There are many tools available for web designers to ensure that their code is accurate and will execute as expected. For example, the W3C provides HTML and CSS code validation by URL or file upload. Also, along with these well-known resources, in browser debugging tools are an invaluable asset to JavaScript programmers. Below are some of the most helpful in browser web dev tool features:

Pause Your Code with Breakpoints

Breakpoints are used to pause JavaScript code to find code errors.

There are different types of code breakpoints. Which type of breakpoint you need to use depends on several factors. The most common breakpoint type is the line-of-code breakpoint. The best use of the line-of-code breakpoint is when you already know which section of code that needs to be inspected. You can insert a breakpoint from the Sources section of the Chrome web dev tool by selecting the number line where you want to insert the break, or by calling debugger within the code. The code will then always pause before that line of code. Document Object Model (DOM) change breakpoints are used when you want to pause code that changes a DOM node or its children (Basques, 2020). Other helpful breakpoints are event listener, exception, and function breakpoints.

# Find Unused JavaScript And CSS Code

# Within Chrome dev tools is the Coverage tab which can be used to find unused JavaScript and CSS code. Unused code can be a problem when using controls from JavaScript libraries like Bootstrap (Basques, 2020). Removing unused code can help speed up page load times. The Coverage tab is used to analyze the code and determine exactly what code is being used to execute the resources, and what is not. After analyzing the code in the Coverage tab, the Resources tab will show a line by line breakdown of the code used by each resource and if the code contains CSS, JavaScript or both (Basques, 2020). Programmers are cautioned when using this feature however because eliminating portions of unused code may require restructuring the entire existing code base.

# Run Snippets of JavaScript On Any Page

# Code that is often reused can be saved as a snippet within Chrome dev tools. Snippets are just sections of code that the programmer can write and save for future use. The Firefox version of Snippets is called Scratchpad. Snippets have access to the page’s JavaScript context and can be run on any page (Basques, 2020). Once created, you can reuse and edit the snippets from the Sources tab. Snippets can also be renamed and deleted.

# Monitor Performance

# The performance tab shows what resources require the most time to load. Statistics can be sorted by time, activating or source (Williams, 2020).

# Edit CSS and HTML

# From the Elements tab CSS and HTML can be changed and the page display will be updated immediately. This can be helpful to see what changes will look like before making permanent changes to the source code. Also, while editing CSS code, by using Cmd + Click (Ctrl + Click), multiple lines of code can be edited at the same time (Williams, 2020).

# Works Cited

Basques, K. (2020). *Tools for Web Developers*. Retrieved from https://developers.google.com/web/tools/chrome-devtools/javascript

Williams, M. (2020). *Chrome DevTools - 20+ Tips and Tricks*. Retrieved from KeyCDN: https://www.keycdn.com/blog/chrome-devtools