```
zip_length  THM

⊢  ∀T1,T2:Type, as:T1 List, bs:T2 List.
|  ||zip(as;bs)||≤||as|| & ||zip(as;bs)||≤||bs||
| by D 0 THENM D 0 THENM D 0 THENA Auto
THEN ListInd (-1)

|    THEN D 0 THENA Auto
THEN ListInd (-1)
THEN RecUnfold ‘zip‘ 0
|
THEN Reduce 0 THEN Try (Complete Auto’)
|
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| 1. T1 : Type
| 2. T2 : Type
| 3. T1 List
| 4. T2 List
| 5. T2
| 6. v : T2 List
| 7. ||zip(nil;v)||≤||nil|| & ||zip(nil;v)||≤||v||
| ⊢  0≤0 & 0≤||v||+1  by Thin (-1) THEN Auto’
|
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. 1. T1 : Type
. 2. T2 : Type
. 3. T1 List
. 4. u : T1
. 5. v : T1 List
. 6. ∀bs:T2 List. ||zip(v;bs)||≤||v|| & ||zip(v;bs)||≤||bs||
. 7. T2 List
. 8. T2
. 9. v1 : T2 List
. 10. ||zip([u / v];v1)||≤||[u / v]|| & ||zip([u / v];v1)||≤||v1||
. ⊢  ||zip(v;v1)||+1≤||v||+1 & ||zip(v;v1)||+1≤||v1||+1
.   by AllHyps (InstHyp [v1]) THEN Auto
END
```