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

1. T : Type
2. T List
3. u : T
4. v : T List
5. $\forall x{:}T.\ (x \in v) \Rightarrow (\neg(x = \text{last}(v))) \Rightarrow x$ before $\text{last}(v) \in v$

$\vdash \forall x{:}T.\ (x \in [u\ /\ v]) \Rightarrow (\neg(x = \text{last}([u\ /\ v]))) \Rightarrow x$ before $\text{last}([u\ /\ v]) \in [u\ /\ v]$
by InteriorProof PERMUTE{1:n,
2:n,
1:n,
2:n,
2:n,
3:n,
4:n,
3:n,
4:n,
4:n,
3:n,
3:n,
3:n,
3:n,
3:n,
3:n,
3:n,
5:n,
6:n,
6:n,
3:n,
4:n,
4:n,
7:n,
5:n}

1:

6. x : T
7. $(x \in [u\ /\ v])$

$\vdash \neg(\uparrow\text{null}([u\ /\ v]))$

2:

6. x : T
7. $(x \in [u\ /\ v])$
8. $\neg(x = \text{last}([u\ /\ v]))$

$\vdash \neg(\uparrow\text{null}([u\ /\ v]))$

3:

6. T

$\vdash \neg(\uparrow\text{null}([u\ /\ v]))$

4:

6. $x : T$
7. $\neg(x = \text{last}([u\ /\ v]))$

$\vdash \neg(\uparrow\text{null}([u\ /\ v]))$

5:

6. $x : T$
7. $(x = u) \vee (x \in v)$

$\vdash \neg(\uparrow\text{null}([u\ /\ v]))$

6:

6. $x : T$
7. $(x = u) \vee (x \in v)$
8. $\neg(x = \text{last}([u\ /\ v]))$

$\vdash \neg(\uparrow\text{null}([u\ /\ v]))$

7:

6. $x : T$
7. $(x = u) \vee (x \in v)$
8. $\neg(x = \text{last}([u\ /\ v]))$

$\vdash (x = u\ \&\ [\text{last}([u\ /\ v])] \subseteq v) \vee [x; \text{last}([u\ /\ v])] \subseteq v$

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http://www.nuprl.org/FDLcontent/p0_963683_/p122_89337_{before_last}2_0.html