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sfa_doc_sexprcarsize  THM

⊢  ∀A:Type, s:Sexpr(A). Size(s) ≠ 1 ∈ ℕ+ ⇒ Size(sexprCar(s))<Size(s)
| by Auto
|
1. A : Type
2. s : Sexpr(A)
3. Size(s) ≠ 1 ∈ ℕ+
⊢  Size(sexprCar(s))<Size(s)  by AbRecTypeInd Hyp:-2
|
2. Q : Sexpr(A)→Prop
3. ∀s:{s:Sexpr(A)| Q(s) }.
|  Size(s) ≠ 1 ∈ ℕ+ ⇒ Size(sexprCar(s))<Size(s)
4. s : ({s:Sexpr(A)| Q(s) }×{s:Sexpr(A)| Q(s) })+A
⊢  Size(s) ≠ 1 ∈ ℕ+ ⇒ Size(sexprCar(s))<Size(s)
| by Analyze-1 THENL [Analyze-1;Id]
|    THEN
|    Try ←Def of Cons(<sexpr>;<sexpr>) | Inj(<sexpr atom>)
|
|\
| 4. x1 : {s:Sexpr(A)| Q(s) }
| 5. x2 : {s:Sexpr(A)| Q(s) }
| 6. Size(Cons(x1;x2)) ≠ 1 ∈ ℕ+
| ⊢  Size(sexprCar(Cons(x1;x2)))<Size(Cons(x1;x2))
|   by Compute
|        Size(⌈sexprCar(Cons(x1;x2))⌉ *⇒ x1)<(⌈Size(Cons(x1;x2))⌉
|                                            *⇒
|                                            Size(x1)+Size(x2))
|
.\
. 4. y : A
. 5. Size(Inj(y)) ≠ 1 ∈ ℕ+
. ⊢  Size(sexprCar(Inj(y)))<Size(Inj(y))
.   by Compute-1 ⌈Size(Inj(y))⌉ *⇒ 1
END
```