Principles of Object Oriented Languages (POOL)
Exam assignment 2012-2013

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General

This document describes the paper that students of the course "Principles of Object Oriented Languages" need to write as a mandatory, partial requirement for the course. The deadline for handing in the paper is **Monday, January 14th 2013** (the first day of the exam period; the same deadline as for the project).

Description

As mentioned in the course fiche of "Principles of Object Oriented Languages", two thirds of the grade for the course depends on a position paper that students need to write and present.

There are two main styles of paper you can write.

Style 1: Comparison of two object-oriented languages

For the first kind of paper, you compare *two* object-oriented languages of choice based on the criteria that have been discussed in the lectures of the course. You discuss the differences in purpose of the languages, the underlying inheritance model, variance, the type system, special features, reflection, and so on. For such a paper, we expect you to be as complete as possible. Try to focus on the language properties that are unique to the languages you discuss. Do not focus only on what the differences between the languages are, but also discuss why you think the language designers have opted for these different strategies, and what the impact is on the software engineering properties of the programs written in these languages. One common mistake with these kinds of papers is to start explaining basic concepts such as class-based languages, static typing, and so on. You can assume that the reader of the paper has a background in object-oriented programming languages, so limit your discussion to the interesting properties of the two languages you discuss. Do not waste space discussing the syntactical differences between both languages, the history of the languages and so on.

Install interpreters/compilers for both languages and play around with them. You should include code examples in your paper. Be original in the languages that you choose to compare. Choose two languages that sufficiently differ in order to provide an interesting discussion (for example, a statically and a dy-

namically typed language). It might be a good idea to compare one mainstream language with one lesser well-known language.

Style 2: In-depth study of a single language feature

The second style of paper provides an in-depth discussion of a single topic or language feature (e.g., multiple inheritance, trait-based composition, ...). For this topic, work out a number of examples that show that you understand the subtlest of details regarding your topic. We expect you to provide an implementation of the chosen language feature/topic in the Scheme macro-style OO system that was presented during the course.

Important

- Your paper needs to be handed in via the Pointcarré system and should not exceed *10 pages, two-columns* in PDF format.
- These 10 pages do *not* include code listings, although we prefer that you add these as an appendix to your paper.
- We encourage you to use LaTeX in order to typeset your document.
- Your paper must be written in English.
- While we encourage you to include references to the material you consulted to write your paper, it is **not** allowed to directly copy text from any source.

In order to provide feedback on your choice of languages/language feature, send your preferences as soon as possible (and before the Christmas holidays at the latest) to `akellens@vub.ac.be` and `vuquilla@vub.ac.be`.

Exam

For the exam, we foresee 50 minutes per student. The student is allowed to present his paper during 10 minutes (there will be a discussion of maximum 20 minutes after the presentation). The last 20 minutes of the exam consists of a short demo of the project together with a discussion of the code.