

Aspect-Oriented Programming with Dependency Injection

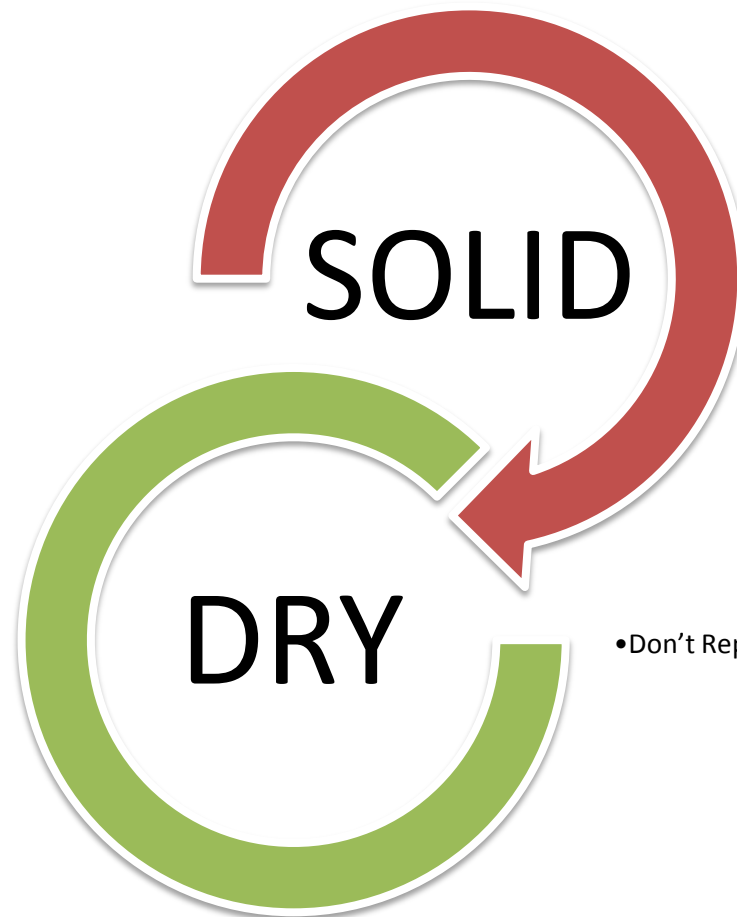
Mark Seemann

@ploeh

Cross-Cutting Concerns



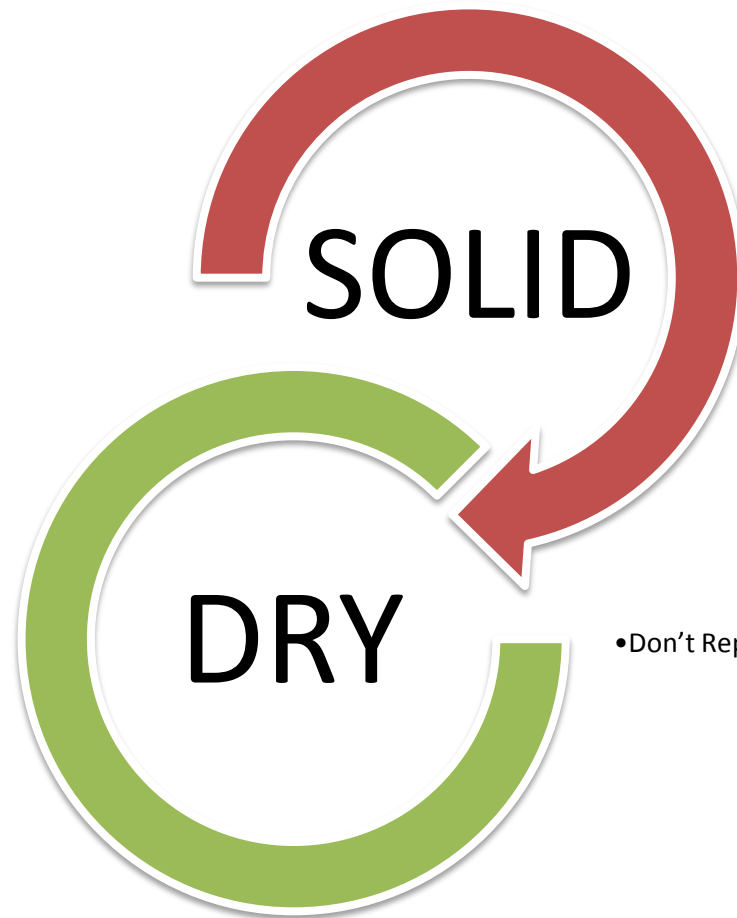
Objective



- Single Responsibility Principle
- Open/Closed Principle
- Liskov Substitution Principle
- Interface Segregation Principle
- Dependency Inversion Principle

- Don't Repeat Yourself

Staying SOLID



- Single Responsibility Principle
- Open/Closed Principle
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- Don't Repeat Yourself

Prerequisite

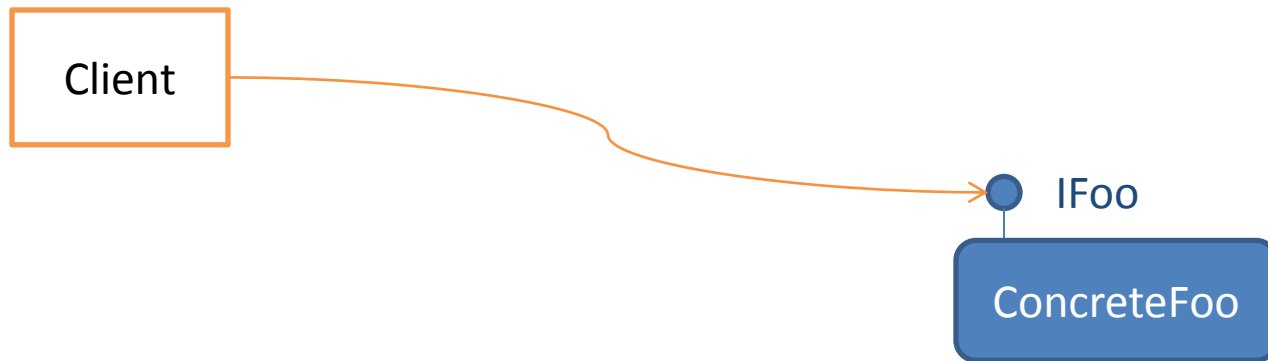
*Program to an
interface, not an
implementation*

- Design
Patterns,
1995

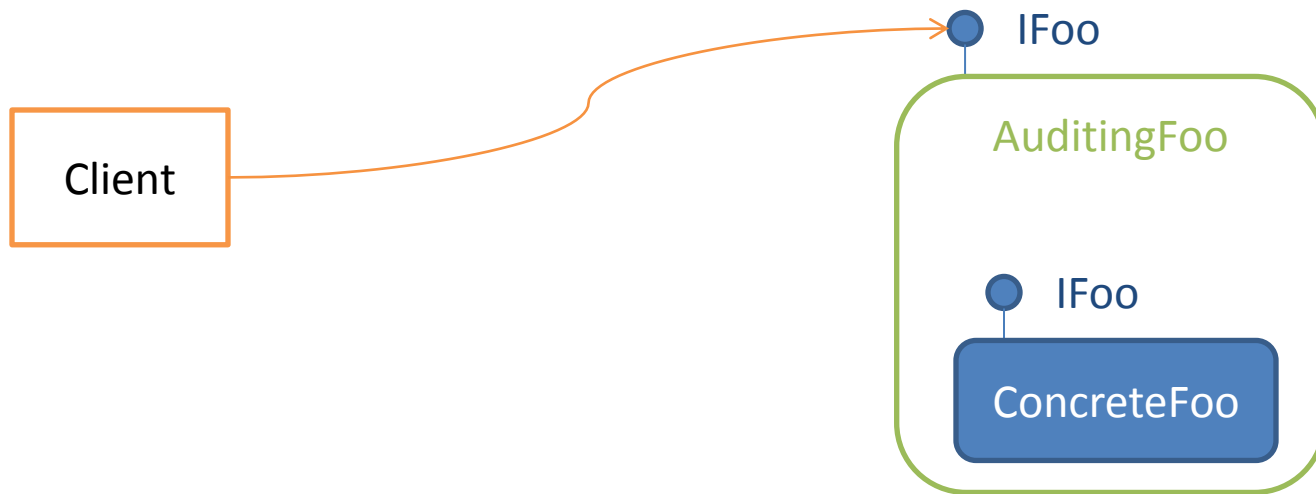
Conjecture

- It's always possible to apply a Decorator to an interface

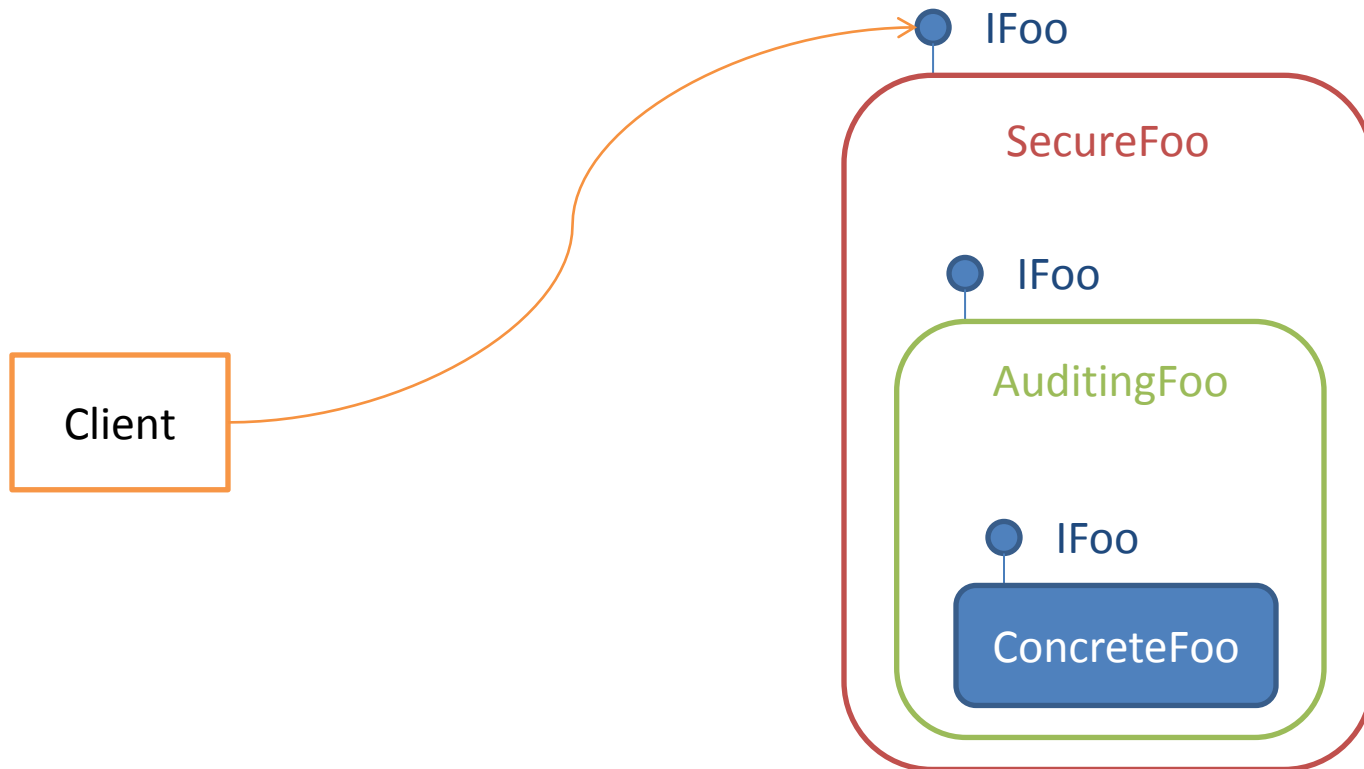
Using Decorators to add aspects



Using Decorators to add aspects



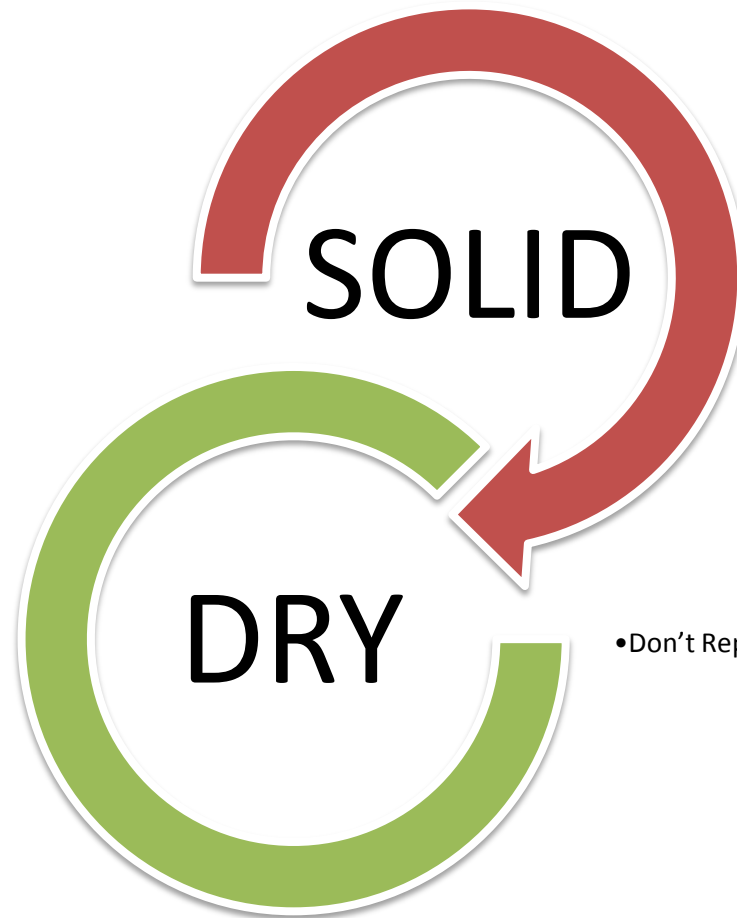
Using Decorators to add aspects



Staying SOLID with Decorators

DEMO

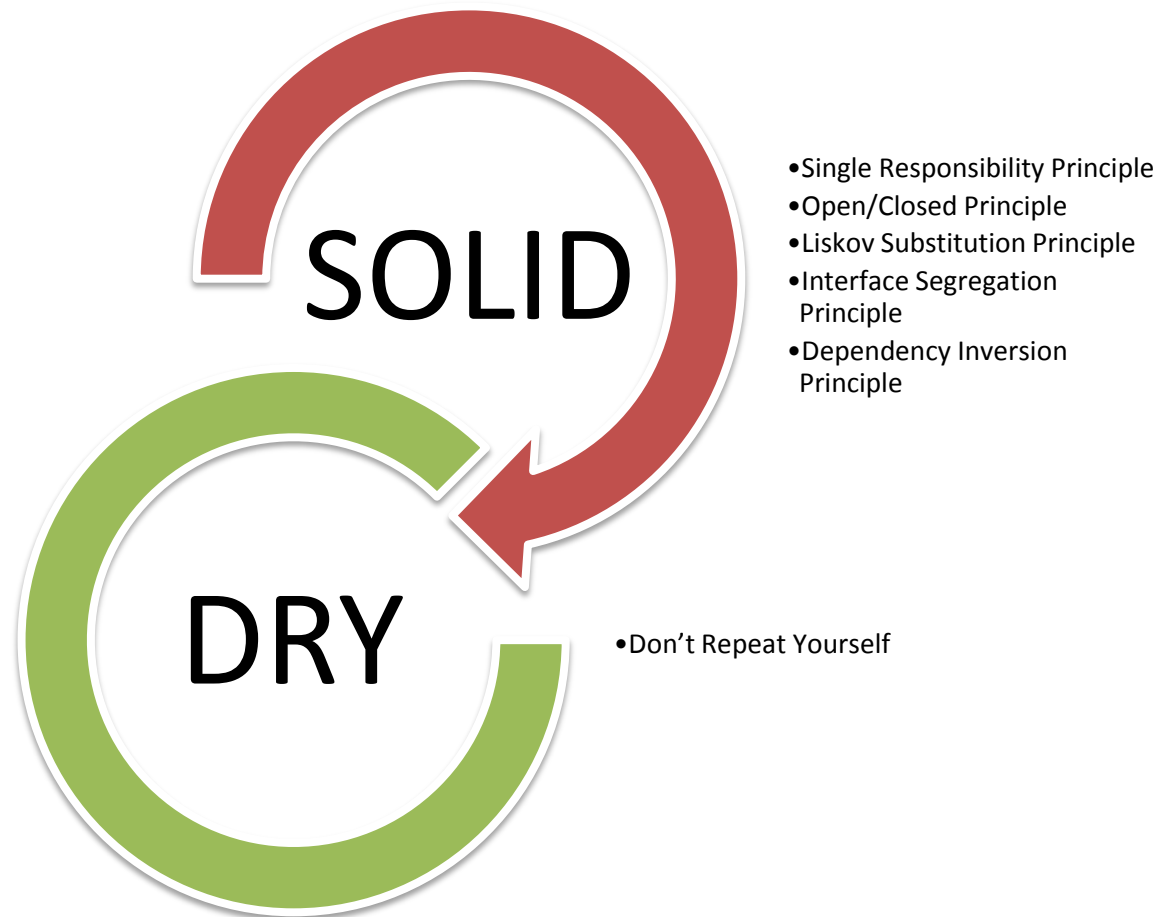
Staying SOLID



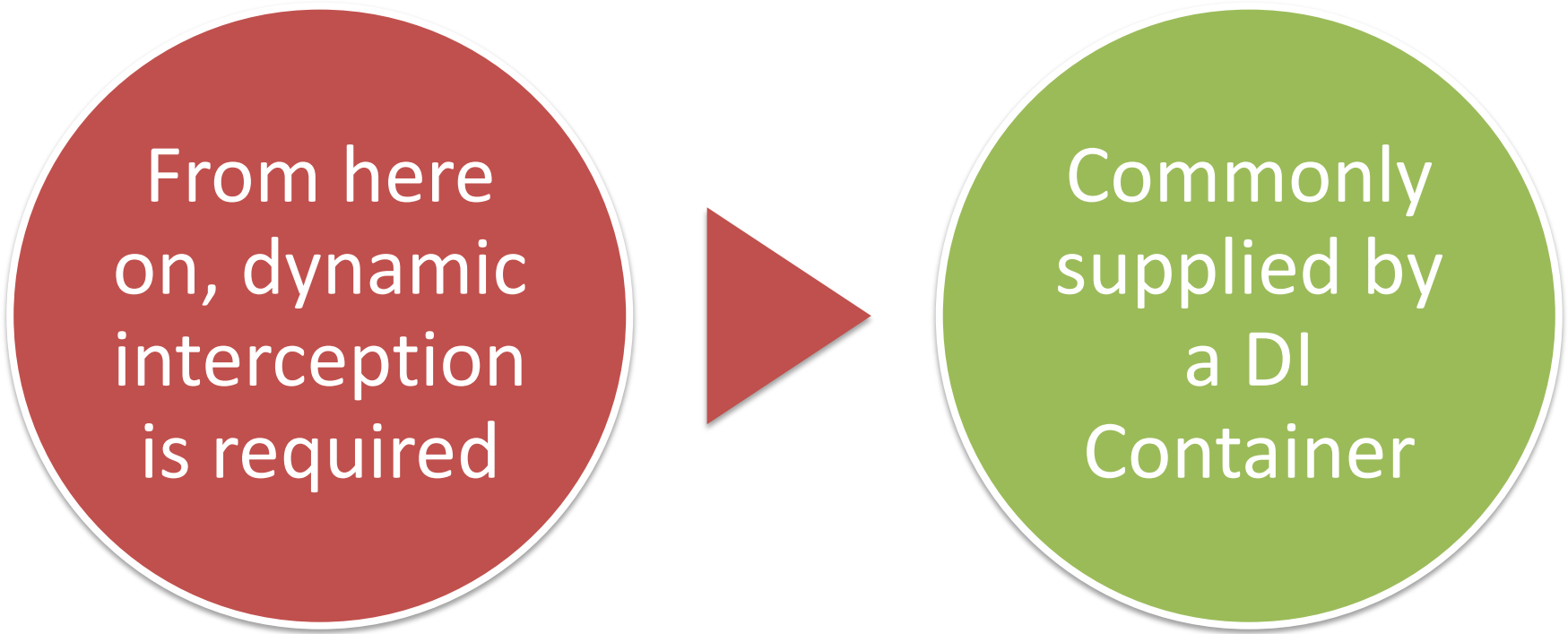
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Staying DRY



Dynamic interception



From here
on, dynamic
interception
is required

Commonly
supplied by
a DI
Container

DI Containers with Interception

Castle
Windsor

Unity

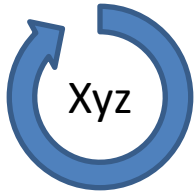
Spring.NET

LinFu

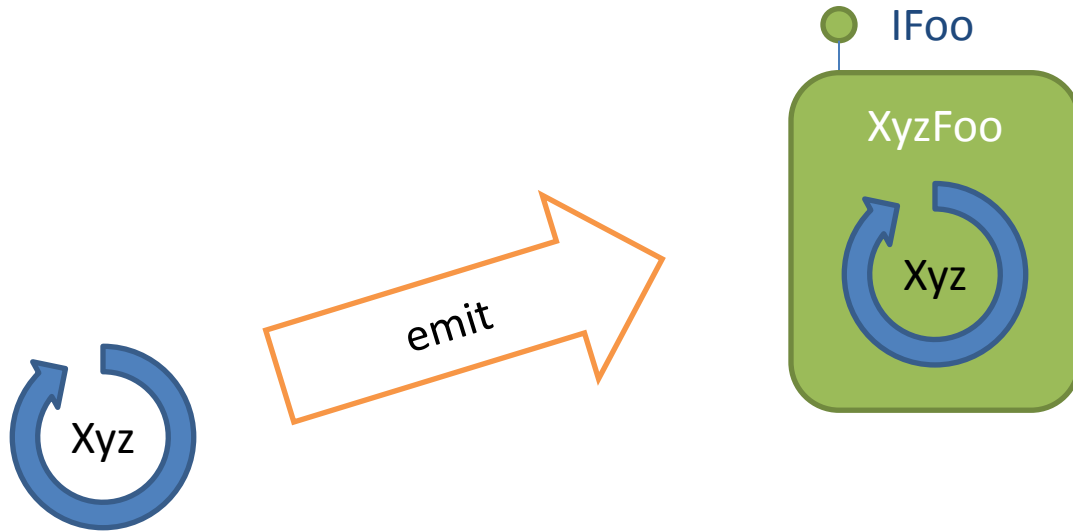
Using a DI Container

DEMO

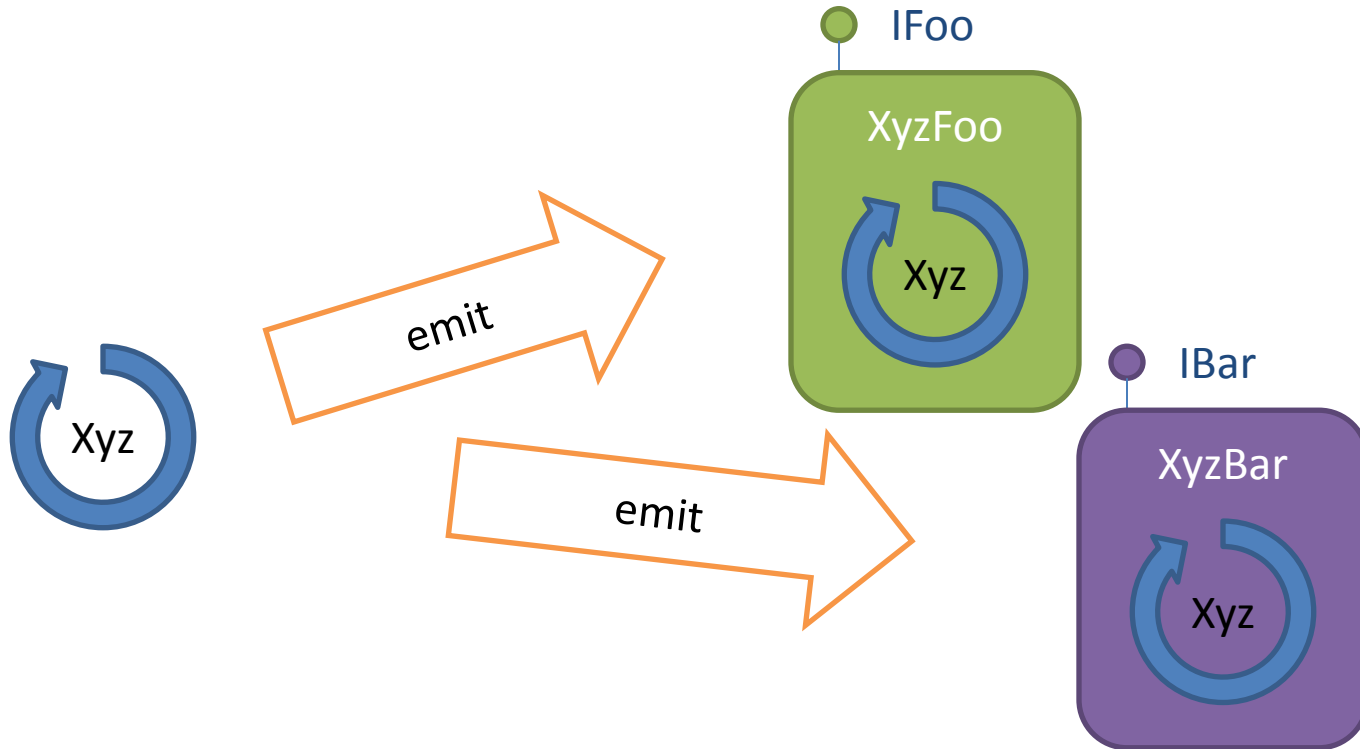
Interception



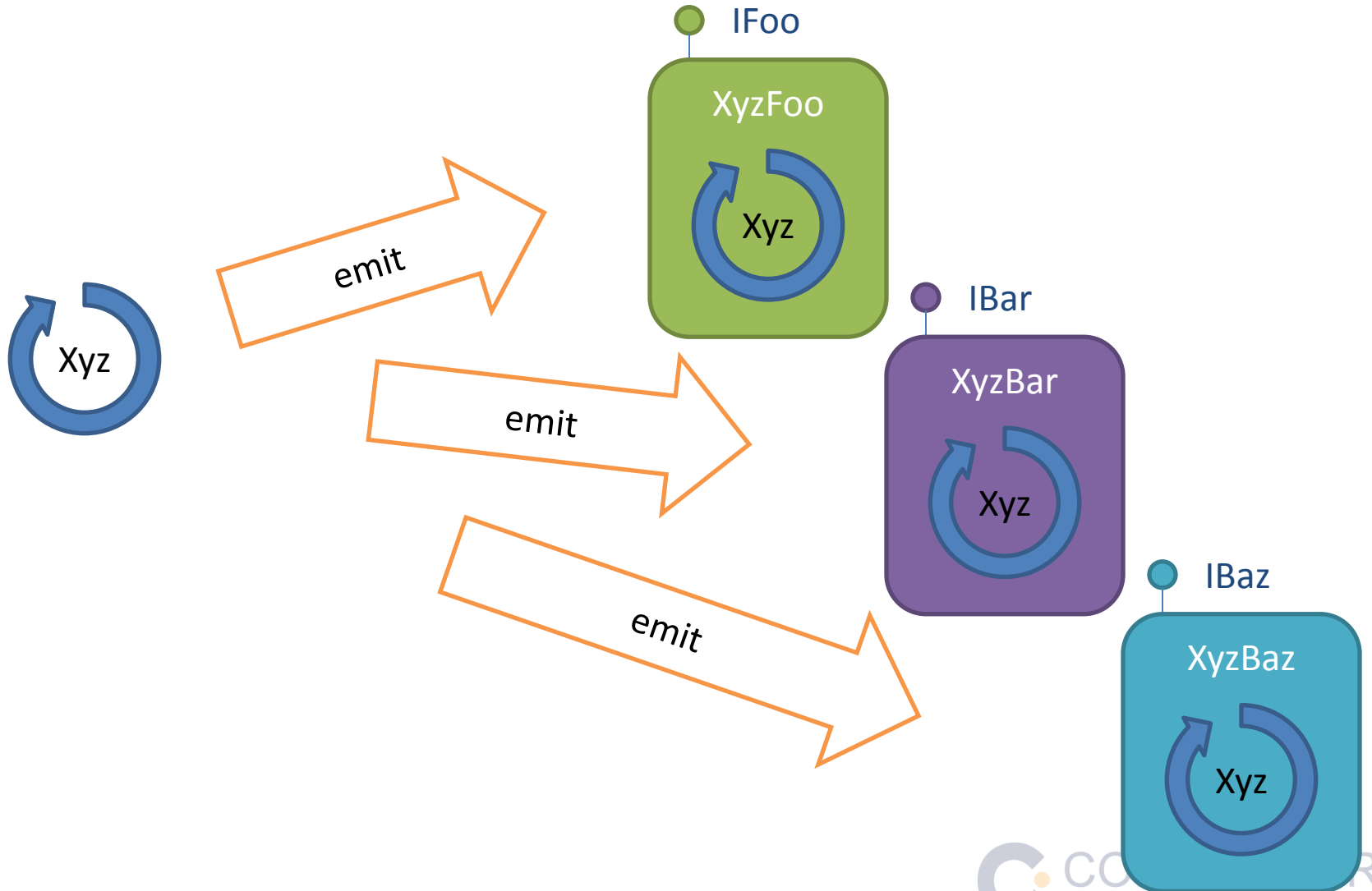
Interception



Interception



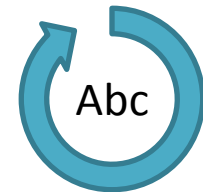
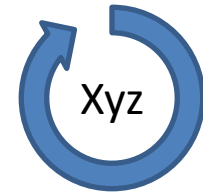
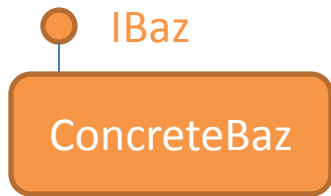
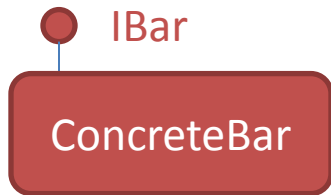
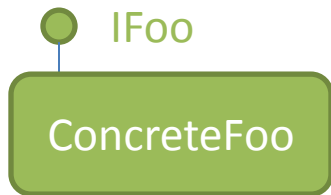
Interception



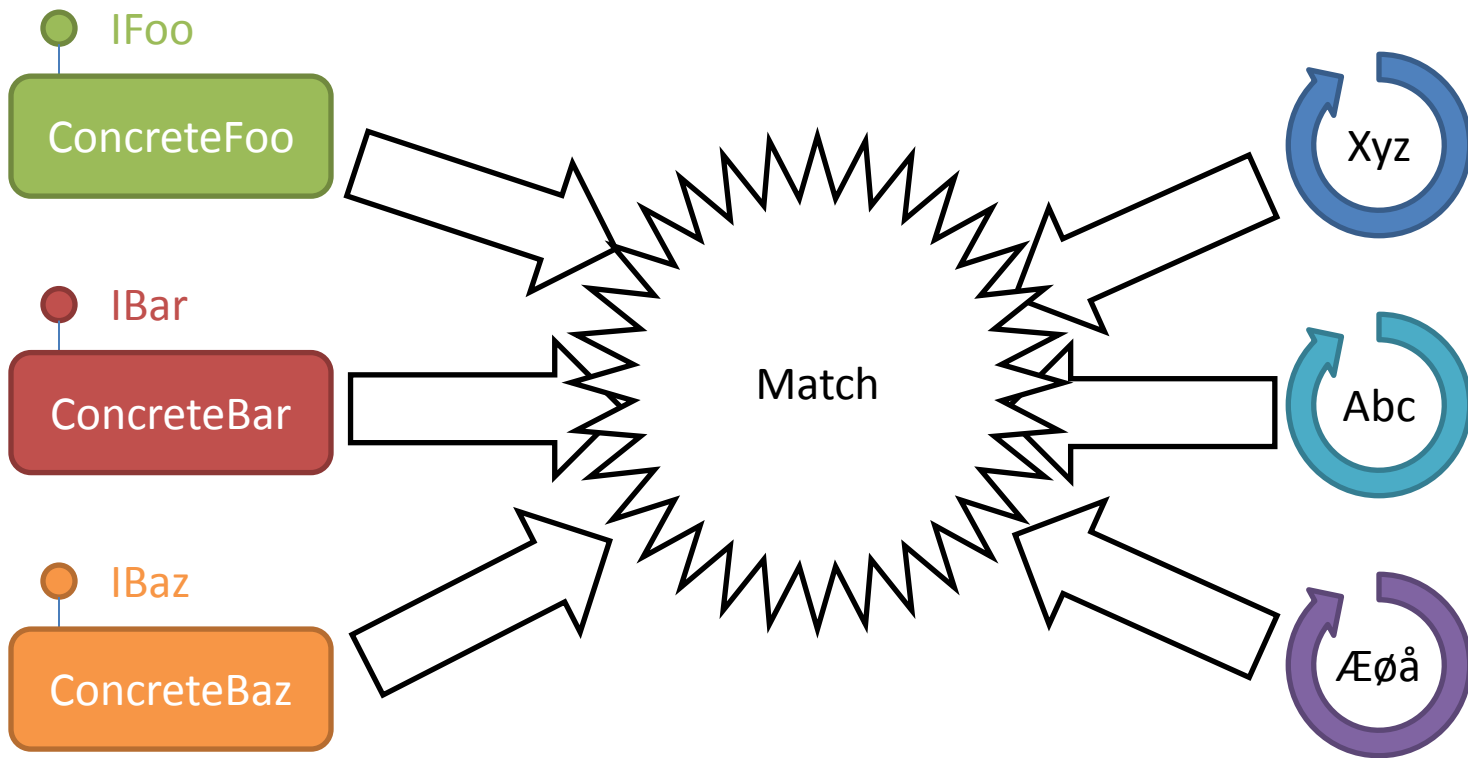
Adding interceptors

DEMO

Pointcut



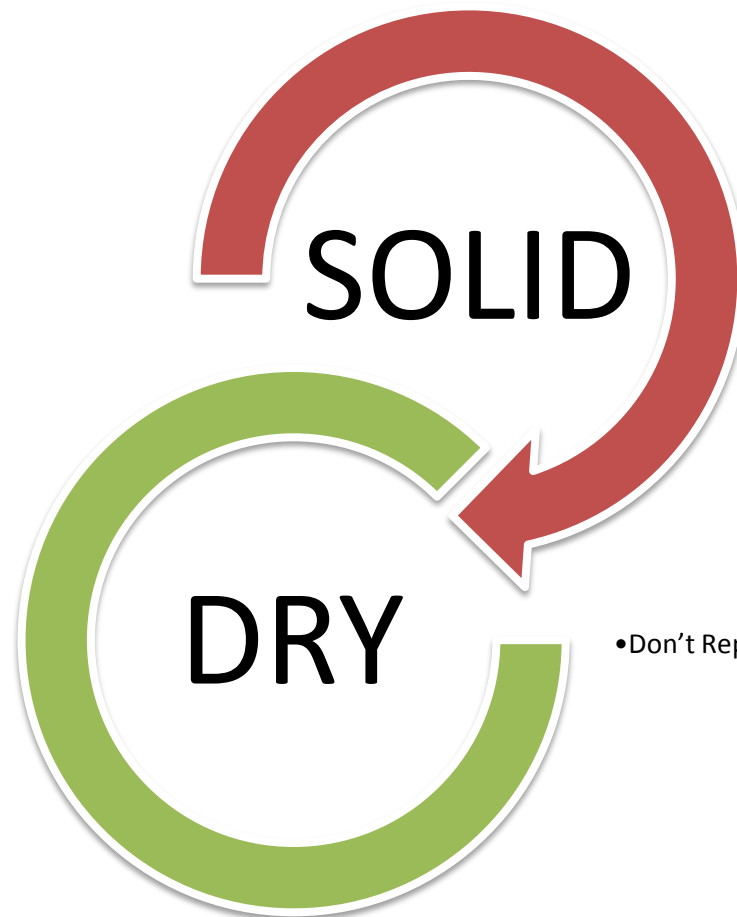
Pointcut



Adding a pointcut

DEMO

Objective

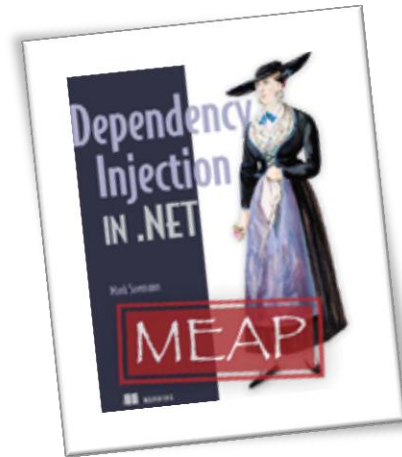


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Staying
SOLID only
requires
loose
coupling

Staying DRY
requires
dynamic
interception



<http://blog.ploeh.dk/>

@ploeh

MARK SEEMANN