

thm_2Equote_2Edatatype_index (TMGgG3XEC1EVBoEfgTnGFoEJrTZz37aWk3u)

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Let $ty_2Equote_2Eindex : \iota$ be given. Assume the following.

$$nonempty\ ty_2Equote_2Eindex \tag{1}$$

Let $c_2Equote_2EEnd_idx : \iota$ be given. Assume the following.

$$c_2Equote_2EEnd_idx \in ty_2Equote_2Eindex \tag{2}$$

Let $c_2Equote_2ERight_idx : \iota$ be given. Assume the following.

$$c_2Equote_2ERight_idx \in (ty_2Equote_2Eindex^{ty_2Equote_2Eindex}) \tag{3}$$

Let $c_2Equote_2ELeft_idx : \iota$ be given. Assume the following.

$$c_2Equote_2ELeft_idx \in (ty_2Equote_2Eindex^{ty_2Equote_2Eindex}) \tag{4}$$

Definition 1 We define c_2Emin_2E3D 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 $(ap (ap (c_2Emin_2E3D (2^2)) (\lambda V0x \in 2.V0x)) (\lambda V1x \in 2.V1x))$

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_2E21 to be $\lambda A_27a : \iota.(\lambda V0P \in (2^{A_27a}).(ap (ap (c_2Emin_2E3D (2^{A_27a}))$

Assume the following.

$$True \tag{5}$$

Assume the following.

$$\forall A_27a.nonempty\ A_27a \Rightarrow (\forall V0x \in A_27a.((p (ap (c_2Ebool_2EDATATYPE A_27a) V0x)) \Leftrightarrow True)) \tag{6}$$

Theorem 1

$$(\forall V0index \in (((2^{ty_2Equote_2Eindex})^{(ty_2Equote_2Eindex^{ty_2Equote_2Eindex})})^{(ty_2Equote_2Eindex^{ty_2Equote_2Eindex})}) (p (ap (c_2Ebool_2EDATATYPE 2) (ap (ap (ap V0index c_2Equote_2ELeft_idx) c_2Equote_2ERight_idx) c_2Equote_2EEnd_idx))))))$$