AspectJ Cheat Sheet

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Terminology

Aspect	Modularization unit, compareable with Class
Introduction	introduce new method
Joinpoint	Condituion to trigger some action
Pointcut	Collection of Joinpoints
Advice	Behavior introduced at Pointcut
Weaving	Aspects get waved into the result bytecode

Aspect

```
public aspect LogAspect { ... }
```

Holds Introductions, Advices and Pointcuts

Introduction

```
public aspect HashableComplex {
   // introduce an interface
    declare parents: Complex implements Compar -
able;
   // don't forget the class name!
    public int Comple x.c omp areTo( Object o ) {
        ...
   }
    @Ov erride
    public boolean Comple x.e qua ls( Object obj) {
        ...
   }
}
```

Can Introduce new Methods and Declarations

Advice

`before`	
`after`	alternative: `after returning`, `after throwing`
`around`	use `proceed()` to execute wrapped joinpoint

Pointcut Args

target(p)	bind cut target
args(vals)	bind Pointcut arguments

```
pointcut setter (Point p, int newval):
 target(p) &&ar gs( newval)
```

Joinpoint

```
package hello;
public aspect WorldA spect{
    public pointcut mainOp era tion():
        exe cution (void hello.W or ld.m ai n(S -
tri ng[]));
        //e xec ution .((*)i)
    bef ore(): mainOp era tion() {
        pri ntln( " Hello aspect world! " );
   }
    aft er(): mainOp era tion() {
        pri ntln( "Bye aspect world! " );
   }
}
```

Pointcut Syntax

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

Primitive Pointcuts

`call(void Foo.m( int))`	call of a Method
`execution(Foo.(..) throws IOExce ption )`	execution of any Method throwing an Exception
`call Foo.ne w(..)`	any Constr-uctors of `Foo`
`initia liz ati on( Foo.ne w(int))`	initialisation by a special constructor
`handle r(I OEx cep tion+)`	handling of any IOExce-ption
`get(int Foo.bar)` or `set(int Foo.bar)`	
`within (Foo)`	limit to foo class

* `call` vs `execution`: think of "caller" vs "executing Object"

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thisJoinPoint

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

```
getSig nat ure()
```

```
getSou rce Loc ation()
```

`thisJo inP oin tSt ati cPart` equals `jp.get Sta tic Pa rt()`

`thisJo inPoint` is available inside the Advice

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