JPA Project

2025-03-18

1 Solve a problem with JPA

1.1 Idea

Since your are now familiar with the general concepts of JPA you'll now apply that knowledge to create an actual application which manages (more or less) meaningful data. Try to use different JPA features and approaches and don't just repeat the same pattern for every entity.

1.2 Tasks

1. Get in groups of 3 or 4
2. Come up with an idea for an application which
   - Has a data model with at least 10 entities
     - At least one master/detail relationship
     - At least one composite key
     - At least one inheritance relation
     - At least *three* complex queries (e.g. `outer joins`, `group by` & `having`, query objects,…)
   - Provides a REST API[1] for inserting, updating and deleting of entities[2].
   - Uses JPA for loading and persisting data
   - Has a sound architecture (Repository Pattern,…)
   - Has a good coverage (unit tests for services, integration tests for repositories)
   - Actually provides a (more or less) useful service
     - Possible examples could be: a (travel) booking system, a car manufacturer, an online calendar,…
3. **Each group has to pick a different topic** – first come, first served
4. Fill the database with *meaningful* test data
   - At least enough entries to show all functions
   - Should be automatically imported if the service starts with a new/empty database
5. Prepare a short demonstration of your project
   - Which features do you provide?
   - How do you use JPA
     - In general (e.g. typed vs. named query, Panache,…)?
     - Which 'special' cases did you encounter and how did you solve them?[3]

[1] For which you can use Quarkus like in previous exercises.

[2] Not for all of them, since some may depend on others.

[3] Very important! I expect everyone to run into at least one issue 😉