

Slimming javascript applications: An approach for removing unused functions from javascript libraries

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© 2018 Elsevier B.V. Context: A common practice in JavaScript development is to ship and deploy an application as a large file, called bundle, which is the result of combining the application code along with the code of all the libraries the application depends on. Despite the benefits of having a single bundle per application, this approach leads to applications being shipped with significant portions of code that are actually not used, which unnecessarily inflates the JavaScript bundles and could slow down website loading because of the extra unused code. Although some static analysis techniques exist for removing unused code, our investigations suggest that there is still room for improvements. Objective: The goal of this paper is to address the problem of reducing the size of bundle files in JavaScript applications. Method: In this context, we define the notion of Unused Foreign Function (UFF) to denote a JavaScript function contained in dependent libraries that is not needed at ru