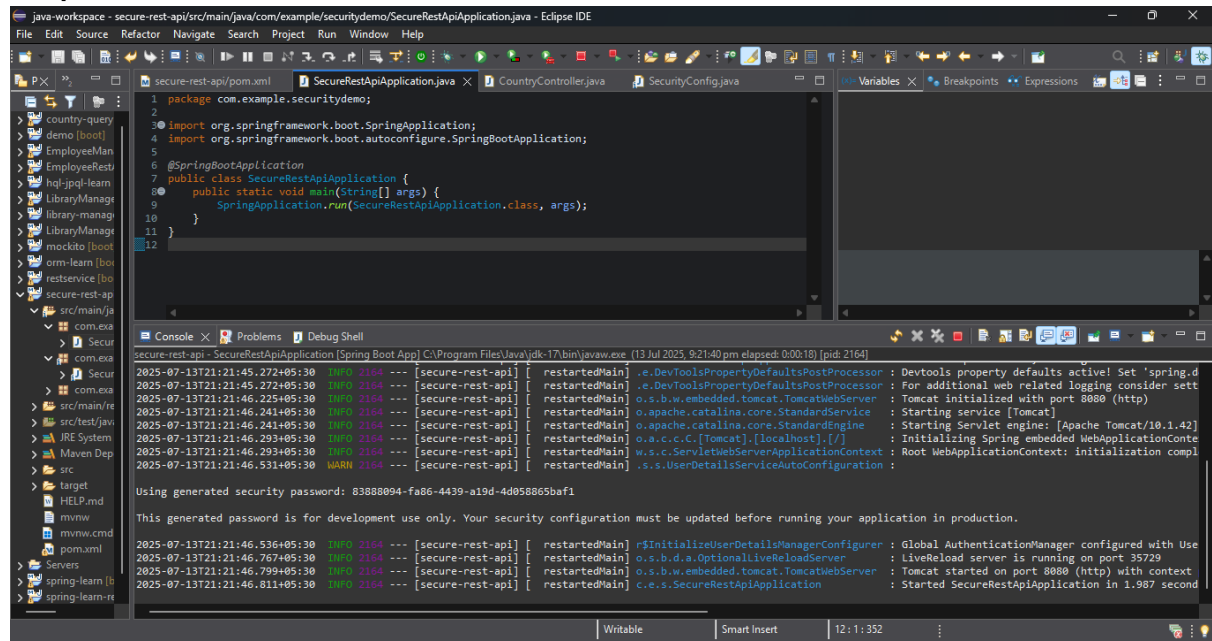


Securing RESTful Web Services with Spring Security

Output:



The screenshot shows the Eclipse IDE with the `SecureRestApiApplication.java` file open. The code defines a Spring Boot application with a `main` method. The console output shows the application starting successfully on port 8080. A security password is generated for development use only.

```
package com.example.securitydemo;

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

@SpringBootApplication
public class SecureRestApiApplication {
    public static void main(String[] args) {
        SpringApplication.run(SecureRestApiApplication.class, args);
    }
}
```

```
2025-07-13T21:21:45.272+05:30 INFO 2164 --- [secure-rest-api] [ restartedMain] .e.DevToolsPropertyDefaultsPostProcessor : Devtools property defaults active! Set 'spring.d
2025-07-13T21:21:45.272+05:30 INFO 2164 --- [secure-rest-api] [ restartedMain] .e.DevToolsPropertyDefaultsPostProcessor : For additional web related logging consider sett
2025-07-13T21:21:46.225+05:30 INFO 2164 --- [secure-rest-api] [ restartedMain] o.s.b.w.embedded.tomcat.TomcatWebServer : Tomcat initialized with port 8080 (http)
2025-07-13T21:21:46.241+05:30 INFO 2164 --- [secure-rest-api] [ restartedMain] o.apache.catalina.core.StandardService : Starting service [Tomcat]
2025-07-13T21:21:46.241+05:30 INFO 2164 --- [secure-rest-api] [ restartedMain] o.apache.catalina.core.StandardEngine : Starting Servlet engine: [Apache Tomcat/10.1.42]
2025-07-13T21:21:46.293+05:30 INFO 2164 --- [secure-rest-api] [ restartedMain] o.a.c.c.C.[Tomcat].[localhost].[/] : Initializing Spring embedded WebApplicationConte
2025-07-13T21:21:46.293+05:30 INFO 2164 --- [secure-rest-api] [ restartedMain] w.s.c.ServletWebServerApplicationContext : Root WebApplicationContext: initialization compl
2025-07-13T21:21:46.531+05:30 WARN 2164 --- [secure-rest-api] [ restartedMain] .s.s.UserDetailsServiceAutoConfiguration :

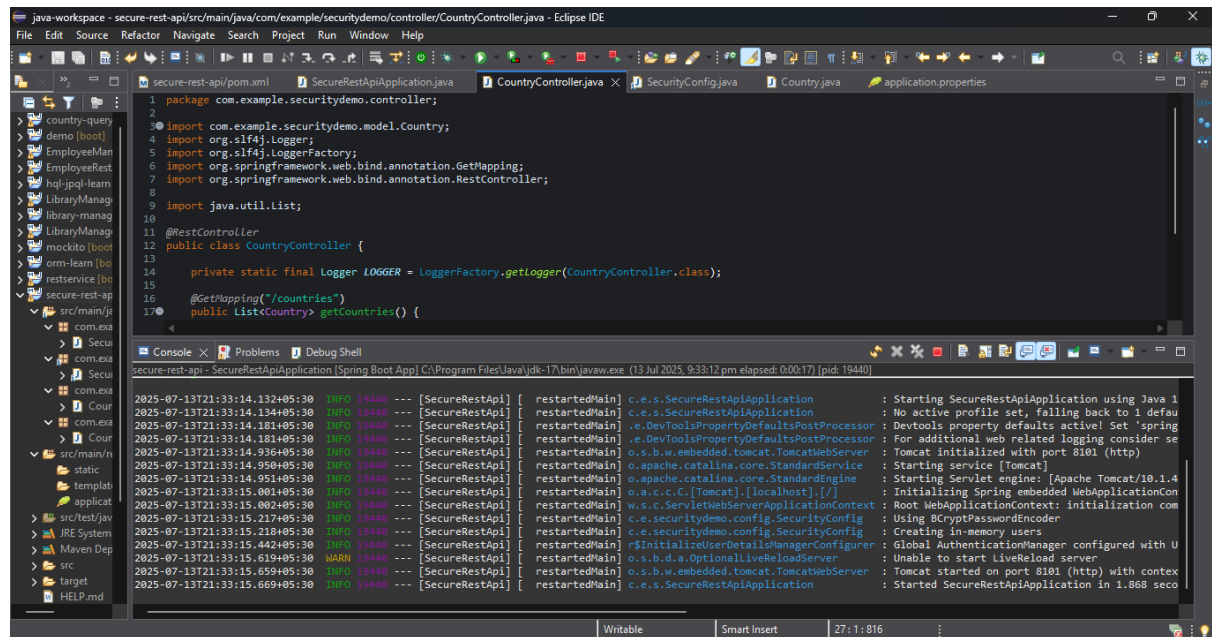
Using generated security password: 83888094-fa86-4439-a19d-4d056865ba1f

This generated password is for development use only. Your security configuration must be updated before running your application in production.

2025-07-13T21:21:46.536+05:30 INFO 2164 --- [secure-rest-api] [ restartedMain] r$InitializeUserDetailsServiceConfigurer : Global AuthenticationManager configured with Use
2025-07-13T21:21:46.767+05:30 INFO 2164 --- [secure-rest-api] [ restartedMain] o.s.b.d.a.OptionalLiveReloadServer : LiveReload server is running on port 35729
2025-07-13T21:21:46.799+05:30 INFO 2164 --- [secure-rest-api] [ restartedMain] o.s.b.w.embedded.tomcat.TomcatWebServer : Tomcat started on port 8080 (http) with contex
2025-07-13T21:21:46.811+05:30 INFO 2164 --- [secure-rest-api] [ restartedMain] c.e.s.SecureRestApiApplication : Started SecureRestApiApplication in 1.987 second
```

Creating users and roles in Spring Security

Output:



The screenshot shows the Eclipse IDE with the `CountryController.java` file open. The code defines a REST controller for countries. The console output shows the application starting successfully on port 8101.

```
package com.example.securitydemo.controller;

import com.example.securitydemo.model.Country;
import org.springframework.web.bind.annotation.GetMapping;
import org.springframework.web.bind.annotation.RestController;
import java.util.List;

@RestController
public class CountryController {

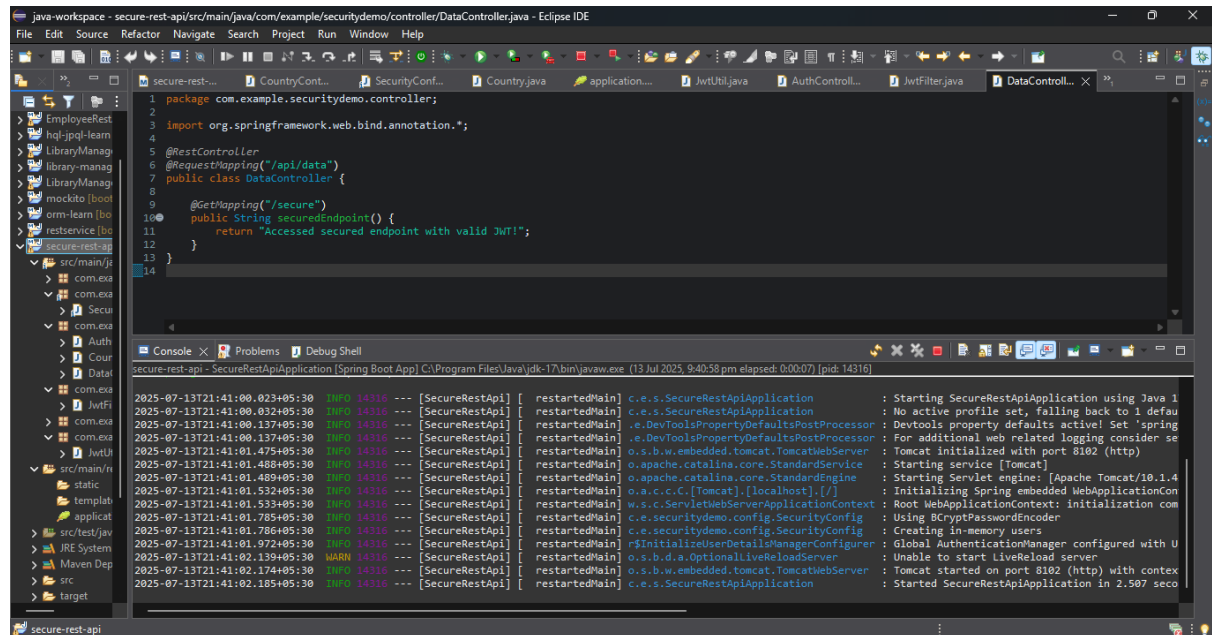
    private static final Logger LOGGER = LoggerFactory.getLogger(CountryController.class);

    @GetMapping("/countries")
    public List<Country> getCountries() {
    }
```

```
2025-07-13T21:33:14.132+05:30 INFO 19440 --- [SecureRestApi] [ restartedMain] c.e.s.SecureRestApiApplication : Starting SecureRestApiApplication using Java 1
2025-07-13T21:33:14.134+05:30 INFO 19440 --- [SecureRestApi] [ restartedMain] c.e.s.SecureRestApiApplication : No active profile set, falling back to 1 defau
2025-07-13T21:33:14.181+05:30 INFO 19440 --- [SecureRestApi] [ restartedMain] .e.DevToolsPropertyDefaultsPostProcessor : Devtools property defaults active! Set 'spring
2025-07-13T21:33:14.181+05:30 INFO 19440 --- [SecureRestApi] [ restartedMain] .e.DevToolsPropertyDefaultsPostProcessor : For additional web related logging consider se
2025-07-13T21:33:14.936+05:30 INFO 19440 --- [SecureRestApi] [ restartedMain] o.s.b.w.embedded.tomcat.TomcatWebServer : Tomcat initialized with port 8101 (http)
2025-07-13T21:33:14.950+05:30 INFO 19440 --- [SecureRestApi] [ restartedMain] o.apache.catalina.core.StandardService : Starting service [Tomcat]
2025-07-13T21:33:14.951+05:30 INFO 19440 --- [SecureRestApi] [ restartedMain] o.apache.catalina.core.StandardEngine : Starting Servlet engine: [Apache Tomcat/10.1.4
2025-07-13T21:33:15.002+05:30 INFO 19440 --- [SecureRestApi] [ restartedMain] o.a.c.c.C.[Tomcat].[localhost].[/] : Initializing Spring embedded WebApplicationCon
2025-07-13T21:33:15.002+05:30 INFO 19440 --- [SecureRestApi] [ restartedMain] w.s.c.ServletWebServerApplicationContext : Root WebApplicationContext: initialization com
2025-07-13T21:33:15.217+05:30 INFO 19440 --- [SecureRestApi] [ restartedMain] c.e.s.securitydemo.config.SecurityConfig : Using BCryptPasswordEncoder
2025-07-13T21:33:15.217+05:30 INFO 19440 --- [SecureRestApi] [ restartedMain] c.e.s.securitydemo.config.SecurityConfig : Creating in-memory users
2025-07-13T21:33:15.442+05:30 INFO 19440 --- [SecureRestApi] [ restartedMain] r$InitializeUserDetailsServiceConfigurer : Global AuthenticationManager configured with U
2025-07-13T21:33:15.619+05:30 WARN 19440 --- [SecureRestApi] [ restartedMain] o.s.b.d.a.OptionalLiveReloadServer : Unable to start LiveReload server
2025-07-13T21:33:15.659+05:30 INFO 19440 --- [SecureRestApi] [ restartedMain] o.s.b.w.embedded.tomcat.TomcatWebServer : Tomcat started on port 8101 (http) with contex
2025-07-13T21:33:15.669+05:30 INFO 19440 --- [SecureRestApi] [ restartedMain] c.e.s.SecureRestApiApplication : Started SecureRestApiApplication in 1.868 seco
```

Understanding JWT

Output:



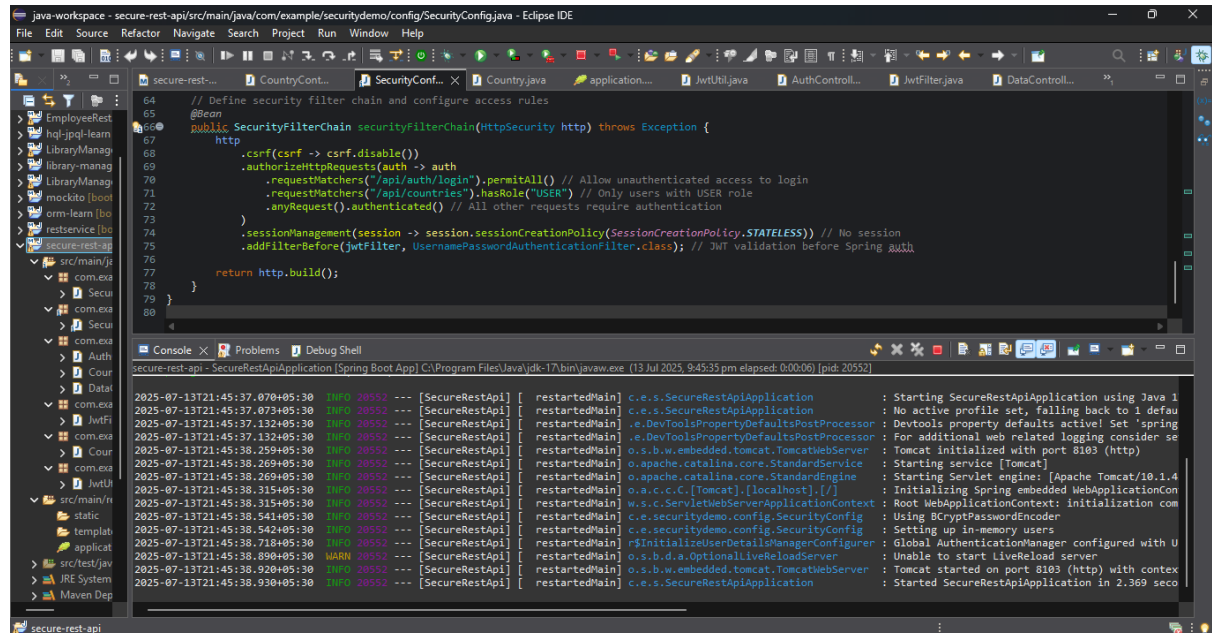
The screenshot shows the Eclipse IDE with the `DataController.java` file open. The code defines a `DataController` class with a `securedEndpoint()` method that returns a string. The console output shows the application starting successfully on port 8102.

```
1 package com.example.securitydemo.controller;
2
3 import org.springframework.web.bind.annotation.*;
4
5 @RestController
6 @RequestMapping("/api/data")
7 public class DataController {
8
9     @GetMapping("/secured")
10    public String securedEndpoint() {
11        return "Accessed secured endpoint with valid JWT!";
12    }
13 }
14
```

```
SecureRestApi - SecureRestApiApplication [Spring Boot App] C:\Program Files\Java\jdk-17\bin\javaw.exe (13 Jul 2025, 9:40:58 pm elapsed: 0:00:07) [pid: 14316]
2025-07-13T21:41:00.023+05:30 INFO 14316 --- [SecureRestApi] [ restartedMain] c.e.s.SecureRestApiApplication : Starting SecureRestApiApplication using Java 1
2025-07-13T21:41:00.032+05:30 INFO 14316 --- [SecureRestApi] [ restartedMain] c.e.s.SecureRestApiApplication : No active profile set, falling back to 1 defau
2025-07-13T21:41:00.137+05:30 INFO 14316 --- [SecureRestApi] [ restartedMain] .e.DevToolsPropertyDefaultsPostProcessor : DevTools property defaults active! Set 'spring
2025-07-13T21:41:00.137+05:30 INFO 14316 --- [SecureRestApi] [ restartedMain] .e.DevToolsPropertyDefaultsPostProcessor : For additional web related logging consider se
2025-07-13T21:41:01.475+05:30 INFO 14316 --- [SecureRestApi] [ restartedMain] o.s.b.w.embedded.tomcat.TomcatWebServer : Tomcat initialized with port 8102 (http)
2025-07-13T21:41:01.489+05:30 INFO 14316 --- [SecureRestApi] [ restartedMain] o.apache.catalina.core.StandardService : Starting service [Tomcat]
2025-07-13T21:41:01.489+05:30 INFO 14316 --- [SecureRestApi] [ restartedMain] o.apache.catalina.core.StandardEngine : Starting Servlet engine: [Apache Tomcat/10.1.4
2025-07-13T21:41:01.532+05:30 INFO 14316 --- [SecureRestApi] [ restartedMain] o.a.c.c.C.[Tomcat].[localhost].[/] : Initializing Spring embedded WebApplicationCon
2025-07-13T21:41:01.533+05:30 INFO 14316 --- [SecureRestApi] [ restartedMain] w.s.c.ServletWebServerApplicationContext : Root WebApplicationContext: initialization com
2025-07-13T21:41:01.785+05:30 INFO 14316 --- [SecureRestApi] [ restartedMain] c.e.securitydemo.config.SecurityConfig : Using BCryptPasswordEncoder
2025-07-13T21:41:01.786+05:30 INFO 14316 --- [SecureRestApi] [ restartedMain] c.e.securitydemo.config.SecurityConfig : Creating in-memory users
2025-07-13T21:41:01.972+05:30 INFO 14316 --- [SecureRestApi] [ restartedMain] .e.InitializerUserDetailsManagerConfigurer : Global AuthenticationManager configured with U
2025-07-13T21:41:02.139+05:30 WARN 14316 --- [SecureRestApi] [ restartedMain] o.s.b.d.a.OptionalLiveReloadServer : Unable to start LiveReload server
2025-07-13T21:41:02.174+05:30 INFO 14316 --- [SecureRestApi] [ restartedMain] o.s.b.w.embedded.tomcat.TomcatWebServer : Tomcat started on port 8102 (http) with contex
2025-07-13T21:41:02.185+05:30 INFO 14316 --- [SecureRestApi] [ restartedMain] c.e.s.SecureRestApiApplication : Started SecureRestApiApplication in 2.507 seco
```

Create authentication service that returns JWT

Output:



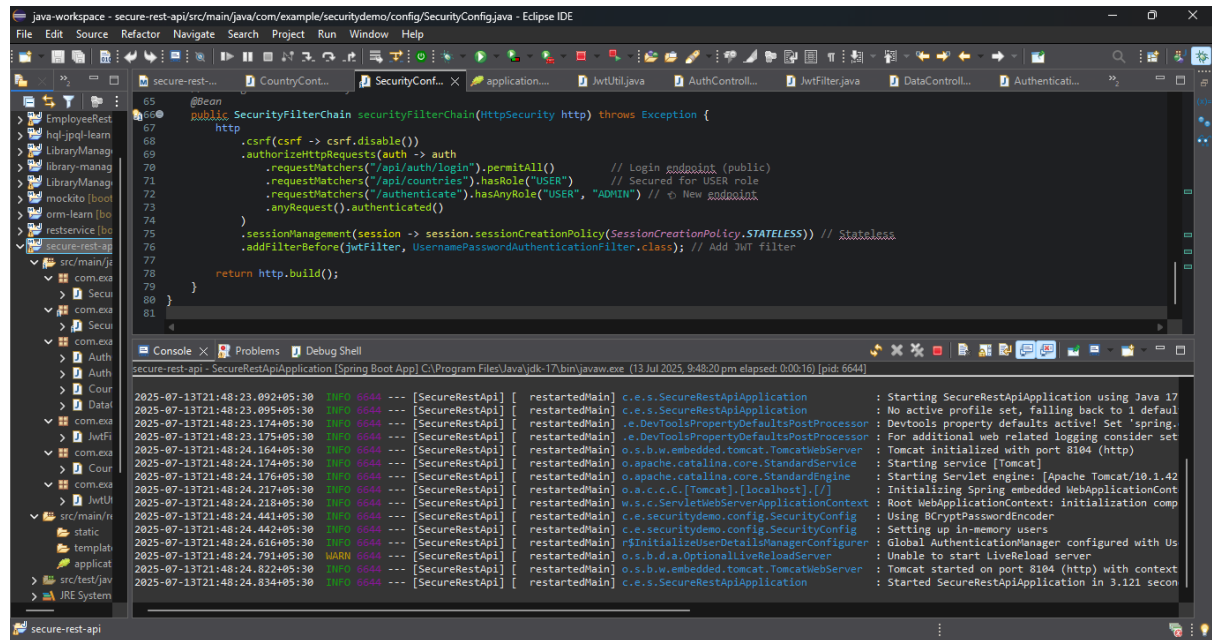
The screenshot shows the Eclipse IDE with the `SecurityConfig.java` file open. The code defines a `SecurityFilterChain` method that configures security rules. The console output shows the application starting successfully on port 8103.

```
64 // Define security filter chain and configure access rules
65 @Bean
66 public SecurityFilterChain securityFilterChain(HttpSecurity http) throws Exception {
67     http
68         .csrf(csrf -> csrf.disable())
69         .authorizeHttpRequests(auth -> auth
70             .requestMatchers("/api/auth/login").permitAll() // Allow unauthenticated access to login
71             .requestMatchers("/api/countries").hasRole("USER") // Only users with USER role
72             .anyRequest().authenticated() // All other requests require authentication
73         )
74         .sessionManagement(session -> session.sessionCreationPolicy(SessionCreationPolicy.STATELESS)) // No session
75         .addFilterBefore(jwtFilter, UsernamePasswordAuthenticationFilter.class); // JWT validation before Spring auth
76
77     return http.build();
78 }
79
80
```

```
SecureRestApi - SecureRestApiApplication [Spring Boot App] C:\Program Files\Java\jdk-17\bin\javaw.exe (13 Jul 2025, 9:45:35 pm elapsed: 0:00:06) [pid: 20552]
2025-07-13T21:45:37.070+05:30 INFO 20552 --- [SecureRestApi] [ restartedMain] c.e.s.SecureRestApiApplication : Starting SecureRestApiApplication using Java 1
2025-07-13T21:45:37.073+05:30 INFO 20552 --- [SecureRestApi] [ restartedMain] c.e.s.SecureRestApiApplication : No active profile set, falling back to 1 defau
2025-07-13T21:45:37.132+05:30 INFO 20552 --- [SecureRestApi] [ restartedMain] .e.DevToolsPropertyDefaultsPostProcessor : DevTools property defaults active! Set 'spring
2025-07-13T21:45:37.132+05:30 INFO 20552 --- [SecureRestApi] [ restartedMain] .e.DevToolsPropertyDefaultsPostProcessor : For additional web related logging consider se
2025-07-13T21:45:38.269+05:30 INFO 20552 --- [SecureRestApi] [ restartedMain] o.s.b.w.embedded.tomcat.TomcatWebServer : Tomcat initialized with port 8103 (http)
2025-07-13T21:45:38.269+05:30 INFO 20552 --- [SecureRestApi] [ restartedMain] o.apache.catalina.core.StandardService : Starting service [Tomcat]
2025-07-13T21:45:38.315+05:30 INFO 20552 --- [SecureRestApi] [ restartedMain] o.apache.catalina.core.StandardEngine : Starting Servlet engine: [Apache Tomcat/10.1.4
2025-07-13T21:45:38.315+05:30 INFO 20552 --- [SecureRestApi] [ restartedMain] o.a.c.c.C.[Tomcat].[localhost].[/] : Initializing Spring embedded WebApplicationCon
2025-07-13T21:45:38.315+05:30 INFO 20552 --- [SecureRestApi] [ restartedMain] w.s.c.ServletWebServerApplicationContext : Root WebApplicationContext: initialization com
2025-07-13T21:45:38.541+05:30 INFO 20552 --- [SecureRestApi] [ restartedMain] c.e.securitydemo.config.SecurityConfig : Using BCryptPasswordEncoder
2025-07-13T21:45:38.542+05:30 INFO 20552 --- [SecureRestApi] [ restartedMain] c.e.securitydemo.config.SecurityConfig : Setting up in-memory users
2025-07-13T21:45:38.718+05:30 INFO 20552 --- [SecureRestApi] [ restartedMain] .e.InitializerUserDetailsManagerConfigurer : Global AuthenticationManager configured with U
2025-07-13T21:45:38.890+05:30 WARN 20552 --- [SecureRestApi] [ restartedMain] o.s.b.d.a.OptionalLiveReloadServer : Unable to start LiveReload server
2025-07-13T21:45:38.920+05:30 INFO 20552 --- [SecureRestApi] [ restartedMain] o.s.b.w.embedded.tomcat.TomcatWebServer : Tomcat started on port 8103 (http) with contex
2025-07-13T21:45:38.930+05:30 INFO 20552 --- [SecureRestApi] [ restartedMain] c.e.s.SecureRestApiApplication : Started SecureRestApiApplication in 2.369 seco
```

Create authentication controller and configure it in SecurityConfig

Output:



The screenshot shows the Eclipse IDE with the `SecurityConfig.java` file open. The code defines a `SecurityFilterChain` for `HttpSecurity`. It configures CSRF to be disabled, sets up request matchers for login, countries, and authentication endpoints, and configures session management to be stateless. A `JwtFilter` is added before the `UsernamePasswordAuthenticationFilter`. The console output shows the application starting successfully on port 8104.

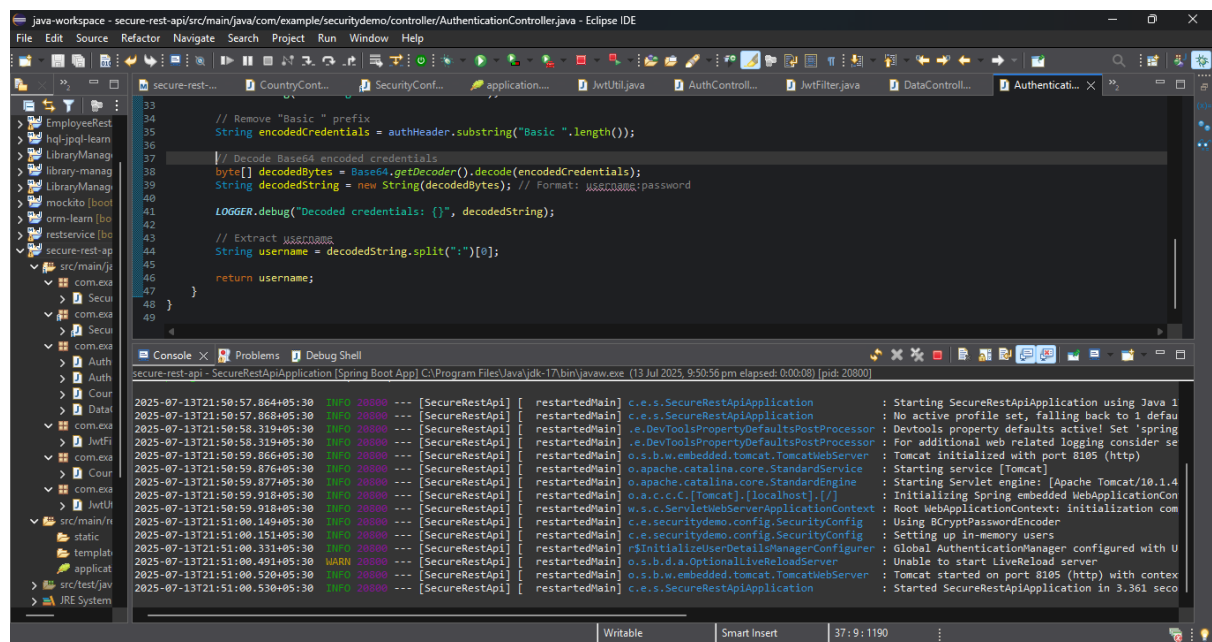
```
65 @Bean
66 public SecurityFilterChain securityFilterChain(HttpSecurity http) throws Exception {
67     http
68         .csrf(csrf -> csrf.disable())
69         .authorizeHttpRequests(auth -> auth
70             .requestMatchers("/api/auth/login").permitAll() // Login endpoint (public)
71             .requestMatchers("/api/countries").hasRole("USER") // Secured for USER role
72             .requestMatchers("/authenticate").hasAnyRole("USER", "ADMIN") // New endpoint
73             .anyRequest().authenticated()
74         )
75         .sessionManagement(session -> session.sessionCreationPolicy(SessionCreationPolicy.STATELESS)) // Stateless
76         .addFilterBefore(jwtFilter, UsernamePasswordAuthenticationFilter.class); // Add JWT filter
77
78     return http.build();
79 }
80
81
```

Console Output:

```
2025-07-13T21:48:23.092+05:30 INFO 6644 --- [SecureRestApi] [ restartedMain] c.e.s.SecureRestApiApplication : Starting SecureRestApiApplication using Java 17
2025-07-13T21:48:23.095+05:30 INFO 6644 --- [SecureRestApi] [ restartedMain] c.e.s.SecureRestApiApplication : No active profile set, falling back to 1 default
2025-07-13T21:48:23.174+05:30 INFO 6644 --- [SecureRestApi] [ restartedMain] e.DevToolsPropertyDefaultsPostProcessor : DevTools property defaults active! Set 'spring.
2025-07-13T21:48:23.175+05:30 INFO 6644 --- [SecureRestApi] [ restartedMain] e.DevToolsPropertyDefaultsPostProcessor : For additional web related logging consider set
2025-07-13T21:48:24.164+05:30 INFO 6644 --- [SecureRestApi] [ restartedMain] o.s.b.w.embedded.tomcat.TomcatWebServer : Tomcat initialized with port 8104 (http)
2025-07-13T21:48:24.174+05:30 INFO 6644 --- [SecureRestApi] [ restartedMain] o.apache.catalina.core.StandardService : Starting service [Tomcat]
2025-07-13T21:48:24.176+05:30 INFO 6644 --- [SecureRestApi] [ restartedMain] o.apache.catalina.core.StandardEngine : Starting Servlet engine: [Apache Tomcat/10.1.42
2025-07-13T21:48:24.217+05:30 INFO 6644 --- [SecureRestApi] [ restartedMain] o.a.c.c.C.[Tomcat].[localhost].[/] : Initializing Spring embedded WebApplicationContext
2025-07-13T21:48:24.218+05:30 INFO 6644 --- [SecureRestApi] [ restartedMain] w.s.c.ServletWebServerApplicationContext : Root WebApplicationContext: initialization comp
2025-07-13T21:48:24.441+05:30 INFO 6644 --- [SecureRestApi] [ restartedMain] c.e.securitydemo.config.SecurityConfig : Using BCryptPasswordEncoder
2025-07-13T21:48:24.442+05:30 INFO 6644 --- [SecureRestApi] [ restartedMain] c.e.securitydemo.config.SecurityConfig : Setting up in-memory users
2025-07-13T21:48:24.616+05:30 INFO 6644 --- [SecureRestApi] [ restartedMain] r$InitializeUserDetailsManagerConfigurer : Global AuthenticationManager configured with Us
2025-07-13T21:48:24.791+05:30 INFO 6644 --- [SecureRestApi] [ restartedMain] o.s.b.d.a.OptionalLiveReloadServer : Unable to start LiveReload server
2025-07-13T21:48:24.822+05:30 INFO 6644 --- [SecureRestApi] [ restartedMain] o.s.b.w.embedded.tomcat.TomcatWebServer : Tomcat started on port 8104 (http) with context
2025-07-13T21:48:24.834+05:30 INFO 6644 --- [SecureRestApi] [ restartedMain] c.e.s.SecureRestApiApplication : Started SecureRestApiApplication in 3.121 secon
```

Read Authorization header and decode the username and password

Output:



The screenshot shows the Eclipse IDE with the `AuthenticationController.java` file open. The code extracts the username from a Basic authentication header. The console output shows the application starting successfully on port 8105.

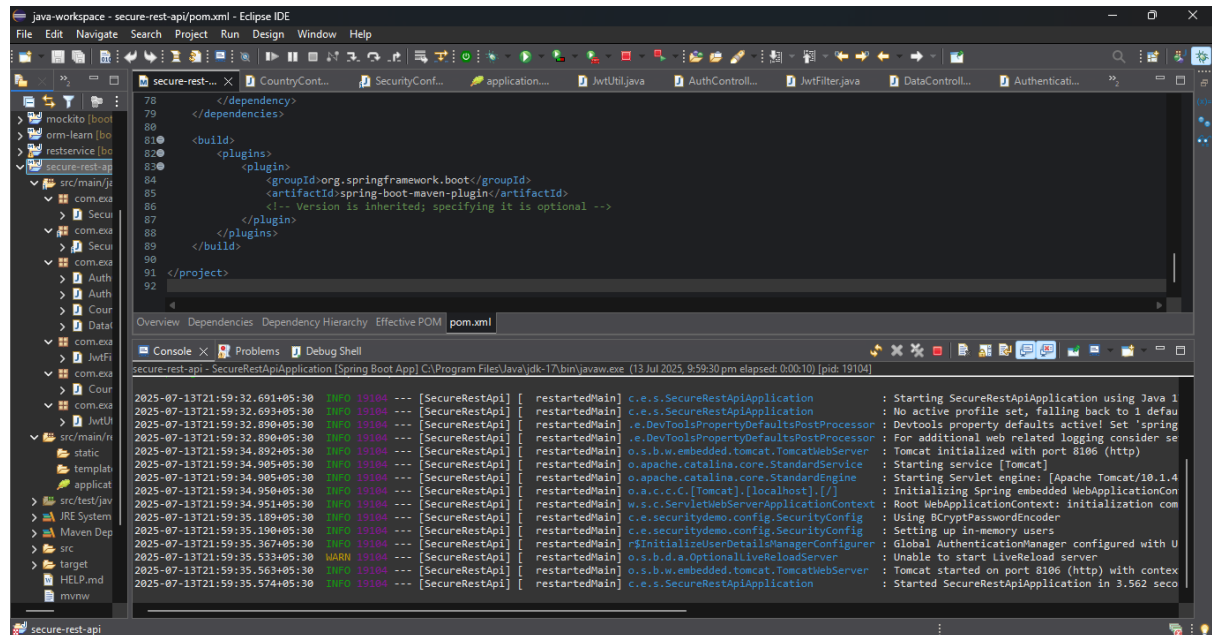
```
33
34 // Remove "Basic " prefix
35 String encodedCredentials = authHeader.substring("Basic ".length());
36
37 // Decode Base64 encoded credentials
38 byte[] decodedBytes = Base64.getDecoder().decode(encodedCredentials);
39 String decodedString = new String(decodedBytes); // Format: username:password
40
41 LOGGER.debug("Decoded credentials: {}", decodedString);
42
43 // Extract username
44 String username = decodedString.split(":")[0];
45
46 return username;
47 }
48
49
```

Console Output:

```
2025-07-13T21:50:57.864+05:30 INFO 20800 --- [SecureRestApi] [ restartedMain] c.e.s.SecureRestApiApplication : Starting SecureRestApiApplication using Java 1
2025-07-13T21:50:57.868+05:30 INFO 20800 --- [SecureRestApi] [ restartedMain] c.e.s.SecureRestApiApplication : No active profile set, falling back to 1 defau
2025-07-13T21:50:58.319+05:30 INFO 20800 --- [SecureRestApi] [ restartedMain] e.DevToolsPropertyDefaultsPostProcessor : DevTools property defaults active! Set 'spring.
2025-07-13T21:50:58.366+05:30 INFO 20800 --- [SecureRestApi] [ restartedMain] e.DevToolsPropertyDefaultsPostProcessor : For additional web related logging consider se
2025-07-13T21:50:58.876+05:30 INFO 20800 --- [SecureRestApi] [ restartedMain] o.s.b.w.embedded.tomcat.TomcatWebServer : Tomcat initialized with port 8105 (http)
2025-07-13T21:50:58.877+05:30 INFO 20800 --- [SecureRestApi] [ restartedMain] o.apache.catalina.core.StandardService : Starting service [Tomcat]
2025-07-13T21:50:58.877+05:30 INFO 20800 --- [SecureRestApi] [ restartedMain] o.apache.catalina.core.StandardEngine : Starting Servlet engine: [Apache Tomcat/10.1.4
2025-07-13T21:50:59.918+05:30 INFO 20800 --- [SecureRestApi] [ restartedMain] o.a.c.c.C.[Tomcat].[localhost].[/] : Initializing Spring embedded WebApplicationCon
2025-07-13T21:50:59.918+05:30 INFO 20800 --- [SecureRestApi] [ restartedMain] w.s.c.ServletWebServerApplicationContext : Root WebApplicationContext: initialization con
2025-07-13T21:51:00.149+05:30 INFO 20800 --- [SecureRestApi] [ restartedMain] c.e.securitydemo.config.SecurityConfig : Using BCryptPasswordEncoder
2025-07-13T21:51:00.151+05:30 INFO 20800 --- [SecureRestApi] [ restartedMain] c.e.securitydemo.config.SecurityConfig : Setting up in-memory users
2025-07-13T21:51:00.331+05:30 INFO 20800 --- [SecureRestApi] [ restartedMain] r$InitializeUserDetailsManagerConfigurer : Global AuthenticationManager configured with U
2025-07-13T21:51:00.491+05:30 INFO 20800 --- [SecureRestApi] [ restartedMain] o.s.b.d.a.OptionalLiveReloadServer : Unable to start LiveReload server
2025-07-13T21:51:00.520+05:30 INFO 20800 --- [SecureRestApi] [ restartedMain] o.s.b.w.embedded.tomcat.TomcatWebServer : Tomcat started on port 8105 (http) with contex
2025-07-13T21:51:00.530+05:30 INFO 20800 --- [SecureRestApi] [ restartedMain] c.e.s.SecureRestApiApplication : Started SecureRestApiApplication in 3.361 seco
```

Generate token based on the user

Output:



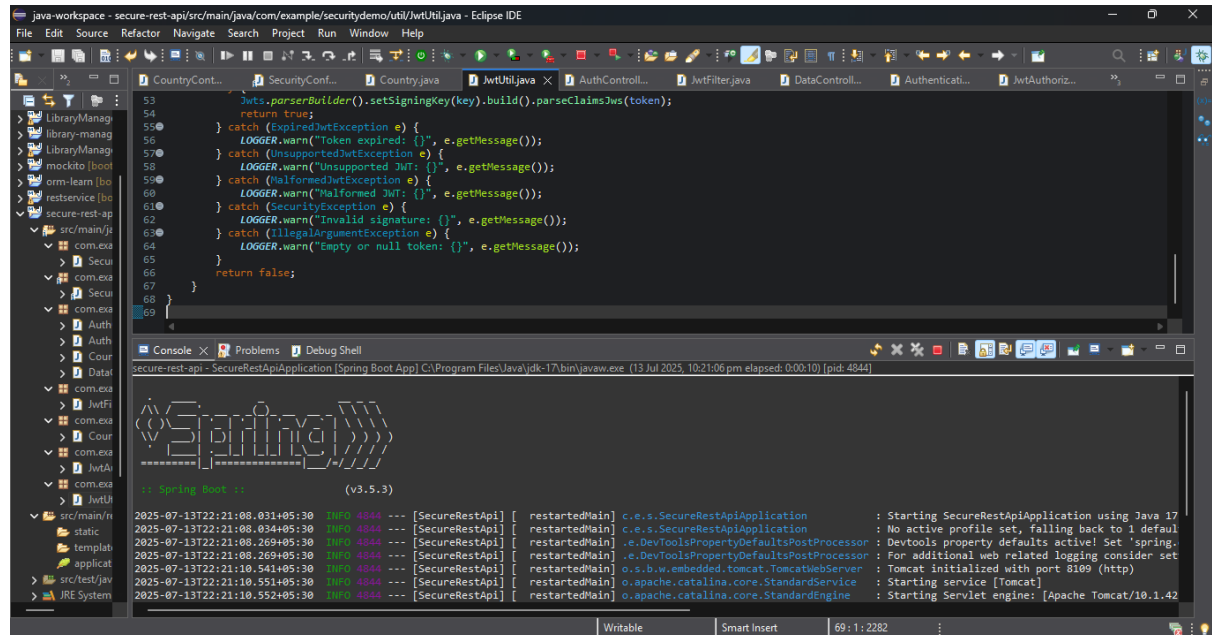
The screenshot shows the Eclipse IDE with the `secure-rest-api` project open. The `pom.xml` file is displayed in the editor, showing dependencies on `spring-boot-starter-web` and `spring-security-oauth2-jwt`. The console output shows the application starting successfully on port 8106.

```
<dependency>
</dependency>
</dependencies>
<build>
<plugins>
<plugin>
<groupId>org.springframework.boot</groupId>
<artifactId>spring-boot-maven-plugin</artifactId>
<!-- Version is inherited; specifying it is optional -->
</plugin>
</plugins>
</build>
</project>
```

```
SecureRestApiApplication [Spring Boot App] C:\Program Files\Java\jdk-17\bin\javaw.exe (13 Jul 2025, 9:59:30 pm elapsed: 0:00:10) [pid: 19104]
INFO 19104 --- [SecureRestApi] [ restartedMain] c.e.s.Securitydemo.config.SecurityConfig : Starting SecureRestApiApplication using Java 1
INFO 19104 --- [SecureRestApi] [ restartedMain] c.e.s.Securitydemo.config.SecurityConfig : No active profile set, falling back to 1 default
INFO 19104 --- [SecureRestApi] [ restartedMain] .e.DevToolsPropertyDefaultsPostProcessor : DevTools property defaults active! Set 'spring
INFO 19104 --- [SecureRestApi] [ restartedMain] .e.DevToolsPropertyDefaultsPostProcessor : For additional web related logging consider se
INFO 19104 --- [SecureRestApi] [ restartedMain] o.s.b.w.embedded.tomcat.TomcatWebServer : Tomcat initialized with port 8106 (http)
INFO 19104 --- [SecureRestApi] [ restartedMain] o.apache.catalina.core.StandardService : Starting service [Tomcat]
INFO 19104 --- [SecureRestApi] [ restartedMain] o.apache.catalina.core.StandardEngine : Starting Servlet engine: [Apache Tomcat/10.1.4
INFO 19104 --- [SecureRestApi] [ restartedMain] o.a.c.c.C.[Tomcat].[localhost].[/] : Initializing Spring embedded WebApplicationCon
INFO 19104 --- [SecureRestApi] [ restartedMain] w.s.c.ServletWebServerApplicationContext : Root WebApplicationContext: initialization com
INFO 19104 --- [SecureRestApi] [ restartedMain] c.e.securitydemo.config.SecurityConfig : Using BCryptPasswordEncoder
INFO 19104 --- [SecureRestApi] [ restartedMain] c.e.securitydemo.config.SecurityConfig : Setting up in-memory users
INFO 19104 --- [SecureRestApi] [ restartedMain] o.s.b.d.a.OptionalLiveReloadServer : Global AuthenticationManager configured with U
INFO 19104 --- [SecureRestApi] [ restartedMain] o.s.b.d.a.OptionalLiveReloadServer : Unable to start LiveReload server
INFO 19104 --- [SecureRestApi] [ restartedMain] o.s.b.w.embedded.tomcat.TomcatWebServer : Tomcat started on port 8106 (http) with contex
INFO 19104 --- [SecureRestApi] [ restartedMain] c.e.s.Securitydemo.config.SecurityConfig : Started SecureRestApiApplication in 3.562 seco
```

Authorize based on JWT

Output:



The screenshot shows the Eclipse IDE with the `secure-rest-api` project open. The `JwtUtil.java` file is displayed in the editor, showing the `validateToken` method. The console output shows the application starting successfully on port 8109.

```
return true;
} catch (ExpiredJwtException e) {
    LOGGER.warn("Token expired: {}", e.getMessage());
} catch (UnsupportedJwtException e) {
    LOGGER.warn("Unsupported JWT: {}", e.getMessage());
} catch (MalformedJwtException e) {
    LOGGER.warn("Malformed JWT: {}", e.getMessage());
} catch (SecurityException e) {
    LOGGER.warn("Invalid signature: {}", e.getMessage());
} catch (IllegalArgumentException e) {
    LOGGER.warn("Empty or null token: {}", e.getMessage());
}
return false;
}
```

```
SecureRestApiApplication [Spring Boot App] C:\Program Files\Java\jdk-17\bin\javaw.exe (13 Jul 2025, 10:21:06 pm elapsed: 0:00:10) [pid: 4844]
INFO 4844 --- [SecureRestApi] [ restartedMain] c.e.s.Securitydemo.config.SecurityConfig : Starting SecureRestApiApplication using Java 17
INFO 4844 --- [SecureRestApi] [ restartedMain] c.e.s.Securitydemo.config.SecurityConfig : No active profile set, falling back to 1 default
INFO 4844 --- [SecureRestApi] [ restartedMain] .e.DevToolsPropertyDefaultsPostProcessor : DevTools property defaults active! Set 'spring
INFO 4844 --- [SecureRestApi] [ restartedMain] .e.DevToolsPropertyDefaultsPostProcessor : For additional web related logging consider set
INFO 4844 --- [SecureRestApi] [ restartedMain] o.s.b.w.embedded.tomcat.TomcatWebServer : Tomcat initialized with port 8109 (http)
INFO 4844 --- [SecureRestApi] [ restartedMain] o.apache.catalina.core.StandardService : Starting service [Tomcat]
INFO 4844 --- [SecureRestApi] [ restartedMain] o.apache.catalina.core.StandardEngine : Starting Servlet engine: [Apache Tomcat/10.1.42
```