

Implement Spring Security with Authentication

Open 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>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>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>
```

Create package com.project.SpringSecurity

Create 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");

    }

}
```

```
}  
  
}
```

Create 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);  
  
    }  
  
}
```

Create 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();

}

}

```

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

Create **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;

}

}
```

Create 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;

}

}
```

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

Create **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);

}
```

Create package com.project.SpringSecurity.services

Create 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.jpa.properties.hibernate.dialect=org.hibernate.dialect.MySQL5Dialect

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

spring.datasource.username=root

spring.datasource.password=password

logging.level.org.springframework.web: DEBUG

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

spring.thymeleaf.suffix=.jsp

server.port=8080

server.error.whitelabel.enabled=false

```

Create 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>

```

Create 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>

Return to Main Page

</body>

</html>

Create 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>