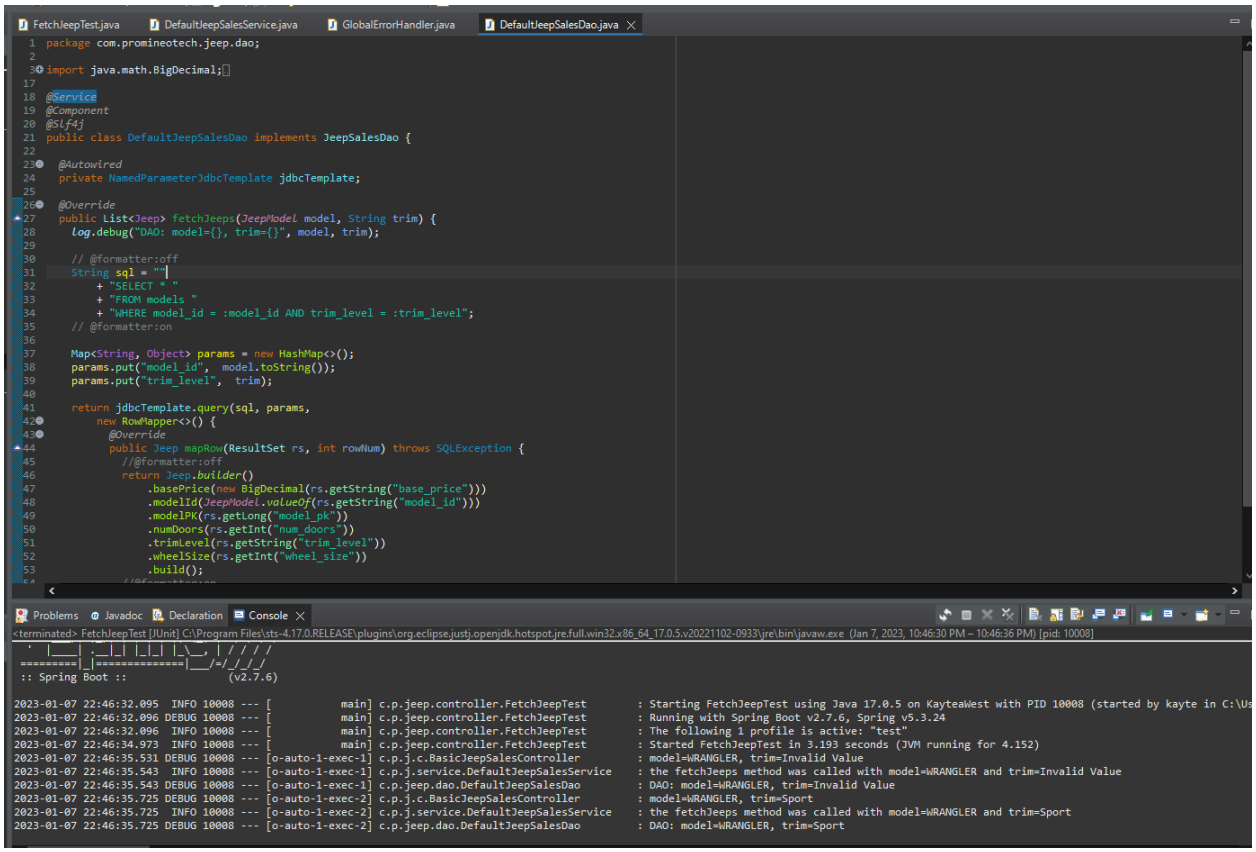
Web API Design with Spring Boot Week 15 Coding Assignment

Points possible: 75

URL to GitHub Repository: https://github.com/kayteawest/PromineoSpringBoot.git

URL to Public Link of your Video:
https://drive.google.com/file/d/1VeN4P-l-9wuiu5-W98kA_VLjMYpWKYEh/view?usp=sharing

Screen Shots:



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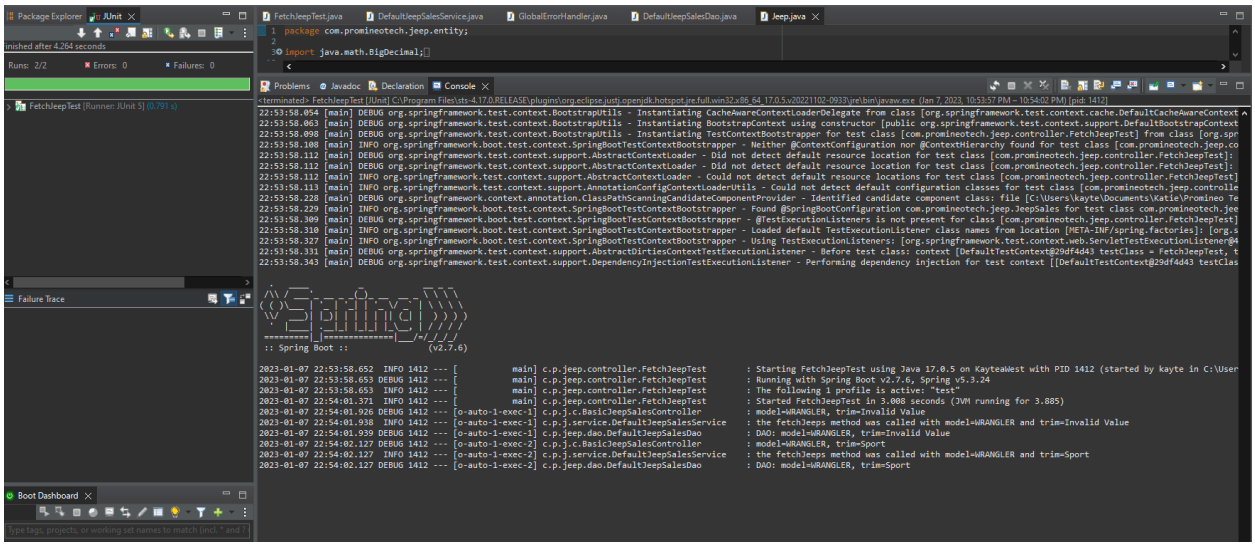
FetchJeepTest.java | DefaultJeepSalesService.java | GlobalErrorHandler.java | DefaultJeepSalesDao.java

```java
@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
          }});
  }

}
```



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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.

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

d) 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.

e) 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());`)

f) 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. 💻

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. 💻