**CSE 470: SOFTWARE ENGINEERING**

**ASSIGNMENT 0**

Write details of HTTP Request and Response.

HTTP stands for HyperText Transfer Protocol. This is a basis for data communication in the internet. The data communication starts with a request sent from a client and ends with the response received from a web server.

* A website URL starting with "http://" is entered in a web browser from a computer (client). The browser can be a Chrome, Firefox, Edge, Safari, Opera or anything else.
* Browser sends a request sent to the web server that [hosts](https://www.webnots.com/types-of-web-hosting/) the website.
* The web server then returns a response as a [HTML](https://www.webnots.com/learn-html-basics/) page or any other document format to the browser.
* Browser displays the response from the server to the user.

The web browser is called as a User Agent and other example of a user agent is the crawlers of [search engines](https://www.webnots.com/what-are-different-types-of-search-engines/) like Googlebot.

1. HTTP Request Structure from Client

A simple request message from a client computer consists of the following components:

* A request line to get a required resource, for example a request GET /content/page1.html is requesting a resource called /content/page1.html from the server.
* Headers (Example – Accept-Language: EN).
* An empty line.
* A message body which is optional.

All the lines should end with a carriage return and line feed. The empty line should only contains carriage return and line feed without any spaces.

2. HTTP Response Structure from Web Server

A simple response from the server contains the following components:

* HTTP Status Code (For example HTTP/1.1 301 Moved Permanently, means the requested resource was permanently moved and redirecting to some other resource).
* Headers (Example – Content-Type: html)
* An empty line.
* A message body which is optional.

All the lines in the server response should end with a carriage return and line feed. Similar to request, the empty line in a response also should only have carriage return and line feed without any spaces.

**HTTPS** is the secured HTTP protocol required to send and receive information securely over internet. Nowadays it is mandatory for all websites to have HTTPS protocol to have secured internet. Browsers like Google Chrome will show an alert with "Not Secure" message in the address bar if the site is not served over HTTPS.

Besides the security and encryption, the communication structure of HTTPS protocol remains same as HTTP protocol as explained above.

Guideline for checking HTTP Request and Response on Chrome:.

* Open a webpage in Google Chrome and go to "View > Developer > Developer Tools" menu.
* You can also open the developer console by right clicking on the page and choose "Inspect" option.
* Go to "Network" tab and then reload the page. Now you will see the loading time for each single component on the page.
* Click on the "Show Overview" icon to remove the timeline so that you can view other details clearly.
* Click the page URL on the left bar and go to "Response" tab. (You can also view the same details under "Preview" tab).

**Submitted by:**

**Samara Chaudhury**

**ID: 15305022**