

## 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.

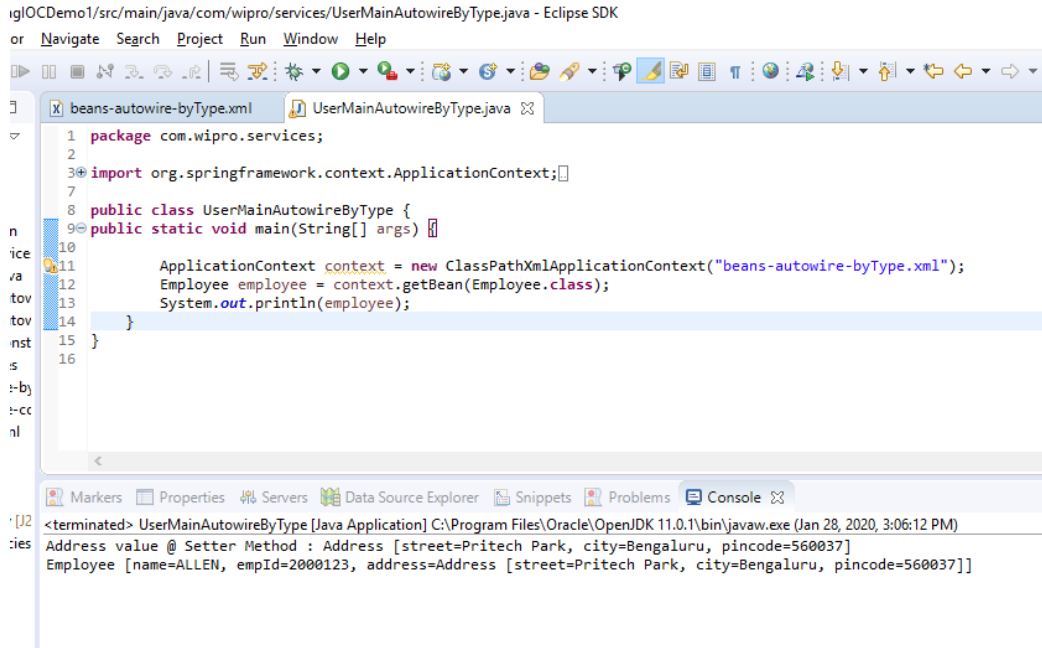
```

<?xml version="1.0" encoding="UTF-8"?>
<beans xmlns="http://www.springframework.org/schema/beans"
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
Park"></constructor-arg>
        <constructor-arg index="1" type="java.lang.String"
value="Bengaluru"></constructor-arg>
        <constructor-arg index="2" type="java.lang.String"
value="560037"></constructor-arg>
    </bean>
    <bean id="employeeBean" class="com.wipro.bean.Employee" autowire="byType">
        <property name="name" value="ALLEN"></property>
        <property name="empId" value="2000123"></property>

    </bean>
</beans>

```



## 2. Code example of autowire by Name.

```

<bean id="address" class="com.wipro.bean.Address">
    <!-- Using Constructor for passing the values -->
    <constructor-arg index="0" type="java.lang.String" value="Pritech
Park"></constructor-arg>
    <constructor-arg index="1" type="java.lang.String"
value="Bengaluru"></constructor-arg>
    <constructor-arg index="2" type="java.lang.String"
value="560037"></constructor-arg>
</bean>

<bean id="employeeBean" class="com.wipro.bean.Employee" autowire="byName">
    <!-- Property Name is address .... Auto reference by name -->
    <property name="name" value="ALLEN"></property>
    <property name="empId" value="2000123"></property>

</bean>

```

## 3. Code example of autowire by Constructor.

```

<?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"
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
Park"></constructor-arg>

```

```

        <constructor-arg index="1" type="java.lang.String"
value="Bengaluru"></constructor-arg>
        <constructor-arg index="2" type="java.lang.String"
value="560037"></constructor-arg>
    </bean>

    <bean id="employeeBean" class="com.wipro.bean.Employee" autowire="constructor">
        <constructor-arg index="0" type="java.lang.String"
value="ALLEN"></constructor-arg>
        <constructor-arg index="1" type="java.lang.String"
value="2000123"></constructor-arg>
        <!-- we are not passing any value for 3 argument, it automatically takes
through constructor using BY TYPE -->
    </bean>
</beans>

```

```

1 package com.wipro.services;
2
3 import org.springframework.context.ApplicationContext;
4
5 public class UserMainConstructorDI {
6     public static void main(String[] args) {
7
8         ApplicationContext context = new ClassPathXmlApplicationContext("beans-autowire.xml");
9         Employee employee = context.getBean(Employee.class);
10        System.out.println(employee);
11    }
12 }
13
14
15
16

```

```

<terminated> UserMainConstructorDI [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]]

```