

## Spring Security Assignment

pom.xml

```
<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/maven-v4_0_0.xsd">

    <modelVersion>4.0.0</modelVersion>

    <groupId>com.library</groupId>

    <artifactId>library-management</artifactId>

    <version>1.0.0</version>

    <packaging>war</packaging>

    <properties>

        <spring.version>5.3.18</spring.version>

        <spring.security.version>5.7.1</spring.security.version>

    </properties>

    <dependencies>

        <!-- Spring MVC -->

        <dependency>

            <groupId>org.springframework</groupId>

            <artifactId>spring-webmvc</artifactId>

            <version>${spring.version}</version>

        </dependency>

        <!-- Spring Security -->

        <dependency>
```

```
<groupId>org.springframework.security</groupId>
<artifactId>spring-security-web</artifactId>
<version>${spring.security.version}</version>
</dependency>
<dependency>
  <groupId>org.springframework.security</groupId>
  <artifactId>spring-security-config</artifactId>
  <version>${spring.security.version}</version>
</dependency>

<!-- JSTL for JSP -->
<dependency>
  <groupId>javax.servlet</groupId>
  <artifactId>jstl</artifactId>
  <version>1.2</version>
</dependency>

<!-- Servlet API -->
<dependency>
  <groupId>javax.servlet</groupId>
  <artifactId>javax.servlet-api</artifactId>
  <version>4.0.1</version>
  <scope>provided</scope>
</dependency>
</dependencies>

<build>
  <finalName>library</finalName>
```

</build>

</project>

web.xml

<?xml version="1.0" encoding="UTF-8"?>

<web-app xmlns="http://xmlns.jcp.org/xml/ns/javaee"

xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"

xsi:schemaLocation="http://xmlns.jcp.org/xml/ns/javaee

http://xmlns.jcp.org/xml/ns/javaee/web-app\_4\_0.xsd"

version="4.0">

<!-- Spring MVC Configuration -->

<servlet>

<servlet-name>spring</servlet-name>

<servlet-class>org.springframework.web.servlet.DispatcherServlet</servlet-class>

<init-param>

<param-name>contextConfigLocation</param-name>

<param-value>/WEB-INF/spring-servlet.xml</param-value>

</init-param>

<load-on-startup>1</load-on-startup>

</servlet>

<servlet-mapping>

<servlet-name>spring</servlet-name>

<url-pattern>/</url-pattern>

</servlet-mapping>

```

<!-- Spring Security Filter Chain -->

<filter>

    <filter-name>springSecurityFilterChain</filter-name>

    <filter-class>org.springframework.web.filter.DelegatingFilterProxy</filter-class>

</filter>


<filter-mapping>

    <filter-name>springSecurityFilterChain</filter-name>

    <url-pattern>/*</url-pattern>

</filter-mapping>


<!-- Welcome File -->

<welcome-file-list>

    <welcome-file>index.jsp</welcome-file>

</welcome-file-list>

</web-app>

```

spring-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:context="http://www.springframework.org/schema/context"
       xmlns:mvc="http://www.springframework.org/schema/mvc"
       xsi:schemaLocation="http://www.springframework.org/schema/beans
                           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/mvc>

<http://www.springframework.org/schema/mvc/spring-mvc.xsd>>

<!-- Component scanning -->

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

<!-- View resolver -->

<bean class="org.springframework.web.servlet.view.InternalResourceViewResolver">

    <property name="prefix" value="/WEB-INF/views/" />

    <property name="suffix" value=".jsp" />

</bean>

<!-- Enable Spring MVC annotations -->

<mvc:annotation-driven />

<!-- Import Spring Security configuration -->

<import resource="spring-security.xml" />

</beans>

spring-security.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:security="http://www.springframework.org/schema/security"

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

<http://www.springframework.org/schema/beans/spring-beans.xsd>

<http://www.springframework.org/schema/security>

<http://www.springframework.org/schema/security/spring-security.xsd>>

<!-- Security configuration -->

<security:http auto-config="true" use-expressions="true">

<!-- Public URLs -->

<security:intercept-url pattern="/" access="permitAll" />

<security:intercept-url pattern="/login" access="permitAll" />

<security:intercept-url pattern="/resources/\*\*" access="permitAll" />

<!-- Protected URLs -->

<security:intercept-url pattern="/books" access="hasAnyRole('ROLE\_USER',  
'ROLE\_ADMIN')" />

<security:intercept-url pattern="/admin" access="hasRole('ROLE\_ADMIN')" />

<!-- Login configuration -->

<security:form-login

login-page="/login"

default-target-url="/books"

authentication-failure-url="/login?error"

username-parameter="username"

password-parameter="password" />

<!-- Logout configuration -->

<security:logout

logout-url="/logout"

logout-success-url="/"

invalidate-session="true"

delete-cookies="JSESSIONID" />

```

        <!-- CSRF protection enabled by default -->
    </security:http>

    <!-- Authentication manager with in-memory users -->
    <security:authentication-manager>
        <security:authentication-provider>
            <security:user-service>
                <security:user name="user" password="{noop}userpass" authorities="ROLE_USER"
            />
                <security:user name="admin" password="{noop}adminpass"
authorities="ROLE_USER, ROLE_ADMIN" />
            </security:user-service>
        </security:authentication-provider>
    </security:authentication-manager>
</beans>

```

BookController.java

```
package com.library.controller;
```

```
import org.springframework.stereotype.Controller;
```

```
import org.springframework.ui.Model;
```

```
import org.springframework.web.bind.annotation.GetMapping;
```

```
import org.springframework.web.bind.annotation.RequestParam;
```

```
@Controller
```

```
public class BookController {
```

```
@GetMapping("/")  
  
public String home() {  
    return "home";  
}
```

```
@GetMapping("/login")  
  
public String login(@RequestParam(value = "error", required = false) String error, Model  
model) {  
    if (error != null) {  
        model.addAttribute("error", "Invalid username or password");  
    }  
    return "login";  
}
```

```
@GetMapping("/books")  
  
public String books() {  
    return "books";  
}
```

```
@GetMapping("/admin")  
  
public String admin() {  
    return "admin";  
}  
}
```

home.jsp



```
<%@ page language="java" contentType="text/html; charset=UTF-8" pageEncoding="UTF-8"%>
```

```
<!DOCTYPE html>
```

```
<html>
```

```
<head>
```

```
    <meta charset="UTF-8">
```

```
    <title>Library Home</title>
```

```
</head>
```

```
<body>
```

```
    <h1>Welcome to Our Library</h1>
```

```
    <p>Browse our collection of books or login to access more features.</p>
```

```
    <a href="/books">View Books</a> |
```

```
    <a href="/login">Login</a>
```

```
</body>
```

```
</html>
```

login.jsp

```
<%@ page language="java" contentType="text/html; charset=UTF-8" pageEncoding="UTF-8"%>
```

```
<!DOCTYPE html>
```

```
<html>
```

```
<head>
```

```
    <meta charset="UTF-8">
```

```
    <title>Login</title>
```

```
</head>
```

```
<body>
```

```
    <h1>Library Login</h1>
```

```
<c:if test="${not empty error}">
    <div style="color:red">${error}</div>
</c:if>
```

```
<form action="/login" method="post">
    <div>
        <label>Username:</label>
        <input type="text" name="username" required>
    </div>
    <div>
        <label>Password:</label>
        <input type="password" name="password" required>
    </div>
    <div>
        <button type="submit">Login</button>
    </div>
</form>
```

```
<a href="/">Back to Home</a>
</body>
</html>
```

books.jsp

```
<%@ page language="java" contentType="text/html; charset=UTF-8" pageEncoding="UTF-8"%>
<%@ taglib prefix="sec" uri="http://www.springframework.org/security/tags" %>
<!DOCTYPE html>
```

```
<html>

<head>

  <meta charset="UTF-8">

  <title>Library Books</title>

</head>

<body>

  <h1>Our Book Collection</h1>

  <ul>

    <li>Book 1</li>

    <li>Book 2</li>

    <li>Book 3</li>

  </ul>

  <sec:authorize access="hasRole('ROLE_ADMIN')">

    <p><a href="/admin">Admin Panel</a></p>

  </sec:authorize>

  <form action="/logout" method="post">

    <input type="hidden" name="${_csrf.parameterName}" value="${_csrf.token}"/>

    <button type="submit">Logout</button>

  </form>

</body>

</html>
```

admin.jsp

```
<%@ page language="java" contentType="text/html; charset=UTF-8" pageEncoding="UTF-8"%>
```

```
<!DOCTYPE html>

<html>

<head>

  <meta charset="UTF-8">

  <title>Admin Panel</title>

</head>

<body>

  <h1>Admin Panel</h1>

  <p>This is the restricted admin area.</p>

  <ul>

    <li><a href="#">Manage Books</a></li>

    <li><a href="#">Manage Users</a></li>

    <li><a href="#">System Settings</a></li>

  </ul>

  <a href="/books">Back to Books</a> |

  <form action="/logout" method="post" style="display:inline;">

    <input type="hidden" name="{_csrf.parameterName}" value="{_csrf.token}"/>

    <button type="submit">Logout</button>

  </form>

</body>

</html>
```