



CS544 EA
Spring

Dependency Injection: XML Autowiring

Autowiring

- Autowiring tells spring:
Why don't you try and figure it out
- Spring uses reflection and finds matches
 - Less typing for the programmer
 - Less documentation for those looking at config

Autowiring by Type

```
<bean id="customerService" class="cs544.spring09.di.auto.CustomerService" autowire="byType"/>
<bean id="customerDao" class="cs544.spring09.di.auto.CustomerDao"/>
```

```
package cs544.spring06.di.xml;

public class CustomerService {
    private ICustomerDao customerDao;

    public void setCustomerDao(ICustomerDao customerDao) {
        this.customerDao = customerDao;
    }
}
```

Spring looks at the types
of the properties
(using reflection)
inside CustomerService

When a type matches the type
(class, superclass, interface)
of another spring bean
it injects it using the Setter



This is a problem
if you have multiple
beans with the requested type:
NoUniqueBeanDefinitionException

Autowiring by Name

```
<bean id="customerService" class="cs544.spring10.di.auto.CustomerService" autowire="byName"/>  
<bean id="customerDao" class="cs544.spring10.di.auto.CustomerDao"/>
```

```
package cs544.spring07.di.xml;  
  
public class CustomerService {  
    private ICustomerDao customerDao;  
  
    public void setCustomerDao(ICustomerDao customerDao) {  
        this.customerDao = customerDao;  
    }  
}
```

Spring looks at the names
of the properties
(using reflection)
inside CustomerService

If a name matches the
id of a bean it uses the
setter to inject it

Autowiring by Constructor

```
<bean id="customerService" class="cs544.spring11.di.auto.CustomerService" autowire="constructor"/>
<bean id="customerDao" class="cs544.spring11.di.auto.CustomerDao"/>
```


```
package cs544.spring08.di.xml;

public class CustomerService {
    private ICustomerDao customerDao;

    public CustomerService(ICustomerDao customerDao) {
        this.customerDao = customerDao;
    }
}
```

Spring looks at the types
of the constructor args
(using reflection)
inside CustomerService

When a type matches the type
(class, superclass, interface)
of another spring bean
it passes it to the constructor

 To accomplish this
customerDao has to be created
before CustomerService