Inference at $*$ 1 1
of proof for Lemma complete_nat_ind_with_y:

. . . . .subterm. T:t1:n

1. $P : \mathbb{N} \to \mathbb{P}\{\mathrm{k}\}$
2. $g : \forall i{:}\mathbb{N}.\ (\forall j{:}\mathbb{N} i.\ P(j)) \Rightarrow P(i)$
$\vdash$ Y($\lambda f,x.\ g(x,f)$) $\in$ ($\forall i{:}\mathbb{N}.\ P(i)$)
by Assert Y($\lambda f,x.\ g(x,f)$) $\in$ Void$\to$Void

1: . . . . .assertion. . . . . NILNIL

$\vdash$ Y($\lambda f,x.\ g(x,f)$) $\in$ Void$\to$Void
2:

3. Y($\lambda f,x.\ g(x,f)$) $\in$ Void$\to$Void
$\vdash$ Y($\lambda f,x.\ g(x,f)$) $\in$ ($\forall i{:}\mathbb{N}.\ P(i)$)
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http://www.nuprl.org/FDLcontent/p0_942988_/p121_93198_{complete_nat_ind_with_y}1_1.html