

Semester Project

Universe Type System for Eiffel

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Background: The Software Component Technology group has developed the Universe type system, a type system that allows the programmer to control aliasing and dependencies. The type system is an extension to the Java type system and was implemented in the MultiJava and JML tools. The underlying ideas of the Universe type system can be applied to other object-oriented programming languages.

Goal of this semester project is to investigate how the Universe type system could be used in Eiffel [1].

The main parts of this project are:

1. identifying the language constructs that differ between Eiffel and Java
2. develop possible treatments of these features
3. discuss and evaluate the possible solutions
4. develop an overall consistent treatment of Eiffel
5. propose the necessary syntax extensions

The language constructs that must be discussed are:

1. expanded types
2. agents
3. Design-by-Contract
4. generics

No implementation of the Universe type checker for Eiffel is required.
A written report and an oral presentation will complete the project.

References

[1] Bertrand Meyer, Editor. ECMA standard: *Eiffel Analysis, Design and Programming Language*. Approved as International Standard 367 by ECMA International. 21 June 2005.