**Spring REST using Spring Boot 3**

**Create authentication service that returns JWT**

As part of first step of JWT process, the user credentials needs to be sent to authentication service request that generates and returns the JWT.

Ideally when the below curl command is executed that calls the new authentication service, the token should be responded. Kindly note that the credentials are passed using -u option.

Request

curl -s -u user:pwd http://localhost:8090/authenticate

Response

{"token":"eyJhbGciOiJIUzI1NiJ9.eyJzdWIiOiJ1c2VyIiwiaWF0IjoxNTcwMzc5NDc0LCJleHAiOjE1NzAzODA2NzR9.t3LRvlCV-hwKfoqZYlaVQqEUiBloWcWn0ft3tgv0dL0"}

This can be incorporated as three major steps:

• Create authentication controller and configure it in SecurityConfig

• Read Authorization header and decode the username and password

• Generate token based on the user retrieved in the previous step

Let incorporate the above as separate hands on exercises.

**PROGRAM IMPLEMENTATION :**

package com.cognizant.springlearn;

import org.springframework.boot.SpringApplication;

import org.springframework.boot.autoconfigure.SpringBootApplication;

@SpringBootApplication

public class SpringLearnApplication {

public static void main(String[] args) {

SpringApplication.run(SpringLearnApplication.class, args);

}

}

package com.cognizant.springlearn.config;

import org.springframework.context.annotation.Configuration;

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

import org.springframework.security.web.SecurityFilterChain;

import org.springframework.context.annotation.Bean;

@Configuration

public class SecurityConfig {

@Bean

public SecurityFilterChain filterChain(HttpSecurity http) throws Exception {

http.csrf().disable()

.authorizeHttpRequests(authz -> authz

.requestMatchers("/authenticate").permitAll()

.anyRequest().authenticated()

)

.httpBasic(); // Enable HTTP Basic Auth

return http.build();

}

}

package com.cognizant.springlearn.util;

import io.jsonwebtoken.Jwts;

import io.jsonwebtoken.SignatureAlgorithm;

import io.jsonwebtoken.security.Keys;

import org.springframework.stereotype.Component;

import java.security.Key;

import java.util.Date;

@Component

public class JwtUtil {

private final Key key = Keys.secretKeyFor(SignatureAlgorithm.HS256);

public String generateToken(String username) {

return Jwts.builder()

.setSubject(username)

.setIssuedAt(new Date(System.currentTimeMillis()))

.setExpiration(new Date(System.currentTimeMillis() + 1000 \* 60 \* 10)) // valid for 10 minutes

.signWith(key)

.compact();

}

}

package com.cognizant.springlearn.controller;

import com.cognizant.springlearn.util.JwtUtil;

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

import org.springframework.http.HttpHeaders;

import org.springframework.http.ResponseEntity;

import org.springframework.web.bind.annotation.\*;

import java.util.Base64;

@RestController

public class AuthenticationController {

@Autowired

private JwtUtil jwtUtil;

@GetMapping("/authenticate")

public ResponseEntity<?> authenticate(@RequestHeader(HttpHeaders.AUTHORIZATION) String authHeader) {

// Format: Basic base64(username:password)

if (authHeader != null && authHeader.startsWith("Basic ")) {

String base64Credentials = authHeader.substring("Basic ".length());

String credentials = new String(Base64.getDecoder().decode(base64Credentials));

String[] values = credentials.split(":", 2);

String username = values[0];

String password = values[1];

if ("user".equals(username) && "pwd".equals(password)) {

String token = jwtUtil.generateToken(username);

return ResponseEntity.ok().body(new TokenResponse(token));

}

}

return ResponseEntity.status(401).body("Invalid credentials");

}

static class TokenResponse {

private String token;

public TokenResponse(String token) {

this.token = token;

}

public String getToken() {

return token;

}

}

}

**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/xsd/maven-4.0.0.xsd">

<modelVersion>4.0.0</modelVersion>

<groupId>com.cognizant</groupId>

<artifactId>spring-learn</artifactId>

<version>0.0.1-SNAPSHOT</version>

<name>spring-learn</name>

<description>Spring Boot Web Project</description>

<packaging>jar</packaging>

<parent>

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

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

<version>3.1.2</version>

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

</parent>

<properties>

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

</properties>

<dependencies>

<!-- Spring Web -->

<dependency>

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

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

</dependency>

<!-- DevTools -->

<dependency>

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

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

<scope>runtime</scope>

<optional>true</optional>

</dependency>

<!-- Testing -->

<dependency>

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

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

<scope>test</scope>

</dependency>

</dependencies>

<build>

<plugins>

<!-- Maven plugin for Spring Boot -->

<plugin>

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

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

</plugin>

</plugins>

</build>

</project>

**OUTPUT :**



