



JavaScript Refactoring Tool

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Research Questions

RQ1: To what extent has var been refactored to let and const in older applications?

RQ2: What are the challenges that developers face when it comes to implementing such a refactoring procedure manually?



Technical Challenges

- Building a corpus of relevant Javascript repositories - involving changes to let, const, var
- Analysing a corpus of Javascript repositories
 - How let, const, and var are misused
 - How var is refactored into using either let or const
- Building a tool for discovering instances of misuse
 - Checking source code for variable scope and variable reassignment
- Implementing efficient Visual Studio Code plugin
 - Ideally provide real time suggestions for improved ES6 feature use



Proposed Solution

1. Define a corpus
2. Answer research questions
3. Build extension
4. Evaluate



Proposed Solution

Visual Studio Code Extension

“The tool will analyze the usage of variables defined within the project by their respective scopes and determine whether they should be declared using the *var*, *let*, or *const* keyword.”



Related Work

- Automated Refactoring of Client-Side JavaScript Code to ES6 Modules
- Type Refinement for Static Analysis of JavaScript
- JSNose: Detecting JavaScript Code Smells
- Tool-supported Refactoring for JavaScript
- Semi-Automatic Rename Refactoring for JavaScript