Web API Design with Spring Boot Week 15 Coding Assignment

Points possible: 75

URL to GitHub Repository: https://github.com/Gruber-TK/Spring-Boot-Jeep-Sales-

URL to Public Link of your Video: https://youtu.be/aeXRArDu8UQ

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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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.jeep.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);
```

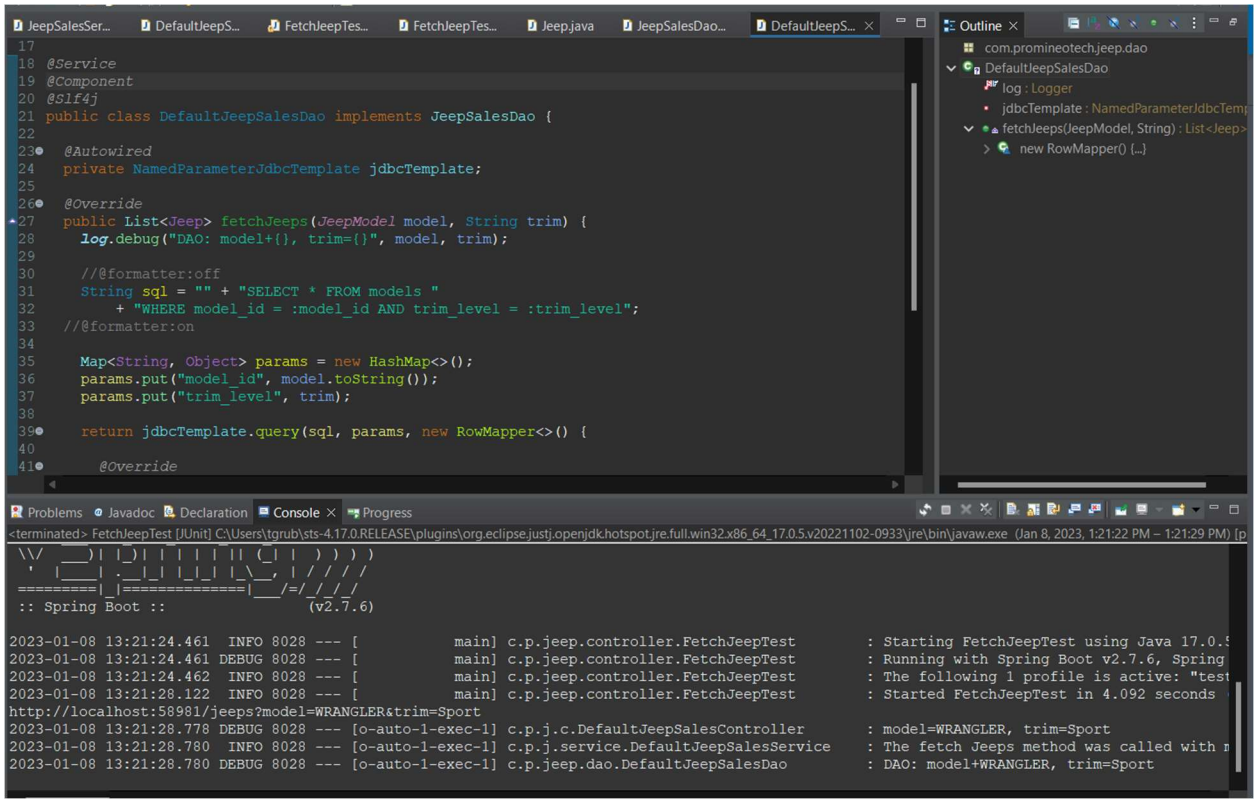
2) In the Jeep sales service implementation class, inject the DAO interface as an instance variable. The instance variable should be `private` and should be named `jeepSalesDao`. Call the DAO method from the service method and store the returned value in a local variable named `jeeps`. Return the value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

3) In the DAO implementation class (`DefaultJeepSalesDao`):

   a) Add the class-level annotation: `@Service`.

   b) 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.

   c)



   d) In `DefaultJeepSalesDao`, inject an instance variable of type `NamedParameterJdbcTemplate`.

   e) 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.

   f) 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());`)

g) 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.

```
@Component
@Slf4j
public class DefaultJeepSalesDao implements JeepSalesDao {

  @Autowired
  private NamedParameterJdbcTemplate jdbcTemplate;

  @Override
  public List<Jeep> fetchJeeps(JeepModel model, String trim) {
    log.debug("DAO: model+{}, trim={}", model, trim);

    //@formatter:off
    String sql = "" + "SELECT * FROM models "
        + "WHERE model_id = :model_id AND trim_level = :trim_level";
  //@formatter:on

    Map<String, Object> params = new HashMap<>();
    params.put("model_id", model.toString());
    params.put("trim_level", trim);

    return jdbcTemplate.query(sql, params, new RowMapper<>() {

      @Override
      public Jeep mapRow(ResultSet rs, int rowNum) throws SQLException {
        //@formatter:off
        return Jeep.builder()
            .basePrice(new BigDecimal(rs.getString("base_price")))
            .modelId(JeepModel.valueOf(rs.getString("model_id")))
            .modelPk(rs.getLong("model_pk"))
            .numDoors(rs.getInt("num_doors"))
            .trimLevel(rs.getString("trim_level"))
            .wheelSize(rs.getInt("wheel_size"))
            .build();
      //@formatter:on
      }});
```

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.