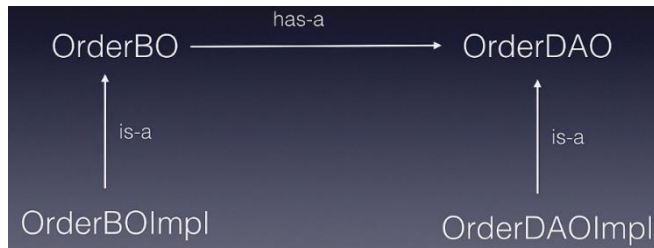
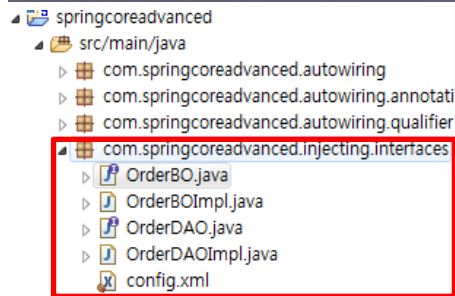


1. 인터페이스 주입



- 1) Create the POJIs/POJO
- 2) Create the configuration
- 3) Create the test



```
1 package com.springcoreadvanced.injecting.interfaces;
2
3 public interface OrderBO {
4
5     void placeOrder();
6 }
```

```
1 package com.springcoreadvanced.injecting.interfaces;
2
3 public class OrderBOImpl implements OrderBO {
4
5     @Override
6     public void placeOrder() {
7         System.out.println("Inside Order BO");
8     }
9 }
```

```
1 package com.springcoreadvanced.injecting.interfaces;
2
3 public interface OrderDAO {
4     void createOrder();
5 }
```

```
1 package com.springcoreadvanced.injecting.interfaces;
2
3 public class OrderDAOImpl implements OrderDAO {
4
5     @Override
6     public void createOrder() {
7         System.out.println("Inside Order DAO createOrder()");
8     }
9 }
```

2. 빈 설정

```
1 package com.springcoreadvanced.injecting.interfaces;
2
3 public class OrderBOImpl implements OrderBO {
4
5     private OrderDAO dao;
6
7     @Override
8     public void placeOrder() {
9         System.out.println("Inside Order BO");
10        dao.createOrder();
11    }
12
13    public OrderDAO getDao() {
14        return dao;
15    }
16
17    public void setDao(OrderDAO dao) {
18        this.dao = dao;
19    }
20 }
```

```
1 <?xml version="1.0" encoding="UTF-8"?>
2 <beans xmlns="http://www.springframework.org/schema/beans"
3       xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
4       xmlns:context="http://www.springframework.org/schema/context"
5       xmlns:util="http://www.springframework.org/schema/util"
6       xmlns:p="http://www.springframework.org/schema/p"
7       xmlns:c="http://www.springframework.org/schema/c"
8       xsi:schemaLocation="http://www.springframework.org/schema/beans
9       http://www.springframework.org/schema/beans/spring-beans.xsd
10      http://www.springframework.org/schema/context
11      http://www.springframework.org/schema/context/spring-context.xsd
12      http://www.springframework.org/schema/util
13      http://www.springframework.org/schema/util/spring-util.xsd">
14
15     <bean
16         class="com.springcoreadvanced.injecting.interfaces.OrderDAOImpl"
17         name="dao" />
18
19     <bean
20         class="com.springcoreadvanced.injecting.interfaces.OrderBOImpl"
21         name="bo">
22         <property name="dao" ref="dao"></property>
23     </bean>
24
25 </beans>
```

3. 테스트

```
Test.java
1 package com.springcoreadvanced.injecting.interfaces;
2
3 import org.springframework.context.ApplicationContext;
4 import org.springframework.context.support.ClassPathXmlApplicationContext;
5
6 public class Test {
7
8     private static ApplicationContext context;
9
10    public static void main(String[] args) {
11        context = new ClassPathXmlApplicationContext(
12            "com/springcoreadvanced/injecting/interfaces/config.xml");
13        OrderBO bo = (OrderBO) context.getBean("bo");
14        bo.placeOrder();
15    }
16 }
```

Problems @ Javadoc Declaration Console

```
<terminated> Test (19) [Java Application] D:\Java\W
4월 09, 2023 4:33:00 오전 org.springfram
INFO: Refreshing org.springframework.con
4월 09, 2023 4:33:00 오전 org.springfram
INFO: Loading XML bean definitions from
Inside Order BO
Inside Order DAO createOrder()
```

4. 구현체 변경

Test.java config.xml OrderDAOImpl2.java

```
OrderDAOImpl2.java
1 package com.springcoreadvanced.injecting.interfaces;
2
3 public class OrderDAOImpl2 implements OrderDAO {
4
5     @Override
6     public void createOrder() {
7         System.out.println("Inside OrderDAOImpl2 createOrder");
8     }
9 }
```

```
config.xml
<bean
    class="com.springcoreadvanced.injecting.interfaces.OrderDAOImpl"
    name="dao" />

<bean
    class="com.springcoreadvanced.injecting.interfaces.OrderDAOImpl2"
    name="dao2" />

<bean
    class="com.springcoreadvanced.injecting.interfaces.OrderBOImpl"
    name="bo">
    <property name="dao" ref="dao2" />
</bean>
```

Problems @ Javadoc Declaration Console

```
<terminated> Test (19) [Java Application] C
4월 09, 2023 4:44:26 오전 org.spr
INFO: Refreshing org.springframework
4월 09, 2023 4:44:26 오전 org.spr
INFO: Loading XML bean definition
Inside Order BO
Inside OrderDAOImpl2 createOrder
```

5. 애노테이션 사용

```
OrderBOImpl.java OrderDAOImpl.java config.xml
1 package com.springcoreadvanced.injecting.interf
2
3 import org.springframework.beans.factory.annota
4 import org.springframework.stereotype.Component
5
6 @Component
7 public class OrderBOImpl implements OrderBO {
8
9     @Autowired
10    private OrderDAO dao;
11
12    @Override
13    public void placeOrder() {
14        System.out.println("Inside Order BO");
15        dao.createOrder();
16    }
17
18    public OrderDAO getDao() {
19        return dao;
20    }
21
22    public void setDao(OrderDAO dao) {
23        this.dao = dao;
24    }
25 }
```

OrderBOImpl.java OrderDAOImpl.java config.xml

```
OrderDAOImpl.java
1 package com.springcoreadvanced.injecting.interfaces;
2
3 import org.springframework.stereotype.Component;
4
5 @Component
6 public class OrderDAOImpl implements OrderDAO {
7
8     @Override
9     public void createOrder() {
10        System.out.println("Inside Order DAO createOrder()");
11    }
12 }
```

OrderBOImpl.java OrderDAOImpl.java config.xml

```

1 <?xml version="1.0" encoding="UTF-8"?>
2 <beans xmlns="http://www.springframework.org/schema/beans"
3     xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
4     xmlns:context="http://www.springframework.org/schema/context"
5     xmlns:util="http://www.springframework.org/schema/util"
6     xmlns:p="http://www.springframework.org/schema/p"
7     xmlns:c="http://www.springframework.org/schema/c"
8     xsi:schemaLocation="http://www.springframework.org/schema/beans
9         http://www.springframework.org/schema/beans/spring-beans.xsd
10        http://www.springframework.org/schema/context
11        http://www.springframework.org/schema/context/spring-context.xsd
12        http://www.springframework.org/schema/util
13        http://www.springframework.org/schema/util/spring-util.xsd">
14
15     <context:component-scan
16         base-package="com.springcoreadvanced.injecting.interfaces" />
17
18     <!-- <bean class="com.springcoreadvanced.injecting.interfaces.Or
19         name="dao" /> <bean class="com.springcoreadvanced.injecting.
20         name="dao2" /> <bean class="com.springcoreadvanced.injecting
21         name="bo" /> <property name="dao" ref="dao2"/></property> </bea
22
23 </beans>

```

[org.springframework.beans.factory.NoSuchBeanDefinitionException](#): No bean named 'bo' available

Test.java OrderBO.java OrderBOImpl.java

```

1 package com.springcoreadvanced.injecting.interfaces;
2
3 import org.springframework.beans.factory.annotation.Autowired;
4
5
6 @Component("bo")
7 public class OrderBOImpl implements OrderBO {
8
9     @Autowired
10     private OrderDAO dao;
11
12     @Override
13     public void placeOrder() {
14         System.out.println("Inside Order BO");
15         dao.createOrder();
16     }
17
18     public OrderDAO getDao() {
19         return dao;
20     }
21
22     public void setDao(OrderDAO dao) {
23         this.dao = dao;
24     }
25 }

```

Problems @ Javadoc Declaration

```

<terminated> Test (19) [Java Application] C
4월 09, 2023 5:01:07 오전 org.spr
INFO: Refreshing org.springframework
4월 09, 2023 5:01:07 오전 org.spr
INFO: Loading XML bean definition
Inside Order BO
Inside Order DAO createOrder()

```