

Inference at * 1 1 2
of proof for Lemma comp_nat_ind_a:

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1.  $P : \mathbb{N} \rightarrow \mathbb{P}\{k\}$ 
2.  $\forall i:\mathbb{N}. (\forall j:\mathbb{N}. (j < i) \Rightarrow P(j)) \Rightarrow P(i)$ 
3.  $\mathbb{N}$ 
4.  $j : \mathbb{N}^+$ 
5.  $\forall s:\mathbb{N}. (s < (j - 1)) \Rightarrow P(s)$ 
6.  $s : \mathbb{N}$ 
7.  $s < j$ 
 $\vdash P(s)$ 
  by ((% Establish desired induction hyp %
Assert  $\forall t:\mathbb{N}. (t < s) \Rightarrow P(t)$ )
CollapseTHEN (
  IfLabL
  ['main',OnHyps [7;5;4;3] Thin % cleanup %
  ;'assertion',((((RepD

  CollapseTHENM (InstHyp [t] 5)).)
CollapseTHEN ((Auto_aux (first_nat 1:n) ((first_nat
2:n),(first_nat 3:n)) (first_tok :t) inil_term))).)]).

1:

3.  $s : \mathbb{N}$ 
4.  $\forall t:\mathbb{N}. (t < s) \Rightarrow P(t)$ 
 $\vdash P(s)$ 
.

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