```
whole_segment  THM

⊢  ∀as:T*. (as[0..||as||⁻]) = as  by RepD
|
1. T : Type
2. as : T*
⊢  (as[0..||as||⁻]) = as  by Unfold ‘segment‘ 0 THEN ArithSimp 0
|
⊢  firstn(||as||;nth_tl(0;as)) = as
| by RecUnfold ‘nth_tl‘ 0 THEN Reduce 0
|
⊢  firstn(||as||;as) = as  by ListInd 2
|
|\
| ⊢  firstn(||nil||;nil) = nil  by RecUnfold ‘firstn‘ 0 THEN Reduce 0
|
.\
. 3. u : T
. 4. v : T*
. 5. firstn(||v||;v) = v
. ⊢  firstn(||u.v||;u.v) = u.v  by RecUnfold ‘firstn‘ 0 THEN Reduce 0
. |
. ⊢  if 0<₂||v||+1→ u.firstn(||v||+1-1;v) else nil fi = u.v
. | by SplitOnConclITE
. |
. |\
. | .....truecase .....
. | 6. 0<||v||+1
. | ⊢  u.firstn(||v||+1-1;v) = u.v  by (ArithSimp 0) THEN Analyze
. |
. .\
. . .....falsecase .....
. . 6. ||v||+1≤0
. . ⊢  nil = u.v  by Auto
END
```