variable L (n : nat) : data

variable R (n : nat) : data

variable Ld (n : nat) : data

variable Rd (n : nat) : data

premise BaseLeft : Ld 0 = R 16

premise BaseRight : Rd 0 = L 16

premise StepLeft : ∀ i : nat, Ld i = R (16 - i) → Ld (i + 1) = R (16 - (i + 1))

premise StepRight : ∀ i : nat, Rd i = L (16 - i) → Rd (i + 1) = L (16 - (i + 1))

theorem ProofLeft : Ld 16 = R 0 :=

have H0 : Ld 0 = R 16, from BaseLeft,

have H1 : Ld ( 0 + 1) = R (16 - ( 0 + 1)), from (StepLeft 0) H0, have H2 : Ld ( 1 + 1) = R (16 - ( 1 + 1)), from (StepLeft 1) H1, have H3 : Ld ( 2 + 1) = R (16 - ( 2 + 1)), from (StepLeft 2) H2, have H4 : Ld ( 3 + 1) = R (16 - ( 3 + 1)), from (StepLeft 3) H3, have H5 : Ld ( 4 + 1) = R (16 - ( 4 + 1)), from (StepLeft 4) H4, have H6 : Ld ( 5 + 1) = R (16 - ( 5 + 1)), from (StepLeft 5) H5, have H7 : Ld ( 6 + 1) = R (16 - ( 6 + 1)), from (StepLeft 6) H6, have H8 : Ld ( 7 + 1) = R (16 - ( 7 + 1)), from (StepLeft 7) H7, have H9 : Ld ( 8 + 1) = R (16 - ( 8 + 1)), from (StepLeft 8) H8, have H10 : Ld ( 9 + 1) = R (16 - ( 9 + 1)), from (StepLeft 9) H9, have H11 : Ld (10 + 1) = R (16 - (10 + 1)), from (StepLeft 10) H10, have H12 : Ld (11 + 1) = R (16 - (11 + 1)), from (StepLeft 11) H11, have H13 : Ld (12 + 1) = R (16 - (12 + 1)), from (StepLeft 12) H12, have H14 : Ld (13 + 1) = R (16 - (13 + 1)), from (StepLeft 13) H13, have H15 : Ld (14 + 1) = R (16 - (14 + 1)), from (StepLeft 14) H14, have H16 : Ld (15 + 1) = R (16 - (15 + 1)), from (StepLeft 15) H15,

show Ld 16 = R 0, from H16