**Implement Spring Security With Authentication**

**Source Code**

**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 https://maven.apache.org/xsd/maven-4.0.0.xsd">

<modelVersion>4.0.0</modelVersion>

<parent>

<groupId>org.springframework.boot</groupId>

<artifactId>spring-boot-starter-parent</artifactId>

<version>2.4.4</version>

<relativePath/> <!-- lookup parent from repository -->

</parent>

<groupId>com.project</groupId>

<artifactId>SpringSecurity</artifactId>

<version>0.0.1-SNAPSHOT</version>

<name>SpringSecurity</name>

<description>Demo project for Spring Boot</description>

<properties>

<java.version>17</java.version>

</properties>

<dependencies>

<dependency>

<groupId>org.springframework.boot</groupId>

<artifactId>spring-boot-starter-data-jdbc</artifactId>

</dependency>

<dependency>

<groupId>org.springframework.boot</groupId>

<artifactId>spring-boot-starter-jdbc</artifactId>

</dependency>

<dependency>

<groupId>org.springframework.boot</groupId>

<artifactId>spring-boot-starter-data-jpa</artifactId>

</dependency>

<dependency>

<groupId>org.springframework.boot</groupId>

<artifactId>spring-boot-starter-jersey</artifactId>

</dependency>

<dependency>

<groupId>org.springframework.boot</groupId>

<artifactId>spring-boot-starter-web</artifactId>

</dependency>

<dependency>

<groupId>org.springframework.boot</groupId>

<artifactId>spring-boot-starter-security</artifactId>

</dependency>

<dependency>

<groupId>org.springframework.boot</groupId>

<artifactId>spring-boot-starter-web-services</artifactId>

</dependency>

<dependency>

<groupId>org.springframework.boot</groupId>

<artifactId>spring-boot-starter-thymeleaf</artifactId>

</dependency>

<dependency>

<groupId>org.springframework.boot</groupId>

<artifactId>spring-boot-devtools</artifactId>

<scope>runtime</scope>

<optional>true</optional>

</dependency>

<dependency>

<groupId>mysql</groupId>

<artifactId>mysql-connector-java</artifactId>

<scope>runtime</scope>

</dependency>

<dependency>

<groupId>org.springframework.boot</groupId>

<artifactId>spring-boot-starter-test</artifactId>

<scope>test</scope>

</dependency>

<dependency>

<groupId>org.springframework.security</groupId>

<artifactId>spring-security-test</artifactId>

<scope>test</scope>

</dependency>

<dependency>

<groupId>javax.servlet</groupId>

<artifactId>jstl</artifactId>

<version>1.2</version>

</dependency>

<dependency>

<groupId>org.apache.tomcat.embed</groupId>

<artifactId>tomcat-embed-jasper</artifactId>

<scope>provided</scope>

</dependency>

</dependencies>

<build>

<plugins>

<plugin>

<groupId>org.springframework.boot</groupId>

<artifactId>spring-boot-maven-plugin</artifactId>

</plugin>

</plugins>

</build>

</project>

**src/main/java :-**

**com.project.SpringSecurity.entities :**

**User.java :**

**package** com.project.SpringSecurity.entities;

**import** javax.persistence.Entity;

**import** javax.persistence.GeneratedValue;

**import** javax.persistence.GenerationType;

**import** javax.persistence.Id;

**import** javax.persistence.Table;

@Entity

@Table(name="user")

**public** **class** User {

@Id

@GeneratedValue(strategy=GenerationType.***AUTO***)

**private** Integer id;

**private** String name;

**private** String password;

**public** User() {

**super**();

}

**public** User(String name, String password) {

**super**();

**this**.name = name;

**this**.password = password;

}

**public** String getName() {

**return** name;

}

**public** **void** setName(String name) {

**this**.name = name;

}

**public** String getPassword() {

**return** password;

}

**public** **void** setPassword(String password) {

**this**.password = password;

}

}

**MyUserDetails.java :**

**package** com.project.SpringSecurity.entities;

**import** java.util.Collection;

**import** org.springframework.security.core.GrantedAuthority;

**import** org.springframework.security.core.userdetails.UserDetails;

**public** **class** MyUserDetails **implements** UserDetails{

**private** **static** **final** **long** ***serialVersionUID*** = 1L;

**private** String userName;

**private** String password;

**public** MyUserDetails() {

}

**public** MyUserDetails(User user) {

**this**.userName = user.getName();

**this**.password = user.getPassword();

}

@Override

**public** Collection<? **extends** GrantedAuthority> getAuthorities() {

**return** **null**;

}

@Override

**public** String getPassword() {

**return** password;

}

@Override

**public** String getUsername() {

**return** userName;

}

@Override

**public** **boolean** isAccountNonExpired() {

**return** **true**;

}

@Override

**public** **boolean** isAccountNonLocked() {

**return** **true**;

}

@Override

**public** **boolean** isCredentialsNonExpired() {

**return** **true**;

}

@Override

**public** **boolean** isEnabled() {

**return** **true**;

}

}

**com.project.SpringSecurity.repositories :**

**UserRepository.java :**

**package** com.project.SpringSecurity.repositories;

**import** java.util.Optional;

**import** org.springframework.data.repository.CrudRepository;

**import** org.springframework.stereotype.Repository;

**import** com.project.SpringSecurity.entities.User;

@Repository

**public** **interface** UserRepository **extends** CrudRepository<User, Integer>{

**public** Optional<User> findUserByName(String name);

}

**com.project.SpringSecurity.services :**

**MyUserDetailsService.java :**

**package** com.project.SpringSecurity.services;

**import** java.util.Optional;

**import** org.springframework.beans.factory.annotation.Autowired;

**import** org.springframework.security.core.userdetails.UserDetailsService;

**import** org.springframework.security.core.userdetails.UsernameNotFoundException;

**import** org.springframework.stereotype.Service;

**import** com.project.SpringSecurity.entities.MyUserDetails;

**import** com.project.SpringSecurity.entities.User;

**import** com.project.SpringSecurity.repositories.UserRepository;

@Service

**public** **class** MyUserDetailsService **implements** UserDetailsService {

@Autowired

UserRepository userRepo;

**public** User GetUserByName(String name) {

Optional<User> user = userRepo.findUserByName(name);

**if**(!user.isPresent()) **throw** **new** RuntimeException();

**return** user.get();

}

@Override

**public** org.springframework.security.core.userdetails.UserDetails loadUserByUsername(String username)

**throws** UsernameNotFoundException {

**return** **new** MyUserDetails(GetUserByName(username));

}

}

**Com.project.SpringSecurity :**

**SpringSecurityApplication.java :**

**package** com.project.SpringSecurity;

**import** org.springframework.boot.SpringApplication;

**import** org.springframework.boot.autoconfigure.SpringBootApplication;

**import** org.springframework.data.jpa.repository.config.EnableJpaRepositories;

**import** com.project.SpringSecurity.repositories.UserRepository;

@SpringBootApplication

@EnableJpaRepositories(basePackageClasses = UserRepository.**class**)

**public** **class** SpringSecurityApplication {

**public** **static** **void** main(String[] args) {

SpringApplication.*run*(SpringSecurityApplication.**class**, args);

}

}

**MvcConfig,java :**

**package** com.project.SpringSecurity;

**import** org.springframework.context.annotation.Configuration;

**import** org.springframework.web.servlet.config.annotation.ViewControllerRegistry;

**import** org.springframework.web.servlet.config.annotation.WebMvcConfigurer;

@Configuration

**public** **class** MvcConfig **implements** WebMvcConfigurer{

**public** **void** addViewControllers(ViewControllerRegistry registry) {

registry.addViewController("/index").setViewName("index");

registry.addViewController("/").setViewName("index");

registry.addViewController("/login").setViewName("login");

registry.addViewController("/welcome").setViewName("welcome");

}

}

**WebSecurityConfig.java :**

**package** com.project.SpringSecurity;

**import** org.slf4j.Logger;

**import** org.slf4j.LoggerFactory;

**import** org.springframework.beans.factory.annotation.Autowired;

**import** org.springframework.context.annotation.Bean;

**import** org.springframework.context.annotation.Configuration;

**import** org.springframework.security.config.annotation.authentication.builders.AuthenticationManagerBuilder;

**import** org.springframework.security.config.annotation.web.builders.HttpSecurity;

**import** org.springframework.security.config.annotation.web.configuration.EnableWebSecurity;

**import** org.springframework.security.config.annotation.web.configuration.WebSecurityConfigurerAdapter;

**import** org.springframework.security.core.userdetails.UserDetailsService;

**import** org.springframework.security.crypto.password.~~NoOpPasswordEncoder~~;

**import** org.springframework.security.crypto.password.PasswordEncoder;

@SuppressWarnings("deprecation")

@Configuration

@EnableWebSecurity

**public** **class** WebSecurityConfig **extends** WebSecurityConfigurerAdapter {

Logger logger = LoggerFactory.*getLogger*(WebSecurityConfig.**class**);

@Autowired

UserDetailsService userDetailsService;

@Bean

**public** PasswordEncoder getPasswordEncoder() {

**return** ~~NoOpPasswordEncoder~~.~~getInstance~~();

}

@Autowired

**public** **void** configureGlobal(AuthenticationManagerBuilder auth) **throws** Exception {

auth.userDetailsService(userDetailsService);

}

@Override

**protected** **void** configure(HttpSecurity http) **throws** Exception {

http.authorizeRequests()

.antMatchers("/", "/index").permitAll()

.anyRequest().authenticated()

.and()

.formLogin()

.loginPage("/login")

.defaultSuccessUrl("/welcome")

.failureUrl("/login?error=true")

.permitAll()

.and()

.logout()

.logoutSuccessUrl("/login?logout=true")

.invalidateHttpSession(**true**)

.permitAll()

.and()

.csrf()

.disable();

}

}

**Src/main/resources :-**

**Application.properties :**

spring.jpa.hibernate.ddl-auto=update

spring.jpa.hibernate.naming-strategy=org.hibernate.cfg.ImprovedNamingStrategy

spring.jap.properties.hibernate.dialect=org.hibernate.dialect.MySQL5Dialect

spring.datasource.url=jdbc:mysql://localhost:3306/dbsecure

spring.datasource.username=root

spring.datasource.password=Suru632kulA#

logging.level.org.springframework.web: DEBUG

spring.thymeleaf.prefix=/WEB-INF/jsp/

spring.thymeleaf.suffix=.jsp

server.port=8131

server.error.whitelabel.enabled=false

**src/test/java :-**

**com.project.SpringSecurity :**

SpringSecurityApplicationTests.java :

package com.project.SpringSecurity;

import org.junit.jupiter.api.Test;

import org.springframework.boot.test.context.SpringBootTest;

@SpringBootTest

class SpringSecurityApplicationTests {

@Test

void contextLoads() {

}

}

**src/main/webapp/WEB-INF/jsp :-**

**index.jsp :**

<!DOCTYPE html>

<html xmlns=*"http://www.w3.org/1999/xhtml"*

xmlns:th=*"http://www.thymeleaf.org"*

xmlns:sec=*"http://www.thymeleaf.org/thymeleaf-extras-springsecurity3"*

xmlns:layout=*"http://www.ultraq.net.nz/thymeleaf/layout"*>

<head>

<title>Greetings!</title>

</head>

<body>

<h1>Welcome!</h1>

<p>

Click <a th:href=*"@{/welcome}"*>here</a> to see a greeting.

</p>

</body>

</html>

**login.jsp :**

<!DOCTYPE html>

<html xmlns=*"http://www.w3.org/1999/xhtml"* xmlns:th=*"https://www.thymeleaf.org"*

xmlns:sec=*"https://www.thymeleaf.org/thymeleaf-extras-springsecurity3"*>

<head>

<title>Login</title>

</head>

<body>

<div th:if=*"*${param.error}*"*>

Invalid username or password.

</div>

<div th:if=*"*${param.logout}*"*>

You have been logged out.

</div>

<form th:action=*"@{/login}"* method=*"post"*>

<div><label> User Name : <input type=*"text"* name=*"username"*/> </label></div>

<div><label> Password: <input type=*"password"* name=*"password"*/> </label></div>

<div><input type=*"submit"* value=*"Sign In"*/></div>

</form>

<a href=*"/"*>Return to Main Page</a>

</body>

</html>

**welcome.jsp :**

<!DOCTYPE html>

<html xmlns=*"http://www.w3.org/1999/xhtml"* xmlns:th=*"https://www.thymeleaf.org"*

xmlns:sec=*"https://www.thymeleaf.org/thymeleaf-extras-springsecurity3"*>

<head>

<title>Welcome!</title>

</head>

<body>

<h1 th:inline=*"text"*>Hello [[${#httpServletRequest.remoteUser}]]!</h1>

<form th:action=*"@{/logout}"* method=*"post"*>

<input type=*"submit"* value=*"Sign Out"*/>

</form>

</body>

</html>