```
mklist_length  THM

⊢  ∀T:Type, n:ℕ, f:(ℕn→T). ||mklist(n;f)|| = n
| by RepeatFor 2 (D 0 THENA Auto) THEN NatInd (-1) THEN Reduce 0
|
|\
| 1. T : Type
| ⊢  ∀f:(ℕ0→T). 0 = 0  by Auto
|
.\
. .....upcase .....
. 1. T : Type
. 2. n : ℤ
. 3. 0<n
. 4. ∀f:(ℕ(n-1)→T). ||mklist(n-1;f)|| = n-1
. ⊢  ∀f:(ℕn→T). ||mklist(n;f)|| = n  by ParallelOp (-1)
. |
. 1. T : Type
. 2. n : ℤ
. 3. 0<n
. 4. ∀f:(ℕ(n-1)→T). ||mklist(n-1;f)|| = n-1
. 5. f : ℕn→T
. 6. ||mklist(n-1;f)|| = n-1
. ⊢  ||mklist(n;f)|| = n
. | by ...
. THENA Auto
. |
. |\
. | .....truecase .....
. | 1. T : Type
. | 2. n : ℤ
. | 3. 0<n
. | 4. ∀f:(ℕ(n-1)→T). ||mklist(n-1;f)|| = n-1
. | 5. f : ℕn→T
. | 6. ||mklist(n-1;f)|| = n-1
. | 7. n = 0
. | ⊢  ||nil|| = n  by Auto
. |
. .\
. . .....falsecase .....
. . 1. T : Type
. . 2. n : ℤ
. . 3. 0<n
. . 4. ∀f:(ℕ(n-1)→T). ||mklist(n-1;f)|| = n-1
. . 5. f : ℕn→T
. . 6. ||mklist(n-1;f)|| = n-1
. . 7. ¬n = 0
. . ⊢  ||(λi,l. l @ [(f(i))])
. .      (n-1
. .      ,primrec(n-1;nil;λi,l. l @ [(f(i))]))||
. .    =
. .    n
. .   by ...
END
```