Question Number 8:-

Write a Java program to demonstrate i - initializingBean and DisposableBean.

ii – Use init-method and destroy-method in xml config

iii – Use @PostConstruct and @PreDestroy

Solution:-

Created Package helloworld

Have two classes in it, MainShape, Shape and an xml file shape.xml.

You need to add javax.annotation jar files in the libraries for the iii problem.(https://mvnrepository.com/artifact/javax.annotation/javax.annotation-api/1.3.2)

i ->

Main.Shape:

```java
package com.helloworld;

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


public class MainShape {

        public static void main(String[] args) {
                AbstractApplicationContext context=new
ClassPathXmlApplicationContext("shape.xml");
                context.registerShutdownHook();
                Shape obj=(Shape) context.getBean("shape");
                obj.draw();


        }

}
```

Shape.java:

```java
package com.helloworld;

import org.springframework.beans.factory.DisposableBean;
import org.springframework.beans.factory.InitializingBean;

public class Shape implements InitializingBean, DisposableBean {

        public void draw() {
```

```java
            System.out.println("Drawing a circle");

        }

        @Override
        public void destroy() throws Exception {
            System.out.println("This is Destroy");

        }

        @Override
        public void afterPropertiesSet() throws Exception {
            System.out.println("This is Initializing method");
        }

}
```

Shape.xml:

```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">

    <bean id="shape" class="com.helloworld.Shape"      >


    </bean>

</beans>
```

ii ->

Mainshape:

```java
package com.helloworld;

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


public class MainShape {

    public static void main(String[] args) {
        AbstractApplicationContext context=new
ClassPathXmlApplicationContext("shape.xml");
        context.registerShutdownHook();
        Shape obj=(Shape) context.getBean("shape");
        obj.draw();


    }
```

```java
}
```

Shape.java:

```java
ackage com.helloworld;

public class Shape {

    public void draw() {
        System.out.println("Drawing a circle");

    }

    public void myInit() {
        System.out.println("My init method called for Shape");
    }
    public void cleanup() {
        System.out.println("My cleanup method called for Shape");
    }

}
```

shape.xml:

```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">

    <bean id="shape" class="com.helloworld.Shape" init-method="myInit" destroy-method="cleanup"   >


    </bean>

</beans>
```

iii ->

MainShape:

```java
package com.helloworld;

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


public class MainShape {

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

```java
            AbstractApplicationContext context=new
ClassPathXmlApplicationContext("shape.xml");
            context.registerShutdownHook();
            Shape obj=(Shape) context.getBean("shape");
            obj.draw();


    }

}
```

Shape.java :

```java
package com.helloworld;

import javax.annotation.PostConstruct;
import javax.annotation.PreDestroy;

public class Shape {

    public void draw() {
            System.out.println("Drawing a circle");

    }
    @PostConstruct
    public void myInit() {
            System.out.println("My init method called for Shape");
    }
    @PreDestroy
    public void cleanup() {
            System.out.println("My cleanup method called for Shape");
    }

}
```

shape.xml :

```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"
   xmlns:context = "http://www.springframework.org/schema/context"
   xsi:schemaLocation = "http://www.springframework.org/schema/beans
   http://www.springframework.org/schema/beans/spring-beans-3.0.xsd
   http://www.springframework.org/schema/context
   http://www.springframework.org/schema/context/spring-context-3.0.xsd">

   <context:annotation-config/>
   <bean id="shape" class="com.helloworld.Shape"      >


   </bean>

</beans>
```