Inference at $*$
of proof for Lemma symmetrized_preorder:

$\vdash \forall T$:Type, R:($T \rightarrow T \rightarrow \mathbb{P}$).
Preorder(T;x,y.R(x,y)) $\Rightarrow$ EquivRel(T;a,b.Symmetrize(x,y.R(x,y);a;b))
by ((Unfolds "preorder equiv_rel symmetrize" 0)
CollapseTHEN ((Auto_aux (first_nat
1:n) ((first_nat 1:n),(first_nat 3:n)) (first_tok :t) inil_term)))·

1:

1. T : Type
2. R : $T \rightarrow T \rightarrow \mathbb{P}$
3. Refl(T;x,y.R(x,y))
4. Trans(T;x,y.R(x,y))

$\vdash$ Refl(T;a,b.R(a,b) & R(b,a))

2:

1. T : Type
2. R : $T \rightarrow T \rightarrow \mathbb{P}$
3. Refl(T;x,y.R(x,y))
4. Trans(T;x,y.R(x,y))

$\vdash$ Sym(T;a,b.R(a,b) & R(b,a))

3:

1. T : Type
2. R : $T \rightarrow T \rightarrow \mathbb{P}$
3. Refl(T;x,y.R(x,y))
4. Trans(T;x,y.R(x,y))

$\vdash$ Trans(T;a,b.R(a,b) & R(b,a))

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http://www.nuprl.org/FDLcontent/p0_942988_/p121_81528_{symmetrized_preorder}.html