

CS 683 Emerging Technologies

Spring Semester, 2003

Doc 1 Aspect Intro

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Reading

The AspectJ Programming Guide, by The AspectJ Team,
PDF version in aspectj-docs-1.0.6.tqz at:

<http://dev.eclipse.org/viewcvs/indextech.cgi/~checkout~/aspectj-home/downloads.html>

HTML version at:

<http://dev.eclipse.org/viewcvs/indextech.cgi/~checkout~/aspectj-home/doc/progguide/index.html>

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Aspect-Oriented Programming Intro

Resources & Links

Main Web Sites

<http://aosd.net/> Aspect-Oriented Program Development

<http://www.eclipse.org/aspectj/> Aspectj site

<http://www.parc.com/groups/csl/projects/aspectj/index.html> Parc Research site on Aspect-Oriented Programming

AspectJ Command line Java Compiler + Browser

Go to download section of <http://www.eclipse.org/aspectj/>

The class will use version 1.0.6

Eclipse Plug-in version

<http://www.eclipse.org/ajdt/>

AspectS

<http://www.prakinf.tu-ilmenu.de/~hirsch/Projects/Squeak/AspectS/>

Includes documentation and download

An Example

The Files

Hello.java

```
public class Hello
{
    public static void main(String[] args )
    {
        System.out.println("Hello");
    }
}
```

HelloAspect.java

```
public aspect HelloAspect
{
    before() : call(static void main(String[]) )
    {
        System.out.println( "Start");
    }
}
```

Hello.lst

```
Hello.java
HelloAspect.java
```

Running the Example (by Hand)

Compile the example

```
ajc @Hello.lst
```

Run the example

```
java Hello
```

Output

```
Start  
Hello
```

AspectJ Browsers

AspectJ has its own Browser/IDE called AspectJ Browser

AspectJ has support for

- Eclipse
- JBuilder
- SunONE/Forte
- Emacs

See <http://www.eclipse.org/aspectj/> for download information

AspectJ Browser

A minimal browser

Download at <http://www.eclipse.org/aspectj/> and click on Downloads

<http://dev.eclipse.org/viewcvs/indextech.cgi/~checkout~/aspectj-home/dl/aspectj-tools-1.0.6.jar> Compiler and Browser

<http://dev.eclipse.org/viewcvs/indextech.cgi/~checkout~/aspectj-home/dl/aspectj-docs-1.0.6.tgz> AspectJ Documentation

See Documentation section <http://www.eclipse.org/aspectj/>

In particular look at:

<http://dev.eclipse.org/viewcvs/indextech.cgi/~checkout~/aspectj-home/doc/devguide/index.html>

Short instructions for Installing AspectJ Browser

Download the aspectj-tools-1.0.6.jar file

Install by using the command:

```
java -jar aspectj-tools-1.0.6.jar
```

In the directory created there is a file README-TOOLS.html

Follow the directions in that file to finish installation.

AspectJ Browser on Rohan

Installed in /home/ma/whitney/aspectj1.0

To use

Add to your classpath:

/home/ma/whitney/aspectj1.0/lib/aspectjrt.jar

Add to your path: /home/ma/whitney/aspectj1.0/bin

Start the browser with the command:

ajbrowser

Sample Use of AspectJ Browser

In a directory, called example, create two files

- Hello.lst (lst is short for list)
- Hello.java

With the contents:

Hello.lst

Hello.java

Hello.java

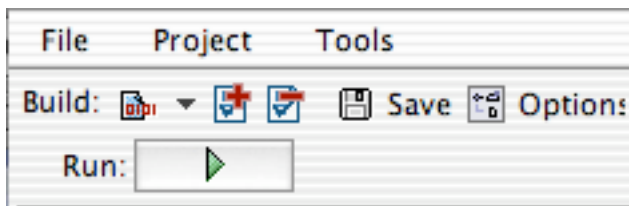
```
public class Hello
{
  public static void main(String[] args)
  {
    System.out.println("Hello");
  }
}
```


Running the Browser

Start the browser with the command `ajbrowser`

Load the Hello.lst file by:

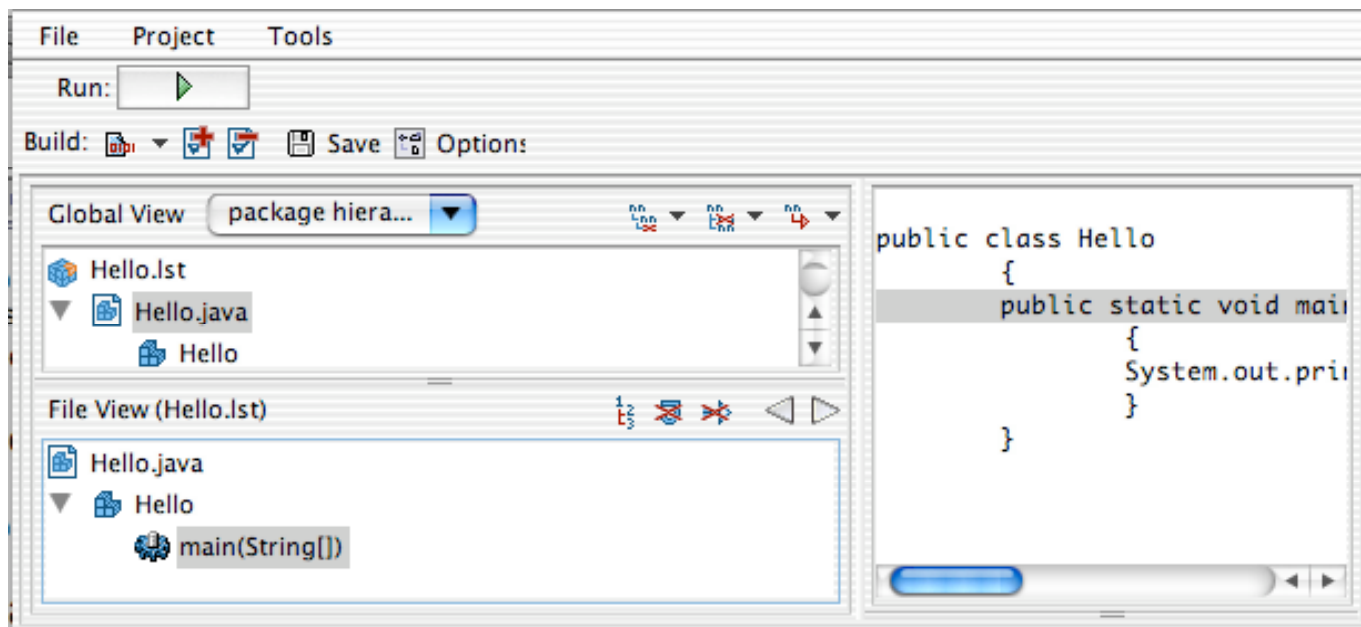
- Clicking on the “Load Configuration” icon (the one with a plus sign)
- Use the file dialog to select Hello.lst



Build the project by clicking and holding on the build icon.

Select the project you wish to build

The browser should look like:



What does the browser do?

- Shows the code
- Shows relationships in the code - needed Aspect code
- Compiles the code

The compiled code is placed in the directory you started the browser in

To change this click on the Options icon and set the “Output path” in the AJBrowser Options panel

Eclipse

An open extensible IDE for anything and nothing in particular

Open source IDE from IBM

Becoming popular for Java development

AspectJ claims to require version 2.0

Main web site: <http://www.eclipse.org/>

FAQ: <http://www.eclipse.org/eclipse/faq/eclipse-faq.html>

You can download Eclipse 2.0 at:

<http://download.eclipse.org/downloads/drops/R-2.0-200206271835/index.php>

On Window download the correct file and unzip it.

In the eclipse directory run the eclipse.exe file

Documentation is at:

<http://www.eclipse.org/documentation/main.html>

Eclipse and AspectJ

Main web page for using AspectJ in Eclipse

<http://www.eclipse.org/ajdt/>

Installing AspectJ in Eclipse

Go to:

<http://dev.eclipse.org/viewcvs/indextech.cgi/~checkout~/org.eclipse.ajdt/download.html>

Download

- ajdt-0.5.2.zip
- aspectj-eclipsePlugin-1.0.6.zip

Unzip the files

This creates two directories

- org.aspectj.ajde_1.0.6
- org.eclipse.ajdt.ui_0.5.2

Follow the instructions in

[org.eclipse.ajdt.ui_0.5.2\releaseNotes\readme.html](http://org.eclipse.ajdt.ui_0.5.2/releaseNotes/readme.html)

Aspect S

<http://www.prakinf.tu-ilmenu.de/~hirsch/Projects/Squeak/AspectS/>

Included in VisualWorks 7

See goodies/other/AspectS in the VisualWorks 7 directory

Read the file goodies/other/AspectS/Readme.txt for installation instructions