

Inference at * 2 1 1
of proof for Lemma before-adjacent:

1. T : Type
 2. T List
 3. u : T
 4. v : T List
 5. $\forall x, y:T.$
 $\text{no_repeats}(T;v)$
 $\Rightarrow \text{adjacent}(T;v;x;y)$
 $\Rightarrow (\forall z:T. z \text{ before } y \in v \Rightarrow (z \text{ before } x \in v \vee (z = x)))$
 6. x : T
 7. y : T
 8. $\text{no_repeats}(T;[u / v])$
 9. $0 < \|v\|$
 10. $x = u \ \& \ y = \text{hd}(v)$
 11. z : T
 12. $z \text{ before } y \in [u / v]$
- $\vdash ((z = u \ \& \ (x \in v)) \vee z \text{ before } x \in v) \vee (z = x)$
by (((RWO "cons_before" (-1))
CollapseTHENA (Auto·))·)
CollapseTHEN ((D (-1)·)
CollapseTHEN (MaAuto·))·)

1:

10. $x = u$
 11. $y = \text{hd}(v)$
 12. z : T
 13. $z = u$
 14. $(y \in v)$
- $\vdash ((z = u \ \& \ (x \in v)) \vee z \text{ before } x \in v) \vee (z = x)$

2:

10. $x = u$
 11. $y = \text{hd}(v)$
 12. z : T
 13. $z \text{ before } y \in v$
- $\vdash ((z = u \ \& \ (x \in v)) \vee z \text{ before } x \in v) \vee (z = x)$