```
select_append_front  THM

⊢  ∀as,bs:T List, i:ℕ||as||. (as @ bs)[i] = as[i]  by UnivCD
|
1. T : Type
2. as : T List
3. bs : T List
4. i : ℕ||as||
⊢  (as @ bs)[i] = as[i]  by ListInd 2 THEN AbReduce 0 THEN Analyze 0
|
|\
| 4. i : ℕ0
| ⊢  bs[i] = nil[i]  by Auto
|
.\
. 4. u : T
. 5. v : T List
. 6. ∀i:ℕ||v||. (v @ bs)[i] = v[i]
. 7. i : ℕ(||v||+1)
. ⊢  (u.(v @ bs))[i] = (u.v)[i]  by Decide (i = 0)
. |
. |\
. | 8. i = 0
. | ⊢  (u.(v @ bs))[i] = (u.v)[i]
. |   by RWH
. |      (LemmaC
. |       Thm* ∀a:T, as:T List, i:ℤ. i≤0 ⇒ (a.as)[i] = a
. |       {select_cons_hd})
. |      0
. |
. .\
. . 8. ¬i = 0
. . ⊢  (u.(v @ bs))[i] = (u.v)[i]
. . | by RWH
. . |    (LemmaC
. . |     Thm* ∀a:T, as:T List, i:ℤ.
. . |          0<i ⇒ i≤||as|| ⇒ (a.as)[i] = as[(i-1)]
. . |     {select_cons_tl})
. . |    0
. . |
. . ⊢  (v @ bs)[(i-1)] = v[(i-1)]  by BackThru 6
END
```