

CSCE 330 Fall 2014
QUIZ 4
Assigned Tuesday, 14-11-25

The two programs below compute the inner (scalar) product of two vectors. The first program is written in FP; the second one is written in Haskell.

1. {ip !+ @ &* @ trans}
2. ip2 = foldr (+) 0 . map mult2a . zip2, where mult2a and zip2 are uncurried versions of (*) and zip, respectively

What are the symbols for composition in FP and Haskell, respectively?

Answer: @ and .

What are the symbols for apply-to-all in FP and Haskell, respectively?

Answer: & and map

Why does FP's insert (!) have only one argument, while the corresponding higher-order function in Haskell, foldr, has two arguments?

Answer: Because !f is not defined for empty sequences. foldr instead works for lists of any length. In particular, foldr f v [] = v. Note that foldr f v [x] = f x v, while !f: <x> = x, so v should be the identity element.