

Spring ASSIGNMENT Day_1

Harshit Kushmakar | 16896

1. Write Spring core application and create bean of Customer as per the class diagram below:

Use XML Configuration to configure Spring Container. In the above program show dependency injection

I. via setter methods

```
package com.springcore;

public class Customer {
    private int customerId;
    private String customerName;
    private double monthlyIncome;
    private String profession;
    private String designation;
    private String companyName;

    public void setCustomerId(int customerId) {
        this.customerId = customerId;
    }

    public void setCustomerName(String customerName) {
        this.customerName = customerName;
    }

    public void setMonthlyIncome(double monthlyIncome) {
        this.monthlyIncome = monthlyIncome;
    }

    public void setProfession(String profession) {
        this.profession = profession;
    }

    public void setDesignation(String designation) {
        this.designation = designation;
    }

    public void setCompanyName(String companyName) {
        this.companyName = companyName;
    }

    @Override
    public String toString() {
        return "Customer{" +
            "customerId=" + customerId +
            ", customerName='" + customerName + '\'' +
            ", monthlyIncome=" + monthlyIncome +
        }
    }
}
```

```

        ", profession='" + profession + '\'' +
        ", designation='" + designation + '\'' +
        ", companyName='" + companyName + '\'' +
        '}';
    }
}

```

```

package com.springcore;

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

public class Main {
    public static void main(String[] args) {
        ApplicationContext context = (ApplicationContext) new
ClassPathXmlApplicationContext("Beans.xml");
        Customer cust = (Customer) context.getBean("customerBean");
        System.out.println(cust);
    }
}

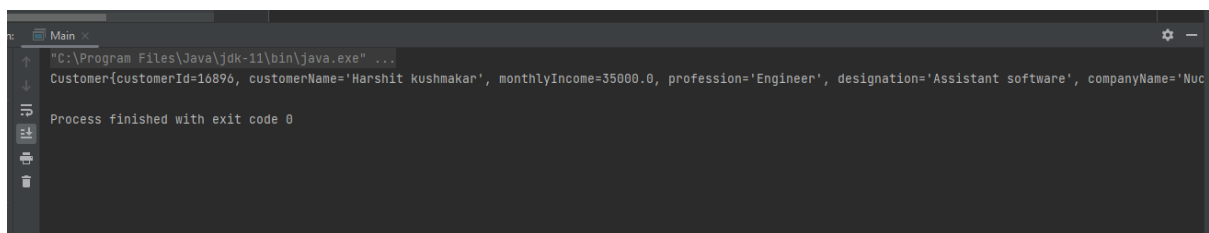
```

```

<?xml version="1.0" encoding="UTF-8"?>
<beans xmlns="http://www.springframework.org/schema/beans"
    xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
    xsi:schemaLocation="http://www.springframework.org/schema/beans
http://www.springframework.org/schema/beans/spring-beans-3.0.xsd">

    <bean id = "customerBean" class = "com.springcore.Customer">
        <property name="customerId" value="16896"></property>
        <property name="customerName" value="Harshit kushmakar"></property>
        <property name="monthlyIncome" value="35000"></property>
        <property name="profession" value="Engineer"></property>
        <property name="designation" value="Assistant software"></property>
        <property name="companyName" value="Nucleus software"></property>
    </bean>
</beans>

```



```

C:\Program Files\Java\jdk-11\bin\java.exe ...
Customer{customerId=16896, customerName='Harshit kushmakar', monthlyIncome=35000.0, profession='Engineer', designation='Assistant software', companyName='Nuc
Process finished with exit code 0

```

II. via constructor – Use constructor Injection with index, name, and 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"
    xsi:schemaLocation="http://www.springframework.org/schema/beans
http://www.springframework.org/schema/beans/spring-beans-3.0.xsd">

```

```

    <bean id = "customerBean" class = "com.springcore.Customer">
        <constructor-arg value="16896" index="0" type="int"/>
        <constructor-arg value="Harshit kushmakar" index="1"
type="String"/>
        <constructor-arg value="35000" index="2" type="double"/>
        <constructor-arg value="Engineer" index="3" type="String"/>
        <constructor-arg value="Assistant software" index="4"
type="String"/>
        <constructor-arg value="Nucleus software" index="5" type="String"/>

    </bean>
</beans>

```

```

Main x
"C:\Program Files\Java\jdk-11\bin\java.exe" ...
Customer{customerId=16896, customerName='Harshit kushmakar', monthlyIncome=35000.0, profession='Engineer', designation='Assistant software', companyName='Nuc
Process finished with exit code 0

```

III. Set the same property – CustomerName with constructor as well as setter. Print the last value of the property. Which value will be available to the CustomerName property and why? Explain with help of comments.

```

<?xml version="1.0" encoding="UTF-8"?>
<beans xmlns="http://www.springframework.org/schema/beans"
    xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
    xsi:schemaLocation="http://www.springframework.org/schema/beans
http://www.springframework.org/schema/beans/spring-beans-3.0.xsd">

    <bean id = "customerBean" class = "com.springcore.Customer">
        <constructor-arg value="16899" index="0" type="int"/>
        <constructor-arg value="kushmakar" index="1" type="String"/>
        <constructor-arg value="45000" index="2" type="double"/>
        <constructor-arg value="Doctor" index="3" type="String"/>
        <constructor-arg value="software" index="4" type="String"/>
        <constructor-arg value="Nucleus " index="5" type="String"/>

        <property name="customerId" value="16896"></property>
        <property name="customerName" value="Harshit"></property>
        <property name="monthlyIncome" value="350"></property>
        <property name="profession" value="Engineer"></property>
        <property name="designation" value="Assistant"></property>
        <property name="companyName" value="genpact"></property>
    </bean>
</beans>

```

```
</bean>
</beans>
```

```
beans > bean
Main x
"C:\Program Files\Java\jdk-11\bin\java.exe" ...
Customer{customerId=16896, customerName='Harshit', monthlyIncome=350.0, profession='Engineer', designation='Assistant', companyName='genpact'}
Process finished with exit code 0
```

Since methods executes after constructor execution, the values assigned through setter injection will be used as final values.

2. Implement the Bean Scopes – Singleton and prototype and show the difference between both with the help of demo code and explain the difference with Java comments.

```
package com.springcore;

import java.util.List;
import java.util.Set;

public class Customer {
    private int customerId;

    public String getCustomerName() {
        return customerName;
    }

    private String customerName;
    private double monthlyIncome;
    private String profession;
    private String designation;
    private String companyName;
    private List<String> phoneNumbers;
    private Set<String> emailAdressSet;

    public void setEmailAdressSet(Set<String> emailAdressSet) {
        this.emailAdressSet = emailAdressSet;
    }

    public void showPersonPhoneEmail() {
```

```

        for (String emailAddressSet : emailAddressSet) {
            System.out.println(emailAddressSet);
        }
    }

    public void showPersonPhoneNumbers() {
        for (String phoneNumber : phoneNumbers) {
            System.out.println(phoneNumber);
        }
    }

    public Customer(Set<String> emailAddressSet) {
        this.emailAddressSet = emailAddressSet;
    }

    public void setCustomerId(int customerId) {
        this.customerId = customerId;
    }

    public Customer(List<String> phoneNumbers) {
        this.phoneNumbers = phoneNumbers;
    }

    public void setCustomerName(String customerName) {
        this.customerName = customerName;
    }

    public void setMonthlyIncome(double monthlyIncome) {
        this.monthlyIncome = monthlyIncome;
    }

    public void setProfession(String profession) {
        this.profession = profession;
    }

    public void setDesignation(String designation) {
        this.designation = designation;
    }

    public void setCompanyName(String companyName) {
        this.companyName = companyName;
    }

    @Override
    public String toString() {
        return "Customer{" +
            "customerId=" + customerId +
            ", customerName=" + customerName + '\'' +
            ", monthlyIncome=" + monthlyIncome +
            ", profession=" + profession + '\'' +
            ", designation=" + designation + '\'' +
            ", companyName=" + companyName + '\'' +
            '}';
    }

    public Customer(int customerId, String customerName, double
monthlyIncome, String profession, String designation, String companyName) {
        this.customerId = customerId;
        this.customerName = customerName;
        this.monthlyIncome = monthlyIncome;
        this.profession = profession;
        this.designation = designation;
    }

```

```

        this.companyName = companyName;
    }

    public Customer() {
    }
}

```

```

package com.springcore;

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

public class Main {
    public static void main(String[] args) {
        ApplicationContext context = (ApplicationContext) new
ClassPathXmlApplicationContext("Beans.xml");
        Customer cust = (Customer) context.getBean("customerBean");

        cust.setCustomerName("Harshit");
        System.out.println("Hello"+cust.getCustomerName());

    }
}

```

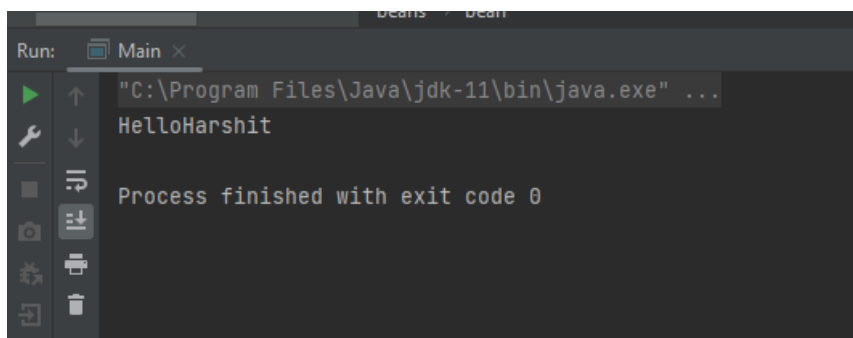
```

<?xml version="1.0" encoding="UTF-8"?>
<beans xmlns="http://www.springframework.org/schema/beans"
    xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
    xsi:schemaLocation="http://www.springframework.org/schema/beans
http://www.springframework.org/schema/beans/spring-beans-3.0.xsd">

    <bean id = "customerBean" class = "com.springcore.Customer"
scope="prototype"/>
    <property>-->

</beans>

```



```

<?xml version="1.0" encoding="UTF-8"?>
<beans xmlns="http://www.springframework.org/schema/beans"

```

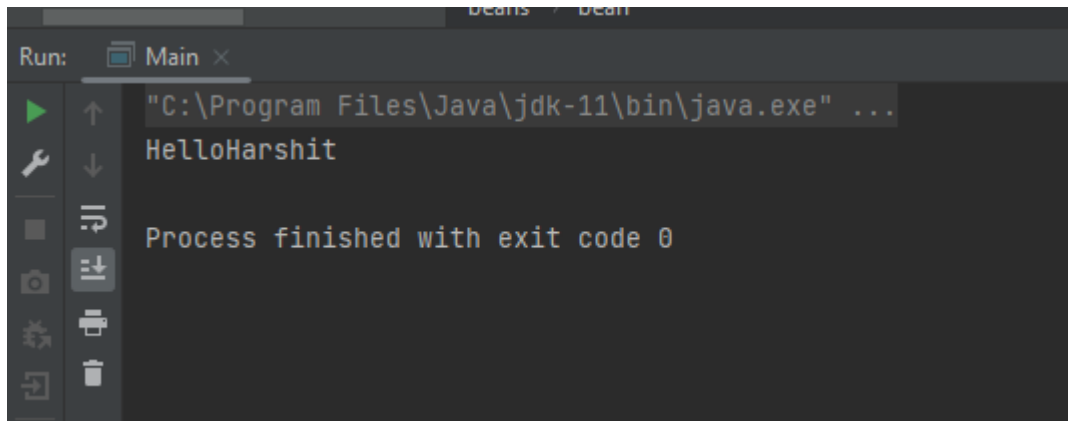
```

        xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
        xsi:schemaLocation="http://www.springframework.org/schema/beans
http://www.springframework.org/schema/beans/spring-beans-3.0.xsd">

        <bean id = "customerBean" class = "com.springcore.Customer"
scope="singleton"/>

</beans>

```



3. In the class Customer created in Question 1, add the below mentioned Data Members:

List<String> phoneNumbers;

Set<String> emailAdressSet;

Use XML configuration to set the values of the given data members as below:

a. List<String> phoneNumbers – via constructor

b. Set<String> emailAdressSet – via setter method

```

package com.springcore;

import java.util.List;

public class Customer {
    private int customerId;
    private String customerName;
    private double monthlyIncome;

```

```

private String profession;
private String designation;
private String companyName;
private List<String> phoneNumbers;

public void showPersonPhoneNumbers() {
    for (String phoneNumber : phoneNumbers) {
        System.out.println(phoneNumber);
    }
}

public void setCustomerId(int customerId) {
    this.customerId = customerId;
}

public Customer(List<String> phoneNumbers) {
    this.phoneNumbers = phoneNumbers;
}

public void setCustomerName(String customerName) {
    this.customerName = customerName;
}

public void setMonthlyIncome(double monthlyIncome) {
    this.monthlyIncome = monthlyIncome;
}

public void setProfession(String profession) {
    this.profession = profession;
}

public void setDesignation(String designation) {
    this.designation = designation;
}

public void setCompanyName(String companyName) {
    this.companyName = companyName;
}

@Override
public String toString() {
    return "Customer{" +
        "customerId=" + customerId +
        ", customerName=" + customerName + '\'' +
        ", monthlyIncome=" + monthlyIncome +
        ", profession=" + profession + '\'' +
        ", designation=" + designation + '\'' +
        ", companyName=" + companyName + '\'' +
        '}';
}

public Customer(int customerId, String customerName, double
monthlyIncome, String profession, String designation, String companyName) {
    this.customerId = customerId;
    this.customerName = customerName;
    this.monthlyIncome = monthlyIncome;
    this.profession = profession;
    this.designation = designation;
    this.companyName = companyName;
}
}

```




```
"C:\Program Files\Java\jdk-11\bin\java.exe" ...  
Customer{customerId=16896, customerName='Harshit', monthlyIncome=350.0, profession='Engineer', designation='Assistant',  
9837337374  
9837337454
```