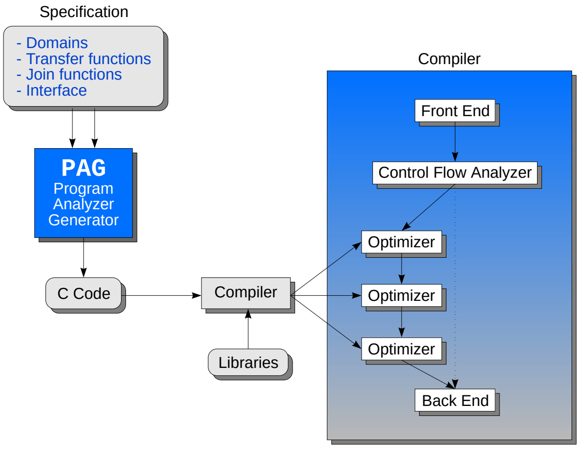
AbsInt
Angewandte Informatik

PAG – Program Analyzer Generator

Static program analysis made easy.

The **PAG** program analyzer generator supports the implementation of static program analyzers. **PAG** generates efficient data flow analyzers from concise specifications.



Features

- **PAG**'s high-level input language **improves maintainability**.
- **PAG**-generated analyzers are **highly efficient** due to sophisticated data structures and iteration algorithms.
- **PAG**-generated interprocedural analyzers can be **easily integrated** into existing compilers thanks to a well-defined interface.
- The underlying theory of **abstract interpretation** provides the relation to the programming language semantics, thus enabling the systematic derivation of **provably correct** and terminating analyses.

Why do you need PAG?

Producing high quality code means that compilers have to perform efficiency-enhancing program transformations. These transformations usually depend on preceding program analyses known as data flow analyses or abstract interpretations. They may range from “simple” intraprocedural bit-vector frameworks to highly complex interprocedural alias analyses. Their implementation is usually difficult and expensive.

The generative approach frees the **PAG** user from having to implement the domain functionality, the traversal of the control flow graph, and the implementation of suitable fixpoint algorithms. Thus, **saving valuable development time**.

Applications

PAG has been used in several projects by numerous companies and universities to implement conditional constant propagation, shape analysis, value analysis, pipeline analysis, cache analysis, interval analysis, data dependency analysis on pointer structures, escape analysis on Java, memory error detection, strongly live variables and classical bit-vector analyses.

Supported platforms

PAG runs under various Unix dialects including Linux. The generated analyzers are produced in ANSI-C.

About AbsInt

AbsInt Angewandte Informatik GmbH provides advanced tools and services in the areas of compiler optimization, static program analysis, and worst-case execution time prediction.

A research license for **PAG** is available from Saarland University (see www.program-analysis.com).

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