**Part One: Solidify Terminology**

In your own terms, define the following terms:

1. What is HTTP?

HTTP (Hypertext Transfer Protocol) is a protocol used for communication between a client (normally a web browser) and a server over the internet. It defines how requests and responses should be formatted and transmitted, enabling the exchange of web resources such as HTML pages, images, and more.

1. What is a URL?

URL (Uniform Resource Locator) is a string of characters that provides a unique address for a resource on the internet. It consists of several components, including the protocol (e.g., "http"), domain name (e.g., "somesite.com"), and path (e.g., "/some/page.html"), which together specify the resource's location.

1. What is DNS?

DNS (Domain Name System) is a system used to translate human-readable domain names (like "somesite.com") into IP addresses (e.g., 192.168.1.1) that computers can use to locate and communicate with each other over the internet.

1. What is a query string?

A Query String is a part of a URL that follows a question mark (?) and contains key-value pairs separated by ampersands (&). It's often used to send data to a web server as parameters, typically in GET requests. For example, in "http://somesite.com/search?query=term&page=1," the query string is "query=term&page=1."

1. What are two HTTP verbs and how are they different?

HTTP Verbs (also known as HTTP methods) are actions that indicate what a client wants to do with a resource on a web server. Two common HTTP verbs are:

**GET**: This verb is used to retrieve data from a specified resource on the server. It is a safe and idempotent operation, meaning it does not have side effects on the server.

**POST**: POST is used to submit/send data to be processed to a specified resource on the server. It can create new resources or modify existing ones and is not necessarily safe or idempotent.

1. What is an HTTP request?

An HTTP request is a message sent by a client to request a specific action from a web server. It typically includes a method (GET, POST, etc.), a URL, headers, and sometimes a request body (for methods like POST).

1. What is an HTTP response?

An HTTP response is a message sent by a web server to a client in response to an HTTP request. It contains the requested data or information about the outcome of the request, along with status codes, headers, and a response body (e.g., HTML content).

1. What is an HTTP header? Give a couple examples of request and response headers you have seen.

HTTP Headers are additional information included in both requests and responses to provide metadata about the message. Examples include:

Request Header: "User-Agent" (identifies the client's browser or user agent).

Response Header: "Content-Type" (indicates the media type of the response, like "text/html").

1. What are the processes that happen when you type “*http://somesite.com/some/page.html*” into a browser?

Typing in the URL will start the following process:

1. The browser initiates a DNS lookup to resolve “somesite.com” into an IP address.
2. Once the IP is obtained, a TCP connection is established to the web server.
3. An HTTP GET request is sent to the server with the specified path (“*/some/page.html*”)
4. The server processes the request, retrieves the requested resource, and sends back an HTTP response with a status code and content.
5. The browser renders the HTML content received in the response and displays the web page.