Institut für Systemsoftware

O.Univ.Prof. Dr. Hanspeter Mössenböck

JOHANNES KEPLER
UNIVERSITÄT LINZ
Netzwerk für Forschung, Lehre und Praxis

Ruby AST Interpreter in Java

Bachelor thesis for Wolfgang Küllinger
Matr.-Nr.: 0955711
Email: kuellingerwolfgang@gmx.at

The goal of this thesis is to write an abstract syntax tree (AST) interpreter for the Ruby scripting language in Java. All elements of the interpreter (e.g., stack, values) should be modeled in Java such that it can run on any Java virtual machine. The interpreter should use its own parser with a particular focus on skipping never executed parts of the Ruby code.

Specific sub-goals are:

- Applying object-oriented design techniques when modeling the interpreter.

- Exploring which Java language constructs are convenient for implementing a Ruby interpreter.

- Identifying possibilities for gathering runtime feedback during interpreter execution.

- Implementing a subset of Ruby such that the interpreter can be tested on established Ruby benchmarks.

Explicit non-goals are:

- Completeness with respect to the Ruby specification.

- Performance in comparison with existing Ruby engines.

The work's progress should be discussed with the supervisor at least every 2 weeks. Please note the guidelines of the Institute for System Software when preparing the written thesis.

Supervisor: Dipl.-Ing. Thomas Würthinger