

Exercise Sheet 3

Due: Sunday 10.05.2009, 23:59:59 via SVN

For help, contact aosd-staff@lists.iai.uni-bonn.de (staff only) or
aosd-course@lists.iai.uni-bonn.de (staff and participants).

Please start working on the exercises early enough so that you can contact us in time in case of problems. Don't expect us to be available during weekend!

Exercise 1: "Refactoring to AOP" (6 Points)

At the lecture you saw how a "Refactoring to Aspects" is done. In your repository you will find the refactoring project **ES03_E01_RefactoringExercise** from the lecture.

- Redo the refactoring of the lecture. Don't forget to run the Junit-tests after each step.
- Some of the tests are using [privileged actions](#). To make the code more readable you can do some refactorings. Add an annotation `@Privileged` to the tests that use privileged operations. Then move the code that is necessary to execute the privileged action into an aspect.

Before you can run the tests you will have to adapt the *banking.policy* file as described in *notes.jpape*.

Exercise 2: "call vs. execution – dynamic vs. static types" (4 Points)

The project **ES03_E02_CallExecution** has some aspects with identical call and execution pointcuts. There are as well variations of this pointcuts that use `this`, `target`, `args`. Analyse the difference between the pointcuts and come up with a systematic and meaningful summary of the Joinpoints that the different pointcuts affect.

Exercise 3: "cflow, thisJoinPoint" (6 Points)

The project **ES03_E03_PerfectSurveillance** has two advices that should give you information about every Joinpoint that result from the invocation of the main method. Till now it only gives you information about the execution Joinpoint of the main method itself. Complete the pointcut.

Let the advice provide useful information. We want to see at least the kind of the Joinpoint and its signature. But there is more information available. Use `thisJoinPoint` (and variants) as well as the dynamic pointcuts `this`, `target`, and `args`.

Study the output of the advice, look up the Joinpoints that you don't know, and be ready to explain the output.