1.2 Practice Project: Assisted Practice: Default and Custom Event Handling

Pom.xml

```xml
<?xml version="1.0" encoding="UTF-8"?>
<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</groupId>
<artifactId>SpringSetup</artifactId>
<version>0.0.1-SNAPSHOT</version>
<packaging>war</packaging>


<name>SpringSetup Maven Webapp</name>
<!-- FIXME change it to the project's website -->
<url>http://www.example.com</url>


<properties>
<org.springframework.version>6.0.4</org.springframework.version>
<maven.compiler.source>1.8</maven.compiler.source>
<maven.compiler.target>1.8</maven.compiler.target>
</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>${org.springframework.version}</version>
</dependency>
<dependency>
<groupId>org.springframework</groupId>
<artifactId>spring-expression</artifactId>
<version>${org.springframework.version}</version>
</dependency>
```

```xml
<dependency>
<groupId>org.springframework</groupId>
<artifactId>spring-beans</artifactId>
<version>${org.springframework.version}</version>
</dependency>
<dependency>
<groupId>org.springframework</groupId>
<artifactId>spring-context</artifactId>
<version>${org.springframework.version}</version>
</dependency>
<dependency>
<groupId>org.springframework</groupId>
<artifactId>spring-context-support</artifactId>
<version>${org.springframework.version}</version>
</dependency>
<dependency>
<groupId>org.springframework</groupId>
<artifactId>spring-jdbc</artifactId>
<version>${org.springframework.version}</version>
</dependency>
<dependency>
<groupId>org.springframework</groupId>
<artifactId>spring-orm</artifactId>
<version>${org.springframework.version}</version>
</dependency>
<dependency>
<groupId>org.springframework</groupId>
<artifactId>spring-web</artifactId>
<version>${org.springframework.version}</version>
</dependency>
<dependency>
<groupId>org.springframework</groupId>
<artifactId>spring-webmvc</artifactId>
<version>${org.springframework.version}</version>
</dependency>
<dependency>
<groupId>javassist</groupId>
<artifactId>javassist</artifactId>
<version>3.12.1.GA</version>
</dependency>
<dependency>
<groupId>taglibs</groupId>
<artifactId>standard</artifactId>
<version>1.1.2</version>
```

```xml
        <scope>runtime</scope>
    </dependency>
    <dependency>
        <groupId>commons-dbcp</groupId>
        <artifactId>commons-dbcp</artifactId>
        <version>1.4</version>
    </dependency>
    <!--
https://mvnrepository.com/artifact/jakarta.servlet.jsp/jakarta.servlet.jsp-api -->
    <!--<dependency>
        <groupId>jakarta.servlet</groupId>
        <artifactId>jakarta.servlet-api</artifactId>
        <version>6.0.0</version>
    </dependency>-->
    <!-- https://mvnrepository.com/artifact/javax.servlet/javax.servlet-api -->
    <dependency>
        <groupId>javax.servlet</groupId>
        <artifactId>javax.servlet-api</artifactId>
        <version>4.0.1</version>
        <scope>provided</scope>
    </dependency>




    <!--
https://mvnrepository.com/artifact/jakarta.servlet.jsp.jstl/jakarta.servlet.jsp.jstl-api -->
    <dependency>
        <groupId>jakarta.servlet.jsp.jstl</groupId>
        <artifactId>jakarta.servlet.jsp.jstl-api</artifactId>
        <version>3.0.0</version>
    </dependency>


    <dependency>
        <groupId>mysql</groupId>
        <artifactId>mysql-connector-java</artifactId>
        <version>8.0.32</version>
    </dependency>
    <dependency>
        <groupId>javax.persistence</groupId>
        <artifactId>persistence-api</artifactId>
```

```xml
<version>1.0.2</version>
<scope>provided</scope>
</dependency>
<dependency>
<groupId>junit</groupId>
<artifactId>junit</artifactId>
<version>4.11</version>
<scope>test</scope>
</dependency>
</dependencies>


<build>
<finalName>SpringSetup</finalName>
<pluginManagement><!-- lock down plugins versions to avoid using Maven defaults (may be
moved to parent pom) -->
<plugins>
<plugin>
<artifactId>maven-clean-plugin</artifactId>
<version>3.1.0</version>
</plugin>
<!-- see http://maven.apache.org/ref/current/maven-core/default-
bindings.html#Plugin_bindings_for_war_packaging -->
<plugin>
<artifactId>maven-resources-plugin</artifactId>
<version>3.0.2</version>
</plugin>
<plugin>
<artifactId>maven-compiler-plugin</artifactId>
<version>3.8.0</version>
</plugin>
<plugin>
<artifactId>maven-surefire-plugin</artifactId>
<version>2.22.1</version>
</plugin>
<plugin>
<artifactId>maven-war-plugin</artifactId>
<version>3.2.2</version>
</plugin>
<plugin>
<artifactId>maven-install-plugin</artifactId>
<version>2.5.2</version>
</plugin>
<plugin>
```

```xml
<artifactId>maven-deploy-plugin</artifactId>
<version>2.8.2</version>
</plugin>
</plugins>
</pluginManagement>
</build>
</project>
```

Main-servlet.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:aop="http://www.springframework.org/schema/aop"
xmlns:context="http://www.springframework.org/schema/context"
xmlns:jee="http://www.springframework.org/schema/jee"
xmlns:lang="http://www.springframework.org/schema/lang"
xmlns:p="http://www.springframework.org/schema/p"
xmlns:tx="http://www.springframework.org/schema/tx"
xmlns:util="http://www.springframework.org/schema/util"
xsi:schemaLocation="http://www.springframework.org/schema/beans
http://www.springframework.org/schema/beans/spring-beans-2.5.xsd
http://www.springframework.org/schema/aop
http://www.springframework.org/schema/aop/spring-aop-2.5.xsd
http://www.springframework.org/schema/context
http://www.springframework.org/schema/context/spring-context-2.5.xsd
http://www.springframework.org/schema/tx
http://www.springframework.org/schema/tx/spring-tx-2.5.xsd">
<context:annotation-config />
<context:component-scan base-package="com.ecommerce.controller" />
<bean id="jspViewResolver"
class="org.springframework.web.servlet.view.InternalResourceViewResolver">
<property name="viewClass"
value="org.springframework.web.servlet.view.JstlView"></property>
<property name="prefix" value="/WEB-INF/view/"></property>
<property name="suffix" value=".jsp"></property>
</bean>
<bean id="messageSource"
class="org.springframework.context.support.ReloadableResourceBundleMessageSource">
<property name="basename" value="classpath:messages"></property>
<property name="defaultEncoding" value="UTF-8"></property>
</bean>
```

```xml
<bean id = "startEventHandler" class = "com.ecommerce.beans.StartEventHandler"/>
<bean id = "stopEventHandler" class = "com.ecommerce.beans.StopEventHandler"/>
<bean id = "customEventListener" class = "com.ecommerce.beans.CustomEventListener"/>
<bean id = "customEventPublisher" class =
"com.ecommerce.beans.CustomEventPublisher"/>


<tx:annotation-driven />
</beans>
```

Web.xml

```xml
<?xml version="1.0" encoding="UTF-8"?>
<web-app xmlns="http://java.sun.com/xml/ns/javaee"
version="2.5"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="http://java.sun.com/xml/ns/javaee
http://java.sun.com/xml/ns/javaee/web-app_2_5.xsd">


<display-name>Archetype Created Web Application</display-name>
<welcome-file-list>
<welcome-file>/WEB-INF/view/index.jsp</welcome-file>
</welcome-file-list>
<servlet>
<servlet-name>main</servlet-name>
<servlet-class>
org.springframework.web.servlet.DispatcherServlet
</servlet-class>
<load-on-startup>1</load-on-startup>
</servlet>
<servlet-mapping>
<servlet-name>main</servlet-name>
<url-pattern>/</url-pattern>
</servlet-mapping>
<context-param>
<param-name>contextConfigLocation</param-name>
<param-value>/WEB-INF/main-servlet.xml</param-value>
</context-param>
<listener>
<listener-class>org.springframework.web.context.ContextLoaderListener</listener-class>
</listener>
</web-app>
```

Index.jsp

```
<html>
<body>
<h2>Spring Application</h2>
<a href="customEvent.jsp">Custom Event Handling</a>
</body>
</html>
```

CustomEvent.jsp

```
<%@ page language="java" contentType="text/html; charset=ISO-8859-1"
pageEncoding="ISO-8859-1"%>
<!DOCTYPE html>
<html>
<head>
<meta charset="UTF-8">
<title>Custom Event</title>
</head>
<body>
Custom Event has been generated in the Java Console.
</body>
</html>
```

MainController.java

```
package com.ecommerce.controller;

import org.springframework.context.ApplicationContext;
import org.springframework.context.support.ClassPathXmlApplicationContext;
import org.springframework.stereotype.Controller;
import org.springframework.ui.ModelMap;
import org.springframework.web.bind.annotation.RequestMapping;
import org.springframework.web.bind.annotation.RequestMethod;

import com.ecommerce.beans.CustomEventPublisher;

@Controller
public class MainController {

@RequestMapping(value = "/customevent", method = RequestMethod.GET)
public String customEvent(ModelMap map) {
```

```java
String confFile = "/WEB-INF/main-servlet.xml";
ApplicationContext context = new ClassPathXmlApplicationContext(confFile);
CustomEventPublisher cvp = (CustomEventPublisher)
context.getBean("customEventPublisher");

cvp.publish();
cvp.publish();
return "customEvent";
}

}
```

CustomEventPublisher.java

```java
package com.ecommerce.beans;

import org.springframework.context.ApplicationEventPublisher;
import org.springframework.context.ApplicationEventPublisherAware;

public class CustomEventPublisher implements ApplicationEventPublisherAware {
private ApplicationEventPublisher publisher;

public void setApplicationEventPublisher(ApplicationEventPublisher publisher) {
this.publisher = publisher;
}

public void publish() {
CustomEvent ce = new CustomEvent(this);
publisher.publishEvent(ce);
}

}
```

CustomEventListener.java

```java
package com.ecommerce.beans;

import org.springframework.context.ApplicationListener;


public class CustomEventListener implements ApplicationListener<CustomEvent> {


public void onApplicationEvent(CustomEvent event) {
```

```java
        System.out.println(event.toString());
    }


}
```

CustomEvent.java

```java
package com.ecommerce.beans;

import org.springframework.context.ApplicationEvent;

public class CustomEvent extends ApplicationEvent {


public CustomEvent(Object source) {
super(source);
}


public String toString() {
return "This is a custom event";
}


}
```

StartEventHandler.java

```java
package com.ecommerce.beans;

import org.springframework.context.ApplicationListener;
import org.springframework.context.event.ContextStartedEvent;

public class StartEventHandler implements ApplicationListener<ContextStartedEvent> {

public void onApplicationEvent(ContextStartedEvent event) {
System.out.println("ContextStartedEvent Received");
}


}
```
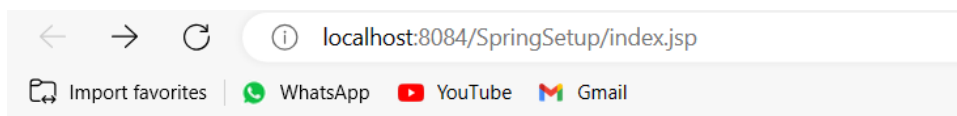
StopEventHandler.java

```java
package com.ecommerce.beans;


import org.springframework.context.ApplicationListener;
import org.springframework.context.event.ContextStoppedEvent;


public class StopEventHandler implements ApplicationListener<ContextStoppedEvent> {


public void onApplicationEvent(ContextStoppedEvent event) {
System.out.println("ContextStoppedEvent Received");
}


}
```
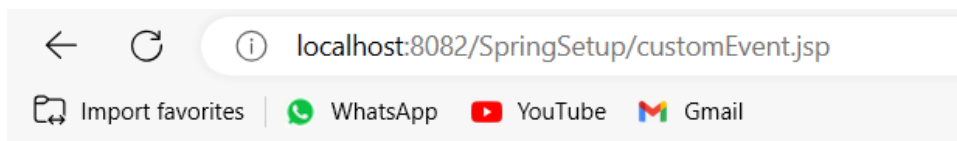
Output

Spring Application

[Custom Event Handling](#)

This is a custom event
ContextStartedEvent Received
ContextStoppedEvent Received
Custom Event has been generated in the Java Console.