Christian Bachmann

Etienne Pfister

JavaScript Refactoring Eclipse Plug-in

Refactoring Support for Eclipse JavaScript Development Tools (JSDT)

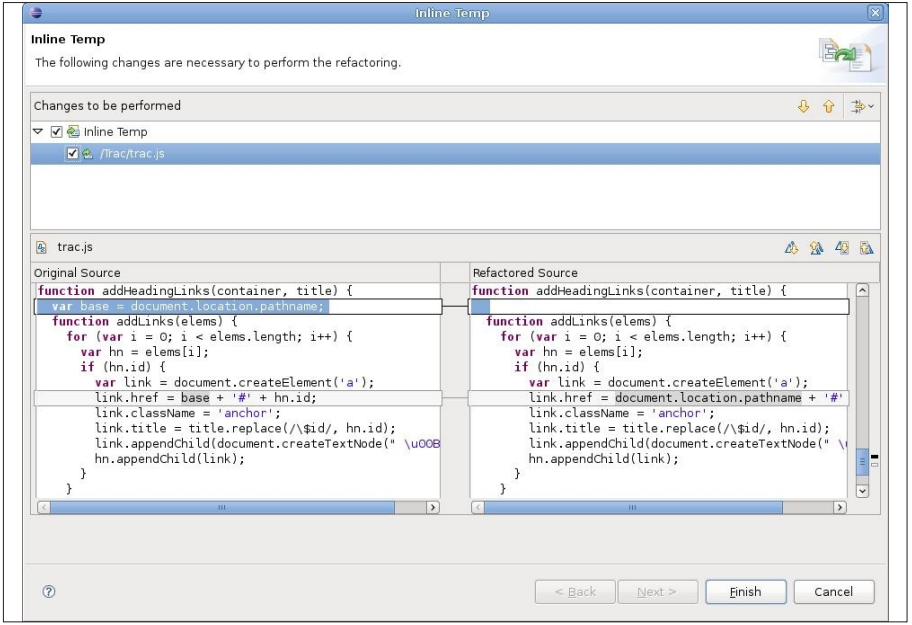
Graduate candidates	Christian Bachmann, Etienne Pfister
Examiner	Prof. Peter Sommerlad
Co-examiner	Dr. Dirk Bäumer, IBM Rational Switzerland, Zürich
Subject area	Software
Project partner	IFS Institute for Software, HSR, Rapperswil-Jona SG

Topic: JavaScript is one of the most used programming languages. Websites are using it to achieve an interactive user experience. Refactoring means modifying existing code without affecting its external behavior. It improves readability and understandability as well as the design and architecture of the program.

The semantics of JavaScript code change dynamically during interpretation at runtime. This makes refactoring JavaScript more challenging than other less dynamic programming languages like Java.

Solution: Based on a preceding diploma thesis we developed three refactorings for the Eclipse JavaScript Development Toolkit (JSDT), which is part of the Eclipse Web Tools Platform (WTP).

- Move Function moves a function definition into another file to achieve a better structure.
- Transform Code Style transforms class definitions in classic style to the modern JSON style.
- Inline Temp replaces all references to a temporary variable with the expression itself.



Example: Performing Inline Temp Refactoring

To simplify verification of the implemented features and to assure code quality, we extended the existing file-based testing environment. File-based testing allows automated testing of refactoring with before/after comparisons.

We fixed several major bugs and shortcomings in the existing plug-in as well as the JSDT code base. All the improvements and additions we have provided have been contributed to the Eclipse project.

More information/update site:
http://sifsstud3.hsr.ch