

thm_2Ering_2Edatatype_ring
(TMH5fnUifQNTkQy3nHG9oQSRpGxqYcYXT1B)

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Let $ty_2Ering_2Ering : \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall A0.nonempty\ A0 \Rightarrow nonempty\ (ty_2Ering_2Ering\ A0) \quad (1)$$

Definition 1 We define $c_2Emin_2E_3D$ to be $\lambda A.\lambda x \in A.\lambda y \in A.inj_o\ (x = y)$ of type $\iota \Rightarrow \iota$.

Definition 2 We define c_2Ebool_2ET to be $(ap\ (ap\ (c_2Emin_2E_3D\ (2^2))\ (\lambda V0x \in 2.V0x))\ (\lambda V1x \in 2.V1x))$

Definition 3 We define $c_2Ebool_2EDATATYPE$ to be $\lambda A_27a : \iota.(\lambda V0x \in A_27a.c_2Ebool_2ET)$.

Definition 4 We define $c_2Ebool_2E_21$ to be $\lambda A_27a : \iota.(\lambda V0P \in (2^{A_27a}).(ap\ (ap\ (c_2Emin_2E_3D\ (2^{A_27a}))\ (V0P))))$

Assume the following.

$$True \quad (2)$$

Assume the following.

$$\forall A_27a.nonempty\ A_27a \Rightarrow (\forall V0x \in A_27a.((p\ (ap\ (c_2Ebool_2EDATATYPE\ A_27a)\ V0x)) \Leftrightarrow True)) \quad (3)$$

Theorem 1

$$\forall A_27a.nonempty\ A_27a \Rightarrow (\forall V0record \in ((((((2^{(A_27a^{A_27a})})^{(A_27a^{A_27a})^{A_27a}})^{(A_27a^{A_27a})^{A_27a}})^{A_27a})^{A_27a})^{A_27a})^{A_27a}) \\ (\forall V1ring \in (ty_2Ering_2Ering\ A_27a).(\forall V2R0 \in A_27a. \\ (\forall V3R1 \in A_27a.(\forall V4RP \in ((A_27a^{A_27a})^{A_27a}).(\forall V5RM \in \\ ((A_27a^{A_27a})^{A_27a}).(\forall V6RN \in (A_27a^{A_27a}).(p\ (ap\ (c_2Ebool_2EDATATYPE\ A_27a)\ V6RN)))) \\ 2) (ap\ (ap\ (ap\ (ap\ (ap\ (ap\ V0record\ V1ring)\ V2R0)\ V3R1)\ V4RP)\ V5RM)\ V6RN))))))))))$$