Inference at $*$ 2 0
of proof for Lemma select_nth_tl:

1. T : Type
2. T List
3. u : T
4. v : T List
5. $\forall n$:{0... $\|v\|$}, i:{0..($\|v\|$ - n)$^{-}$}. nth_tl(n;v)[i] = v[(i+n)]
$\vdash$ $\forall n$:{0... $\|v\|$+1}, i:{0..(($\|v\|$+1) - n)$^{-}$}. nth_tl(n;[u / v])[i] = [u / v][(i+n)]
by PERMUTE{1:n,
2:n,
3:n,
4:n,
5:n,
6:n,
7:n,
8:n,
9:n,
10:n,
11:n,
12:n,
10:n,
13:n,
11:n,
14:n,
15:n,
16:n,
17:n,
18:n,
16:n,
15:n,
19:n,
20:n,
21:n}

1: .....wf..... NILNIL

6. n : {0... $\|v\|$+1}
7. {0..(($\|v\|$+1) - n)$^{-}$}
$\vdash$ n $\leq$z 0 $\in$ $\mathbb{B}$

2: .....wf..... NILNIL

6. n : {0... $\|v\|$+1}
7. {0..(($\|v\|$+1) - n)$^{-}$}

$\vdash \mathbb{B} \in$ Type
3: .....wf..... NILNIL

6. n : {0... $\|v\|$+1}
7. {0..(($\|v\|$+1) - n)$^-$}
8. n ≤z 0 = tt
$\vdash$ (n ≤z 0 = tt) $\in \mathbb{P}_1$
4: .....wf..... NILNIL

6. n : {0... $\|v\|$+1}
7. {0..(($\|v\|$+1) - n)$^-$}
8. n ≤z 0 = tt
$\vdash$ (↑n ≤z 0) $\in \mathbb{P}_1$
5: .....wf..... NILNIL

6. n : {0... $\|v\|$+1}
7. {0..(($\|v\|$+1) - n)$^-$}
8. n ≤z 0 = tt
$\vdash$ ($n \leq 0$) $\in \mathbb{P}_1$
6: .....wf..... NILNIL

6. n : {0... $\|v\|$+1}
7. {0..(($\|v\|$+1) - n)$^-$}
8. n ≤z 0 = tt
$\vdash$ n ≤z 0 $\in \mathbb{B}$
7: .....wf..... NILNIL

6. n : {0... $\|v\|$+1}
7. {0..(($\|v\|$+1) - n)$^-$}
8. n ≤z 0 = tt
$\vdash n \in \mathbb{Z}$
8: .....wf..... NILNIL

6. n : {0... $\|v\|$+1}
7. {0..(($\|v\|$+1) - n)$^-$}
8. n ≤z 0 = tt
$\vdash 0 \in \mathbb{Z}$
9: .....truecase..... NILNIL

6. n : {0... $\|v\|$+1}
7. i : {0..(($\|v\|$+1) - n)$^-$}
8. $n \leq 0$
$\vdash$ [u / v][i] = [u / v][(i+n)]
10: .....wf..... NILNIL

6. n : {0... $\|v\|$+1}

7. $\{0..((\|v\|+1) \text{ - } n)^{-}\}$
8. $n \leq$z $0 = $ ff
⊢ $(n \leq$z $0 =$ ff$) \in \mathbb{P}_1$

11: .....wf..... NILNIL

6. $n : \{0 \ldots \|v\|+1\}$
7. $\{0..((\|v\|+1) \text{ - } n)^{-}\}$
8. $n \leq$z $0 = $ ff
⊢ $(\uparrow 0 <$z $n) \in \mathbb{P}_1$

12: .....wf..... NILNIL

6. $n : \{0 \ldots \|v\|+1\}$
7. $\{0..((\|v\|+1) \text{ - } n)^{-}\}$
8. $n \leq$z $0 = $ ff
⊢ $(0 < n) \in \mathbb{P}_1$

13: .....wf..... NILNIL

6. $n : \{0 \ldots \|v\|+1\}$
7. $\{0..((\|v\|+1) \text{ - } n)^{-}\}$
8. $n \leq$z $0 = $ ff
⊢ $(\uparrow(\neg_b n \leq$z $0)) \in \mathbb{P}_1$

14: .....wf..... NILNIL

6. $n : \{0 \ldots \|v\|+1\}$
7. $\{0..((\|v\|+1) \text{ - } n)^{-}\}$
8. $n \leq$z $0 = $ ff
⊢ $n \leq$z $0 \in \mathbb{B}$

15: .....wf..... NILNIL

6. $n : \{0 \ldots \|v\|+1\}$
7. $\{0..((\|v\|+1) \text{ - } n)^{-}\}$
8. $n \leq$z $0 = $ ff
⊢ $n \in \mathbb{Z}$

16: .....wf..... NILNIL

6. $n : \{0 \ldots \|v\|+1\}$
7. $\{0..((\|v\|+1) \text{ - } n)^{-}\}$
8. $n \leq$z $0 = $ ff
⊢ $0 \in \mathbb{Z}$

17: .....antecedent..... NILNIL

6. $n : \{0 \ldots \|v\|+1\}$
7. $\{0..((\|v\|+1) \text{ - } n)^{-}\}$
8. $n \leq$z $0 = $ ff
⊢ True

18: .....wf..... NILNIL

6. n : $\{0\ldots\ \|v\|{+}1\}$
7. $\{0..((\|v\|{+}1)$ - $n)^{-}\}$
8. n ≤z 0 = ff
9. $(\uparrow(\neg_b n \leq$z $0)) = (\uparrow 0 <$z $n)$
$\vdash \mathbb{P}_1 = \mathbb{P}_1$

19:

6. n : $\{0\ldots\ \|v\|{+}1\}$
7. i : $\{0..((\|v\|{+}1)$ - $n)^{-}\}$
8. $0 < n$
$\vdash$ nth_tl(n - 1;v)[i] = [u / v][(i+n)]

20: .....wf..... NILNIL

6. n : $\{0\ldots\ \|v\|{+}1\}$
$\vdash \{0..((\|v\|{+}1)$ - $n)^{-}\} \in$ Type

21: .....wf..... NILNIL

$\vdash \{0\ldots\ \|v\|{+}1\} \in$ Type

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