- **Investigate and record your findings in your e-portfolio for this activity. Open a website on a browser, then investigate various functionality associated with the browser to get a webpage loaded.**

To get a webpage loaded, a browser performs several functions, such as retrieving information from the World Wide Web and making it available for users, visiting any website using a web browser, running Java applets and flash content using plugins available on the web browser. Navigation occurs when a user requests a page by entering a URL into the address bar, clicking a link, submitting a form, or other actions, which is the first step in loading a web page. The browser goes to the DNS server and finds the actual address of the server that the website lives on. The browser sends an HTTP request message to the server, asking it to send a copy of the website to the client.

A general overview of the functions associated with a browser to load a webpage.

**Domain Name System (DNS) Lookup:** When a user enters a website's URL in the browser, the browser must resolve the domain name to an IP address. The browser requests a DNS server to resolve the domain name to an IP address.

**Establishing a Connection:** Once the browser has the IP address of the website, it creates a TCP connection with the web server using the HTTP protocol.

**HTTP Request:** The browser sends an HTTP request to the web server requesting the website's content.

**Server Processing:** The web server processes the request and sends the website's content back to the browser.

**Rendering:** Once the browser has received the website's content, it begins rendering it. The browser parses the HTML, CSS, and JavaScript code to generate the webpage correctly.

**Display:** Finally, the browser displays the fully rendered webpage to the user.

In addition to these basic functionalities, modern browsers have additional features that enhance the user experience. These include caching, cookies, security features, plug-ins, and extensions.

Caching allows the browser to store a copy of frequently accessed web pages to speed up future visits. Cookies are used to store user information, preferences, and session data. Security features like SSL/TLS encryption and sandboxing protect users from malicious websites and attacks. Plug-ins and extensions add additional functionality to the browser, such as ad blocking, password managers, and language translation.

A browser is a complex piece of software that performs many functions to load a webpage and provide an optimal user experience.

**Reference:**

MDN Web Docs. (2019). *How the Web works*. [online] Available at:

https://developer.mozilla.org/en-

US/docs/Learn/Getting_started_with_the_web/How_the_Web_works.