Aspect Oriented Programming :- Without changing business logic, a new service can be added to existed layer, using Aspect and advices we can construct services.

Aspect : it is service class.

Advice: It represents a business method

Pointcut: It is expression, it will select business methods to be bounded with advices

Aspect:

**package** com.app;

**import** org.aspectj.lang.annotation.After;

**import** org.aspectj.lang.annotation.Aspect;

**import** org.aspectj.lang.annotation.Before;

@Aspect

**public** **class** SampleAspectEx {

@Before("execution(\* com.one.\*.\*.get\*(..))")

**public** **void** showMessage(){

System.*out*.println("Hello I'm from aspect");

}

}

Circle:

**package** com.one.two;

**public** **class** Circle {

**private** String name;

**private** **int** type;

**public** String getName() {

System.*out*.println("In-Circle-In-getName():String");

**return** name;

}

**public** String getName(**int** id) {

System.*out*.println("In-Circle-In-getName(int):String");

**return** name;

}

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

**this**.name = name;

}

**public** **int** getType() {

System.*out*.println("In-Circle-In-getType():int");

**return** type;

}

**public** **int** getType(**int** id) {

System.*out*.println("In-Circle-In-getType(int):int");

**return** type;

}

**public** **void** setType(**int** type) {

**this**.type = type;

}

}

Shape:

**package** com.one.three;

**public** **class** Shape {

**private** String name;

**private** **int** type;

**public** String getName() {

System.*out*.println("In-Shape-In-getName():String");

**return** name;

}

**public** String getName(**int** id) {

System.*out*.println("In-Shape-In-getName(int):String");

**return** name;

}

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

**this**.name = name;

}

**public** **int** getType() {

System.*out*.println("In-Shape-In-getType():int");

**return** type;

}

**public** **int** getType(**int** id) {

System.*out*.println("In-Shape-In-getType(int):int");

**return** type;

}

**public** **void** setType(**int** type) {

**this**.type = type;

}

}

Student:

**package** com.app.module;

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

**private** String name;

**private** **int** type;

**public** String getName() {

System.*out*.println("In-Student-In-getName():String");

**return** name;

}

**public** String getName(**int** id) {

System.*out*.println("In-Student-In-getName(int):String");

**return** name;

}

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

**this**.name = name;

}

**public** **int** getType() {

System.*out*.println("In-Student-In-getType():int");

**return** type;

}

**public** **int** getType(**int** id) {

System.*out*.println("In-Student-In-getType(int):int");

**return** type;

}

**public** **void** setType(**int** type) {

**this**.type = type;

}

}

Rectangle:

**package** com.one;

**public** **class** Rectangle {

**private** String name;

**private** **int** type;

**public** String getName() {

System.*out*.println("In-Rectangle-In-getName():String");

**return** name;

}

**public** String getName(**int** id) {

System.*out*.println("In-Rectangle-In-getName(int):String");

**return** name;

}

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

**this**.name = name;

}

**public** **int** getType() {

System.*out*.println("In-Rectangle-In-getType():int");

**return** type;

}

**public** **int** getType(**int** id) {

System.*out*.println("In-Rectangle-In-getType(int):int");

**return** type;

}

**public** **void** setType(**int** type) {

**this**.type = type;

}

}

Employee:

**package** com.app;

**public** **class** Employee {

**private** String name;

**private** **int** type;

**public** String getName() {

System.*out*.println("In-Employee-In-getName():String");

**return** name;

}

**public** String getName(**int** id) {

System.*out*.println("In-Employee-In-getName(int):String");

**return** name;

}

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

**this**.name = name;

}

**public** **int** getType() {

System.*out*.println("In-Employee-In-getType():int");

**return** type;

}

**public** **int** getType(**int** id) {

System.*out*.println("In-Employee-In-getType(int):int");

**return** type;

}

**public** **void** setType(**int** type) {

**this**.type = type;

}

}

Design:

**package** com.one.two;

**public** **class** Design {

**private** String name;

**private** **int** type;

**public** String getName() {

System.*out*.println("In-Design-In-getName():String");

**return** name;

}

**public** String getName(**int** id) {

System.*out*.println("In-Design-In-getName(int):String");

**return** name;

}

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

**this**.name = name;

}

**public** **int** getType() {

System.*out*.println("In-Design-In-getType():int");

**return** type;

}

**public** **int** getType(**int** id) {

System.*out*.println("In-Design-In-getType(int):int");

**return** type;

}

**public** **void** setType(**int** type) {

**this**.type = type;

}

}

Config.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:p=*"http://www.springframework.org/schema/p"*

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

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

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

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

[*http://www.springframework.org/schema/beans/spring-beans.xsd*](http://www.springframework.org/schema/beans/spring-beans.xsd)

*http://www.springframework.org/schema/context*

[*http://www.springframework.org/schema/context/spring-context.xsd*](http://www.springframework.org/schema/context/spring-context.xsd)

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

[*http://www.springframework.org/schema/aop/spring-aop.xsd*](http://www.springframework.org/schema/aop/spring-aop.xsd)

*"*>

<aop:aspectj-autoproxy/>

<bean class=*"com.app.Employee"* name=*"emp"*>

<property name=*"name"*>

<value>employee</value>

</property>

<property name=*"type"*>

<value>10</value>

</property>

</bean>

<bean class=*"com.one.two.Circle"* name=*"c1"*>

<property name=*"name"*>

<value>circle</value>

</property>

<property name=*"type"*>

<value>20</value>

</property>

</bean>

<bean class=*"com.one.Rectangle"* name=*"r1"*>

<property name=*"name"*>

<value>rectangle</value>

</property>

<property name=*"type"*>

<value>30</value>

</property>

</bean>

<bean class=*"com.one.three.Shape"* name=*"s1"*>

<property name=*"name"*>

<value>shape</value>

</property>

<property name=*"type"*>

<value>40</value>

</property>

</bean>

<bean class=*"com.app.module.Student"* name=*"std"*>

<property name=*"name"*>

<value>student</value>

</property>

<property name=*"type"*>

<value>50</value>

</property>

</bean>

<bean class=*"com.one.two.Design"* name=*"d1"*>

<property name=*"name"*>

<value>design</value>

</property>

<property name=*"type"*>

<value>60</value>

</property>

</bean>

<bean class=*"com.app.SampleAspectEx"*></bean>

</beans>

Test class:

**package** com.app;

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

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

**import** com.app.module.Student;

**import** com.one.Rectangle;

**import** com.one.three.Shape;

**import** com.one.two.Circle;

**import** com.one.two.Design;

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

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

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

Employee e=context.getBean("emp",Employee.**class**);

Student std=context.getBean("std",Student.**class**);

Shape s1=context.getBean("s1",Shape.**class**);

Circle c1=context.getBean("c1",Circle.**class**);

Rectangle r1=context.getBean("r1",Rectangle.**class**);

Design d1=context.getBean("d1",Design.**class**);

//(\* com.one.Rectangle.get\*())

c1.getName(10);

d1.getName(20);

d1.getName();

c1.getName();

r1.getName();

r1.getType();

r1.getName(10);

r1.getType(10);

}

}



JARS:

AOP JARS(only):

<http://www.mediafire.com/download/2szvk5sjxgoqkdp/Maven.rar>

Also include cglib jar.

<http://central.maven.org/maven2/cglib/cglib/3.1/cglib-3.1.jar>