

Terminology	
Aspect	Modularization unit, comparable with Class
Introduction	introduce new method
Joinpoint	Condition to trigger some action
Pointcut	Collection of Joinpoints
Advice	Behavior introduced at Pointcut

Weaving	Aspects get weaved into the result bytecode
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Aspect
<pre>public aspect LogAspect { ... }</pre>
Holds Introductions, Advices and Pointcuts

Introduction
<pre>public aspect HashableComplex { // introduce an interface declare parents: Complex implements Comparable; // don't forget the class name! public int Complex.compareTo(Object o) { ... } @Override public boolean Complex.equals(Object obj) { ... } }</pre>
Can Introduce new Methods and Declarations

Advice
before
after alternative: after returning, after throwing
around use <code>proceed()</code> to execute wrapped joinpoint

Pointcut Args	
target(p)	bind cut target
args(vals)	bind Pointcut arguments
<pre>pointcut setter (Point p, int newval): target(p) && args(newval)</pre>	

Joinpoint
<pre>package hello; public aspect WorldAspect { public pointcut mainOperation(): execution (void hello.World.main(String[])); //execution .(*)(*); before(): mainOperation() { println(" Hello aspect world! "); } after(): mainOperation() { println("Bye aspect world! "); } }</pre>

Pointcut Syntax	
Wildcards	
*	any characters, but not "."
..	any characters, also "."
+	Any Subclass / Interface
Logical	, &&, !

Primitive Pointcuts	
<code>call(void Foo.m(int))</code>	call of a Method
<code>execution(Foo(..) throws IOExce ption)</code>	execution of any Method throwing an Exception
<code>call Foo.ne w(..)</code>	any Constr- uctors of Foo
<code>initia liz ati on(Foo.ne w(int))</code>	initialisation by a special constructor
<code>handle r(I OEx cep tion+)</code>	handling of any IOExce- ption
<code>get(int Foo.bar) or set(int Foo.bar)</code>	
<code>within (Foo)</code>	limit to foo class
* call vs execution: think of "caller" vs "executing Object"	



thisJoinPoint

```
getArgs(): Object[] args
```

```
getSignature()
```

```
getSourceLocation()
```

```
thisJoinPoint.getTarget().equals(jp.getTarget())
```

thisJoinPoint is available inside the Advice

C

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