Lab session 7

Targets

- Map with JPA annotations the Domain model developed during the previous session
- Map in *Green Field* and *Legacy* scenarios
- Adjust the Domain model implementation to follow the JPA specs
- Verify functionality and mapping with unit tests

Tasks

Map the domain model in Green Field

Please, follow this workflow:

- Copy your domain classes from the previous lab session to the package `uo.ri.cws.domain`.
- Start up the HSQLDB database. There are no tables.
- Check the file `persistence.xml`, ensure this line is **not commented out**:

```
<property name="eclipselink.ddl-generation" value="drop-and-create-tables"/>
```

- Add the abstract class *BaseEntity* as the base class for all entities. This class sets:
    * Subrogated identity based on UUIID (String)
    * A Long attribute for version
    * The `@MappedSuperclass`, `@Id` and `@Version` annotations
- Mark all the attributes of association ends with `@Transient`.
- Map all the entities, one by one, adding `@Entity` as needed.
    * After every class run the support class `JustLoadEntityManagerFactory.java`. That makes the mapper to load the persistence unit and then (re)generate all the tables.
    * Watch the generated tables using the database manager or other tool (DBVisualizer for example).
- Now, map the associations, one by one. Remove the `@Transient` annotation on both sides and add the proper annotation (don't forget *mappedby*). Watch the changes on the database with the tool.
- Map the inheritance around *PaymentMean*. Try the three possible strategies. Observe the tables generated. What is the best?
- Add annotations to the entities so that the database adds a unique index over the natural identity fields: `@Column(unique=true)` and/or `@Table( uniqueConstraints…)`.
- Run all the tests, they all must show green.

Map the Domain model in Legacy

- Stop the database (execute shutdown on the db manager). Then execute the `setLegacy.bat` script. It changes the database data file with one already filled with data. This database has some differences regarding the previous one. The tables have different names, some columns might have different names, some dates are stored with timestamp format, the enums have different format, etc.
- On the file `persistence.xml` **comment out** the line:

```
<!--
<property name="eclipselink.ddl-generation" value="drop-and-create-tables"/>
-->
```

- There are these differences between the two table models:
    * All tables follow the naming convention of *T<Entity>s*. For example: *TClients*, *TVehicles*, etc.
    * The hierarchy around *Payment* uses the *JOINED* strategy.
    * The enumerated fields are stored as VARCHAR (String, not ordinal).
- Make all the previous adjustments until the mapper be able to work with the database and the tests will be green again.