

Web API Design with Spring Boot Week 15 Coding Assignment

Points possible: 75


URL to GitHub Repository:<https://github.com/oalinares/Week13AndOnSpringBoot>

URL to Public Link of your Video:


https://www.youtube.com/watch?v=BDnh8g5RBk4&ab_channel=OscarLinares

Instructions :

1. Follow the **Coding Steps** below to complete this assignment.

- In Spring Tool Suite (STS), or an IDE of your choice, write the code that accomplishes the objectives listed below. Ensure that the code compiles and runs as directed.
- Use your existing repo or create a new repository on GitHub for this week's assignment and push your completed code to the repo, including your entire Maven Project Directory (e.g., jeep-sales) and any additional files (e.g. .sql files) that you create. In addition, screenshot your ERD and push the screenshot to your GitHub repo.
- Include the screenshots into this Assignment Document indicated by: 
- Create a video showcasing your work:
 - In this video: record and present your project verbally while showing the results of the working project.
 - Easy way to Create a video: Start a meeting in Zoom, share your screen, open Eclipse with the code and your Console window, start recording & record yourself describing and running the program showing the results.
 - Your video should be a maximum of 5 minutes.
 - Upload your video with a public link.
 - Easy way to Create a Public Video Link: Upload your video recording to YouTube with a public link.


2. In addition, please include the following in your Coding Assignment Document:

- The requested screenshots, indicated by: 
- The URL for this week's GitHub repository.
- The URL of the public link of your video.

3. Save the Coding Assignment Document as a .pdf and do the following:

- Push the .pdf to the GitHub repo for this week.
 - Upload the .pdf to the LMS in your Coding Assignment Submission.
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Web API Design with Spring Boot Week 15 Coding Assignment

Here's a friendly tip: as you watch the videos, code along with the videos. This will help you with the homework. When a screenshot is required, look for the icon:  You will keep adding to this project throughout this part of the course. When it comes time for the final project, use this project as a starter.

Project Resources:

<https://github.com/promineotech/Spring-Boot-Course-Student-Resources>

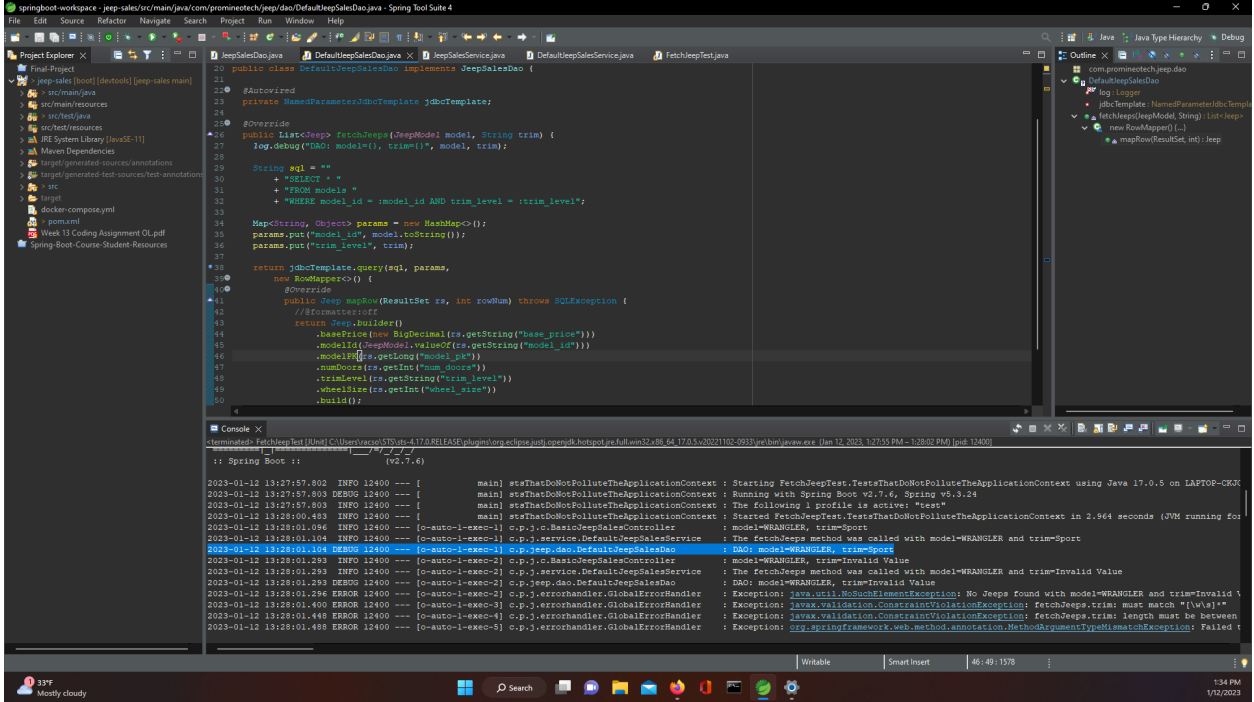
Coding Steps:

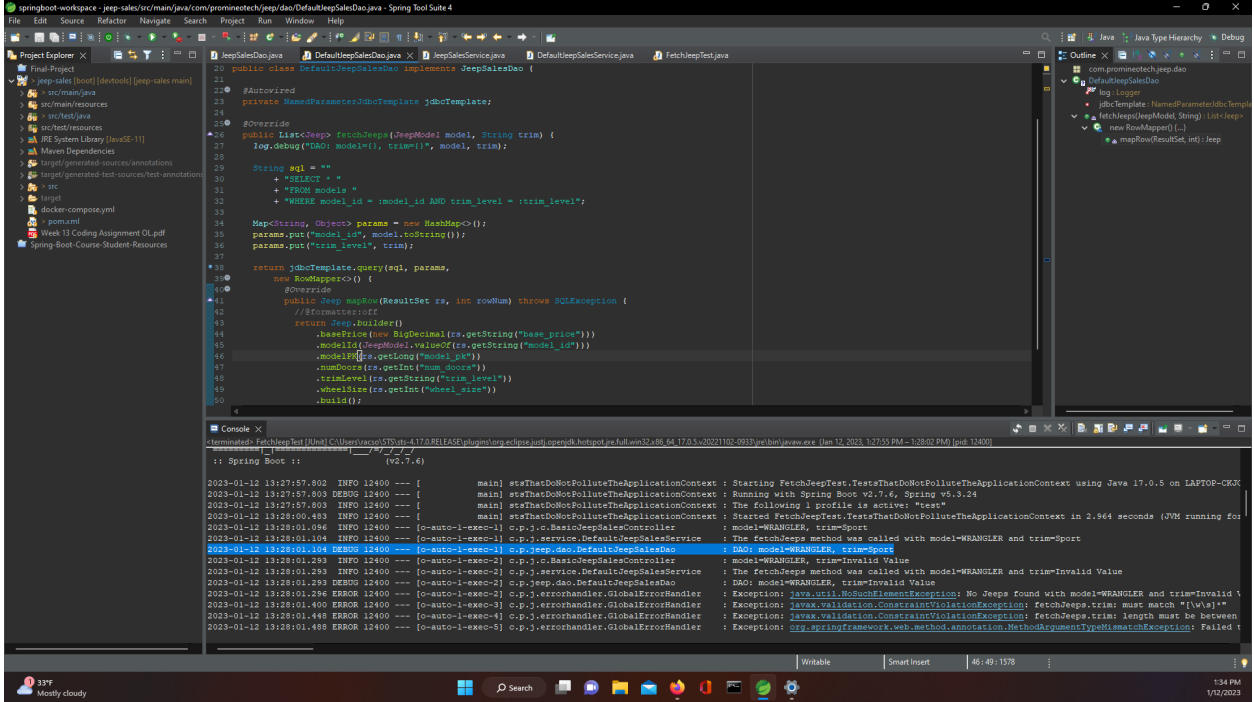
- 1) In the application you've been building add a DAO layer:
 - a) Add the package, `com.promineotech.jeepp.dao`.
 - b) In the new package, create an interface named `JeepSalesDao`.
 - c) In the same package, create a class named `DefaultJeepSalesDao` that implements `JeepSalesDao`.
 - d) Add a method in the DAO interface and implementation that returns a list of Jeep models (class `Jeep`) and takes the model and trim parameters. Here is the method signature:

```
List<Jeep> fetchJeeps(JeepModel model, String trim);
```
- 2) In the Jeep sales service implementation class, inject the DAO interface as an instance variable. The instance variable should be `private` and should be named `jeepSalesDao`. Call the DAO method from the service method and store the returned value in a local variable named `jeeps`. Return the value in the `jeeps` variable (we will add to this later).

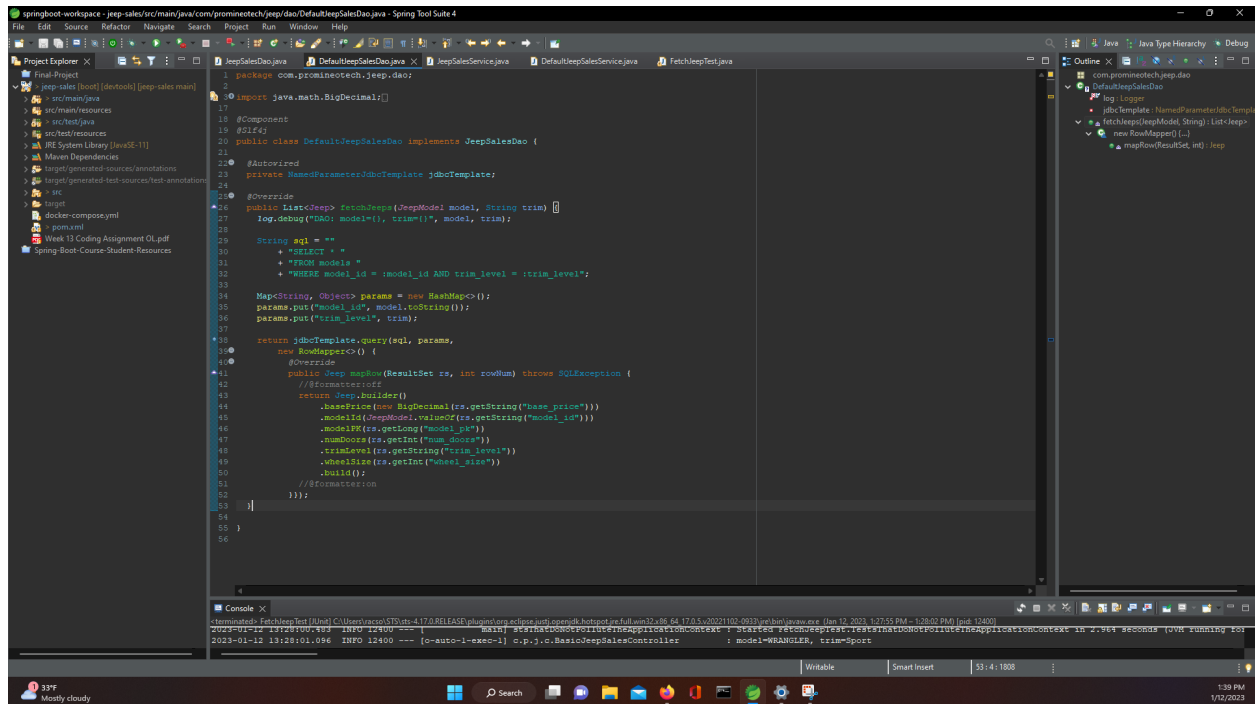
Web API Design with Spring Boot Week 15 Coding Assignment

3) In the DAO implementation class (DefaultJeepSalesDao):


- Add the class-level annotation: `@Service`.
- Add a log statement in `DefaultJeepSalesDao.fetchJeeps()` that logs the model and trim level. Run the integration test. Produce a screenshot showing the DAO implementation class and the log line in the IDE's console. 

- In `DefaultJeepSalesDao`, inject an instance variable of type `NamedParameterJdbcTemplate`.
- Write SQL to return a list of Jeep models based on the parameters: model and trim. Be sure to utilize the SQL Injection prevention mechanism of the `NamedParameterJdbcTemplate` using `:model_id` and `:trim_level` in the query.
- Add the parameters to a parameter map as shown in the video. Don't forget to convert the `JeepModel` enum value to a String (i.e., `params.put("model_id", model.toString());`)
- Call the query method on the `NamedParameterJdbcTemplate` instance variable to return a list of Jeep model objects. Use a `RowMapper` to map each row of the result set. Remember to convert `modelId` to a `JeepModel`. See the video for details. Produce a screenshot to show the complete method in the implementation class. 

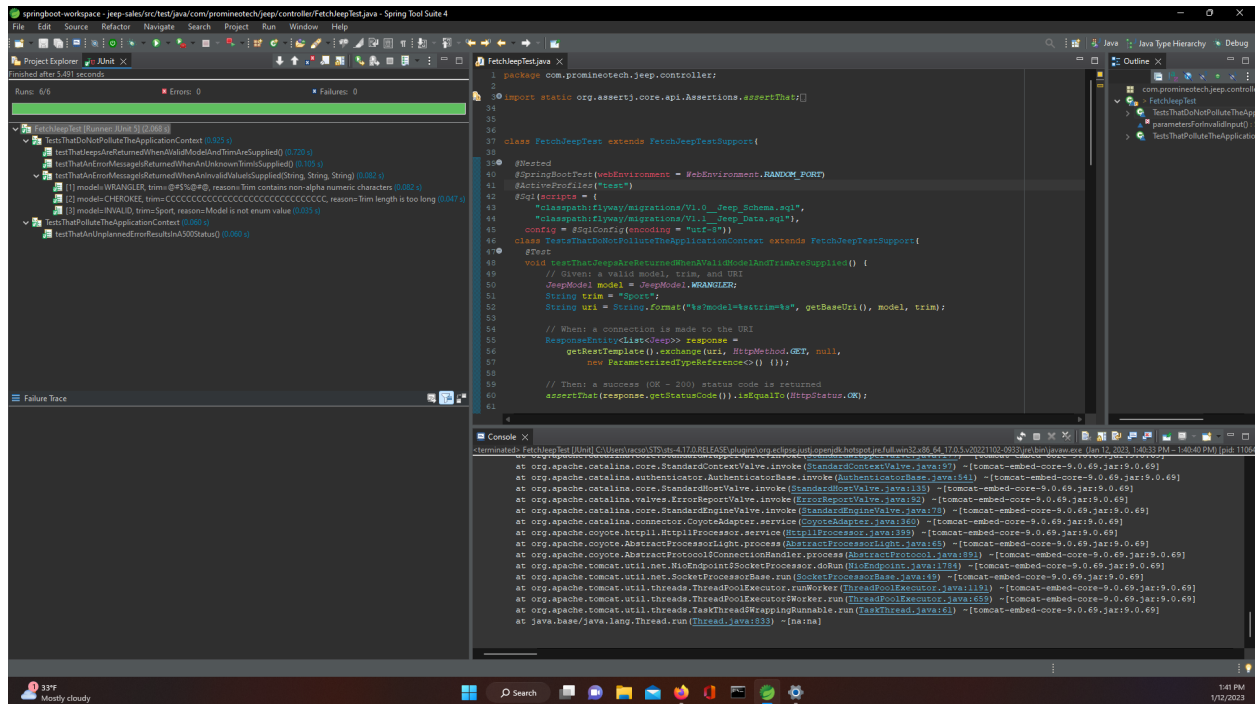
Web API Design with Spring Boot Week 15 Coding Assignment



```
1 package com.promineotech.jeeptest;
2
3 import java.math.BigDecimal;
4
5 @Component
6 @Repository
7 public class DefaultJeepSalesDao implements JeepSalesDao {
8
9     @Autowired
10     private JdbcTemplate jdbcTemplate;
11
12     @Override
13     public List<Jeep> fetchJeeps(JeepModel model, String trim) {
14         log.debug("DAO: model={}, trim={}", model, trim);
15
16         String sql = "
17             SELECT *
18             FROM models
19             WHERE model_id = :model_id AND trim_level = :trim_level";
20
21         Map<String, Object> params = new HashMap<>();
22         params.put("model_id", model.getModelId());
23         params.put("trim_level", trim);
24
25         return jdbcTemplate.query(sql, params,
26             new RowMapper<Jeep>() {
27                 @Override
28                 public Jeep mapRow(ResultSet rs, int rowNum) throws SQLException {
29                     //formatting
30                     return Jeep.builder()
31                         .basePrice(new BigDecimal(rs.getString("base_price")))
32                         .modelId(rs.getModelId().toString())
33                         .modelPK(rs.getLong("model_pk"))
34                         .numDoors(rs.getInt("num_doors"))
35                         .trimLevel(rs.getString("trim_level"))
36                         .wheelSize(rs.getInt("wheel_size"))
37                         .build();
38                 }
39             });
40     }
41
42     @Override
43     public Jeep fetchJeep(JeepModel model, String trim) {
44         log.debug("DAO: model={}, trim={}", model, trim);
45
46         String sql = "
47             SELECT *
48             FROM models
49             WHERE model_id = :model_id AND trim_level = :trim_level";
50
51         Map<String, Object> params = new HashMap<>();
52         params.put("model_id", model.getModelId());
53         params.put("trim_level", trim);
54
55         return jdbcTemplate.queryForObject(sql, params,
56             new RowMapper<Jeep>() {
57                 @Override
58                 public Jeep mapRow(ResultSet rs, int rowNum) throws SQLException {
59                     //formatting
60                     return Jeep.builder()
61                         .basePrice(new BigDecimal(rs.getString("base_price")))
62                         .modelId(rs.getModelId().toString())
63                         .modelPK(rs.getLong("model_pk"))
64                         .numDoors(rs.getInt("num_doors"))
65                         .trimLevel(rs.getString("trim_level"))
66                         .wheelSize(rs.getInt("wheel_size"))
67                         .build();
68                 }
69             });
70     }
71 }
```

- 4) Add a getter in the Jeep class for modelPK. Add the @JsonIgnore annotation to the getter to exclude the modelPK value from the returned object.
- 5) Run the test to produce a green status bar. Produce a screenshot showing the test and the green status bar. 

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The screenshot displays an IDE window for a Spring Boot project. The main editor shows the `FetchJeeptest.java` file, which is a test class extending `FetchJeeptestSupport`. It includes a `@Method` annotation, a `@SpringBootTest` annotation with `webEnvironment = WebEnvironment.RANDOM_PORT`, and a `@SqlScripts` annotation pointing to a migration file. The test class contains a `@Test` method that sets up a `Jeeptest` model, a `String trim`, and a `String url`, then performs a GET request and asserts the response status is 200.

```
1 package com.prominentech.jeeptest.controller;
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3 import static org.assertj.core.api.Assertions.assertThat;
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```

The left sidebar shows the Project Explorer with the following structure:

- com.prominentech.jeeptest.controller
 - FetchJeeptest.java
- com.prominentech.jeeptest.test
 - FetchJeeptestTest.java
- com.prominentech.jeeptest.test.testcases
 - FetchJeeptestTestTestCases.java

The bottom status bar shows the system clock as 1:41 PM on 1/12/2023.