

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

index.jsp:

```
<html>
<body>
<h3><a href="listProducts">List Products</a></h3>

</body>
</html>
```

listProduct.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>
```

ProductController.java:

```
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.RequestMapping;
import org.springframework.web.bind.annotation.RequestMethod;

import com.ecommerce.EProduct;

import 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 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;
        }

    });

}

}

```

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; }

}

```

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/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.InternalResourceViewReso
lver">
        <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.ReloadableResourceBundle
MessageSource">

```

```

        <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="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="Karthik@30112000"></property>
    </bean>

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

    <bean id="dao" class="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>
<!-- 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>
    <!--

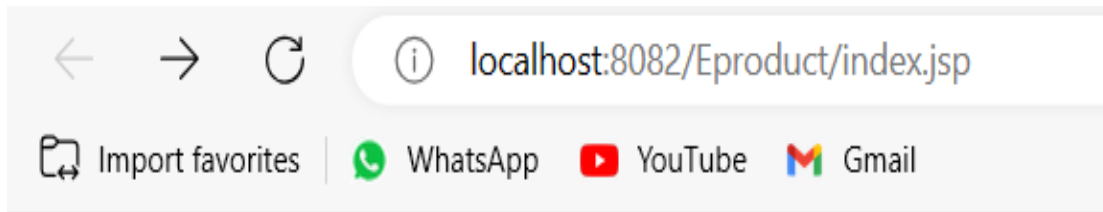
https://mvnrepository.com/artifact/jakarta.servlet.jsp.jstl/jakarta.servlet.js
p.jstl-api -->
    <dependency>
        <groupId>jakarta.servlet.jsp.jstl</groupId>
        <artifactId>jakarta.servlet.jsp.jstl-api</artifactId>
        <version>3.0.0</version>
    </dependency>

    <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>

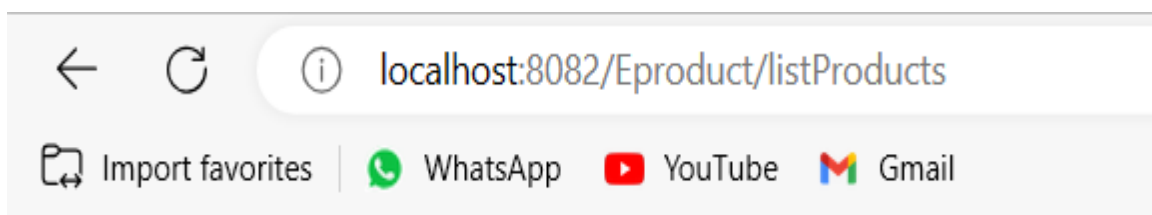
```

```
<!-- 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>
```

OUTPUT:



List Products



HP Laptop ABC, 21900.00, 2019-06-04
Acer Laptop ABC, 23300.00, 2019-06-04
Lenovo Laptop ABC, 33322.00, 2019-06-04