```
Tarski  THM

⊢  ¬(∃Tr:(Term→Prop), tr:Term, L:(Term→Prop). RepsTruth(L; Tr; tr))
| by Analyze 0
|
1. ∃Tr:(Term→Prop), tr:Term, L:(Term→Prop). RepsTruth(L; Tr; tr)
⊢  False  by Unfold ‘RepsTruth‘ 1 THEN ExRepD
|
1. Tr : Term→Prop
2. tr : Term
3. L : Term→Prop
4. ∀S:Term. (∃t:Term. S reps t) ⇒ L(tr/S)
5. RespectsNot(Tr; L)
6. ReflectsProp(Tr; tr; Tr)
⊢  False  by Let (S = s(NOT(tr)))
|
7. S : Term
8. S = s(NOT(tr))
⊢  False  by Assert (S reps NOT(tr/S))
|
|\
| .....assertion .....
| ⊢  S reps NOT(tr/S)  by HypSubst 8 0
| |
| ⊢  s(NOT(tr)) reps NOT(tr/s(NOT(tr)))
| | by Rewrite← Thm* ∀t,e:Term. NOT(t)/e = NOT(t/e)    {qnot_subx} 0
| |
| ⊢  s(NOT(tr)) reps NOT(tr)/s(NOT(tr))
|   by BackThru Thm* ∀t:Term. s(t) reps t/s(t)    {s_reps}
|
.\
. 9. S reps NOT(tr/S)
. ⊢  False  by InstHyp [S] 4 THENA Witness NOT(tr/S) THEN Thin 4
. |
. 4. RespectsNot(Tr; L)
. 5. ReflectsProp(Tr; tr; Tr)
. 6. S : Term
. 7. S = s(NOT(tr))
. 8. S reps NOT(tr/S)
. 9. L(tr/S)
. ⊢  False
. | by Unfold ‘ReflectsProp‘ 5 THEN InstHyp [NOT(tr/S);S] 5
. |    THEN
. |    Thin 5
. |
. 5. S : Term
. 6. S = s(NOT(tr))
. 7. S reps NOT(tr/S)
. 8. L(tr/S)
. 9. Tr(tr/S) ⟺ Tr(NOT(tr/S))
. ⊢  False
. | by Unfold ‘RespectsNot‘ 4 THEN InstHyp [tr/S] 4 THEN Thin 4
. |
. 4. S : Term
. 5. S = s(NOT(tr))
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. 6. S reps NOT(tr/S)
. 7. L(tr/S)
. 8. Tr(tr/S) ⟺ Tr(NOT(tr/S))
. 9. Tr(NOT(tr/S)) ⟺ L(tr/S) & ¬Tr(tr/S)
. ⊢  False
. | by Assert (Tr(NOT(tr/S)) ⟺ ¬Tr(tr/S))
. |    THENA
. |    Using [‘B’,(L(tr/S))]
. |    (BackThru Thm* B ⇒ (A ⟺ B & C) ⇒ (A ⟺ C)    {prop_and_iff})
. |    THEN
. |    OnHyps [9;7] Thin
. |
. 7. Tr(tr/S) ⟺ Tr(NOT(tr/S))
. 8. Tr(NOT(tr/S)) ⟺ ¬Tr(tr/S)
. ⊢  False
. | by FwdThru
. |    Thm* (A ⟺ B) ⇒ (B ⟺ C) ⇒ (A ⟺ C)    {prop_iff_trans}
. |    [7;8]
. |    THEN
. |    OnHyps [8;7] Thin
. |
. 7. Tr(tr/S) ⟺ ¬Tr(tr/S)
. ⊢  False
.   by FwdThru Thm* (P ⟺ ¬P) ⇒ False    {prop_iff_contra} [7]
END
```