Google Closure - Building Complex Applications with JavaScript

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Blog post published November 22, 2010 in *Depth-First*
https://doi.org/10.59350/cjf7q-0q072

Abstract

Many years ago, JavaScript was considered a toy language suited only for implementing button rollovers and annoying modal dialogs. Those days are long gone. A key enabler of HTML5 and the astonishing levels of multimedia interactivity becoming widely-available within browsers, JavaScript will only increase in importance in coming years. And projects like Node.js are demonstrating that JavaScript is a serious contender on the server side as well.

Keywords

Physical and Theoretical Chemistry (Subfield), Mobile and Web Applications (Topic), Information Systems (Subfield)

Recommended citation

Apodaca, R. (2010, November 22). Google Closure - Building Complex Applications with JavaScript. *Depth-First*. https://doi.org/10.59350/cjf7q-0q072

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Today, JavaScript is being used to create software of increasing complexity and scale. This article, the first in a series, introduces Google Closure, an especially effective tool for building client-side JavaScript applications that scale.

This will be no theoretical discussion. At the beginning of this year my company committed itself to re-writing its flagship product ChemWriter, a chemical structure drawing tool, in JavaScript using Closure. We've been working with it since - a lot. In this series, I'd like to share some of our experiences.

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All Articles in this Series

1. Google Closure - Building Complex Applications with JavaScript
2. Synchronize the Closure Library SVN Using a Git Submodule

Who This Series is for

If you're considering writing (or re-writing) an interactive client, the combination of JavaScript and browsers has a lot to offer as a platform - even if you're targeting mobile uses. But unless your resources are unlimited, you're going to need a JavaScript framework to do the grunt work for you. Browsers are too inconsistent and lack higher-level interfaces to unlock their full functionality, and JavaScript the language has too many rough edges. A JavaScript framework solves these problems for you.

We considered many options for a JavaScript framework before starting. Closure was the one that best suited our needs, including:

- Proven cross-browser capabilities, particularly event handling, dom manipulation, and graphics.
- Clear object-oriented structure.
- Well-written documentation.
- Cross-browser support for vector graphics, including IE7/8.
- Support for complex manipulation of geometrical shapes, including affine transformations.
- Maintained by a dedicated team with significant resources and vested interest in success.
- Source code minification and obfuscation with the option to run code in its original form at any time.
- Emphasis on high performance.
- Open sourced under an academic-style license.
- Capable of working with BDD-style testing frameworks such as Screw.Unit.

Your needs may differ, but if they overlap with ours, you might want to consider Closure.

Stop Right Now and Get This Book

One of our requirements, well-written documentation, was only partially met by Closure at the time we started using it. That situation has since changed for the better. Closure: The Definitive Guide is essential reading for anyone interested in using Google Closure.

In case you're new to JavaScript, I can also highly recommend JavaScript: The Good Parts.

These two books should be enough background to start any project using Closure.

Where To?

Although a lot of good Closure documentation exists, we've found a few situations in which a concise discussion of a specific Closure problem and a workable solution would have come in handy. The articles to follow will reveal solutions to some problems in using Closure effectively.