

IntensiVE

The Intensional Views Environment

1 Overview

Keywords: active documentation, co-evolution

Platforms: Cincom VisualWorks 7.x

License: Lesser General Public License (LGPL)

Developers:

Andy Kellens
Vrije Universiteit Brussel
akellens@vub.ac.be

Frédéric Pluquet
Université Libre de Bruxelles
fpluquet@ulb.ac.be

Kim Mens
Université Catholique de Louvain
kim.mens@info.ucl.ac.be

2 Description

Maintaining the source code of an evolving software system requires adequate documentation of its design and architecture. However, due to its constant evolution, it is difficult to keep source code and design / architecture synchronized. Intensional source-code views have been proposed as an

active documentation technique to alleviate this problem. They increase our ability to understand, modularize and browse the source code by grouping together source-code entities that address a same concern. They facilitate software development and evolution, because alternative descriptions of the same intensional view can be checked for consistency and because relations among intensional views can be defined and verified. Finally, they enable us to document and verify knowledge developers have about source code that is not captured by traditional program documentation mechanisms.

To define and verify intensional views and their interrelationships we have built a series of tools which we grouped in what we call IntensiVE. Some of these tools are:

- The Intensional View Editor : a tool for defining, modifying and storing intensional views and checking them against the source code
- The Relation Browser : a tool for defining, modifying and storing relations between intensional views and checking them against the source code
- The Relation Inspector : a tool for getting fine-grained feedback on the validity of high-level relationships between intensional views
- The Visualization Tool

Recently we reimplemented most of the tools, to improve the storage mechanism and to integrate them seamlessly with StarBrowser2, an advanced source code browser for VisualWorks Smalltalk. In addition to having the Prolog-like query language SOUL as underlying language in which to express the intensional views and relations, we also added support for using Smalltalk itself as query language. Perhaps most importantly, we added support for visualizing intensional views and relations, by relying on CodeCrawler, a reverse engineering tool which combines metrics and software visualization. To test the validity of this new breed of tools, and to explore the new opportunities offered by the visualization tool in particular, we recently applied these tools on SmallWiki.

3 Download

IntensiVE can be downloaded from:

<http://prog.vub.ac.be/~akellens/intensive/>

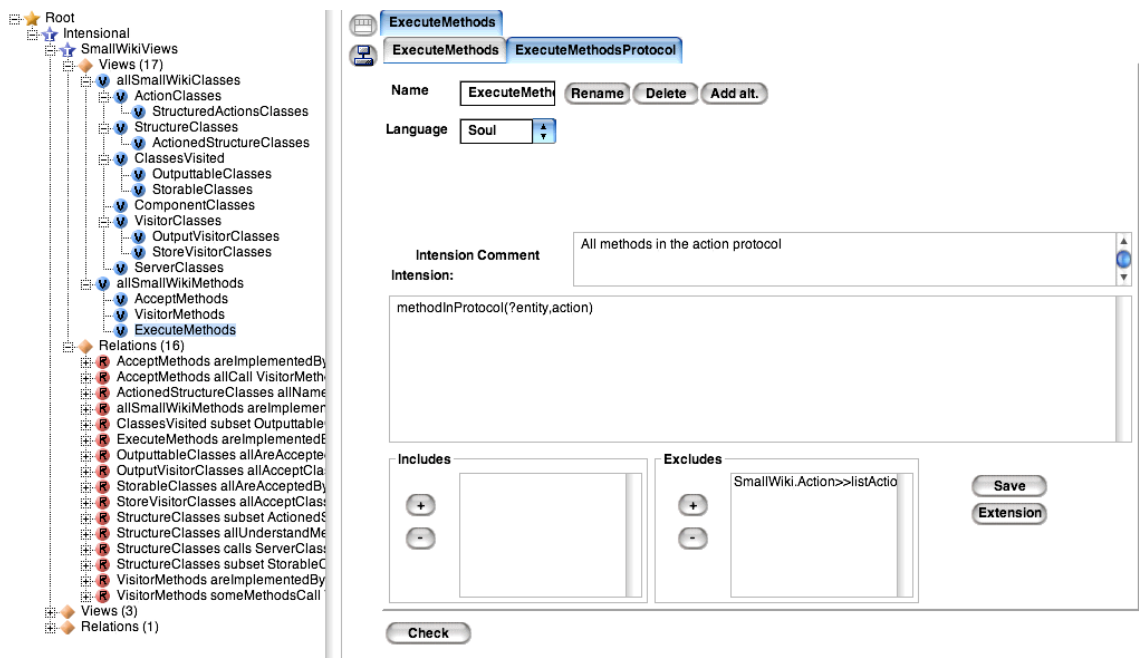


Figure 1: The Intensional View Editor

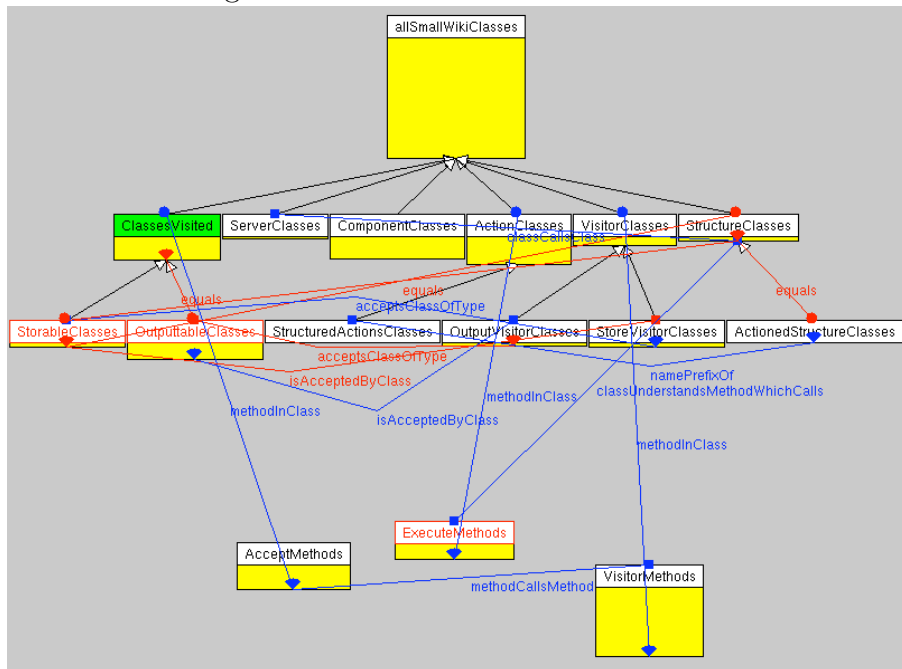


Figure 2: The Visualization Tool