
Essentials of Programming Languages

<http://proglang.informatik.uni-freiburg.de/teaching/konzepte/2015/>

Exercise Sheet 7

7.1 Pairs

In the lecture, pairs were introduced. Extend your *typed* language from the previous exercise to support pairs.

$$e ::= \dots \mid (e, e) \mid \text{left } e \mid \text{right } e$$

Implement a call-by-value behavior for pairs.

7.2 Casts

We would like to extend our language with *type casts*.

- Overload `+` and `*` to accept boolean values (but without changing the type system).
- Implement a `cast` operator that changes the type of a value.

Once adjusted, the following examples should work.

- `cast(true, Int) + 1`
- `cast(cast(1, Bool), Int) + 1`
- `cast((λ x : Int . x)(cast(true, Int)), Bool)`

Submission

Deadline The submission deadline is **19.06.2015, 12:00 (noon)**. Late submissions will not be accepted. Submit your solution to the subversion repository.

Submission Your solution will consist of one *folder* (**exercise7**) for each exercise sheet. Submit one *pdf* file (`<name>_exercise7-<nr>.pdf`) and one *rkt* file (`<name>_exercise7-<nr>.rkt`) per exercise.

Your solution may be either in German or in English. Clear and understandable style is required. You are strongly encouraged to test your solution. Your code must compile without errors (which did not necessarily mean that everything has to work). Provide your source code with comments to understand the intention.