**Implement Spring Security with Authentication**

**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>1.8</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> |

**package com.project.SpringSecurity**

**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");

}

}

**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.UsersRepository;

@SpringBootApplication

@EnableJpaRepositories(basePackageClasses = UsersRepository.class)

public class SpringSecurityApplication {

public static void main(String[] args) {

SpringApplication.run(SpringSecurityApplication.class, args);

}

**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();

}

}

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

**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;

}

}

**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;

}

}

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

**UsersRepository.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 UsersRepository extends CrudRepository<User, Integer>{

public Optional<User> findUserByName(String name);

}

**package 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.UsersRepository;

@Service

public class MyUserDetailsService implements UserDetailsService {

@Autowired

UsersRepository 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));

}

}

**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/springsecurity

spring.datasource.username=root

spring.datasource.password=abc@123

logging.level.org.springframework.web: DEBUG

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

spring.thymeleaf.suffix=.jsp

server.port=8080

server.error.whitelabel.enabled=false

**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> |