**SPRING CORE**

**ASSIGNMENT**

**1)setter injection:**

**Address.java**

**package** com.example2;

**public** **class** Address {

String street;

String city;

String state;

**int** zip;

String country;

**public** String getStreet() {

**return** street;

}

**public** **void** setStreet(String street) {

**this**.street = street;

}

**public** String getCity() {

**return** city;

}

**public** **void** setCity(String city) {

**this**.city = city;

}

**public** String getState() {

**return** state;

}

**public** **void** setState(String state) {

**this**.state = state;

}

**public** **int** getZip() {

**return** zip;

}

**public** **void** setZip(**int** zip) {

**this**.zip = zip;

}

**public** String getCountry() {

**return** country;

}

**public** **void** setCountry(String country) {

**this**.country = country;

}

}

**Customer.java**

**package** com.example2;

**public** **class** Customer {

**private** Address address;

**int** customerid;

String customername;

**long** customercontact;

String customeraddress;

**public** **int** getCustomerid() {

**return** customerid;

}

**public** **void** setCustomerid(**int** customerid) {

**this**.customerid = customerid;

}

**public** String getCustomername() {

**return** customername;

}

**public** **void** setCustomername(String customername) {

**this**.customername = customername;

}

**public** **long** getCustomercontact() {

**return** customercontact;

}

**public** **void** setCustomercontact(**long** customercontact) {

**this**.customercontact = customercontact;

}

**public** String getCustomeraddress() {

**return** customeraddress;

}

**public** **void** setCustomeraddress(String customeraddress) {

**this**.customeraddress = customeraddress;

}

**public** Address getAddress() {

**return** address;

}

**public** **void** setAddress(Address address) {

**this**.address = address;

}

**public** **void** display()

{

System.***out***.println("Customer details");

System.***out***.println("Customer id:" +customerid);

System.***out***.println("Customer name:" +customername);

System.***out***.println("Customer contact:" +customercontact);

System.***out***.println("Customer address:" +customeraddress);

}

}

**file.xml**

<?xml version=*"1.0"* encoding=*"UTF-8"*?>

<!DOCTYPE beans PUBLIC "-//SPRING//DTD BEAN//EN" "http://www.springframework.org/dtd/spring-beans.dtd">

<beans>

<bean id = *"customer"* class= *"com.example2.Customer"*>

<property name=*"customerid"* value=*"1"*/>

<property name=*"customername"* value=*"Rishi"*/>

<property name=*"customercontact"* value=*"9353282635"*/>

<property name=*"customeraddress"* value=*"Hyderabad"*/>

</bean>

</beans>

**Test.java**

package com.example2;

import org.springframework.context.ApplicationContext;

import org.springframework.context.support.ClassPathXmlApplicationContext;

public class Test {

public static void main(String[] args) {

ApplicationContext context=new ClassPathXmlApplicationContext("file.xml");

Customer c=(Customer)context.getBean("customer");

c.display();

}

**}**

**Output:**

Customer details

Customer id:1

Customer name:Rishi

Customer contact:9353282635

Customer address:Hyderabad

**Using constructor injection:**

**Customer.java**

package com.example2;

public class Customer {

int customerid;

String customername;

long customercontact;

String customeraddress;

public Customer(int customerid, String customername, long customercontact, String customeraddress) {

super();

this.customerid = customerid;

this.customername = customername;

this.customercontact = customercontact;

this.customeraddress = customeraddress;

}

public int getCustomerid() {

return customerid;

}

public String getCustomername() {

return customername;

}

public long getCustomercontact() {

return customercontact;

}

public String getCustomeraddress() {

return customeraddress;

}

public void display()

{

System.*out*.println("Customer details");

System.*out*.println(getCustomerid() + " is Customer id" );

System.*out*.println(getCustomername()+ " is Customer name" );

System.*out*.println(getCustomercontact()+ " is Customer contact");

System.*out*.println(getCustomeraddress()+ " is Customer address" );

}

}

**file.xml**

<?xml version=*"1.0"* encoding=*"UTF-8"*?>

<!DOCTYPE beans PUBLIC "-//SPRING//DTD BEAN//EN" "http://www.springframework.org/dtd/spring-beans.dtd">

<beans>

<bean id = *"customer"* class= *"com.example2.Customer"*>

<constructor-arg value=*"1"*/>

<constructor-arg value=*"Rishi"*/>

<constructor-arg value=*"9353282635"*/>

<constructor-arg value=*"Hyderabad"*/>

</bean>

</beans>

**Test.java**

package com.example2;

import org.springframework.context.ApplicationContext;

import org.springframework.context.support.ClassPathXmlApplicationContext;

public class Test {

public static void main(String[] args) {

ApplicationContext context=new ClassPathXmlApplicationContext("file.xml");

Customer c=(Customer)context.getBean("customer");

c.display();

}

**}**

**Output:**

Customer details

1 is Customer id

Rishi is Customer name

9353282635 is Customer contact

Hyderabad is Customer address

**2)Injecting Collection**

**Question.java**

**package** com.example2;

**import** java.util.\*;

**public** **class** Question {

**private** List<String> questionlist;

**private** Set<String> questionset;

**private** Map<Integer,String> questionmap;

**public** List<String> getQuestionlist() {

System.***out***.println("List Elements :" + questionlist);

**return** questionlist;

}

**public** **void** setQuestionlist(List<String> questionlist) {

**this**.questionlist = questionlist;

}

**public** Set<String> getQuestionset() {

System.***out***.println("Set Elements :" + questionset);

**return** questionset;

}

**public** **void** setQuestionset(Set<String> questionset) {

**this**.questionset = questionset;

}

**public** Map<Integer, String> getQuestionmap() {

System.***out***.println("Map Elements :" + questionmap);

**return** questionmap;

}

**public** **void** setQuestionmap(Map<Integer, String> questionmap) {

**this**.questionmap = questionmap;

}

}

**file.xml**

<?xml version=*"1.0"* encoding=*"UTF-8"*?>

<!DOCTYPE beans PUBLIC "-//SPRING//DTD BEAN//EN" "http://www.springframework.org/dtd/spring-beans.dtd">

<beans>

<bean id = *"questions"* class= *"com.example2.Question"*>

<property name = *"questionlist"*>

<list>

<value>What is your name?</value>

<value>Rishi</value>

</list>

</property>

<property name = *"questionset"*>

<set>

<value>How are you</value>

<value>I am fine</value>

</set>

</property>

<property name = *"questionmap"*>

<map>

<entry key = *"1"* value = *"Where are you working?"*/>

<entry key = *"2"* value = *"In Capgemini"*/>

</map>

</property>

</bean>

</beans>

**Test.java**

**package** com.example2;

**import** org.springframework.context.ApplicationContext;

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

**public** **class** Test {

**public** **static** **void** main(String[] args) {

ApplicationContext context=**new** ClassPathXmlApplicationContext("file.xml");

Question q=(Question)context.getBean("questions");

q.getQuestionlist();

q.getQuestionset();

q.getQuestionmap();

}

}

**Output:**

List Elements :[What is your name?, Rishi]

Set Elements :[How are you, I am fine]

Map Elements :{1=Where are you working?, 2=In Capgemini}

**5)Annotations:**

**Address.java**

package com.example2;

public class Address {

String street;

String city;

String state;

int zip;

String country;

public String getStreet() {

return street;

}

public void setStreet(String street) {

this.street = street;

}

public String getCity() {

return city;

}

public void setCity(String city) {

this.city = city;

}

public String getState() {

return state;

}

public void setState(String state) {

this.state = state;

}

public int getZip() {

return zip;

}

public void setZip(int zip) {

this.zip = zip;

}

public String getCountry() {

return country;

}

public void setCountry(String country) {

this.country = country;

}

@Override

public String toString() {

return "Address [street=" + street + ", city=" + city + ", state=" + state + ", zip=" + zip + ", country="

+ country + "]";

}

}

**Customer.java**

**package** com.example2;

**import** javax.annotation.Resource;

**import** org.springframework.beans.factory.annotation.Required;

**public** **class** Customer {

**int** customerid;

String customername;

**long** customercontact;

String customeraddress;

@Resource(name="myaddress")

**private** Address address;

**public** **int** getCustomerid() {

**return** customerid;

}

@Required

**public** **void** setCustomerid(**int** customerid) {

**this**.customerid = customerid;

}

**public** String getCustomername() {

**return** customername;

}

@Required

**public** **void** setCustomername(String customername) {

**this**.customername = customername;

}

**public** **long** getCustomercontact() {

**return** customercontact;

}

@Required

**public** **void** setCustomercontact(**long** customercontact) {

**this**.customercontact = customercontact;

}

**public** String getCustomeraddress() {

**return** customeraddress;

}

@Required

**public** **void** setCustomeraddress(String customeraddress) {

**this**.customeraddress = customeraddress;

}

**public** Address getAddress() {

**return** address;

}

**public** **void** setAddress(Address address) {

**this**.address = address;

}

@Override

**public** String toString() {

**return** "Customer [customerid=" + customerid + ", customername=" + customername + ", customercontact="

+ customercontact + ", customeraddress=" + customeraddress + ", address=" + address + "]";

}

}

**file.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"*

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"*

xmlns:context=*"http://www.springframework.org/schema/context"*>

<bean id = *"myaddress"* class= *"com.example2.Address"*>

<property name=*"street"* value=*"Brakatpura"*/>

<property name=*"city"* value=*"Hyderabad"*/>

<property name=*"state"* value=*"Tealangana"*/>

<property name=*"zip"* value=*"500027"*/>

<property name=*"country"* value=*"India"*/>

</bean>

<bean id = *"customer"* class= *"com.example2.Customer"*>

<property name=*"customerid"* value=*"1"*/>

<property name=*"customername"* value=*"Rishi"*/>

<property name=*"customercontact"* value=*"9353282635"*/>

<property name=*"customeraddress"* value=*"Hyderabad"*/>

</bean>

<bean class=*"org.springframework.beans.factory.annotation.RequiredAnnotationBeanPostProcessor"*/>

<context:annotation-config/>

</beans>

**Test.java**

**package** com.example2;

**import** org.springframework.context.ApplicationContext;

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

**public** **class** Test {

**public** **static** **void** main(String[] args) {

ApplicationContext context=**new** ClassPathXmlApplicationContext("file.xml");

Customer c=(Customer)context.getBean("customer", Customer.**class**);

System.***out***.println(c.toString());

}

}

**Output:**

Customer [customerid=1, customername=Rishi, customercontact=9353282635, customeraddress=Hyderabad, address=Address [street=Brakatpura, city=Hyderabad, state=Tealangana, zip=500027, country=India]]

**8)Using init and destroy method in xml config**

**Point.java**

**package** com.example1;

**public** **class** Point {

**private** **int** x;

**private** **int** y;

**public** **int** getX() {

**return** x;

}

**public** **void** setX(**int** x) {

**this**.x = x;

}

**public** **int** getY() {

**return** y;

}

**public** **void** setY(**int** y) {

**this**.y = y;

}

}

**Triangle.java**

**package** com.example1;

**import** org.springframework.beans.BeansException;

**import** org.springframework.context.ApplicationContext;

**public** **class** Triangle {

**private** Point pointA;

**private** Point pointB;

**private** Point pointC;

**public** Point getPointA() {

**return** pointA;

}

**public** **void** setPointA(Point pointA) {

**this**.pointA = pointA;

}

**public** Point getPointB() {

**return** pointB;

}

**public** **void** setPointB(Point pointB) {

**this**.pointB = pointB;

}

**public** Point getPointC() {

**return** pointC;

}

**public** **void** setPointC(Point pointC) {

**this**.pointC = pointC;

}

**public** **void** draw()

{

System.***out***.println("Point A=(" + getPointA().getX()+"," +getPointA().getY() +")");

System.***out***.println("Point B=(" + getPointB().getX()+"," +getPointB().getY() +")");

System.***out***.println("Point C=(" + getPointC().getX()+"," +getPointC().getY() +")");

}

**public** **void** myInit() {

System.***out***.println("My init method called for triangle");

}

**public** **void** cleanup() {

System.***out***.println("My cleanup method called for triangle");

}

}

**Spring.xml**

**<?xml version=*"1.0"* encoding=*"UTF-8"*?>**

**<!DOCTYPE beans PUBLIC "-//SPRING//DTD BEAN//EN" "http://www.springframework.org/dtd/spring-beans.dtd">**

**<beans>**

**<bean id = *"triangle"* class= *"com.example1.Triangle"* autowire=*"byName"* init-method=*"myInit"* destroy-method=*"cleanup"*>**

**</bean>**

**<bean id=*"pointA"* class= *"com.example1.Point"*>**

**<property name=*"x"* value=*"0"*>**

**</property>**

**<property name=*"y"* value=*"0"*>**

**</property>**

**</bean>**

**<bean id=*"pointB"* class= *"com.example1.Point"*>**

**<property name=*"x"* value=*"-20"*>**

**</property>**

**<property name=*"y"* value=*"0"*>**

**</property>**

**</bean>**

**<bean id=*"pointC"* class= *"com.example1.Point"*>**

**<property name=*"x"* value=*"20"*>**

**</property>**

**<property name=*"y"* value=*"0"*>**

**</property>**

**</bean>**

**</beans>**

**DrawingApp.java**

package com.example1;

import org.springframework.beans.factory.BeanFactory;

import org.springframework.beans.factory.xml.XmlBeanFactory;

import org.springframework.context.ApplicationContext;

import org.springframework.context.support.AbstractApplicationContext;

import org.springframework.context.support.ClassPathXmlApplicationContext;

import org.springframework.core.io.FileSystemResource;

public class DrawingApp {

public static void main(String[] args) {

//Triangle t=new Triangle();

//BeanFactory factory=new XmlBeanFactory(new FileSystemResource("spring.xml"));

AbstractApplicationContext context=new ClassPathXmlApplicationContext("spring.xml");

context.registerShutdownHook();

Triangle t=(Triangle)context.getBean("triangle");

t.draw();

}

}

**Output:**

My init method called for triangle

Point A=(0,0)

Point B=(-20,0)

Point C=(20,0)

My cleanup method called for triangle

**@PostConstruct and @PreDestroy**

**Cricle.java**

**package** com.example1;

**import** javax.annotation.PostConstruct;

**import** javax.annotation.PreDestroy;

**public** **class** Circle **implements** Shape {

**private** Point center;

@Override

**public** **void** draw() {

System.***out***.println("Drawing a circle");

System.***out***.println("Circle: Point is: (" +center.getX() + "," +center.getY() + ")");

}

**public** Point getCenter() {

**return** center;

}

**public** **void** setCenter(Point center) {

**this**.center = center;

}

@PostConstruct

**public** **void** initializeCircle()

{

System.***out***.println("Init of Circle");

}

@PreDestroy

**public** **void** destroyCircle()

{

System.***out***.println("Destroy of circle");

}

}

**spring.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"*

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"*

xmlns:context=*"http://www.springframework.org/schema/context"*>

<bean id = *"triangle"* class= *"com.example1.Triangle"* autowire=*"byName"*>

</bean>

<bean id=*"pointA"* class= *"com.example1.Point"*>

<property name=*"x"* value=*"0"*/>

<property name=*"y"* value=*"0"*/>

</bean>

<bean id=*"pointB"* class= *"com.example1.Point"*>

<property name=*"x"* value=*"-20"*/>

<property name=*"y"* value=*"0"*/>

</bean>

<bean id=*"pointC"* class= *"com.example1.Point"*>

<property name=*"x"* value=*"20"*/>

<property name=*"y"* value=*"0"*/>

</bean>

<bean id=*"circle"* class= *"com.example1.Circle"*>

</bean>

<context:annotation-config/>

</beans>

**Output:**

Init of Circle

Drawing a circle

Destroy of circle

**10)ApplicationContextAware:**

**Point.java:**

**package** com.example1;

**public** **class** Point {

**private** **int** x;

**private** **int** y;

**public** **int** getX() {

**return** x;

}

**public** **void** setX(**int** x) {

**this**.x = x;

}

**public** **int** getY() {

**return** y;

}

**public** **void** setY(**int** y) {

**this**.y = y;

}

}

**Triangle.java**

package com.example1;

import org.springframework.beans.BeansException;

import org.springframework.context.ApplicationContext;

import org.springframework.context.ApplicationContextAware;

public class Triangle implements ApplicationContextAware {

private Point pointA;

private Point pointB;

private Point pointC;

private ApplicationContext context=null;

public Point getPointA() {

return pointA;

}

public void setPointA(Point pointA) {

this.pointA = pointA;

}

public Point getPointB() {

return pointB;

}

public void setPointB(Point pointB) {

this.pointB = pointB;

}

public Point getPointC() {

return pointC;

}

public void setPointC(Point pointC) {

this.pointC = pointC;

}

public void draw()

{

System.*out*.println("Point A=(" + getPointA().getX()+"," +getPointA().getY() +")");

System.*out*.println("Point B=(" + getPointB().getX()+"," +getPointB().getY() +")");

System.*out*.println("Point C=(" + getPointC().getX()+"," +getPointC().getY() +")");

}

@Override

public void setApplicationContext(ApplicationContext context) throws BeansException {

// TODO Auto-generated method stub

this.context=context;

System.*out*.println(context);

}

}

**Spring.xml**

**<?xml version=*"1.0"* encoding=*"UTF-8"*?>**

**<!DOCTYPE beans PUBLIC "-//SPRING//DTD BEAN//EN" "http://www.springframework.org/dtd/spring-beans.dtd">**

**<beans>**

**<bean id = *"triangle"* class= *"com.example1.Triangle"* autowire=*"byName"*>**

**</bean>**

**<bean id=*"pointA"* class= *"com.example1.Point"*>**

**<property name=*"x"* value=*"0"*>**

**</property>**

**<property name=*"y"* value=*"0"*>**

**</property>**

**</bean>**

**<bean id=*"pointB"* class= *"com.example1.Point"*>**

**<property name=*"x"* value=*"-20"*>**

**</property>**

**<property name=*"y"* value=*"0"*>**

**</property>**

**</bean>**

**<bean id=*"pointC"* class= *"com.example1.Point"*>**

**<property name=*"x"* value=*"20"*>**

**</property>**

**<property name=*"y"* value=*"0"*>**

**</property>**

**</bean>**

**</beans>**

**DrawingApp.java**

package com.example1;

import org.springframework.beans.factory.BeanFactory;

import org.springframework.beans.factory.xml.XmlBeanFactory;

import org.springframework.context.ApplicationContext;

import org.springframework.context.support.ClassPathXmlApplicationContext;

import org.springframework.core.io.FileSystemResource;

public class DrawingApp {

public static void main(String[] args) {

//Triangle t=new Triangle();

//BeanFactory factory=new XmlBeanFactory(new FileSystemResource("spring.xml"));

ApplicationContext context=new ClassPathXmlApplicationContext("spring.xml");

Triangle t=(Triangle)context.getBean("triangle");

t.draw();

// TODO Auto-generated method s

}

}

Output:

org.springframework.context.support.ClassPathXmlApplicationContext@f2a0b8e: startup date [Mon Aug 16 13:59:32 IST 2021]; root of context hierarchy

Point A=(0,0)

Point B=(-20,0)

Point C=(20,0)