

October 26, 2009

Programming Languages and Types

Group Exercises G2

G2.1 First-Order vs. Higher-Order Functions

Suppose you are using a programming language that supports lists but only first-order functions, i.e. no higher-order functions. In this language, is it possible to define the `filter` function such that it can be used meaningfully?

G2.2 Static vs. Dynamic Scoping

Define a program that yields different results when interpreted using dynamic and static scoping, respectively. Why is dynamic scoping a bad idea in general?

G2.3 Closures

In the environment-based interpreted we introduced so-called closures. What do we need them for? Why did we not need closures in the substitution-based interpreter?