**11.3 Aim: Write a program to demonstrate Spring AOP – after returning advice.**

**Code –**

**Student.java**

**package** org.mca3;

**public** **class** Student {

**private** String name;

**private** Integer age;

**public** **void** setAge(Integer age) {

**this**.age = age;

}

**public** Integer getAge() {

System.***out***.println("Age : " + age );

**return** age;

}

**public** **void** setName(String name) {

**this**.name = name;

}

**public** String getName() {

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

**return** name;

}

**public** **void** printThrowException(){

System.***out***.println("Exception raised");

**throw** **new** IllegalArgumentException();

}

}

**Logging.java**

**package** org.mca3;

**public** **class** Logging {

**public** **void** afterReturningAdvice(Object retVal){

System.***out***.println("Returning:" + retVal.toString() );

}

}

**MainApp.java**

**package** org.mca3;

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

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

**public** **class** MainApp {

**private** **static** ApplicationContext *context*;

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

*context* = **new** ClassPathXmlApplicationContext("Beans.xml");

Student student = (Student) *context*.getBean("student");

student.getName();

student.getAge();

}

}

**Beans.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:aop = "http://www.springframework.org/schema/aop"

xsi:schemaLocation = "http://www.springframework.org/schema/beans

http://www.springframework.org/schema/beans/spring-beans-3.0.xsd

http://www.springframework.org/schema/aop

http://www.springframework.org/schema/aop/spring-aop-3.0.xsd ">

<aop:config>

<aop:aspect id = "log" ref = "logging">

<aop:pointcut id = "selectAll"

expression = "execution(\* org.mca3.\*.\*(..))"/>

<aop:after-returning pointcut-ref = "selectAll"

method = "afterReturningAdvice" returning = "retVal"/>

</aop:aspect>

</aop:config>

<!-- Definition for student bean -->

<bean id = "student" class = " org.mca3.Student">

<property name = "name" value = "Zara" />

<property name = "age" value = "11"/>

</bean>

<!-- Definition for logging aspect -->

<bean id = "logging" class = " org.mca3.Logging"/>

</beans>

**pom.xml**

<project xmlns=*"http://maven.apache.org/POM/4.0.0"* xmlns:xsi=*"http://www.w3.org/2001/XMLSchema-instance"*

xsi:schemaLocation=*"http://maven.apache.org/POM/4.0.0 http://maven.apache.org/xsd/maven-4.0.0.xsd"*>

<modelVersion>4.0.0</modelVersion>

<groupId>com.tutorialspoint</groupId>

<artifactId>AfterReturningAdvise</artifactId>

<version>0.0.1-SNAPSHOT</version>

<packaging>jar</packaging>

<name>AopStudent</name>

<url>http://maven.apache.org</url>

<properties>

<project.build.sourceEncoding>UTF-8</project.build.sourceEncoding>

</properties>

<dependencies>

<dependency>

<groupId>junit</groupId>

<artifactId>junit</artifactId>

<version>3.8.1</version>

<scope>test</scope>

</dependency>

<dependency>

<groupId>org.springframework</groupId>

<artifactId>spring-core</artifactId>

<version>5.2.8.RELEASE</version>

</dependency>

<!-- https://mvnrepository.com/artifact/org.springframework/spring-context -->

<dependency>

<groupId>org.springframework</groupId>

<artifactId>spring-context</artifactId>

<version>5.2.8.RELEASE</version>

</dependency>

<!-- https://mvnrepository.com/artifact/org.postgresql/postgresql -->

<dependency>

<groupId>org.postgresql</groupId>

<artifactId>postgresql</artifactId>

<version>42.2.19</version>

</dependency>

<!-- https://mvnrepository.com/artifact/org.springframework/spring-jdbc -->

<dependency>

<groupId>org.springframework</groupId>

<artifactId>spring-jdbc</artifactId>

<version>5.2.8.RELEASE</version>

</dependency>

<!-- https://mvnrepository.com/artifact/org.springframework/spring-aop -->

<dependency>

<groupId>org.springframework</groupId>

<artifactId>spring-aop</artifactId>

<version>5.2.8.RELEASE</version>

</dependency>

<!-- https://mvnrepository.com/artifact/org.aspectj/aspectjrt -->

<dependency>

<groupId>org.aspectj</groupId>

<artifactId>aspectjrt</artifactId>

<version>1.9.6</version>

</dependency>

<!-- https://mvnrepository.com/artifact/org.aspectj/aspectjweaver -->

<dependency>

<groupId>org.aspectj</groupId>

<artifactId>aspectjweaver</artifactId>

<version>1.9.6</version>

</dependency>

</dependencies>

</project>