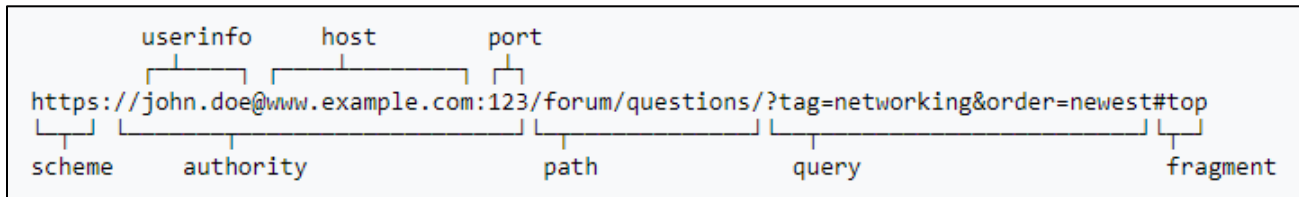**Programming Assignment #2**
"URL Analyzer"
Orig. Date Due: Thursday, September 27, 2018
New Date Due: Sunday, September 30, 2018

Skills: HTML, CSS, Javascript/jQuery, DOM, AJAX, JSON

Background Information:

A Uniform Resource Locator (URL) is the representation of what is commonly known as a web address:

https://en.wikipedia.org/wiki/URL
https://en.wikipedia.org/wiki/Uniform_Resource_Identifier#Syntax
https://www.w3schools.com/html/html_urlencode.asp

Description of Assignment:

The goal of this assignment is to obtain and analyze a set of URLs.

Step 1: Obtain a set of URLs

(The original assignment called for accessing these URLs from the browser history. Due to security concerns, there are restrictions on what can be obtained from the browser history.)

https://developer.mozilla.org/en-US/docs/Web/API/History
https://www.w3schools.com/jsref/obj_history.asp

As an alternative, please provide a File-Upload button so that the user/instructor and choose a file which will contain a list of URLs, and take it from there. Here are two links that should be helpful:

https://www.w3schools.com/jsref/dom_obj_fileupload.asp
https://www.javascripture.com/FileReader

(The due-date has been extended by three days to provide additional time to handle this change.)

Step 2: Parse the URLs into their component parts (see above for components)

Three approaches are:
- do your own parsing
- use regular expressions https://developer.mozilla.org/en-US/docs/Web/JavaScript/Guide/Regular_Expressions
- convert the string to a URL object https://developer.mozilla.org/en-US/docs/Web/API/URL

Step 3: Lookup the domain names and obtain their corresponding IP addresses:

One way to get the IP address is
- pass a domain name to this site: https://dns.google.com/resolve?name=
- use an XMLHttpRequest() to send a request to the Google DNS server
- use JSON.parse(*) to parse the response

Step 4: List each complete URL as it appeared in the browser history, as well as all their respective component parts, including the corresponding IP address

Use either <table> or <div> tags and create appropriate headers for each columns

Step 5: Display summary data below the table

For example: how many of each scheme, how many of each top-level domain (TLD), etc.

Use bar graphs or pie charts to present your analysis
https://www.w3schools.com/howto/howto_google_charts.asp
https://canvasjs.com/html5-javascript-pie-chart/
https://www.anychart.com/blog/2017/12/06/pie-chart-create-javascript/