CS 565 Out: April 23, 1998
Jens Palsberg Due: April 30, 1998

Homework 11:

The Fast Control-Flow Analysis

In the following I have used the standard convention that the body of a λ-abstraction extends "as far as possible."

1. Consider the following λ-term:

$$E = (\lambda^1 v.(((\lambda^2 x.\lambda^3 k.kv)v)(\lambda^4 a.a)))(\lambda^5 y.\lambda^6 m.my) \ .$$

Show the graph for E that is used by the Heintze/McAllester flow analysis algorithm. What is the label set for E produced by the algorithm?

2. Consider the following λ-terms:

$$\begin{aligned} S &= \lambda^1 x.\lambda^2 y.\lambda^3 z.((xz)(yz)) \\ K &= \lambda^4 a.\lambda^5 b.a \\ I &= ((SK)K) \end{aligned}$$

Show the graph for I that is used by the Heintze/McAllester flow analysis algorithm. What is the label set for I produced by the algorithm?