

Abstract

ASB: A Framework for Implementing Extensible Aspect-oriented Programming Languages

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Mechanisms in aspect-oriented programming (AOP) can be characterized by a join point model consisting of the join points, a means of identifying the join points, and a means of effecting at the join points. Each of current AOP languages is based on a few fixed set of join point models. Many different join point models have been proposed, and they are still evolving so that they could better modularize various crosscutting concerns. There are several AOP systems, such as AspectJ, Hyper/J, and Demeter, that deal with different kinds of crosscutting concerns. Moreover, there are crosscutting concerns specific to certain kinds of user applications, and these concerns may not be modularized with current join point models. Extensible AOP languages are needed to address this problem. In this paper, a framework for implementing extended join point models is proposed. The framework, called X-ASB (eXtensible Aspect Sand Box), is based on a common framework for modeling different join point models proposed by Masuhara and Kiczales. Using X-ASB, programmers can rapid-prototype new join point models for designing and evaluating new AOP languages. We believe that clarifying programming interfaces for extending join point models is an important milestone towards computational reflection for AOP.

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