```
decidable__all_int_seg  THM

⊢  ∀i,j:ℤ, F:({i..j⁻}→Prop).
|  (∀k:{i..j⁻}. Dec(F(k))) ⇒ Dec(∀k:{i..j⁻}. F(k))
| by (Unfold ‘so_apply‘ 0) THEN RepD
|
1. i : ℤ
2. j : ℤ
3. F : {i..j⁻}→Prop
4. ∀k:{i..j⁻}. Dec(F(k))
⊢  Dec(∀k:{i..j⁻}. F(k))
| by Inst
|    Thm* ∀i,j:ℤ, F:({i..j⁻}→Prop).
|         (∀k:{i..j⁻}. Dec(F(k))) ⇒ Dec(∃k:{i..j⁻}. F(k))
|    {decidable__ex_int_seg}
|    [i;j;λ₂x. ¬F(x)]
|
5. Dec(∃k:{i..j⁻}. ¬F(k))
⊢  Dec(∀k:{i..j⁻}. F(k))  by OnCls [0;5] (Unfold ‘decidable‘)
|
5. (∃k:{i..j⁻}. ¬F(k)) ∨ ¬(∃k:{i..j⁻}. ¬F(k))
⊢  (∀k:{i..j⁻}. F(k)) ∨ ¬(∀k:{i..j⁻}. F(k))  by Analyze 5
|
|\
| 5. ∃k:{i..j⁻}. ¬F(k)
| ⊢  (∀k:{i..j⁻}. F(k)) ∨ ¬(∀k:{i..j⁻}. F(k))
| | by (Sel 2 (Analyze 0)) THEN (Analyze 0)
| |
| 6. ∀k:{i..j⁻}. F(k)
| ⊢  False  by (Analyze 5) THEN (With k (Analyze -1))
|
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. 5. ¬(∃k:{i..j⁻}. ¬F(k))
. ⊢  (∀k:{i..j⁻}. F(k)) ∨ ¬(∀k:{i..j⁻}. F(k))  by Sel 1 (Analyze 0)
. |
. ⊢  ∀k:{i..j⁻}. F(k)  by RWW "not_over_exists dneg_elim_a" 5
END
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