

0. 개요

<code><constructor-arg></code>	As Tag
<code><value> b </value></code>	
<code><constructor-arg></code>	As Attribute
<code><constructor-arg></code>	
<code><ref bean="a"/></code>	C Shema/C Namespace
<code></constructor-arg></code>	

1. 프로젝트 생성 및 설정

com.springcore.constructorinjection

- Address.java
- Employee.java
- config.xml

Employee.java Address.java config.xml

```
1 package com.springcore.constructorinjection;
2
3 public class Address {
4
5     private int hno;
6     private String street;
7     private String city;
8
9     public int getHno() {
10         return hno;
11     }
12
13     public void setHno(int hno) {
14         this.hno = hno;
15     }
16
17     public String getStreet() {
18         return street;
19     }
20
21     public void setStreet(String street) {
22         this.street = street;
23     }
24
25     public String getCity() {
26         return city;
27     }
28
29     public void setCity(String city) {
30         this.city = city;
31     }
32
33     @Override
34     public String toString() {
35         return "Address [hno=" + hno + ", "
36             + "street=" + street + ", city=" + city + "]";
37     }
38 }
```

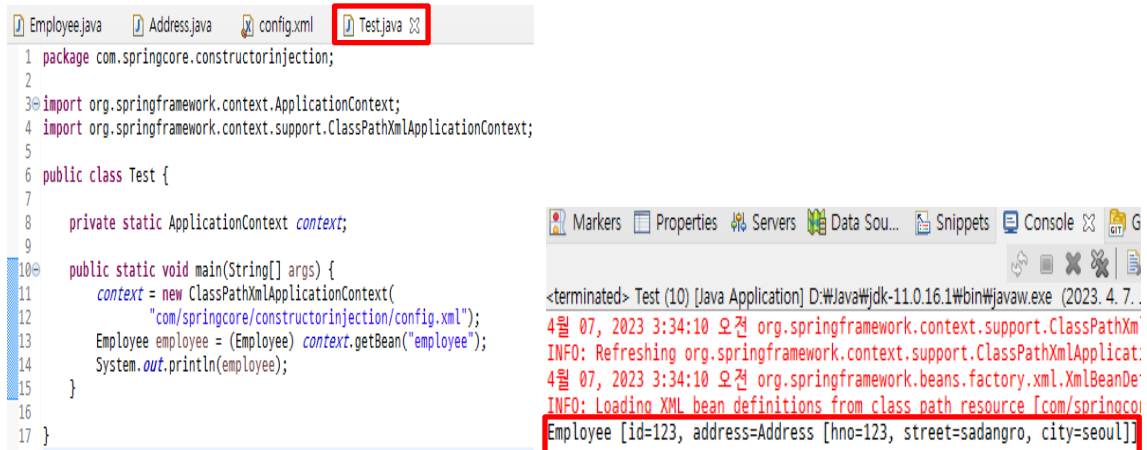
Employee.java Address.java config.xml

```
1 package com.springcore.constructorinjection;
2
3 public class Employee {
4
5     private int id;
6     private Address address;
7
8     public Employee(int id, Address address) {
9         this.id = id;
10        this.address = address;
11    }
12
13     public int getId() {
14         return id;
15     }
16
17     public void setId(int id) {
18         this.id = id;
19     }
20
21     public Address getAddress() {
22         return address;
23     }
24
25     public void setAddress(Address address) {
26         this.address = address;
27     }
28
29     @Override
30     public String toString() {
31         return "Employee [id=" + id + ", address=" + address + "]";
32     }
33 }
```

생성자

Employee.java Address.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:p="http://www.springframework.org/schema/p"
6     xsi:schemaLocation="http://www.springframework.org/schema/beans
7         http://www.springframework.org/schema/beans/spring-beans.xsd
8         http://www.springframework.org/schema/context
9         http://www.springframework.org/schema/context/spring-context.xsd">
10
11     <bean class="com.springcore.constructorinjection.Address"
12         name="address" p:hno="123" p:street="sadangro" p:city="seoul" />
13
14     <bean class="com.springcore.constructorinjection.Employee"
15         name="employee">
16         <constructor-arg>
17             <value>123</value>
18         </constructor-arg>
19         <constructor-arg>
20             <ref bean="address" />
21         </constructor-arg>
22     </bean>
23
24 </beans>
```



```
1 package com.springcore.constructorinjection;
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/springcore/constructorinjection/config.xml");
13        Employee employee = (Employee) context.getBean("employee");
14        System.out.println(employee);
15    }
16
17 }
```

<terminated> Test (10) [Java Application] D:\Java\jdk-11.0.16.1\bin\javaw.exe (2023. 4. 7. 4월 07, 2023 3:34:10 오전 org.springframework.context.support.ClassPathXmlApplicationContext: Refreshing org.springframework.context.support.ClassPathXmlApplicationContext: 4월 07, 2023 3:34:10 오전 org.springframework.beans.factory.xml.XmlBeanDefinitionReader: Loading XML bean definitions from class path resource [com/springcore/constructorinjection/config.xml] Employee [id=123, address=Address [hno=123, street=sadangro, city=seoul]]

2. 엘리먼트 속성과 C 스키마

3. 모호성 문제

가. 예시



```
1 package com.springcore.constructorinjection.ambiguity;
2
3 public class Addition {
4
5     public Addition(int a, int b)
6     {
7         System.out.println("Inside constructor INT");
8     }
9
10    public Addition(double a, double b)
11    {
12        System.out.println("Inside constructor Double");
13    }
14 }
```

```
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:p="http://www.springframework.org/schema/p"
6       xmlns:c="http://www.springframework.org/schema/c"
7       xsi:schemaLocation="http://www.springframework.org/schema/beans
8         http://www.springframework.org/schema/beans/spring-beans.xsd
9         http://www.springframework.org/schema/context
10        http://www.springframework.org/schema/context/spring-context.xsd">
11
12    <bean
13        class="com.springcore.constructorinjection.ambiguity.Addition"
14        name="addition">
15
16        <constructor-arg value="10" />
17        <constructor-arg value="20" />
18    </bean>
19
20 </beans>
```

정수 생성자를 호출

<terminated> Test (11) [Java Application] D:\Java\jdk-11.0.16.1\bin\javaw.exe 4월 07, 2023 5:16:19 오전 org.springframework.context.support.ClassPathXmlApplicationContext: Refreshing org.springframework.context.support.ClassPathXmlApplicationContext: 4월 07, 2023 5:16:19 오전 org.springframework.beans.factory.xml.XmlBeanDefinitionReader: Loading XML bean definitions from class path resource [com/springcore/constructorinjection/ambiguity/config.xml] Inside constructor INT 정수 생성자를 호출한 것처럼 보인다. com.springcore.constructorinjection.ambiguity.Addition@f381794

The left screenshot shows the 'Addition' class with two constructors. The first constructor takes two double parameters and prints 'Inside constructor Double'. The second constructor takes two int parameters and prints 'Inside constructor INT'. The right screenshot shows the Spring logs for the 'Double' constructor, indicating that the 'Double' parameter is being used for dependency resolution.

```

1 package com.springcore.constructorinjection.ambiguity;
2
3 public class Addition {
4
5     public Addition(double a, double b)
6     {
7         System.out.println("Inside constructor Double");
8     }
9     // 생성자 순서를 변경
10    public Addition(int a, int b)
11    {
12        System.out.println("Inside constructor INT");
13    }
14 }

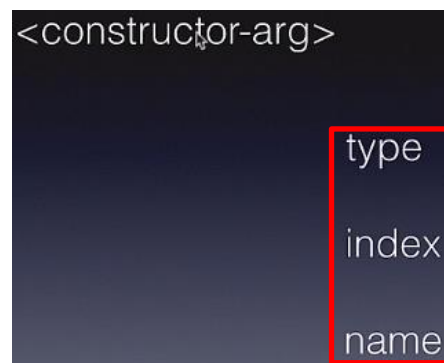
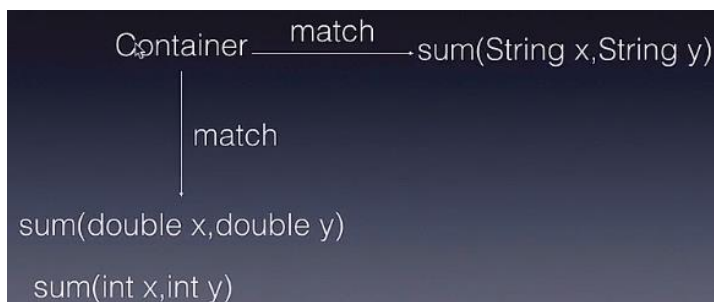
```

The right screenshot shows the Spring logs for the 'Double' constructor, indicating that the 'Double' parameter is being used for dependency resolution.

```

<terminated> Test (11) [Java Application] D:\Java\jdk-11.0.16\bin\javaw.exe
4월 07, 2023 5:25:05 오전 org.springframework.context.support.
INFO: Refreshing org.springframework.context.support.ClassPath
4월 07, 2023 5:25:05 오전 org.springframework.beans.factory.xml
INFO: Loading XML bean definitions from class path resource [c
Inside constructor Double 순서가 앞인 생성자 호출???
com.springcore.constructorinjection.ambiguity.Addition@f381794

```



Addition.java
config.xml
Test.java

```

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:p="http://www.springframework.org/schema/p"
6       xmlns:c="http://www.springframework.org/schema/construct"
7       xsi:schemaLocation="http://www.springframework.org/schema/beans
8       http://www.springframework.org/schema/beans/spring-beans.xsd
9       http://www.springframework.org/schema/context
10      http://www.springframework.org/schema/context/spring-context.xsd"
11 >
12   <bean
13       class="com.springcore.constructorinjection.addition"
14       name="addition">
15
16       <constructor-arg value="10" type="int" />
17       <constructor-arg value="20" type="int" />
18   </bean>
19
20 </beans>

```

Markers Prop... Serv...

<terminated> Test (11) [Java Appli
4월 07, 2023 5:37:32 오전

INFO: Refreshing org.spring

4월 07, 2023 5:37:32 오전

INFO: Loading XML bean defi

Inside constructor INT
com.springcore.constructor:

4. 모호성 변형

Addition.java
config.xml
Test.java

```

1 package com.springcore.constructorinjection.ambiguity;
2
3 public class Addition {
4
5     public Addition(int a, double b)
6     {
7         System.out.println("Inside the constructor");
8     }
9 }

```

Markers Prop... Serv... Data...

<terminated> Test (11) [Java Application] D:\WJ

4월 07, 2023 5:45:21 오전 org.spring

INFO: Refreshing org.springframework

4월 07, 2023 5:45:21 오전 org.spring

INFO: Loading XML bean definitions f

Inside the constructor 정상실행

com.springcore.constructorinjection.

Addition.java
config.xml
Test.java

```

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:p="http://www.springframework.org/schema/p"
6       xmlns:c="http://www.springframework.org/schema/construct"
7       xsi:schemaLocation="http://www.springframework.org/schema/beans
8       http://www.springframework.org/schema/beans/spring-beans.xsd
9       http://www.springframework.org/schema/context
10      http://www.springframework.org/schema/context/spring-context.xsd"
11 >
12   <bean
13       class="com.springcore.constructorinjection.ambiguity"
14       name="addition">
15
16       <constructor-arg value="10" type="int" />
17       <constructor-arg value="20.3" type="double" />
18   </bean>
19
20 </beans>

```

Markers Prop... Serv...

<terminated> Test (11) [Java Appli

4월 07, 2023 5:47:55 오전 이

INFO: Refreshing org.spring

4월 07, 2023 5:47:55 오전 이

INFO: Loading XML bean defi

Inside the constructor 정상실행???

com.springcore.constructori

Addition.java
config.xml
Test.java

```

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:p="http://www.springframework.org/schema/p"
6       xmlns:c="http://www.springframework.org/schema/construct"
7       xsi:schemaLocation="http://www.springframework.org/schema/beans
8       http://www.springframework.org/schema/beans/spring-beans.xsd
9       http://www.springframework.org/schema/context
10      http://www.springframework.org/schema/context/spring-context.xsd"
11 >
12   <bean
13       class="com.springcore.constructorinjection.ambiguity"
14       name="addition">
15
16       <constructor-arg value="20.3" type="double" />
17       <constructor-arg value="10" type="int" />
18   </bean>
19
20 </beans>

```

Markers Prop... Serv...

<terminated> Test (11) [Java Appli

4월 07, 2023 5:47:55 오전 이

INFO: Refreshing org.spring

4월 07, 2023 5:47:55 오전 이

INFO: Loading XML bean defi

Inside the constructor 정상실행???

com.springcore.constructori

Markers

Prop...

Serv...

Addition.java

config.xml

Test.java

```
1 package com.springcore.constructorinjection.ambiguity;
2
3 public class Addition {
4
5     public Addition(int a, double b)
6     {
7         System.out.println("Inside the constructor");
8         System.out.println("a=" + a);
9         System.out.println("b=" + b);
10    }
11 }
```

<terminated> Test (11) [Java Application] D

4월 07, 2023 5:52:12 오전 org.spr

INFO: Refreshing org.springframework

4월 07, 2023 5:52:12 오전 org.spr

INFO: Loading XML bean definitions

Inside the constructor

a=10

b=20.3

정상 실행함

com.springcore.constructorinjecti

Addition.java

*config.xml

Test.java

```
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:p="http://www.springframework.org/schema/p"
6       xmlns:c="http://www.springframework.org/schema/c"
7       xsi:schemaLocation="http://www.springframework.org/schema/beans
8       http://www.springframework.org/schema/beans/spring-beans.xsd
9       http://www.springframework.org/schema/context
10      http://www.springframework.org/schema/context/spring-context.xsd"
11 >
12     <bean
13         class="com.springcore.constructorinjection.ambiguity.Addi
14         name="addition">
15
16         <constructor-arg value="20.3" type="double" index="1" />
17         <constructor-arg value="10" type="int" index="0" />
18     </bean>
19
20 </beans>
```