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SWAGGER DOCUMENTATION IN JAVA PROJECT

Author: *By VAMOS Team*
Date: February 2, 2024

I. Setup Swagger:

1. Install initial dependencies:

```
<!-- Swagger -->
<dependency>
    <groupId>io.swagger</groupId>
    <artifactId>swagger-annotations</artifactId>
    <version>1.6.13</version>
</dependency>
<dependency>
    <groupId>io.swagger</groupId>
    <artifactId>swagger-jaxrs</artifactId>
    <version>1.6.13</version>   vdmhuan, Yesterday • feat: S03 - 3.4
</dependency>
```

2. Config Bean For Swagger **:**
    a. In the section build -> plugin in the pom file, add the following plugin:

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```
<!-- swagger plugin:  downloads the latest swagger-ui & unpack to target folder -->
<plugin>
    <groupId>com.googlecode.maven-download-plugin</groupId>
    <artifactId>download-maven-plugin</artifactId>
    <version>${download-maven-plugin-version}</version>
    <executions>
        <execution>
            <id>swagger-ui</id>
            <phase>prepare-package</phase>
            <goals>
                <goal>wget</goal>
            </goals>
            <configuration>
                <skipCache>false</skipCache>
                <url>https://github.com/swagger-api/swagger-ui/archive/master.tar.gz</url>
                <unpack>true</unpack>
                <outputDirectory>${project.build.directory}/swagger</outputDirectory>
            </configuration>
        </execution>
    </executions>
</plugin>
```

The first code block will download the latest version of Swagger UI and extract it to the target folder when Maven packages the code.

```
<!-- swagger plugin: copy unpack swagger folder to docs folder -->
<plugin>
    <artifactId>maven-resources-plugin</artifactId>
    <version>${maven-resources-plugin-version}</version>
    <executions>
        <execution>
            <id>copy-resources</id>
            <phase>prepare-package</phase>
            <goals>
                <goal>copy-resources</goal>
            </goals>
            <configuration>
                <outputDirectory>${project.build.directory}/${project.build.finalName}/docs</outputDirectory>
                <resources>
                    <resource>
                        <directory>${project.build.directory}/swagger/swagger-ui-master/dist</directory>
                    </resource>
                </resources>
            </configuration>
        </execution>
    </executions>
</plugin>
```

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The second code block would help us copy that folder into our war file's "docs/" folder. When we deploy our application to Wildfly, we will be able to access Swagger UI by accessing :

http://localhost:8080/agilecourse/docs/index.html

***Note**: Your project application path should be @ApplicationPath("/api"). DO NOT put it empty or like this "/" then you won't able to access Swagger UI's index file

```
</plugin>
<!— move do a token substitution in Swagger-UI's index.html & point to http://localhost:8080/agilecourse/api/swagger.json —>
<plugin>
    <groupId>com.google.code.maven-replacer-plugin</groupId>
    <version>${replacer-version}</version>
    <artifactId>replacer</artifactId>
    <executions>
        <execution>
            <id>replace-swagger-json-location</id>
            <phase>prepare-package</phase>
            <goals>
                <goal>replace</goal>
            </goals>
        </execution>
    </executions>
    <configuration>
        <file>${project.build.directory}/${project.build.finalName}/docs/swagger-initializer.js</file>
        <replacements>
            <replacement>
                <token>https://petstore.swagger.io/v2/swagger.json</token>
                <value>http://localhost:8080/agilecourse/swagger.json</value>
            </replacement>
            <replacement>
                <token>deepLinking: true</token>
                <value>deepLinking: true, validatorUrl : false</value>
            </replacement>
        </replacements>
    </configuration>
</plugin>
```

The last one will replace the default JSON URL (which is https://petstore.swagger.io/v2/swagger.json) with our application swagger JSON file which is initialed by swagger-jars

II. Config Swagger:

1. Create a properties file: swagger.properties with this information:

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pom.xml (agilecourse) | swagger.properties

```
application.version=0.3.0
application.host-domain=localhost:8080
application.base-path=agilecourse
application.resource-package=com.axonactive.agilecourse
application.swagger.title=Agile Course
application.swagger.description=List of all available API from Agile Course application with fully detailed description
```

2. Create a Swagger config class with all header sections that should be stored in a properties file and pass to argument fields through ResourceBundle rather than pass string value directly and also config authorize:

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pom.xml (agilecourse) | JwtConfig.java | SwaggerConfig.java | UniversityResource.java | JwtProvider.java | swagger.properties

```
15
    vdmhuan
16  @ApplicationPath("")
17  @SwaggerDefinition(securityDefinition = @SecurityDefinition(
18          apiKeyAuthDefinitions = {
19                  @ApiKeyAuthDefinition(
20                          key = HttpHeaders.AUTHORIZATION,
21                          name = HttpHeaders.AUTHORIZATION,
22                          in = ApiKeyAuthDefinition.ApiKeyLocation.HEADER
23                  )
24          }
25  ))
26  public class SwaggerConfig extends Application {
        6 usages
27      private static final ResourceBundle bundle = ResourceBundle.getBundle( baseName: "swagger");
        1 usage
28      private static final String APPLICATION_VERSION = bundle.getString( key: "application.version");
        1 usage
29      private static final String APPLICATION_HOST_DOMAIN = bundle.getString( key: "application.host-domain");
        1 usage
30      private static final String APPLICATION_BASE_PATH = bundle.getString( key: "application.base-path");
        1 usage
31      private static final String APPLICATION_RESOURCE_PACKAGE = bundle.getString( key: "application.resource-package");
        1 usage
32      private static final String APPLICATION_SWAGGER_TITLE = bundle.getString( key: "application.swagger.title");
        1 usage
33      private static final String APPLICATION_SWAGGER_DESCRIPTION = bundle.getString( key: "application.swagger.description");
34
        no usages   vdmhuan
35  @       public SwaggerConfig(@Context ServletConfig servletConfig) {
36          BeanConfig beanConfig = new BeanConfig();
37          beanConfig.setVersion(APPLICATION_VERSION);
38          beanConfig.setSchemes(new String[]{"http"});
39          beanConfig.setHost(APPLICATION_HOST_DOMAIN);
40          beanConfig.setBasePath(APPLICATION_BASE_PATH);
41          beanConfig.setResourcePackage(APPLICATION_RESOURCE_PACKAGE);
42          beanConfig.setTitle(APPLICATION_SWAGGER_TITLE);
43          beanConfig.setDescription(APPLICATION_SWAGGER_DESCRIPTION);
44          beanConfig.setScan(true);
45          servletConfig.getServletName();
46      }
47  }
48
```

List of all available API from Agile Course application with fully detailed description

Schemes
HTTP

Authorize

3. To make our Swagger page get API in the resource layer, input these lines to help Swagger get API:

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```
vdmhuan +2
@Path("courses")
@Api(tags = "Courses API")
public class CourseResource {
    2 usages
    @Inject
    CourseService courseService;
```

```
Tran Manh Thang
@GET
@Produces({MediaType.APPLICATION_JSON})
@ApiOperation(value = "Get all course list")
@ApiResponses({
        @ApiResponse(
                code = 200,
                message = "Get all course list successfully",
                response = Course.class, responseContainer = "List"
        ),
        @ApiResponse(
                code = 500,
                message = "Request cannot be fulfilled through browser due to server-side problems"
        )
})
public Response getAllCourses() { return Response.ok().entity(courseService.findAll()).build(); }
```

Swagger will automatically generate the application JSON file @ and map it as below in the picture:

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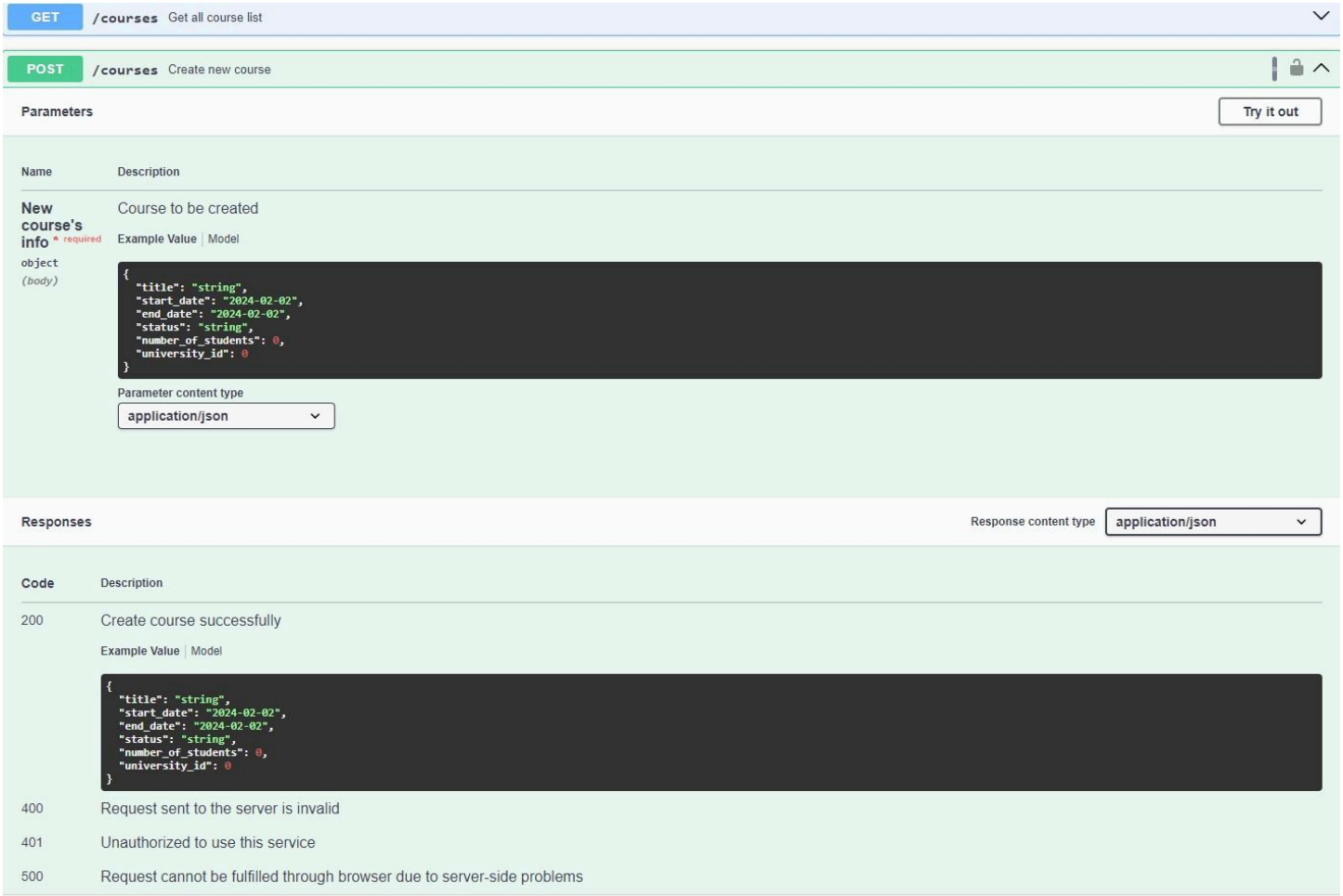

4. To create the required information and show it on Swagger UI just use **@ApiParam**:

```
public Response addCourse(@ApiParam(value = "Course to be created",
        required = true, name = "New course's info") @Valid CreateCourseDTO createCourseDTO) throws Exception {
    return Response.ok().entity(new ResponseBody(
            Response.Status.OK.getStatusCode(),
            message: "Create course successfully.",
            courseService.add(createCourseDTO)
    )).build();
}
```

5. Some of the functions need authorization and we are using bearer token authenticate. Next to the function has a lock icon press it:

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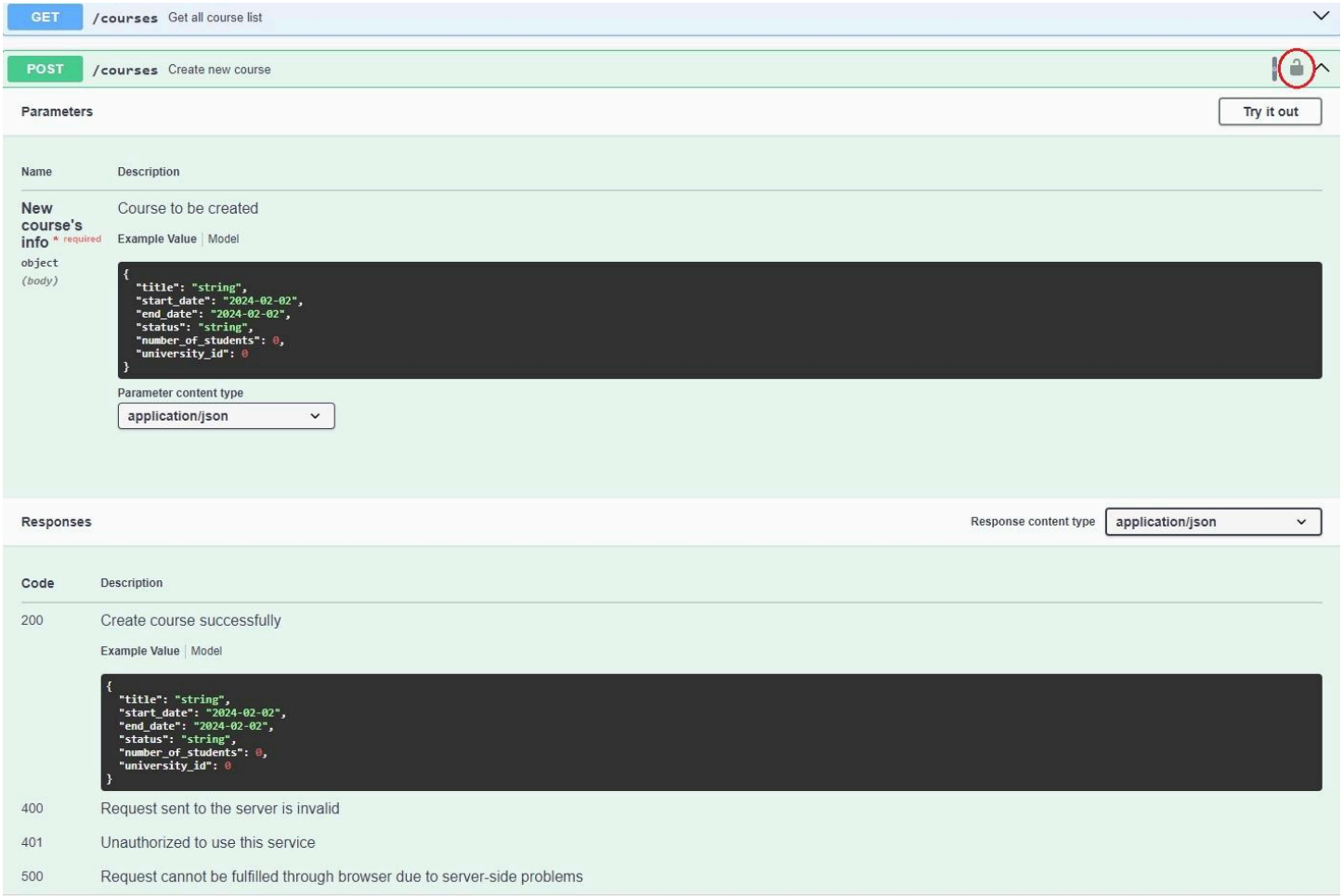

a. A screen will pop it. Write “Bearer” in the input box then insert the valid token:

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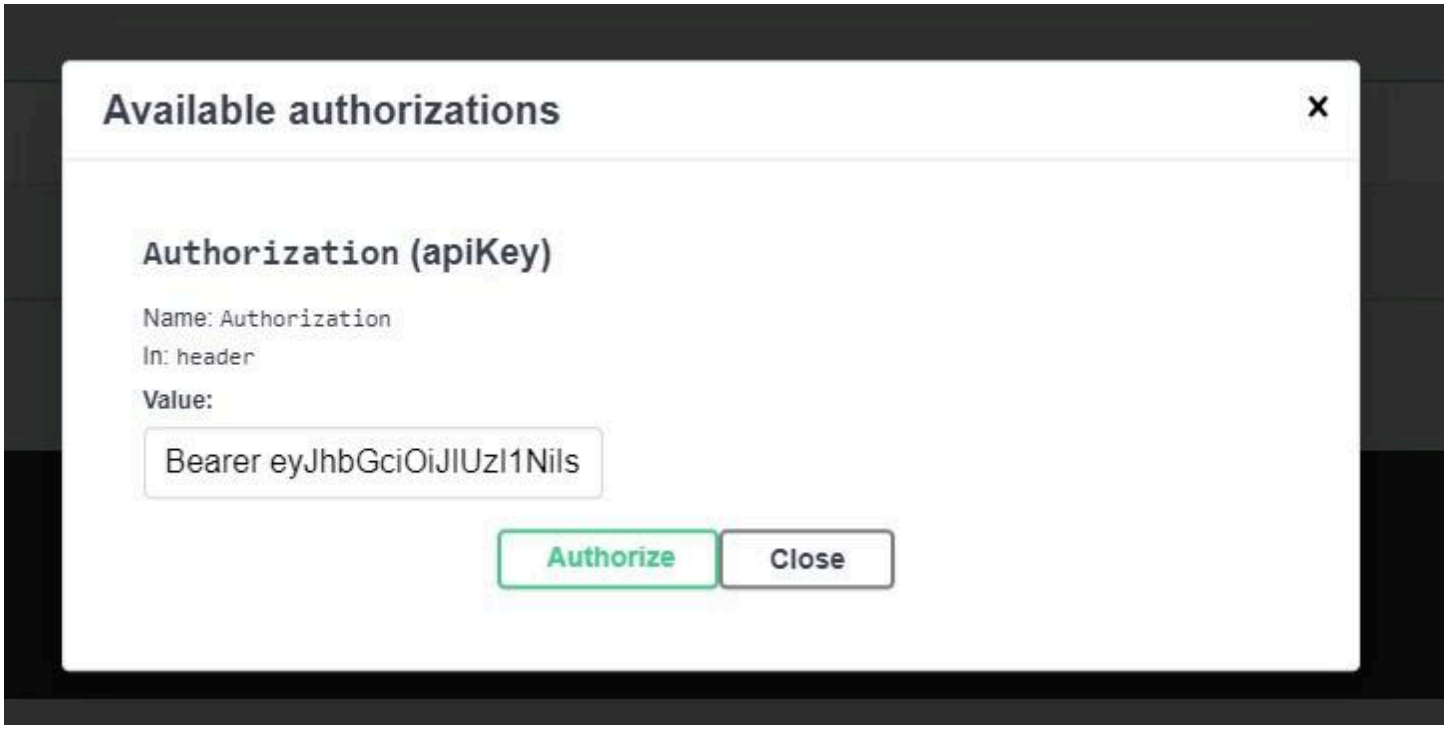

III. Swagger Annotation:

Name	Description
@Api	Marks a class as a Swagger resource.
@ApiImplicitParam	Represents a single parameter in an API Operation.
@ApiImplicitParams	A wrapper to allow a list of multiple ApiImplicitParam objects.
@ApiModel	Provides additional information about Swagger models.
@ApiModelProperty	Adds and manipulates data of a model property.
@ApiOperation	Describes an operation or typically an HTTP method against a specific path.

@ApiParam	Adds additional meta-data for operation parameters.
@ApiResponse	Describes a possible response to an operation.
@ApiResponses	A wrapper to allow a list of multiple ApiResponse objects.
@Authorization	Declares an authorization scheme to be used on a resource or an operation.
@AuthorizationScope	Describes an OAuth2 authorization scope.

IV. References

For more information and features, please go to:

- AgileSkills/Swagger/2023_10_SET UP SWAGGER FOR JAVA EE PROJECT
- https://github.com/swagger-api/swagger-core/wiki/Annotations