

3. Create a Java program to demonstrate JDBC and Spring Integration.

**EProduct.java**

```
package com.ecommerce;
```

```
import java.math.BigDecimal;
```

```
import java.util.Date;
```

```
public class EProduct {
```

```
    private long ID;
```

```
    private String name;
```

```
    private BigDecimal price;
```

```
    private Date dateAdded;
```

```
    public long getID() {return this.ID; }
```

```
    public String getName() { return this.name;}
```

```
    public BigDecimal getPrice() { return this.price;}
```

```
    public Date getDateAdded() { return this.dateAdded;}
```

```
    public void setID(long id) { this.ID = id;}
```

```
    public void setName(String name) { this.name = name;}
```

```
    public void setPrice(BigDecimal price) { this.price = price;}
```

```
    public void setDateAdded(Date date) { this.dateAdded = date;}
```

```
}
```

## **ProductController.java**

```
package com.ecommerce.controller;

import java.util.List;

import org.springframework.beans.factory.annotation.Autowired;
import org.springframework.stereotype.Controller;
import org.springframework.ui.ModelMap;
import org.springframework.web.bind.annotation.*;

import com.ecommerce.EProduct;
import com.ecommerce.dao.EProductDAO;

@Controller
public class ProductController {

    @Autowired
    EProductDAO eproductDAO;

    @RequestMapping(value = "/listProducts", method = RequestMethod.GET)
    public String listProducts(ModelMap map) {
        List<EProduct> list = eproductDAO.getProducts();
        map.addAttribute("list", list);
        return "listProducts";
    }
}
```

## **EProductDAO.java**

```
package com.ecommerce.dao;
```

```
import java.sql.ResultSet;
```

```
import java.sql.SQLException;
```

```
import java.util.List;
```

```
import org.springframework.jdbc.core.JdbcTemplate;
```

```
import org.springframework.jdbc.core.RowMapper;
```

```
import com.ecommerce.EProduct;
```

```
public class EProductDAO {
```

```
    JdbcTemplate template;
```

```
    public void setTemplate(JdbcTemplate template) {
```

```
        this.template = template;
```

```
    }
```

```
    // Business methods
```

```
    public List<EProduct> getProducts() {
```

```
        return template.query("select * from eproduct", new RowMapper<EProduct>() {
```

```
            public EProduct mapRow(ResultSet rs, int row) throws SQLException {
```

```
                EProduct e = new EProduct();
```

```
                e.setID(rs.getInt(1));
```

```
                e.setName(rs.getString(2));
```

```
                e.setPrice(rs.getBigDecimal(3));
```

```

        e.setDateAdded(rs.getDate(4));

        return e;
    }

});

}

```

### Index.jsp

```

<html>
<body>
<h2>Spring Application</h2>

<a href="listProducts">List Products</a>
</body>
</html>

```

### listProducts.jsp

```

<%@ page language="java" contentType="text/html; charset=UTF-8"
    pageEncoding="UTF-8"%>
    <%@ taglib uri="http://www.springframework.org/tags/form"
prefix="form"%>
    <%@ taglib uri="http://java.sun.com/jsp/jstl/core" prefix="c"%>

<!DOCTYPE html>
<html>
<head>
<meta charset="UTF-8">
<title>List Products</title>
</head>
<body>
    <c:forEach var="product" items="${list}">
        ${product.name}, ${product.price}, ${product.dateAdded}<br>
    </c:forEach>
</body>
</html>

```

### Main-servlet.xml

```

<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>>

```
<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>

<context:annotation-config />

<context:component-scan base-package="com.ecommerce" />
<context:component-scan
    base-package="com.ecommerce.dao" />
<context:component-scan
    base-package="com.ecommerce.controller" />

<bean id="dataSource"
    class="org.apache.commons.dbcp.BasicDataSource" destroy-
method="close"
    p:driverClassName="${jdbc.driverClassName}"
    p:url="${jdbc.databaseurl}" p:username="${jdbc.username}"
    p:password="${jdbc.password}"></bean>

<bean id="ds"
    class="org.springframework.jdbc.datasource.DriverManagerDataSource">
    <property name="driverClassName"
        value="com.mysql.jdbc.Driver"></property>
    <property name="url"
        value="jdbc:mysql://localhost:3306/ecommerce"></property>
    <property name="username" value="root"></property>
    <property name="password" value="123456"></property>
</bean>

<bean id="jt" class="org.springframework.jdbc.core.JdbcTemplate">
    <property name="dataSource" ref="ds"></property>
</bean>

<bean id="dao" class="com.ecommerce.dao.EProductDAO">
    <property name="template" ref="jt"></property>
</bean>

<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>
  <context-param>
    <param-name>contextConfigLocation</param-name>
    <param-value>/WEB-INF/main-servlet.xml</param-value>
  </context-param>
  <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>
  <listener>
    <listener-
class>org.springframework.web.context.ContextLoaderListener</listener-
class>
  </listener>
</web-app>
```

## 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>

  <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.servle
t.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.s
ervlet.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>

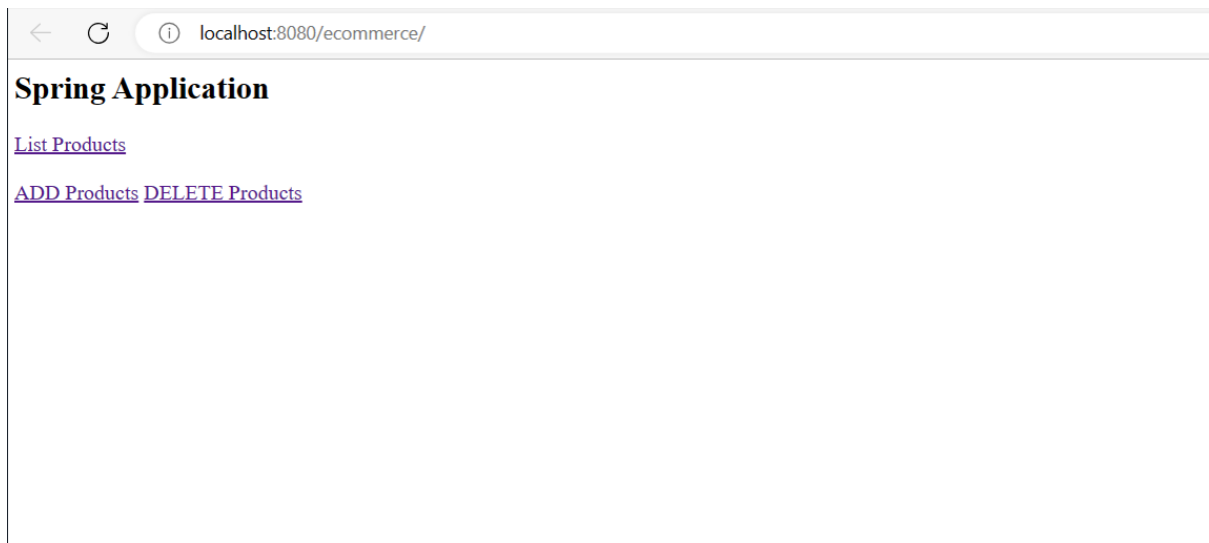
```



```

        <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>

```



## Spring Application

[List Products](#)

HP LAPTOP ABC, 29000.00, 2023-12-30

Acer Laptop ABC, 23500, 2023-12-30

,

### ADD a new Product here

NAME

PRICE

### DELETE a Product here

ID

Product deleted successfully!