

UnitTest + Hibernate

Question 1: Shopping Cart

Exploit JUnit to test this [program](#)

Specifications

- When created, the cart has 0 items
 - When empty, the cart has 0 items
 - When a new product is added, the number of items must be incremented
 - When a new product is added, the new balance must be the sum of the previous balance plus the cost of the new product
 - When an item is removed, the number of items must be decreased
 - When a product not in the cart is removed, a `ProductNotFoundException` must be thrown
 - Hint: insert the call in a try block and put a `fail()` after the call to `removeItem()`
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Question 2: Converter

Part A: Write a class with a static method that converts a string into an integer value.

Specifications

- The method must accept a string and convert it into an integer
- Well-formed strings do not contain characters different from numbers, trailing spaces, and minus
- The represented number must be in the range `[-32768, 32767]`
- No real numbers are allowed
- OK: “-3”, “500”, “-10”, “32767”
- NO: “2 3”, “32768”, “A3”, “2.3”

Part B: Exploit JUnit to test the defined method

- Test also boundary conditions
- Hint 1: throw an exception in the converter method, and
- test if the exception has been thrown when the method
- is called with bad arguments
- Hint 2: exploit the Integer.parseInt() method for
- both the conversion and the check

Question 3: [Bank System](#)

Question 4: [Elevator simulation](#)

Question 5: Film Entity

Film Entity: Film.java is a business entity that stores some film-related information like file title, description, length, language, rating, and director name in second. Your job is to implement JPA entity mapping

1. Specify id
2. Configure it as an auto-increment column
3. Specify not null constraint for fields name and directory

Film Repository: implement a repository for movies by Hibernate contains these methods

4. save
5. findById
6. findAll
7. update
8. Remove

Implement these queries with the HQL.

- Films produced by director X.
- Movies that have scored more than 9 points.
- The longest film.
- Director name of the longest film.

Question 6: JPA Criteria API

Read this [article](#) and try the article codes yourself
