# **Spring DI - Autowiring Demo**

#### **Autowiring**

Can be autowired using 4 types

- 1. By Type
- 2. By Name
- 3. By constructor
- 4. @Autowired Annotation [We'll see this with Spring MVC]

To understand the autowire concept better let us add print statements to the employee class constructor and setter method of address field.

```
package com.wipro.bean;
public class Employee {
      private String name;
      private String empId;
      private Address address;
      public Employee() {
             super();
             // TODO default constructor stub
      public Employee(String name, String empId, Address address) {
             super();
             this.name = name;
             this.empId = empId;
             this.address = address;
             System.out.println("Address value @ constructor : "+address);
      }
      public String getName() {
             return name;
      public void setName(String name) {
             this.name = name;
      public String getEmpId() {
             return empId;
      }
      public void setEmpId(String empId) {
             this.empId = empId;
      public Address getAddress() {
             return address;
      public void setAddress(Address address) {
             this.address = address;
             System.out.println("Address value @ Setter Method : "+address);
      @Override
      public String toString() {
```

```
return "Employee [name=" + name + ", empId=" + empId + ", address=" +
address + "]";
}
```

## 1. Code example of autowire by type.

```
<?xml version="1.0" encoding="UTF-8"?>
<beans xmlns="http://www.springframework.org/schema/beans"</pre>
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:context="http://www.springframework.org/schema/context"
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">
 <bean id="addressBean" class="com.wipro.bean.Address">
              <!-- Using Constructor for passing the values -->
              <constructor-arg index="0" type="java.lang.String" value="Pritech"</pre>
Park"></constructor-arg>
              <constructor-arg index="1" type="java.lang.String"</pre>
value="Bengaluru"></constructor-arg>
              <constructor-arg index="2" type="java.lang.String"</pre>
value="560037"></constructor-arg>
 </bean>
 <bean id="employeeBean" class="com.wipro.bean.Employee" autowire="byType">
              property name="name" value="ALLEN">
              coperty name="empId" value="2000123">
 </bean>
</beans>
```

```
igIOCDemo1/src/main/java/com/wipro/services/UserMainAutowireBvTvpe.java - Eclipse SDK
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3
   🖟 beans-autowire-byType.xml 🔑 UserMainAutowireByType.java 🛭
      package com.wipro.services;
      3⊕ import org.springframework.context.ApplicationContext;
      8 public class UserMainAutowireByType {
      9⊖ public static void main(String[] args) {
n
ice
                ApplicationContext context = new ClassPathXmlApplicationContext("beans-autowire-byType.xml");
/a
                                 = context.getBean(Employee.class);
tov
                System.out.println(employee);
tov 14
nst
    15 }
    16
s
:-b)
:-cc
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[12] <terminated> UserMainAutowireByType [Java Application] C:\Program Files\Oracle\OpenJDK 11.0.1\bin\javaw.exe (Jan 28, 2020, 3:06:12 PM)
:ies Address value @ Setter Method : Address [street=Pritech Park, city=Bengaluru, pincode=560037]
    Employee [name=ALLEN, empId=2000123, address=Address [street=Pritech Park, city=Bengaluru, pincode=560037]]
```

## 2. Code example of autowire by Name.

#### 3. Code example of autowire by Constructor.

```
<constructor-arg index="1" type="java.lang.String"</pre>
value="Bengaluru"></constructor-arg>
                    <constructor-arg index="2" type="java.lang.String"</pre>
value="560037"></constructor-arg>
    </bean>
    <bean id="employeeBean" class="com.wipro.bean.Employee" autowire="constructor">
                     <constructor-arg index="0" type="java.lang.String"</pre>
value="ALLEN"></constructor-arg>
                     <constructor-arg index="1" type="java.lang.String"</pre>
value="2000123"></constructor-arg>
          <!-- we are not passing any value for 3 argument, it automatically takes
through constructor using BY TYPE -->
    </bean>
          </beans>
/java/com/wipro/services/UserMainConstructorDI.java - Eclipse SDK
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🔤 SpringlOCDemo... 📝 Address.java 📝 Employee.java 🕱 beans.xml 📝 UserMain.java 😨 beans-condi.xml 👔 UserMainConst... 🕱 🖹 "beans-autowir...
  package com.wipro.services;
3⊕ import org.springframework.context.ApplicationContext;
 8 public class UserMainConstructorDI {
  9⊖ public static void main(String[] args) {
           ApplicationContext context = new ClassPathXmlApplicationContext("beans-autowire.xml");
Employee employee = context.getBean(Employee.class);
          System.out.println(employee);
       }
15 }
🚆 Markers 🔲 Properties 🚜 Servers 🎉 Data Source Explorer 🔓 Snippets 🥷 Problems 📮 Console 🔀
                                                                                           cterminated> UserMainConstructorDl [Java Application] C:\Program Files\Oracle\OpenJDK 11.0.1\bin\javaw.exe (Jan 28, 2020, 1:23:36 PM)
Address value @ constructor : Address [street=Pritech Park, city=Bengaluru, pincode=560037]
Employee [name=ALLEN, empId=2000123, address=Address [street=Pritech Park, city=Bengaluru, pincode=560037]]
```