

Wikiprint Book

Title: Checking Java Annotations

Subject: Java Path Finder - summer-projects/2010-annotations

Version: 17

Date: 02/22/2013 12:04:24 PM

Table of Contents

TracNav	3
Introduction	3
Installing JPF	3
User Guide	3
Developer Guide	3
MJI	3
Projects	3
About	4
Checking Java Annotations	4
Abstract	4
Contact	5
Program & Timeline	5
Repository	5
Description	5
Assumptions	5
Questions	5
Related work	5
Project Blog	5

TracNav

- [JPFWiki - Welcome Page](#)

Introduction

- [What is JPF](#)
- [Testing vs model checking](#)
- [Random Example](#)
- [Race Example](#)
- [JPF classification](#)

Installing JPF

- [System requirements](#)
- [Download snapshots](#)
- [Download repositories](#)
- [Create site.properties](#)
- [Install NetBeans IDE plugin](#)
- [Install Eclipse IDE plugin](#)
- [Building and testing](#)

User Guide

- [Application Types](#)
- [JPF Components](#)
- [Configuring JPF](#)
- [Running JPF](#)
- [JPF Output](#)
- [The JPF API](#)

Developer Guide

- [Design](#)
- [Choice Generator](#)
- [Partial Order Reduction](#)
- [Attributes](#)
- [Listener](#)

MJI

- [Mangling for MJI](#)
- [Bytecode Factory](#)
- [Logging](#)
- [Report](#)
- [Embedded](#)
- [JPF tests](#)
- [JPF project layout](#)
- [Create a JPF project](#)
- [Coding Conventions](#)
- [Hosting update site](#)

Projects

- [jpf-core](#)
- [jpf-actor](#)
- [jpf-awt](#)
- [jpf-awt-shell](#)

- [jpf-concurrent](#)
- [jpf-cv](#)
- [jpf-delayed](#)
- [jpf-guided-test](#)
- [jpf-mango](#)
- [jpf-racefinder](#)
- [jpf-rtembed](#)
- [jpf-statechart](#)
- [net-iocache](#)
- [jpf-aprop](#)
- [jpf-numeric](#)
- [jpf-symbc](#)
- [jpf-concolic](#)
- [jpf-symbc-load?](#)
- [jpf-extended-test-gen](#)
- [jpf-parallel-spf?](#)
- [eclipse-jpf](#)
- [netbeans-jpf](#)
- [jpf-inspector](#)
- [jpf-shell](#)
- [jpf-template](#)
- [jpf-trace-server](#)
- [standard NB example](#)
- [Summer Projects](#)
- [External Projects](#)
- [Change\(B\)log](#)

[About](#)

- [About this Wiki](#)
- [About the Mailing Lists](#)
- [About the Development Process?](#)
- [About the Repository?](#)
- [How to Contribute](#)
- [JPF contributor account](#)
- [Events](#)
- [Presentations](#)
- [Papers](#)
- [FAQ](#)
- [History?](#)
- [Support](#)
- [People?](#)
- [Playground](#)
- [Table of Context](#)

Checking Java Annotations

Abstract

Imagine the world where computers are handling all critical situations. Reliable systems using artificial intelligence prevent ships from drafting on shallows and planes from crashes. However, it is required that those systems are tested by powerful verification tools. In order to maximize application reliability, production versions should not differ from tested versions. Achieving that is possible using annotations which are detected at runtime. The aim of Checking Java Annotation project is to develop a set of annotations that can be applied to Java programs to assist tools that detect software defects.

Contact

student: Filip Rogaczewski <frogaczewski "at" gmail.com> (FR)
mentor: Suzette Person <suzette.person "at" nasa.gov> (SP)
co-mentor: Mateusz Ujma <mateusz.ujma "at" gmail.com> (MU)

Program & Timeline

This project is funded by the [Google Summer of Code \(GSoC\)](#) program. It follows the [GSoC timeline](#) (start 05/24, finish 08/16)
<http://bitbucket.org/rogaall/jpf-aprop-gsoc2010/wiki/Schedule> for the project.

Repository

The sources for this project are available from a Mercurial repository on <http://bitbucket.org/rogaall/jpf-aprop-gsoc2010>

Description

- [Motivating Example](#)

Confined checker will be used to check whether references to certain type, field or method are used inside of specified scope.

Descriptions of the annotations are on the following wiki-pages:

- [@Region](#)
- [@Confined](#)

Basic <http://bitbucket.org/rogaall/jpf-aprop-gsoc2010/src/tip/src/main/java/nasa/jpf/aprop/listener/ConfinedChecker.java> ConfinedChecker was developed during the application period.

Examples showing the future use of the annotations are in the following <http://bitbucket.org/rogaall/jpf-aprop-gsoc2010/src/fb778f25c3e1/src/examples/eclipse> project.

Assumptions

Summary of assumptions we will follow as we implement the new annotations are found on the following
<http://bitbucket.org/rogaall/jpf-aprop-gsoc2010/wiki/Assumptions> wiki page.

Questions

Questions about the project functionality are on the following <http://bitbucket.org/rogaall/jpf-aprop-gsoc2010/wiki/Questions> wiki page.

Related work

- <http://src.acm.org/subpages/ACMGFAlexPotanin/alexpotanin.html> A Tool for Ownership and Confinement Analysis of the Java Object Graphs
- <http://groups.csail.mit.edu/pag/reading-group/confined.ps> Encapsulating Objects with Confined Types
- <http://www.cs.purdue.edu/homes/jv/pubs/oopsla03.pdf> Lightweight Confinement for Featherweight Java

Project Blog

<http://frogaczewski.blogspot.com/> Filip's blog related to the project.

(most recent on top)

05/28/2010 (SP) - updated with content from bitbucket wiki

05/06/2010 (SP) - project page created