SPRING FRAMEWORK

ASPECT-ORIENTED PROGRAMMING

APRIL, 2015

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Programming paradigm that aims to increase modularity

by allowing the separation of cross-cutting concerns

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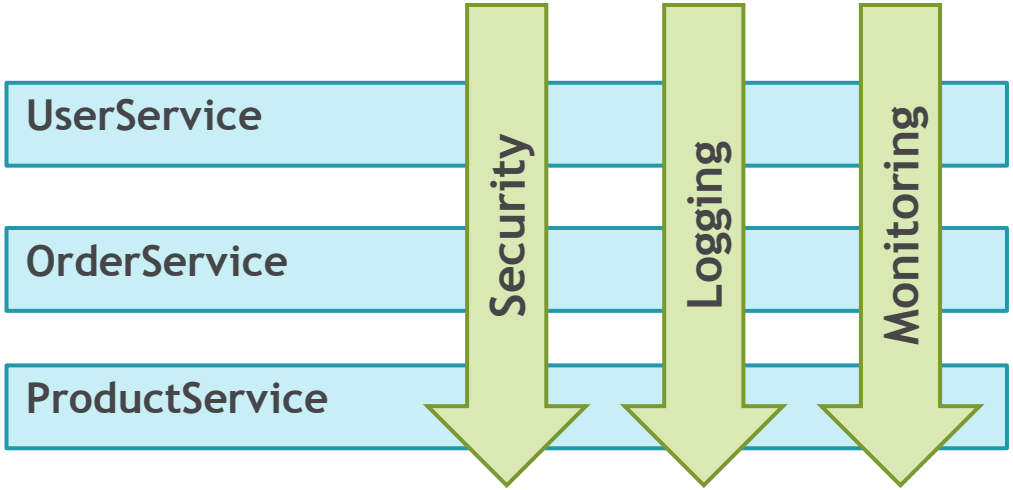
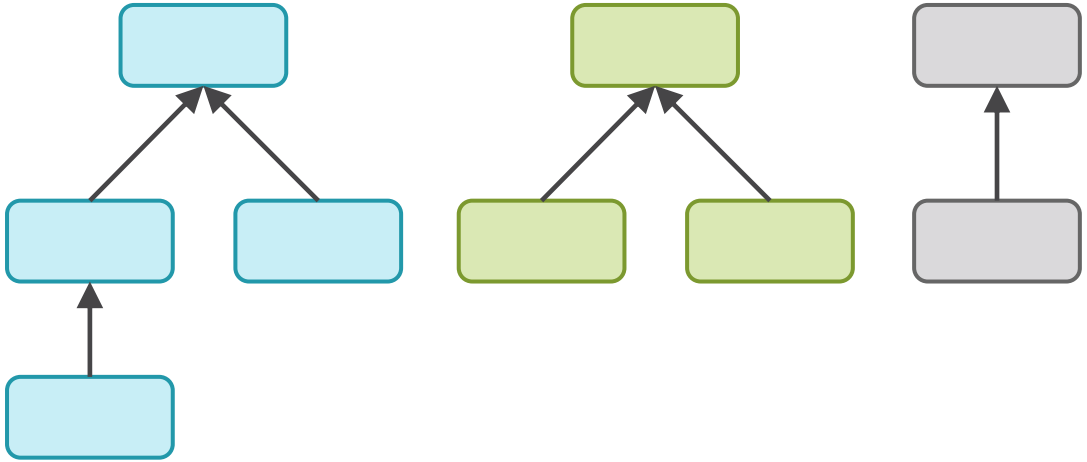


CROSS-CUTTING CONCERNS



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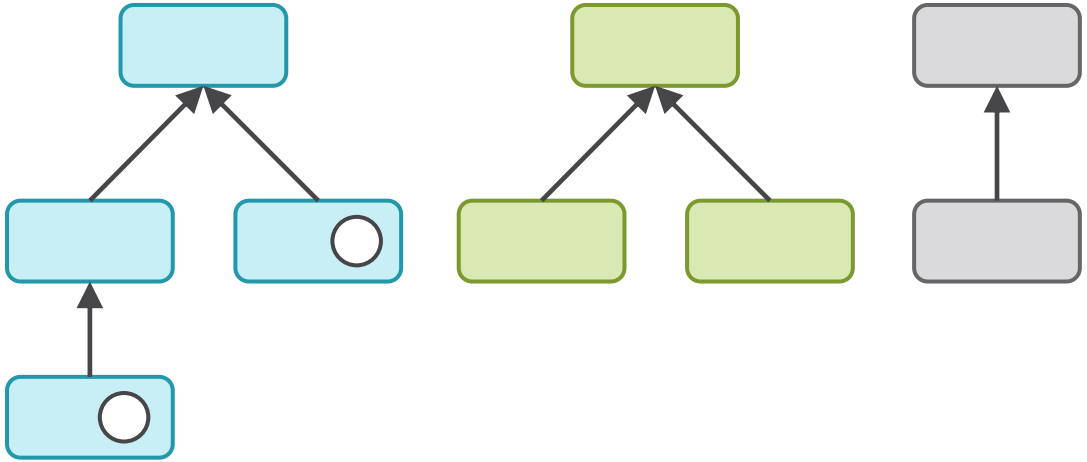

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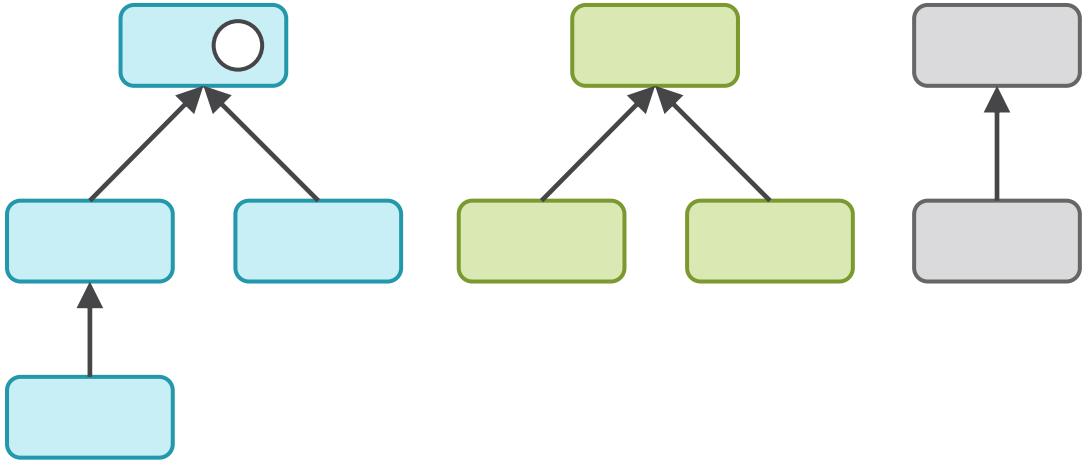

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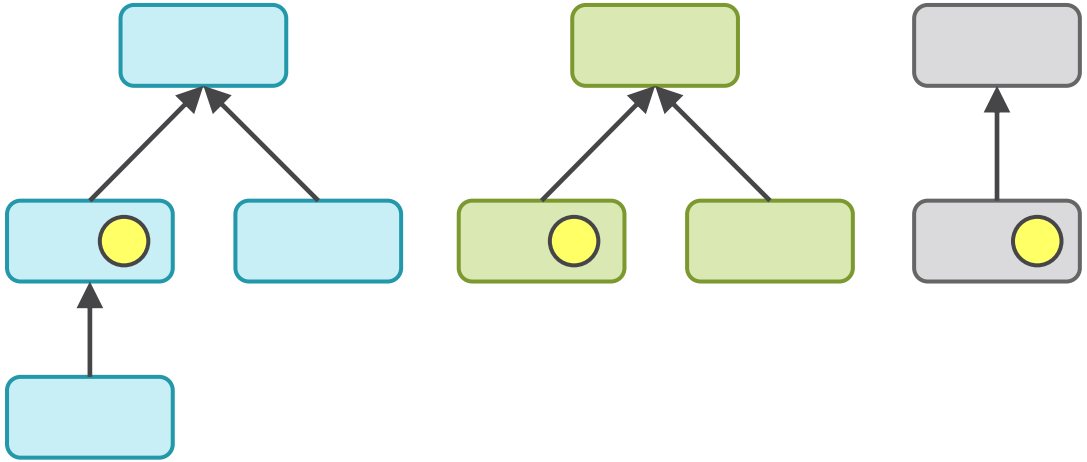

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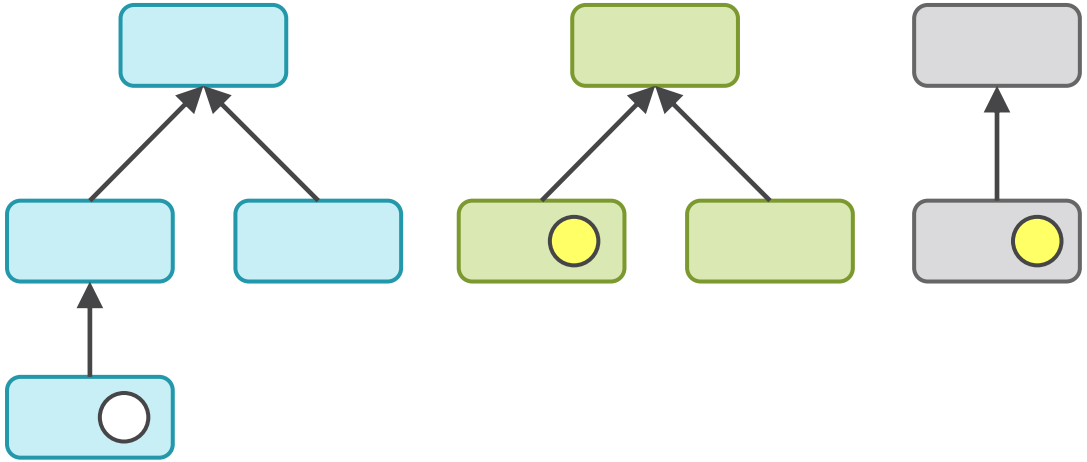

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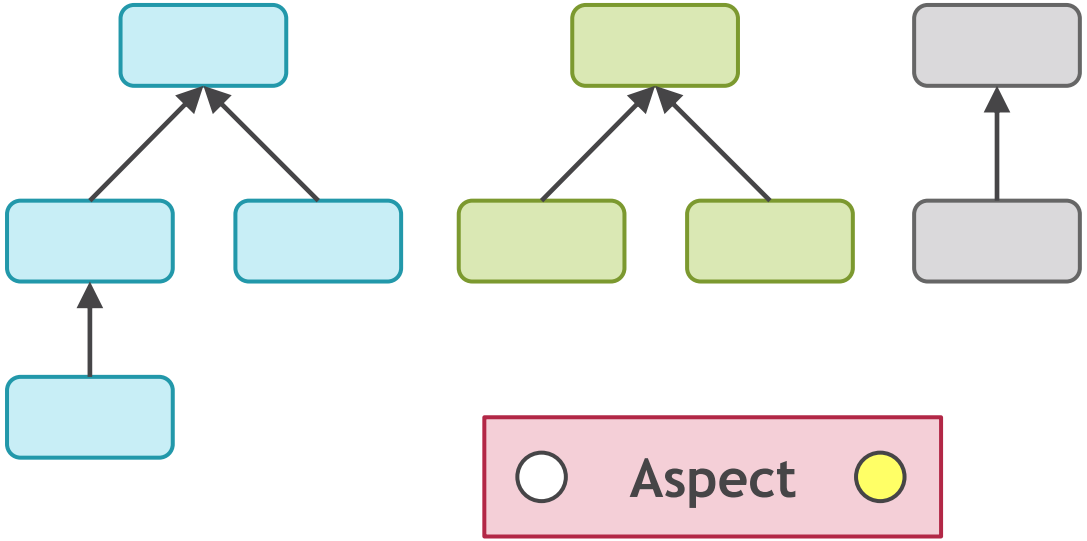

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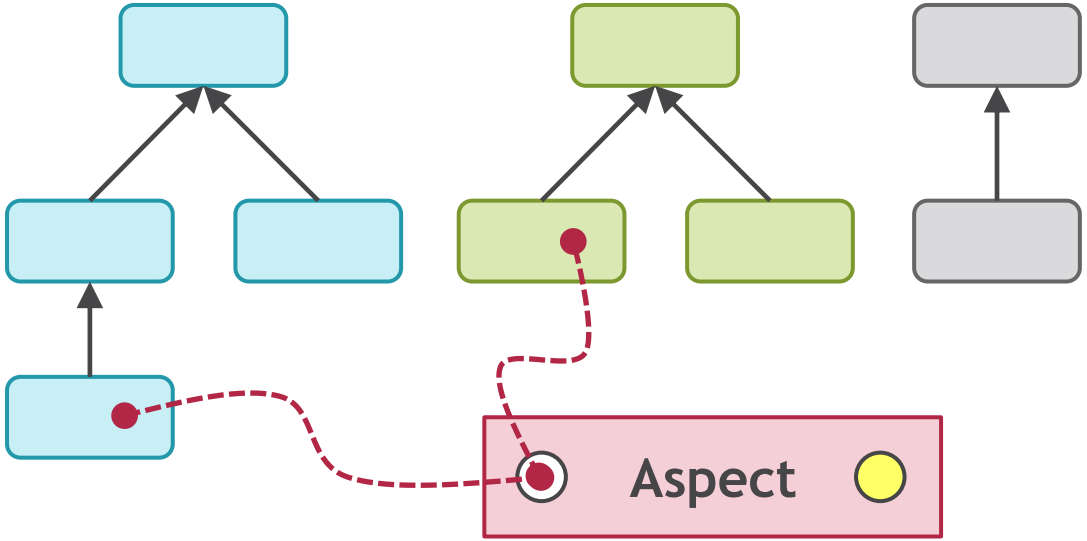

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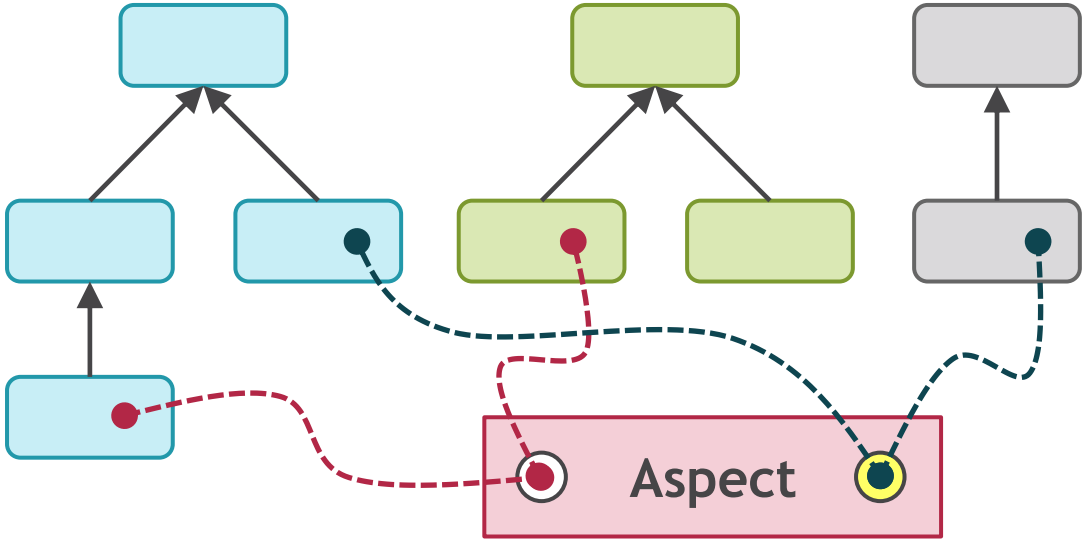

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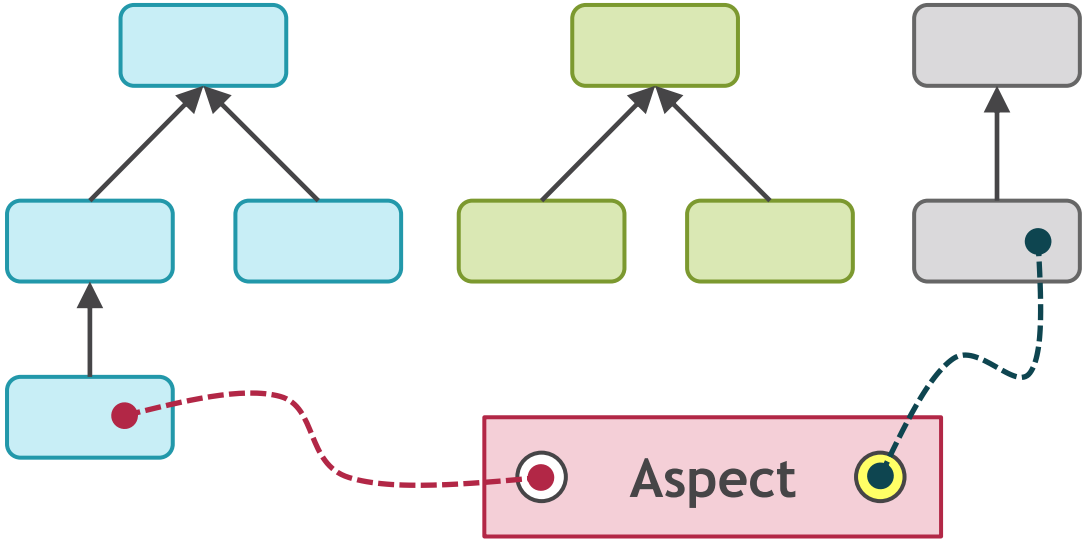

TERMINOLOGY

Aspect - modularization of a concern that cuts across multiple classes

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Pointcut - predicate that matches places where aspect is applied

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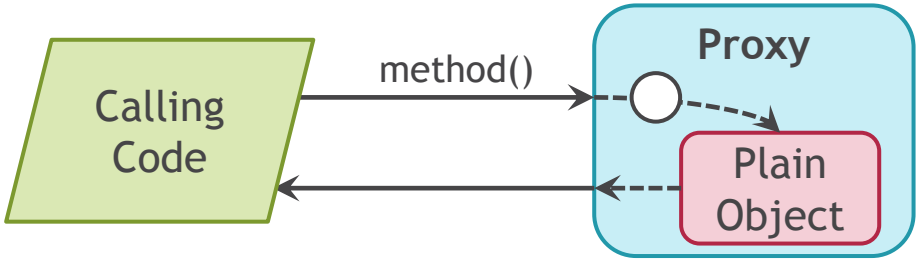
Advice - action taken by an aspect at a particular join point

SPRING AOP



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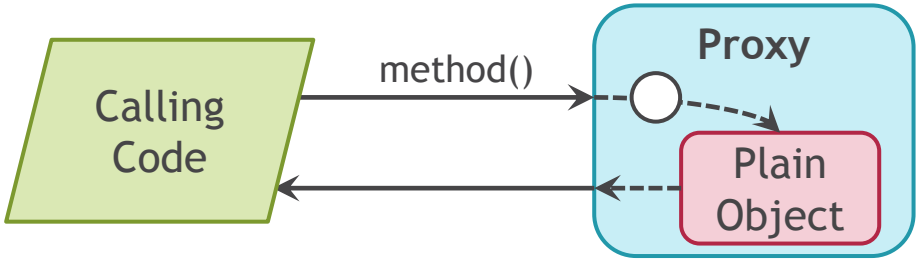

Currently supports only **method execution** join points (advising the execution of methods on Spring beans)

POINTCUTS

```
designator(args or signature pattern)
```

execution - method execution join points

within - join points within certain types

target - join points where the target object is an instance of the given type

this - join points where the bean reference (proxy) is an instance of the given type

args - join points where the arguments are instances of the given types

@target, ***@within***, ***@args*** – same with annotations

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AspectJ

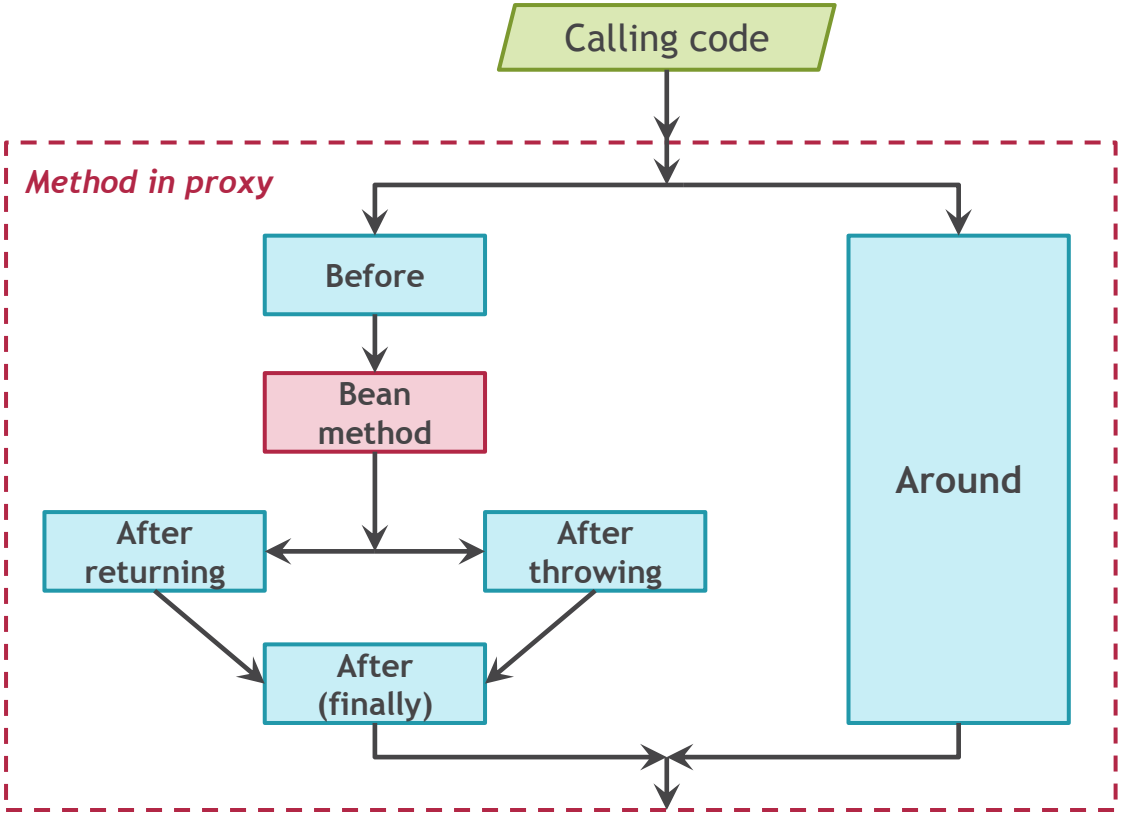
```
call, get, set, preinitialization, staticinitialization,
initialization, handler, adviceexecution, withincode, cflow,
cflowbelow, if, @this, @withincode
```

‘EXECUTION’ POINTCUT

```
execution(modifiers-pattern? ret-type-pattern
 declaring-type-pattern? name-pattern(param-
 pattern) throws-pattern?)
```

```
execution(public * *(..))
execution(* set*(..))
execution(* com.xyz.service.AccountService.*(..))
execution(* com.xyz.service.*.*(..))
```

ADVICE


Calling code
Method in proxy
Before
Bean method
After returning
After throwing
After (finally)
Around

THANK YOU

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