

Aspect-Oriented Programming (AOP)

Combine Pointcuts



Problem

- How to apply multiple pointcut expressions to single advice?
- Execute an advice only if certain conditions are met
- For example
 - All methods in a package EXCEPT getter/setter methods

Combining Pointcut Expressions

- Combine pointcut expressions using logic operators
 - AND (`&&`)
 - OR (`||`)
 - NOT (`!`)

Combining Pointcut Expressions

- Works like an “if” statement
- Execution happens only if it evaluates to true

```
@Before("expressionOne() && expressionTwo()")
```

```
@Before("expressionOne() || expressionTwo()")
```

```
@Before("expressionOne() && !expressionTwo()")
```

Example:

- All methods in a package EXCEPT getter/setter methods

Development Process

Step-By-Step

- 1. Create a pointcut declarations**
- 2. Combine pointcut declarations**
- 3. Apply pointcut declaration to advice(s)**

Step 1- Create Pointcut Declaration

```
@Pointcut("execution(* com.luv2code.aopdemo.dao.*.*(..))")  
private void forDaoPackage() {}
```

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```
@Pointcut("execution(* com.luv2code.aopdemo.dao.*.*(..))")  
private void forDaoPackage() {}
```

```
// create pointcut for getter methods  
@Pointcut("execution(* com.luv2code.aopdemo.dao.*.get*(..))")  
private void getter() {}
```

Step 1- Create Pointcut Declaration

```
@Pointcut("execution(* com.luv2code.aopdemo.dao.*.*(..))")  
private void forDaoPackage() {}
```

```
// create pointcut for getter methods  
@Pointcut("execution(* com.luv2code.aopdemo.dao.*.get*(..))")  
private void getter() {}
```

```
// create pointcut for setter methods  
@Pointcut("execution(* com.luv2code.aopdemo.dao.*.set*(..))")  
private void setter() {}
```

Step 2 - Combine Pointcut Declarations

```
@Pointcut("execution(* com.luv2code.aopdemo.dao.*.*(..))")
private void forDaoPackage() {}

// create pointcut for getter methods
@Pointcut("execution(* com.luv2code.aopdemo.dao.*.get*(..))")
private void getter() {}

// create pointcut for setter methods
@Pointcut("execution(* com.luv2code.aopdemo.dao.*.set*(..))")
private void setter() {}

// combine pointcut: include package ... exclude getter/setter
@Pointcut("forDaoPackage() && !(getter() || setter())")
private void forDaoPackageNoGetterSetter() {}}
```

Step 3 - Apply Pointcut Declaration to Advice(s)

...

```
// combine pointcut: include package ... exclude getter/setter  
@Pointcut("forDaoPackage() && !(getter() || setter())")  
private void forDaoPackageNoGetterSetter() {
```

```
@Before("forDaoPackageNoGetterSetter()")  
public void beforeAddAccountAdvice() {
```

...

```
}
```