

Testing and Debugging

Project I: Code Coverage

Forum

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Projekt 1	1	3	Apr 21, 2010 12:31:55 PM by roessler
Allgemein Besprechungen	1	1	Apr 12, 2010 1:39:10 PM by roessler
Off-Topic	0	0	No Posts
Programmierung 2 Watch			
Allgemeine Fragen	9	35	Apr 29, 2010 9:45:54 AM by s9nifisc
Projekt 1	22	177	Apr 29, 2010 7:13:12 AM by s9cnschl
Projekt 2	4	19	Apr 29, 2010 12:32:51 PM by s9aaafeld
Tauschbörse für Termine in den Übungsgruppen	10	31	Apr 24, 2010 12:28:00 PM by s9jshaup
Übungsblatt 1	3	18	Apr 26, 2010 7:18:12 PM by s9adfrit
Übungsblatt 2	0	0	No Posts
Off-Topic	4	10	Apr 28, 2010 3:30:30 PM by s9mnmohm
Testing and Debugging Watch			
General Questions	0	0	No Posts
Project 1 Code Coverage	5	14	Apr 29, 2010 1:50:54 AM by nikolai.knopp
Off-Topic	1	1	Apr 23, 2010 8:12:20 AM by kevin.streit

Microsoft Word

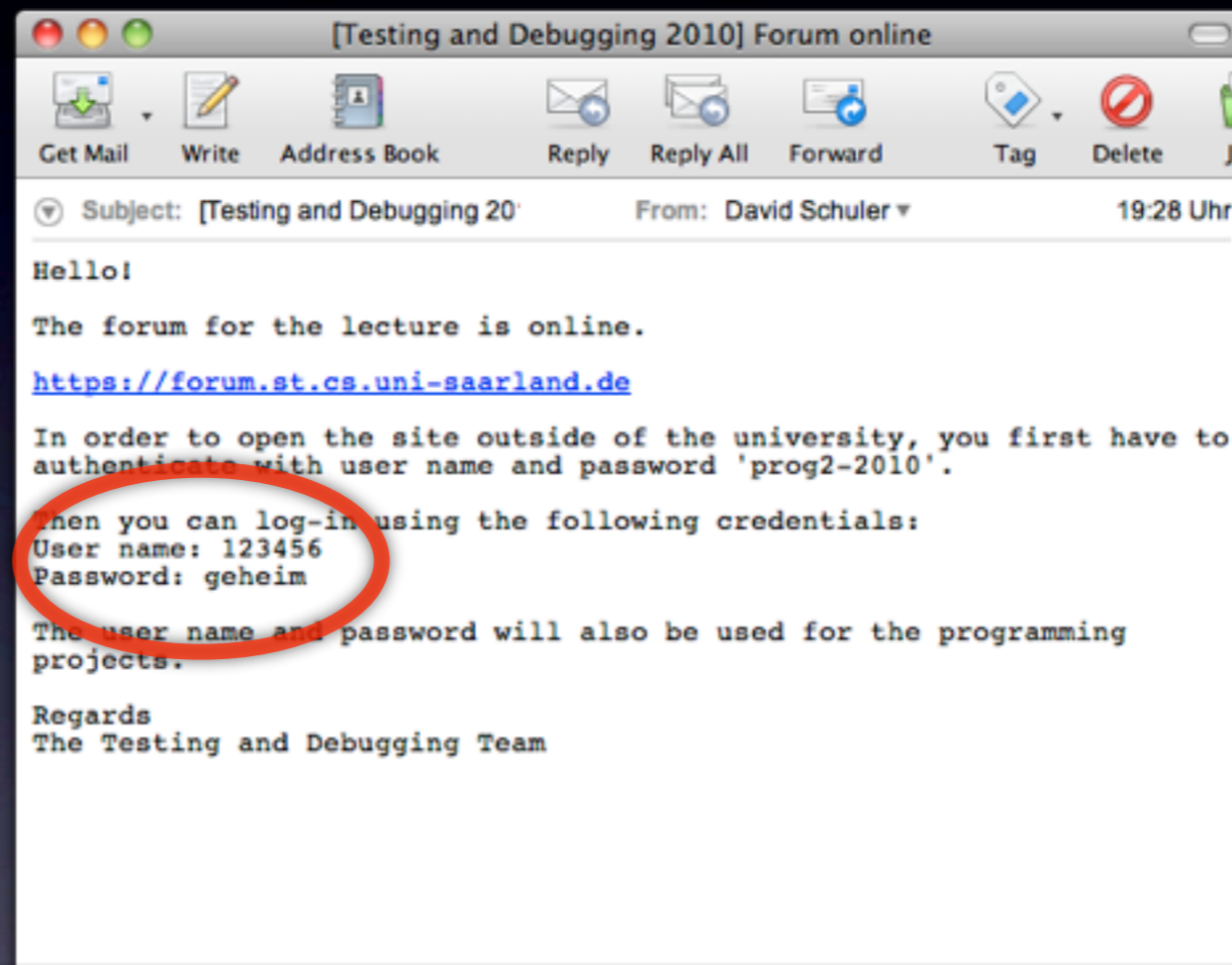
[Off-Topic](#)

1

1

Apr 29, 2010 12:50:54 AM
by [nikolai.knopp](#)

Projects

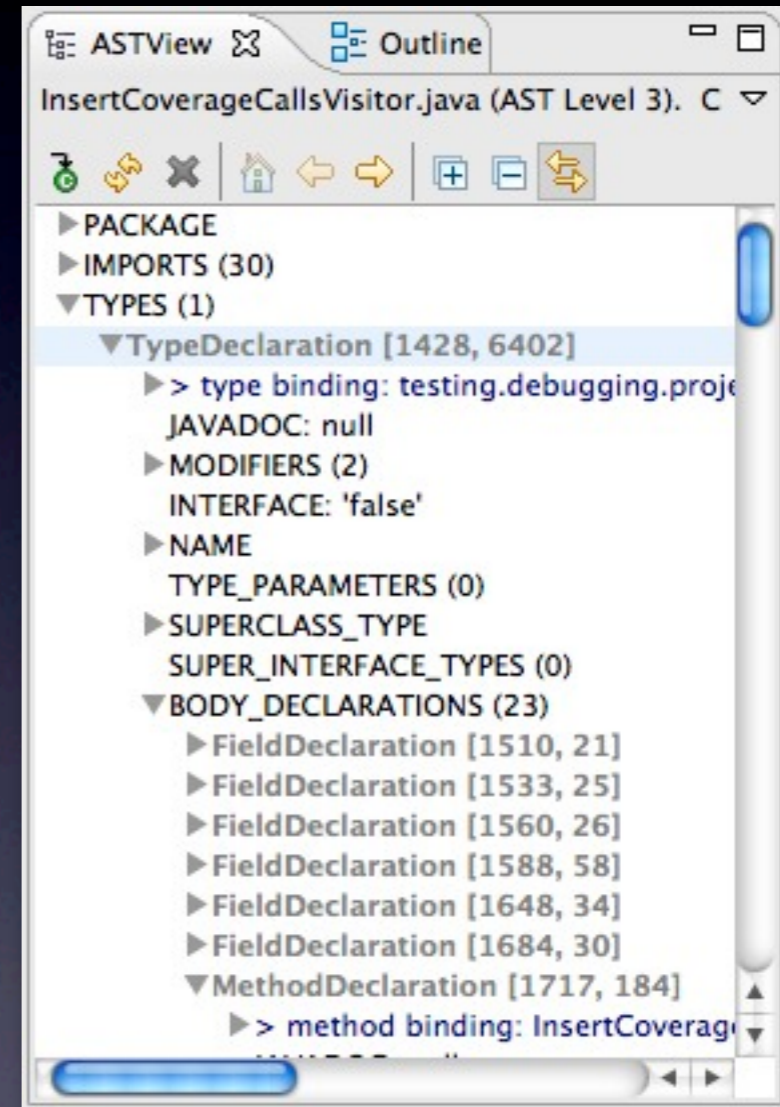
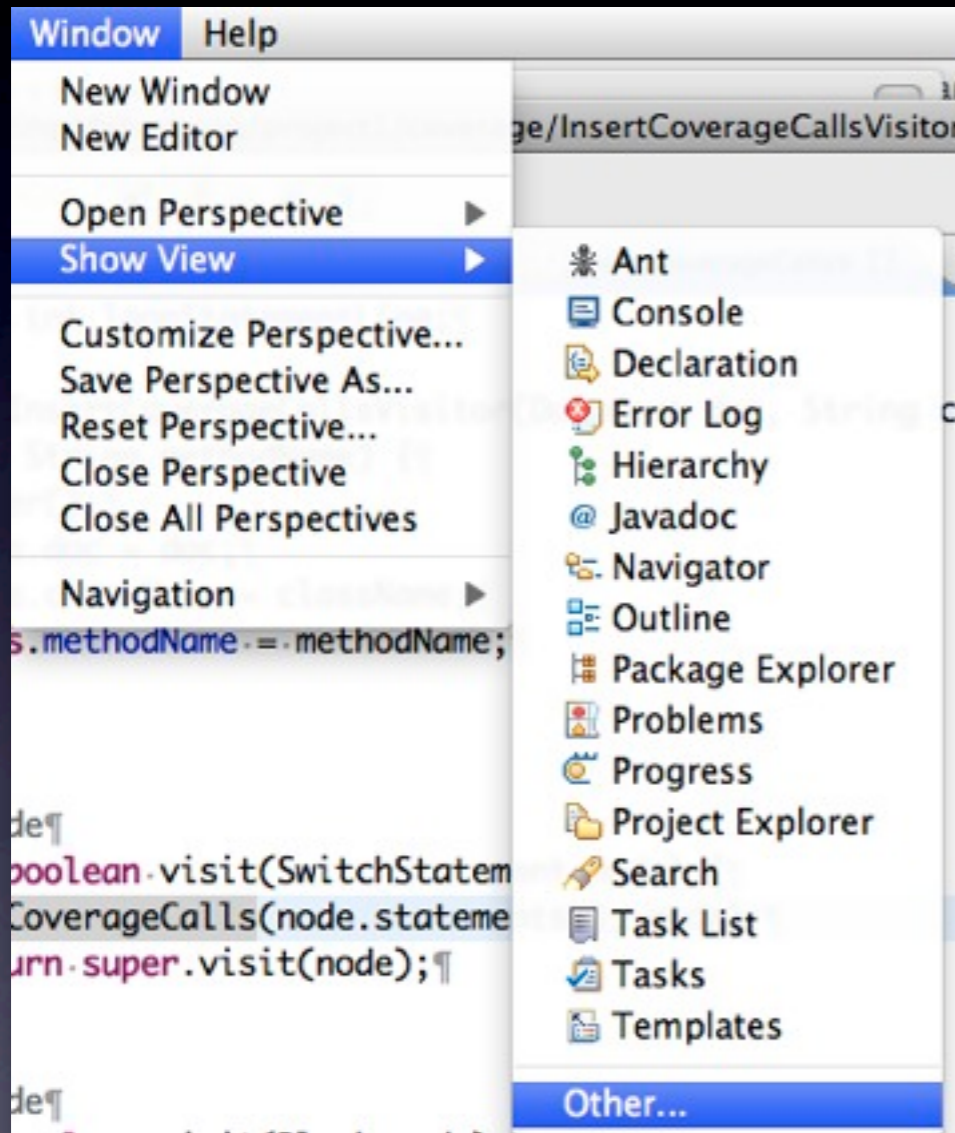


<http://www.st.cs.uni-saarland.de/edu/testingdebugging10/>

Svn

- Check in early, check in often.
- Do not check in your target directory or class files.
- Eclipse configuration?

AST View Plug-in

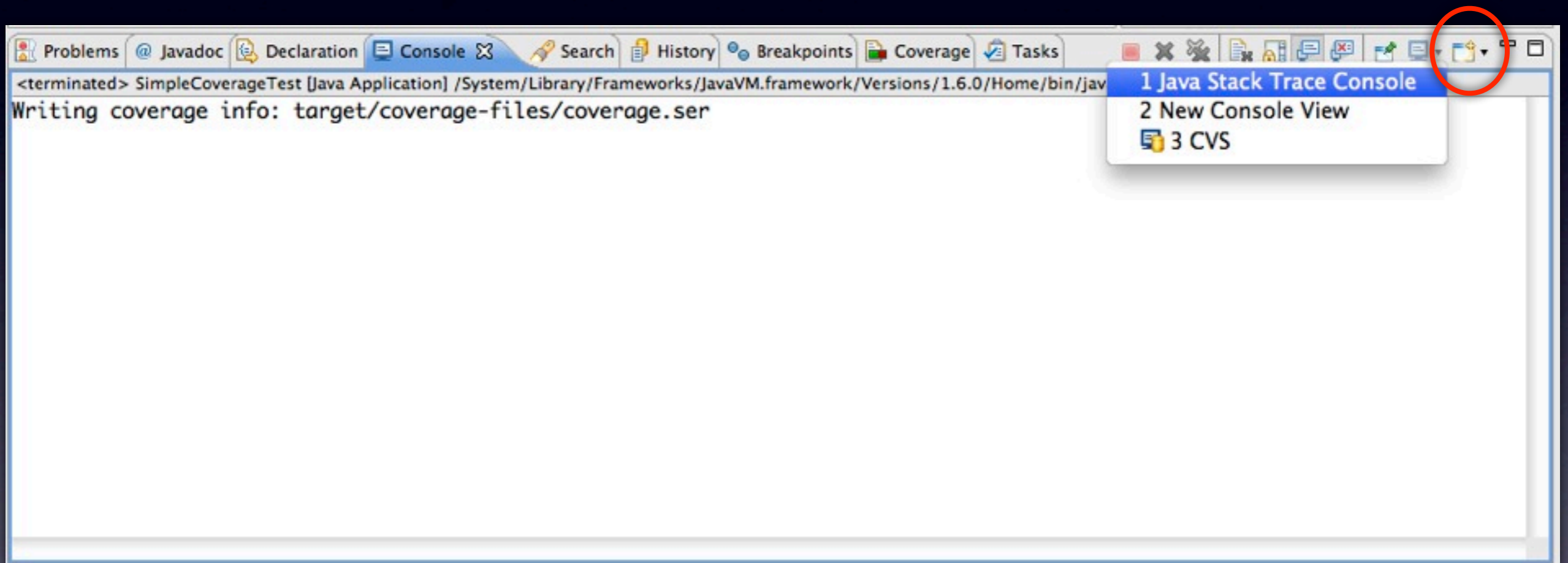


<http://www.eclipse.org/jdt/ui/astview/index.php>

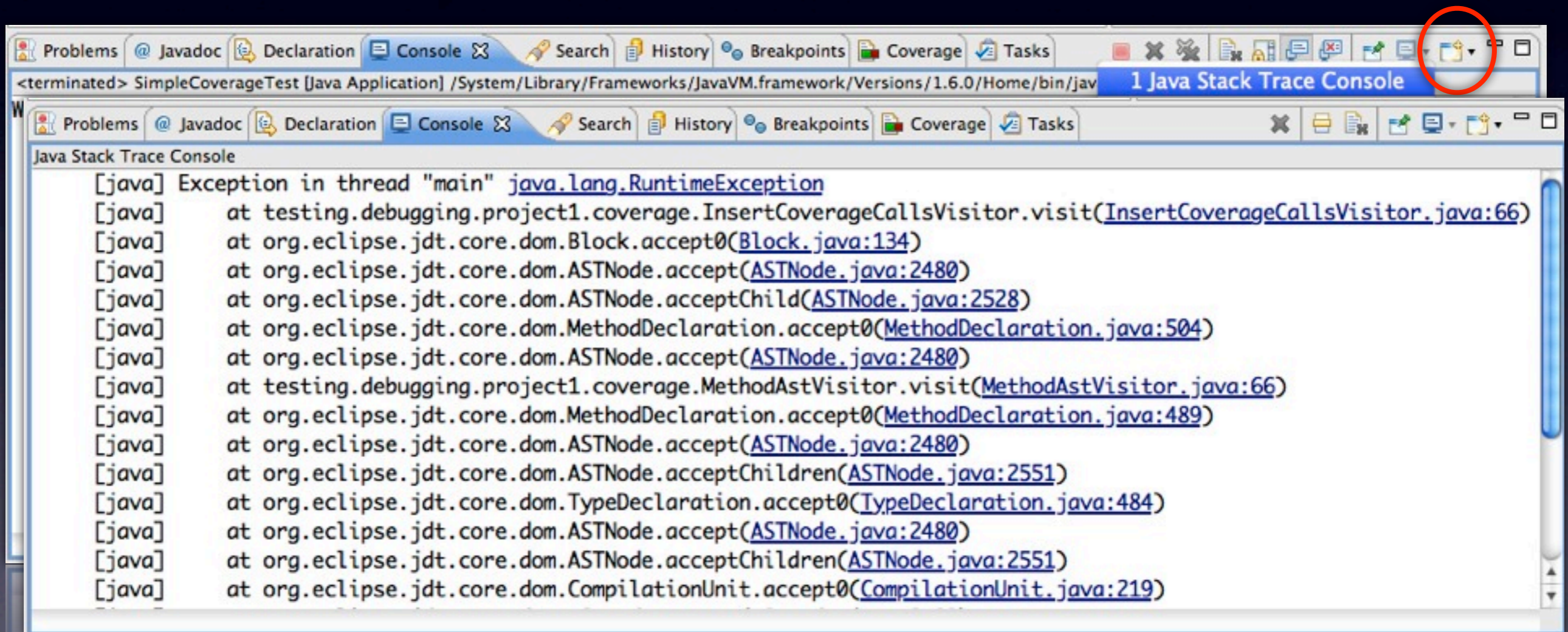
Running Tests & Debugging

- Copy stack trace from terminal to eclipse.
- In order to debug the program, tests can be run inside Eclipse.

Stack Trace Console



Stack Trace Console



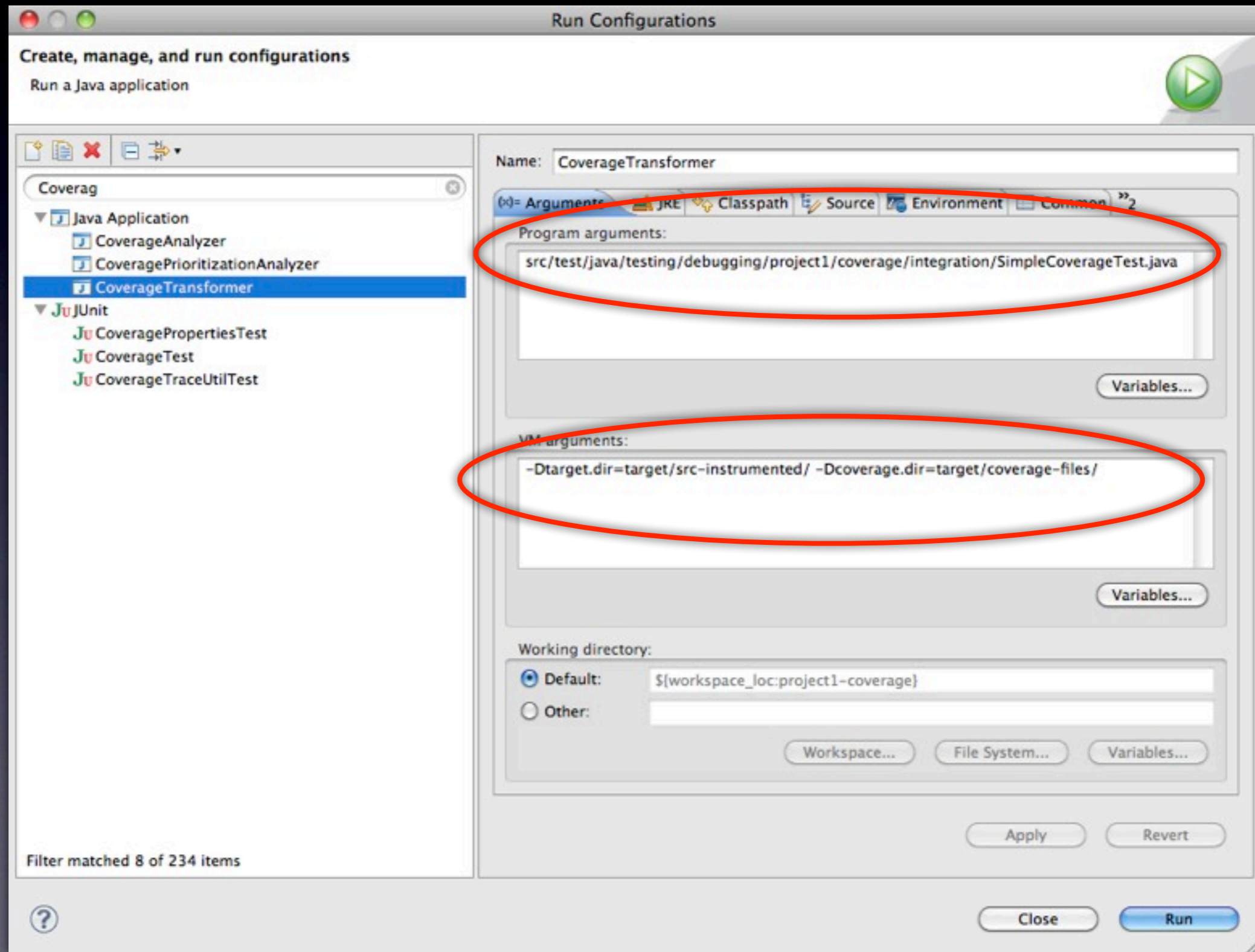
```
<terminated> SimpleCoverageTest [Java Application] /System/Library/Frameworks/JavaVM.framework/Versions/1.6.0/Home/bin/jav
1 Java Stack Trace Console

Java Stack Trace Console
[java] Exception in thread "main" java.lang.RuntimeException
[java]   at testing.debugging.project1.coverage.InsertCoverageCallsVisitor.visit(InsertCoverageCallsVisitor.java:66)
[java]   at org.eclipse.jdt.core.dom.Block.accept0(Block.java:134)
[java]   at org.eclipse.jdt.core.dom.ASTNode.accept(ASTNode.java:2480)
[java]   at org.eclipse.jdt.core.dom.ASTNode.acceptChild(ASTNode.java:2528)
[java]   at org.eclipse.jdt.core.dom.MethodDeclaration.accept0(MethodDeclaration.java:504)
[java]   at org.eclipse.jdt.core.dom.ASTNode.accept(ASTNode.java:2480)
[java]   at testing.debugging.project1.coverage.MethodAstVisitor.visit(MethodAstVisitor.java:66)
[java]   at org.eclipse.jdt.core.dom.MethodDeclaration.accept0(MethodDeclaration.java:489)
[java]   at org.eclipse.jdt.core.dom.ASTNode.accept(ASTNode.java:2480)
[java]   at org.eclipse.jdt.core.dom.ASTNode.acceptChildren(ASTNode.java:2551)
[java]   at org.eclipse.jdt.core.dom.TypeDeclaration.accept0(TypeDeclaration.java:484)
[java]   at org.eclipse.jdt.core.dom.ASTNode.accept(ASTNode.java:2480)
[java]   at org.eclipse.jdt.core.dom.ASTNode.acceptChildren(ASTNode.java:2551)
[java]   at org.eclipse.jdt.core.dom.CompilationUnit.accept0(CompilationUnit.java:219)
```


Run Test in Eclipse

1. Transform file.
2. Compile file.
3. Put transformed class on classpath.
4. Run transformed class.

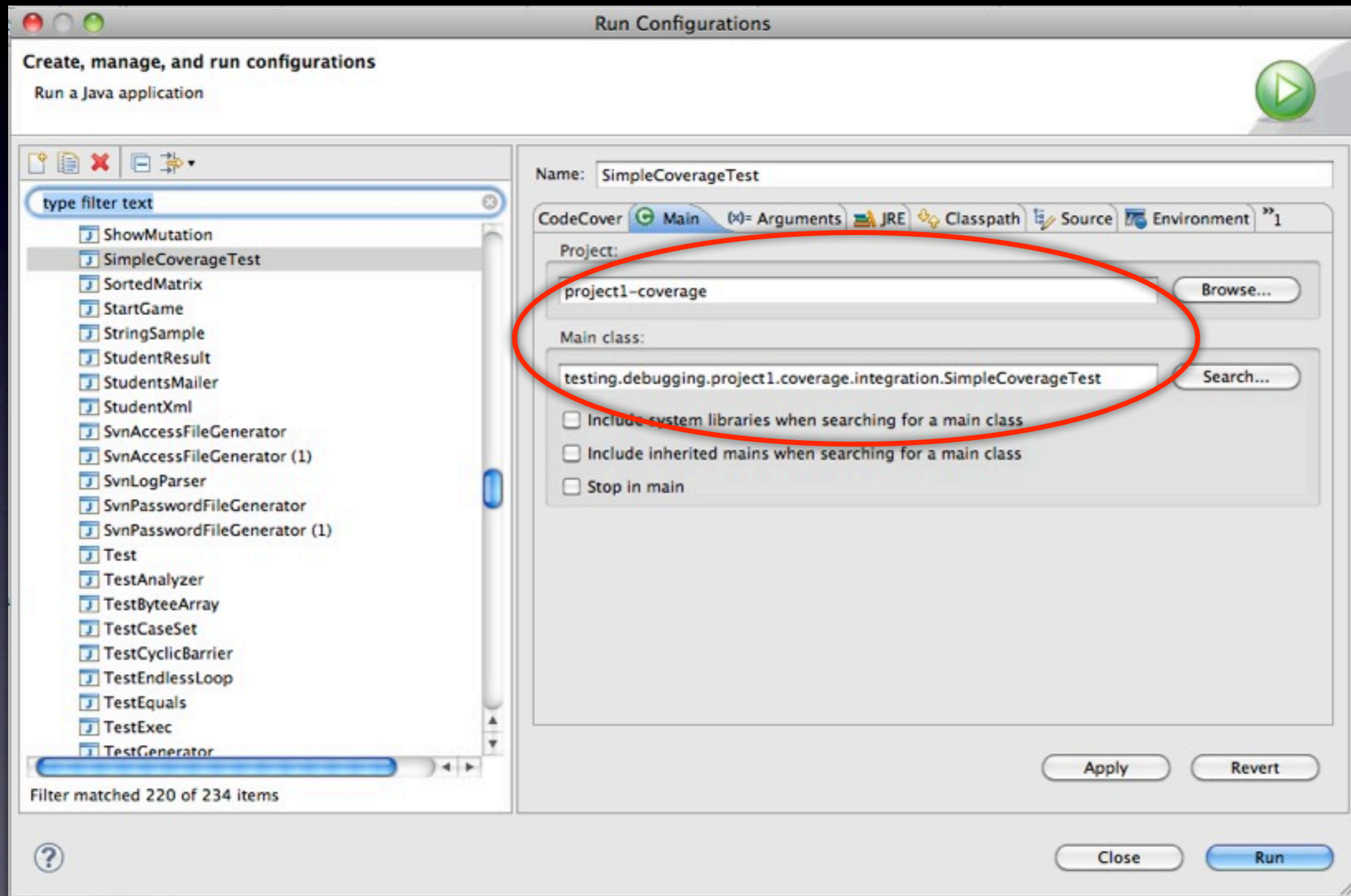
Transform File



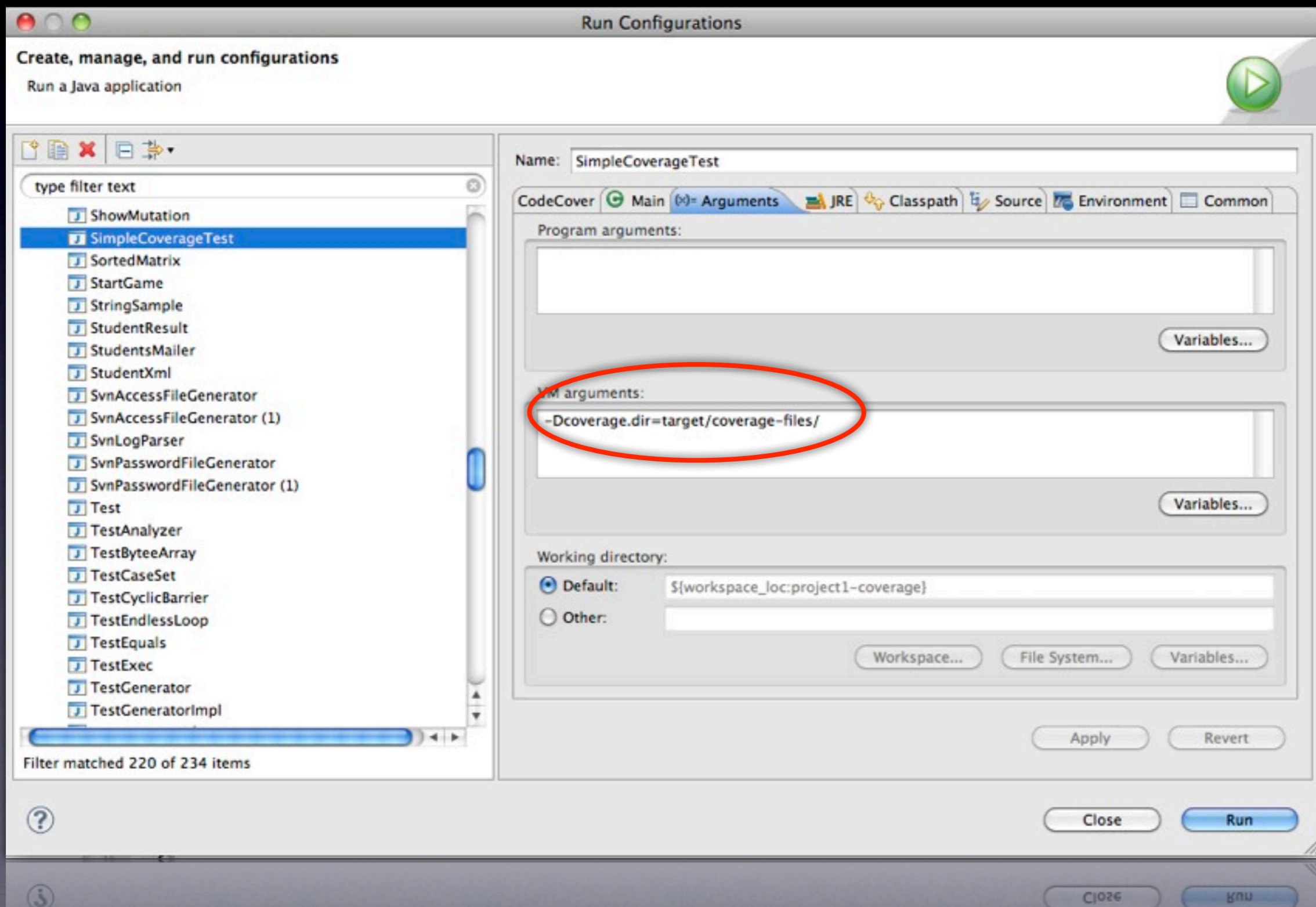
Compile File

```
$javac \  
-cp target/classes:target/project1-  
coverage-1.0-SNAPSHOT-dist.dir/lib/  
junit-4.8.1.jar \  
target/src-instrumented/testing/  
debugging/project1/coverage/  
integration/SimpleCoverageTest.java
```

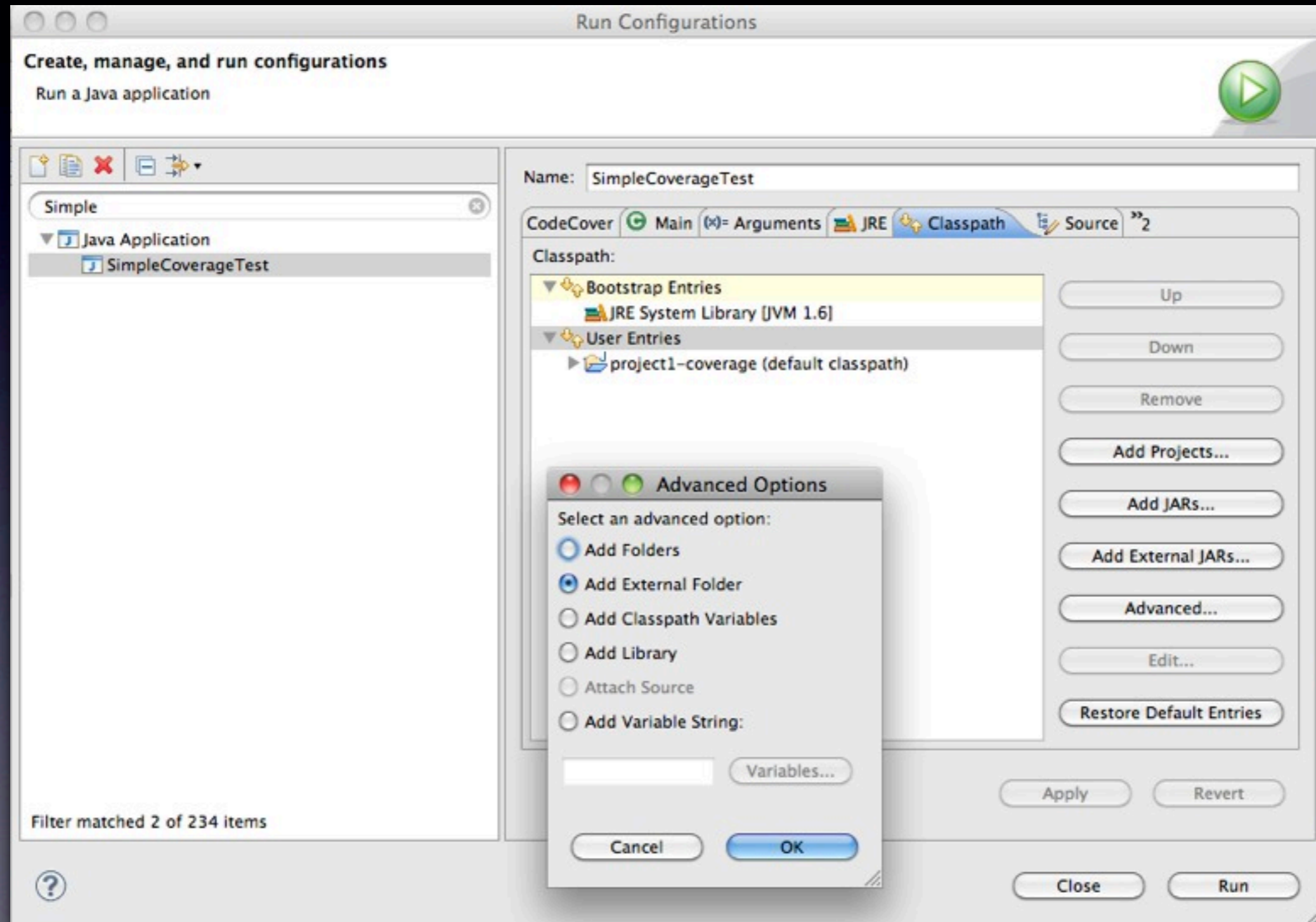
Run Transformed Class



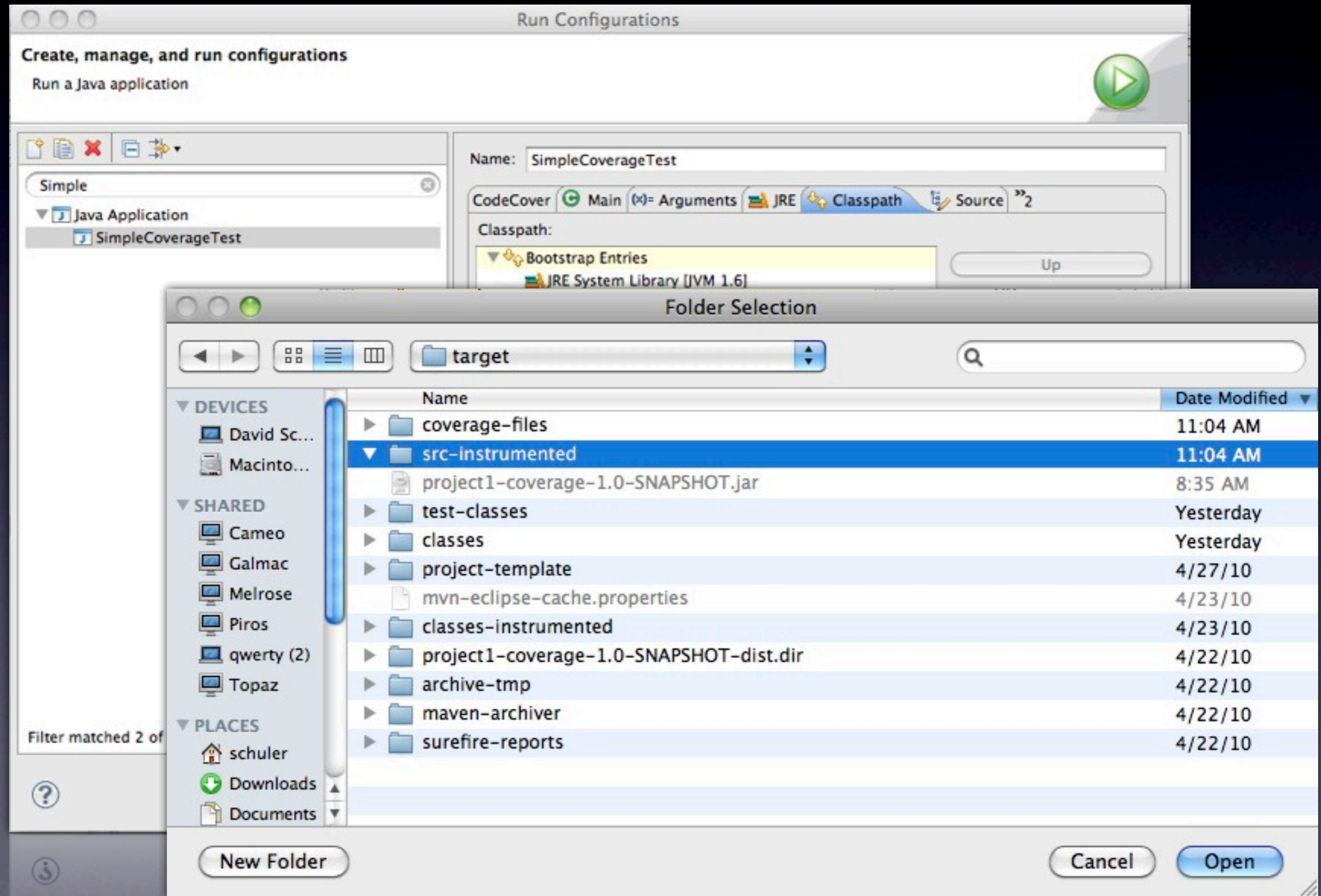
Run Transformed Class



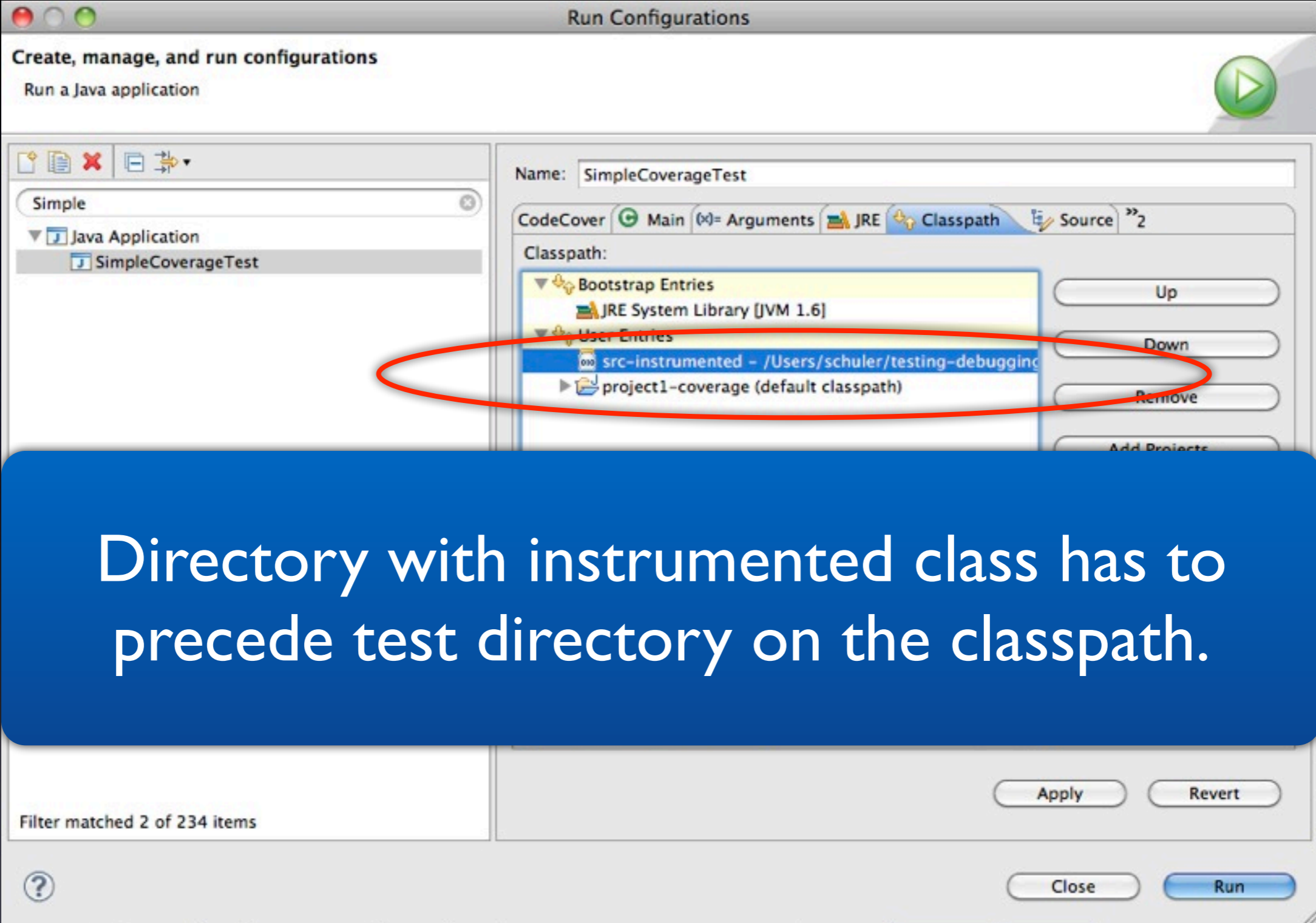
Add to Classpath



Add to Classpath



Add to Classpath



Run Configurations

Create, manage, and run configurations

Run a Java application

Name: SimpleCoverageTest

CodeCover Main Arguments JRE Classpath Source

Classpath:

- Bootstrap Entries
 - JRE System Library [JVM 1.6]
- User Entries
 - src-instrumented - /Users/schuler/testing-debugging
 - project1-coverage (default classpath)

Up Down Remove Add Projects

Filter matched 2 of 234 items

Apply Revert

Close Run

Directory with instrumented class has to precede test directory on the classpath.

Secret Tests

- Expected coverage:
 - 1,2,3
- See test in forum.

```
1. do  
2.  continue;  
3. while (i != 0);
```

Secret Tests

- Expected coverage:
 - 1,2

```
1. do  
2.  break;  
3. while (i != 0);
```

Implementation Issues

- Sometimes blocks have to be added when new statements are inserted.

```
if(i > 0)
  i--;
```

```
if(i > 0) {
  Log Coverage
  i--;
}
```

Build

- Tests do not work on Ubuntu.

<code>ignoreDirFormatExtensions</code>	boolean	-	If this flag is set, the ".dir" suffix will be suppressed in the output directory name when using assembly/format == 'dir' and other formats that begin with 'dir'. NOTE: Since 2.2-beta-3, the default-value for this is true, NOT false as it used to be. Default value is: true.
<code>ignoreMissingDescriptor</code>	boolean	-	Set to true in order to not fail when a descriptor is missing. Default value is: false.
<code>includeSite</code>	boolean	-	Deprecated. Please set this variable in the assembly descriptor instead Default value is: false.

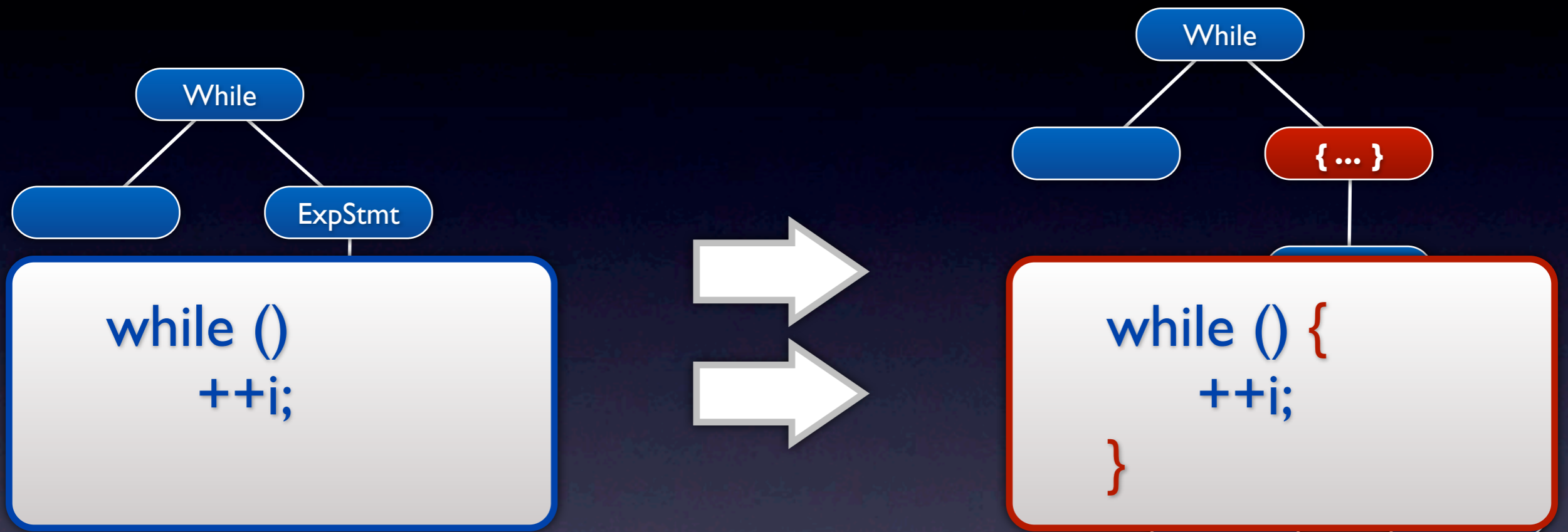
another possible fix is to change the pom.xml:

```
<ignoreDirFormatExtensions>>false</ignoreDirFormatExtensions>
```

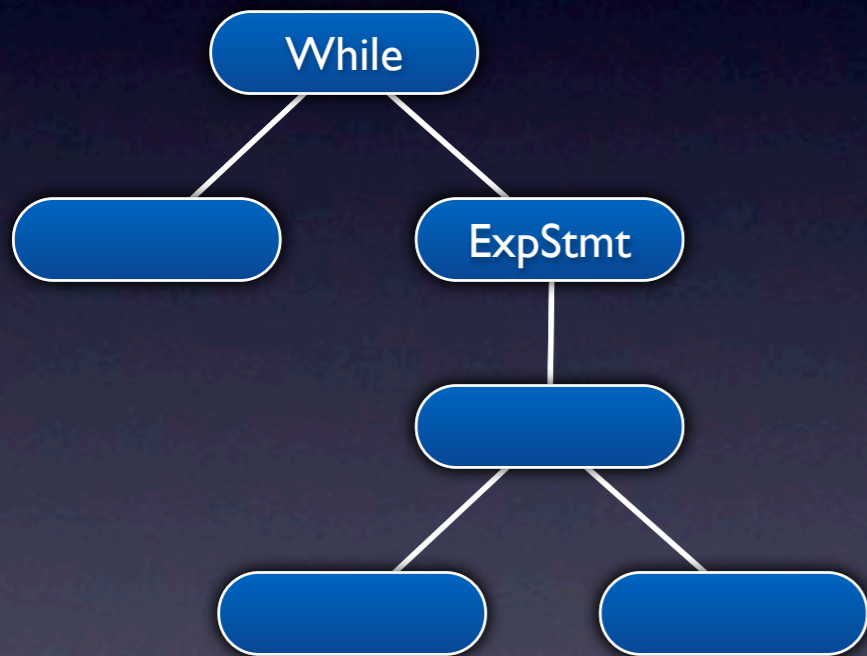
Build

- Tests may not pass when multiple files are written by the tracer.
- We will update the *build.xml*.
- Run *svn update* to get the changes.

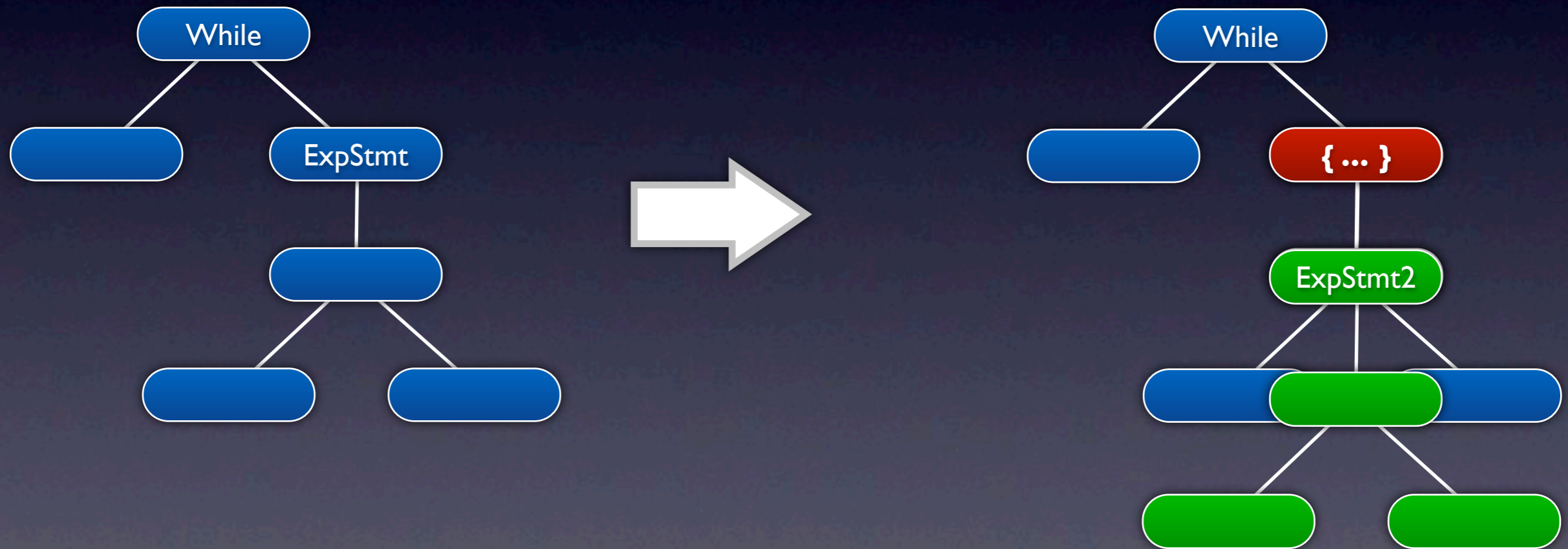
Direct AST Manipulation vs. ASTRewrite



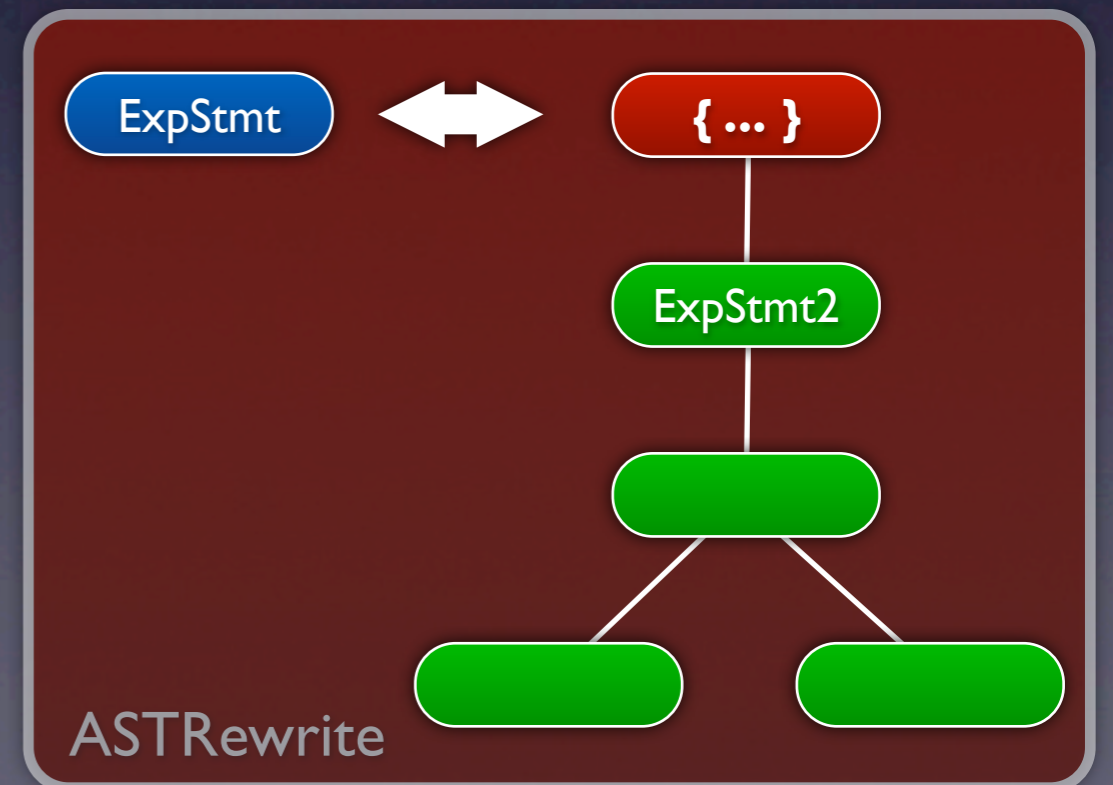
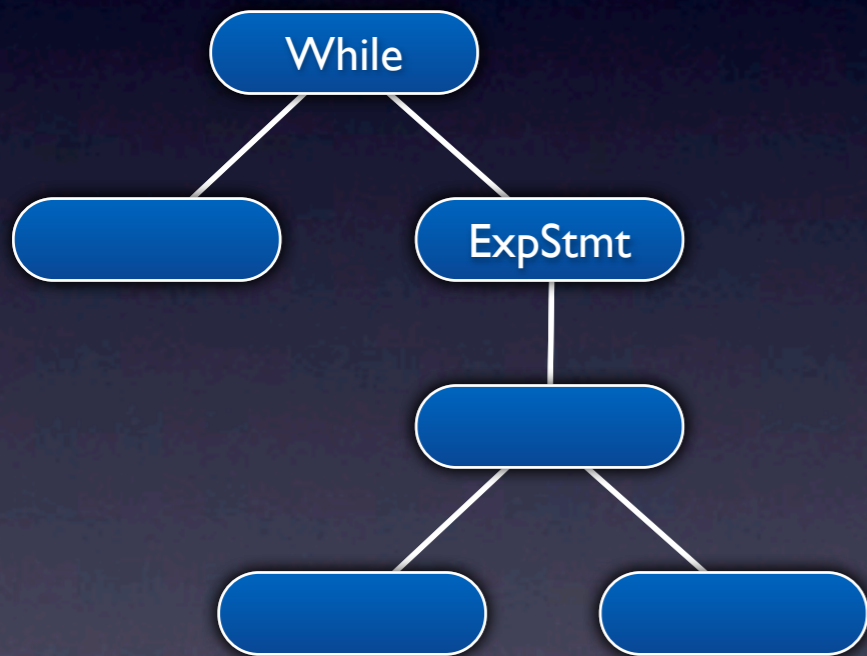
Direct AST Manipulation



Direct AST Manipulation



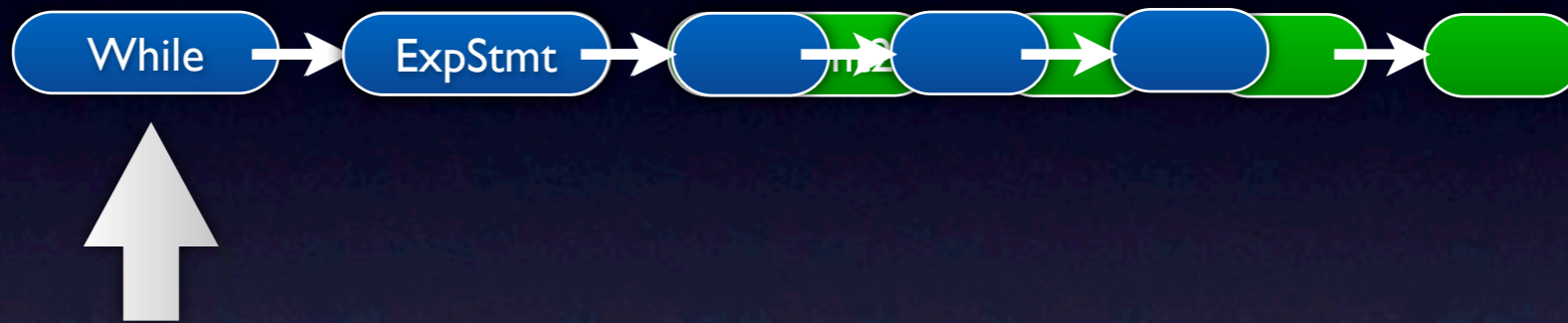
ASTRewrite



Tree Traversal

(using the visit(..)-Methods)

Direct



ASTRewrite

