**Techtonic Group Technical Writing Assignment**

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When <https://www.techtonicgroup.com/> is entered in the browser, the browser requests the numeric IP address from a DNS server. In this case, it would be resolved to “35.161.60.106”. The browser may, however, have that address cached. These requests, and the subsequent responses, travel over a network of cables, mostly fiber optic. Some endpoints may use satellite signals and/or WIFI signals.

The communication for *browsing* the Internet consists of a server and a client. The server could be a single computer, or a network of hundreds of connected computers. The client, in this case, is the browser, which could be running on desktop computer, a laptop, or mobile device. These devices communicate using a protocol called “TCP/IP”, which stands for Transfer Control Protocol and Internet Protocol.

The role of the server is to run code that transforms a request from a client into the “HTML” code the browser will use to build a webpage. HTML stands for HyperText Markup Language. The client is responsible for displaying that code and reacting to any user input.

If a webpage needs data that is stored in a database, there is usually a separate server for that database. The server would communicate with the server to gain the data that needs to be included in the webpage.

The browser then issues an “HTTP/GET” request to the server at that address. It issues this request via the “HTTP” protocol. HTTP stands for HyperText Transport Protocol. This protocol defines how the packets must be built in order to have a successful request. “HTTPS” may be used instead of “HTTP”. This is a secure version of the protocol.

Included in the request is an HttpRequest packet, which includes metadata about the browser, any user preferences, and any cookies that have been stored for the domain.

The server at that address builds the webpage based upon the request, and any information in the cookies. It will also request any data needed from a database server.

The server sends an HttpResponse packet, which includes a status line and header information, such as the content-type. It also sends the body, which is the HTML code used to display within the web browser. The status line lets the browser know the result of the request. “200 OK” means it was able to successfully process the request. If a problem occurred, then one of many *error* codes would be returned, such as “400 Bad Request” or “500 Internal Server Error”. There are many more, less commonly used, error codes.

The browser receives the response, and parses it for display. Also included may be links for CSS and JavaScript files. These will cause the browser to make additional calls to the server to request those files.

The browser then assembles the page, starting with the HTML, and then modifying the page according to any CSS and JavaScript code. Once the final page is assembled, it will be rendered by the browser for display to the user.