Inference at $*$ 1 2 1
of proof for Lemma append_overlapping_sublists:

. . . . .wf. . . . . NILNIL

1. T : Type
2. L_1 : T List
3. L_2 : T List
4. L : T List
5. x : T
6. $\forall i, j{:}\mathbb{N}.\ (i < \|L\|) \Rightarrow (j < \|L\|) \Rightarrow (\neg(i = j)) \Rightarrow (\neg(L[i] = L[j]))$
7. f_1 : $\{0..\|L_1 \ @\ [x]\|^{-}\} \rightarrow \{0..\|L\|^{-}\}$
8. increasing(f_1;$\|L_1 \ @\ [x]\|$)
9. $\forall j{:}\{0..\|L_1 \ @\ [x]\|^{-}\}.\ (L_1 \ @\ [x])[j] = L[(f_1(j))]$
10. f : $\{0..(\|L_2\|{+}1)^{-}\} \rightarrow \{0..\|L\|^{-}\}$
11. increasing(f;$\|L_2\|{+}1$)
12. $\forall j{:}\{0..(\|L_2\|{+}1)^{-}\}.\ [x \ /\ L_2][j] = L[(f(j))]$
13. $\|L_1 \ @\ [x \ /\ L_2]\| = \|L_1\|{+}\|L_2\|{+}1$
14. $\|[]\| \geq 0$

$\vdash$(λi.if i $\leq$z $\|L_1\|$ then $f_1(i)$ else $f(i$ - $\|L_1\|)$ fi)
$\in \{0..\|L_1 \ @\ [x \ /\ L_2]\|^{-}\} \rightarrow \{0..\|L\|^{-}\}$
by InteriorProof ((((((MemCD)
CollapseTHENA ((Auto_aux (first_nat 1:n) ((first_nat 1:n
),(first_nat 3:n)) (first_tok :t) inil_term)))·)
CollapseTHEN (
SplitOnConclITE))·)
CollapseTHEN ((Auto_aux (first_nat 1:n
) ((first_nat 2:n),(first_nat 3:n)) (first_tok SupInf:t) inil_term)))·

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