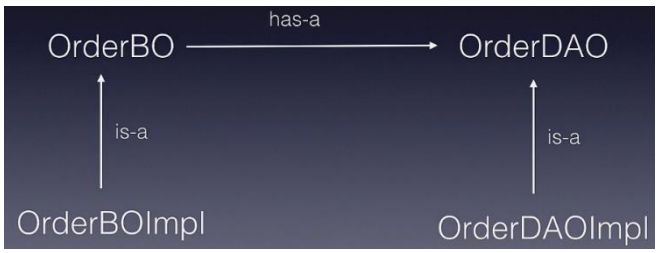
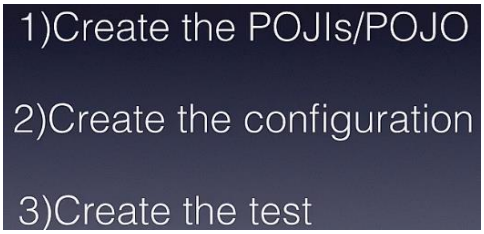
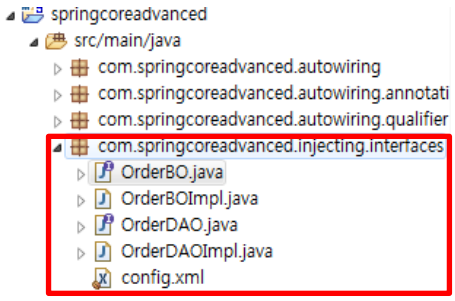
1. 인터페이스 주입







OrderBO.java

```java
package com.springcoreadvanced.injecting.interfaces;

public interface OrderBO {

    void placeOrder();
}
```

OrderBOImpl.java

```java
package com.springcoreadvanced.injecting.interfaces;

public class OrderBOImpl implements OrderBO {

    @Override
    public void placeOrder() {
        System.out.println("Inside Order BO");
    }
}
```

OrderDAO.java

```java
package com.springcoreadvanced.injecting.interfaces;

public interface OrderDAO {
    void createOrder();
}
```

OrderDAOImpl.java

```java
package com.springcoreadvanced.injecting.interfaces;

public class OrderDAOImpl implements OrderDAO {

    @Override
    public void createOrder() {
        System.out.println("Inside Order DAO createOrder()");
    }
}
```

2. 빈 설정

OrderBOImpl.java

```java
package com.springcoreadvanced.injecting.interfaces;

public class OrderBOImpl implements OrderBO {

    private OrderDAO dao;

    @Override
    public void placeOrder() {
        System.out.println("Inside Order BO");
        dao.createOrder();
    }

    public OrderDAO getDao() {
        return dao;
    }

    public void setDao(OrderDAO dao) {
        this.dao = dao;
    }
}
```

config.xml

```xml
<?xml version="1.0" encoding="UTF-8"?>
<beans xmlns="http://www.springframework.org/schema/beans"
    xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
    xmlns:context="http://www.springframework.org/schema/context"
    xmlns:util="http://www.springframework.org/schema/util"
    xmlns:p="http://www.springframework.org/schema/p"
    xmlns:c="http://www.springframework.org/schema/c"
    xsi:schemaLocation="http://www.springframework.org/schema/beans
    http://www.springframework.org/schema/beans/spring-beans.xsd
    http://www.springframework.org/schema/context
    http://www.springframework.org/schema/context/spring-context.xsd
    http://www.springframework.org/schema/util
    http://www.springframework.org/schema/util/spring-util.xsd">

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

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

</beans>
```

3. 테스트

Test.java

```java
package com.springcoreadvanced.injecting.interfaces;

import org.springframework.context.ApplicationContext;
import org.springframework.context.support.ClassPathXmlApplicationContext;

public class Test {

    private static ApplicationContext context;

    public static void main(String[] args) {
        context = new ClassPathXmlApplicationContext(
                "com/springcoreadvanced/injecting/interfaces/config.xml");
        OrderBO bo = (OrderBO) context.getBean("bo");
        bo.placeOrder();
    }
}
```

Problems @ Javadoc Declaration Co

```
<terminated> Test (19) [Java Application] D:₩Java₩j
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

com.springcoreadvanced.injecting.interfaces
- OrderBO.java
- OrderBOImpl.java
- OrderDAO.java
- OrderDAOImpl.java
- OrderDAOImpl2.java
- Test.java
- config.xml

Test.java config.xml OrderDAOImpl2.java

```java
package com.springcoreadvanced.injecting.interfaces;

public class OrderDAOImpl2 implements OrderDAO {

    @Override
    public void createOrder() {
        System.out.println("Inside OrderDAOImpl2 createOrder");
    }
}
```

```
<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"></property>
</bean>
```

Problems @ Javadoc Declaration

```
<terminated> Test (19) [Java Application] D
4월 09, 2023 4:44:26 오전 org.spr
INFO: Refreshing org.springframew
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.

```java
package com.springcoreadvanced.injecting.interf

import org.springframework.beans.factory.annot
import org.springframework.stereotype.Componen

@Component
public class OrderBOImpl implements OrderBO {

    @Autowired
    private OrderDAO dao;

    @Override
    public void placeOrder() {
        System.out.println("Inside Order BO");
        dao.createOrder();
    }

    public OrderDAO getDao() {
        return dao;
    }

    public void setDao(OrderDAO dao) {
        this.dao = dao;
    }
}
```

OrderBOImpl.java OrderDAOImpl.java config.xml

```java
package com.springcoreadvanced.injecting.interfaces;

import org.springframework.stereotype.Component;

@Component
public class OrderDAOImpl implements OrderDAO {

    @Override
    public void createOrder() {
        System.out.println("Inside Order DAO createOrder()");
    }
}
```

OrderBOImpl.java | OrderDAOImpl.java | config.xml

```xml
<?xml version="1.0" encoding="UTF-8"?>
<beans xmlns="http://www.springframework.org/schema/beans"
    xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
    xmlns:context="http://www.springframework.org/schema/context"
    xmlns:util="http://www.springframework.org/schema/util"
    xmlns:p="http://www.springframework.org/schema/p"
    xmlns:c="http://www.springframework.org/schema/c"
    xsi:schemaLocation="http://www.springframework.org/schema/beans
    http://www.springframework.org/schema/beans/spring-beans.xsd
    http://www.springframework.org/schema/context
    http://www.springframework.org/schema/context/spring-context.xsd
    http://www.springframework.org/schema/util
    http://www.springframework.org/schema/util/spring-util.xsd">

    <context:component-scan
        base-package="com.springcoreadvanced.injecting.interfaces "

    <!-- <bean class="com.springcoreadvanced.injecting.interfaces.Or
        name="dao" /> <bean class="com.springcoreadvanced.injecting.
        name="dao2" /> <bean class="com.springcoreadvanced.injecting
        name="bo"> <property name="dao" ref="dao2"></property> </bea

</beans>
```

org.springframework.beans.factory.NoSuchBeanDefinitionException: No bean named 'bo' available

Test.java | OrderBO.java | OrderBOImpl.java

```java
package com.springcoreadvanced.injecting.interfaces;

import org.springframework.beans.factory.annotation.Autowired;

@Component("bo")
public class OrderBOImpl implements OrderBO {

    @Autowired
    private OrderDAO dao;

    @Override
    public void placeOrder() {
        System.out.println("Inside Order BO");
        dao.createOrder();
    }

    public OrderDAO getDao() {
        return dao;
    }

    public void setDao(OrderDAO dao) {
        this.dao = dao;
    }
}
```

Problems | Javadoc | Declaration

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