests
  4. Fixes HOL blocking
  5. Multiplexing request

The biggest takeaway from HTTP 2.0 is that it keeps the high-level structure the same, but changes the way data is framed and transported.

HTTP 3.0(QUIC)- Performance improvements

- Coming soon, will use a custom transport-layer protocol build on-top of UDP.

- HTTP 3.0 is the upcoming HTTP version based on Google QUIP transport layer protocol which uses UDP over TCP.
It is not in active use yet.