

2. Create a Java program to demonstrate default and custom event handling.

Pom.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>ecommerce</artifactId>
    <version>0.0.1-SNAPSHOT</version>
    <packaging>war</packaging>

    <name>ecommerce 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>
    <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>

<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>3.0.1</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>
  <version>1.0.2</version>
  <scope>provided</scope>
</dependency>
```

```
</dependencies>
```

```
<build>
```

```
  <finalName>ecommerce</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>
```

```
  <artifactId>maven-deploy-plugin</artifactId>
```

```
  <version>2.8.2</version>
```

```
</plugin>
```

```
</plugins>
```

```
</pluginManagement>
```

```
</build>
</project>
```

main-servlet.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/schem
a/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>
<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 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.jsp:

```
package com.ecommerce.controller;

import org.springframework.context.ApplicationContext;
import
org.springframework.context.support.ClassPathXmlApplicationConte
xt;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.CustomEventPublishe

r;@Controller
public class MainController {

    @RequestMapping(value = "/customevent", method =
RequestMethod.GET) public String customEvent(ModelMap
map) {
        String confFile = "/WEB-INF/main-servlet.xml";
        ApplicationContext context = new ClassPathXmlApplicationContext(confFile);
        CustomEventPublisher cvp = (CustomEventPublisher)
context.getBean("customEventPublisher");
```

```
cvp.publi  
sh();  
cvp.publi  
sh();  
return "customEvent";  
}  
  
}
```

CustomEventPublisher.java:

```
package com.ecommerce.beans;  
  
import  
org.springframework.context.ApplicationEventPublisher;  
import  
org.springframework.context.ApplicationEventPublisherAw  
are;  
  
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:

```
package com.ecommerce.beans;
import org.springframework.context.ApplicationListener;
public class CustomEventListener implements
ApplicationListener<CustomEvent> {
public void onApplicationEvent(CustomEvent event) {

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

CustomerEvent.java:

```
package com.ecommerce.beans;

import org.springframework.context.Applicati

onEvent; public class CustomEvent extends

ApplicationEvent {

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

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

}
```

StartEventHandler.java:

```
package com.ecommerce.beans;

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

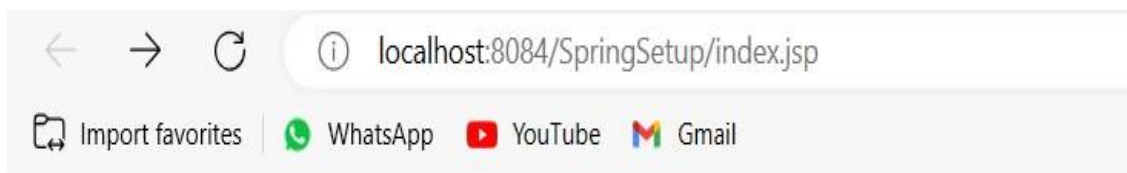
public class StartEventHandler implements
ApplicationListener<ContextStartedEvent> {
```

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

StopEventHandler.java:

```
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](#)



localhost:8082/SpringSetup/customEvent.jsp



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This is a custom event

ContextStartedEvent Received

ContextStoppedEvent Received

Custom Event has been generated in the Java Console.