1 Introduction

Big Proof Trees	
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{ }, [xs → [1, 2, 3, 4, 5], f → (closure x → x)] ⊢ if (xs == []) then [] else ([f (head xs)] ++ map f (tail xs)) ⇒ [1, 2, 3, 4, 5]

 $\frac{ \left\{ \right\}, \left[\right] \vdash (\text{fun n} \rightarrow \text{if (n == 0) then } \right] \text{ else (nats ((n - 1)) \leftrightarrow [n]))} \Rightarrow (\text{closure n} \rightarrow \text{if (n == 0) then } \right] \text{ else (nats ((n - 1)) \leftrightarrow [n]))} }{ \left\{ \right\}, \left[\right] \vdash \text{nats} \Rightarrow (\text{closure n} \rightarrow \text{if (n == 0) then } \right] \text{ else (nats ((n - 1)) \leftrightarrow [n]))} }$ $\frac{\left\{ \right\}, \left[n \mapsto 3 \right] \vdash n \Rightarrow 3}{ \left\{ \right\}, \left[n \mapsto 3 \right] \vdash (n == 0)}$ $\frac{\left\{ \right\}, \left[n \mapsto 2 \right] \vdash n \Rightarrow 2}{ \left\{ \right\}, \left[n \mapsto 2 \right] \vdash (n == 0)} \Rightarrow \text{False}$ $\{\ \}, [n \mapsto 4] \vdash (nats\ ((n\ \hbox{-}\ 1))\ \hbox{++}\ [n]) \Rightarrow [1,\ 2,\ 3,\ 4]$