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

1. T : Type
2. L : T List
3. x : T
4. y : T
5. i : $\{0..(\|L\| - 1)^-\}$
6. $x = L[i]$
7. $y = L[(i+1)]$

$\vdash \exists f{:}\{0..2^-\}\to\{0..\|L\|^-\}.\ (\text{increasing}(f;2)\ \&\ (\forall j{:}\{0..2^-\}.\ [x; y][j] = L[(f(j))]))$

by ((((InstConcl [$\lambda j.$if ($j =_0 0$) then i else i+1 fi])
CollapseTHENA (Auto'))$\cdot$)

CollapseTHEN (((RepUR "increasing" (0)$\cdot$)
CollapseTHEN (MaAuto$\cdot$))$\cdot$))$\cdot$

1:

8. $i@_0$: $\{0..1^-\}$

$\vdash$ if ($i@_0 =_0 0$) then i else i+1 fi $<$ if ($i@_0$+1 $=_0 0$) then i else i+1 fi

2:

8. $\forall i@_0{:}\{0..1^-\}.$
   if ($i@_0 =_0 0$) then i else i+1 fi $<$ if ($i@_0$+1 $=_0 0$) then i else i+1 fi
9. j : $\{0..2^-\}$

$\vdash [x; y][j] = L[\text{if } (j =_0 0) \text{ then } i \text{ else } i\text{+1 fi }]$

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