Software Component Technology Group

Semester Project

Usability Evaluation of Jive

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In cooperation with the Softwaretechnik Group at the University of Kaiserslauten, the Software Component Technology Group at ETH works on the Java Interactive Verification Environment, Jive. Jive uses JML as specification language and allows one to interactively prove that Diet Java Card (a subset of Java Card) programs match their specification.

The development of Jive reached a relatively stable point by now, however, little effort has been spent on actually putting the usability of Jive to the test. The immediate goal of this project is to determine the capabilities of Jive by attempting to verify programs and if necessary fixing encountered problems (e.g. missing information in generated verification conditions). The complexity of programs attempted to get verified by the tool will increase gradually from very simple programs to more involved ones, ultimately proving the two reference programs provided by the two groups.

Since this includes working with the entire system, providing documentation from the viewpoint of a new user is a natural extension of the project. Hence the documentation will be in tutorial form.

The experience gained with Jive throughout the project may lead to the identification of shortcomings (e.g. GUI, useful language constructs not supported by Jive). If time permits, such shortcomings should be fixed to enhance the usability of Jive.

To sum up, the tasks of this project are:

i Write programs and attempt to verify them to determine the current state of Jive and fix encountered problems. The outcome should be a classified collection of programs (e.g. "correct and proven", "correct but unproven", "incorrect and unproven").

ii Provide documentation in the form of a tutorial for new users of Jive.

iii Depending on the progress with the previous two points, small to medium size tasks may be worked out to fix shortcomings experienced during the project.

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