```
listify_length  THM

⊢  ∀m,n:ℤ, f:({m..n⁻}→T). n<m ∨ ||f{m..n⁻}|| = n-m  by UnivCD
|
1. T : Type
2. m : ℤ
3. n : ℤ
4. f : {m..n⁻}→T
⊢  n<m ∨ ||f{m..n⁻}|| = n-m  by Decide (m≤n)
|
5. m≤n
⊢  n<m ∨ ||f{m..n⁻}|| = n-m  by Sel 2 (Analyze 0)
|
⊢  ||f{m..n⁻}|| = n-m
| by Assert (∀m:{...n}, f:({m..n⁻}→T). ||f{m..n⁻}|| = n-m)
|    THENA
|    OnHyps [5;4;2] Thin
|
|\
| 2. n : ℤ
| ⊢  ∀m:{...n}, f:({m..n⁻}→T). ||f{m..n⁻}|| = n-m
| | by (BackThru
| |     Thm* ∀i:ℤ, E:({...i}→Prop).
| |          E(i)
| |          ⇒
| |          (∀k:{...i-1}. E(k+1) ⇒ E(k)) ⇒ (∀k:{...i}. E(k))
| |     {int_lower_ind})
| |    THEN
| |    UnivCD
| |
| |\
| | 3. f : {n..n⁻}→T
| | ⊢  ||f{n..n⁻}|| = n-n  by RecCaseSplit ‘listify‘
| |
| .\
| . 3. m : {...n-1}
| . 4. ∀f:({(m+1)..n⁻}→T). ||f{(m+1)..n⁻}|| = n-(m+1)
| . 5. f : {m..n⁻}→T
| . ⊢  ||f{m..n⁻}|| = n-m  by RecCaseSplit ‘listify‘
| . |
| . 6. m<n
| . ⊢  ||f{(m+1)..n⁻}||+1 = n-m  by Witness4 f
|
.\
. 6. ∀m:{...n}, f:({m..n⁻}→T). ||f{m..n⁻}|| = n-m
. ⊢  ||f{m..n⁻}|| = n-m  by BackThru -1
END
```