

# Code Refactoring - 1

July 4, 2020

## 1 Reverse engineering

To do this exercise you will have to load the file `refactoring.tgz` on the web site. This is one of the main example of the book : *Refactoring* , de Martin Fowler et al., Addison-Wesley, 1999.

- Describe the classes inside the package by drawing a class diagram.
- Write the `main` program to implement the following *use case*:
  - A client has lend the 3 movies :
    1. "Rogue One" of type `NEW_RELEASE` during 5 days ,
    2. "Frozen" of type `CHILDREN` during 7 days,
    3. "Star Wars III" of type `REGULAR` during 4 days.
  - Informations about the client will be displayed on the standard output.
- Describe interactions between objects at the runtime.

## 2 Non regression testing

- By using the test framework `junit4` implements the previous *use case* as a non-regression test. This test will compare the `String` returned by the `statement` method to this one that you have written firstly.
- Verify that your test does not work when you modify the calculus rules in the `statement` method.

## 3 Criticisms

- Give your remarks about the state of the application code.
- Give a list of improvements required to satisfy criteria for the lisibility, the maintainability , the re-usability and the extensibility of your code.