

thm_2Equote_2Edatatype_varmap (TMaejHLp- WhAL7NShGvxSH56BQyEefzwk6dG)

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Let $ty_2Equote_2Evarmap : \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall A0.nonempty\ A0 \Rightarrow nonempty\ (ty_2Equote_2Evarmap\ A0) \quad (1)$$

Let $c_2Equote_2ENode_vm : \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall A_27a.nonempty\ A_27a \Rightarrow c_2Equote_2ENode_vm\ A_27a \in ((ty_2Equote_2Evarmap\ A_27a)^{(ty_2Equote_2Evarmap\ A_27a)})^{(ty_2Equote_2Evarmap\ A_27a)} \quad (2)$$

Let $c_2Equote_2EEmpty_vm : \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall A_27a.nonempty\ A_27a \Rightarrow c_2Equote_2EEmpty_vm\ A_27a \in (ty_2Equote_2Evarmap\ A_27a) \quad (3)$$

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

Assume the following.

$$True \quad (4)$$

Assume the following.

$$\forall A_27a.nonempty\ A_27a \Rightarrow (\forall V0x \in A_27a.((p\ (ap\ (c_2Ebool_2EDATATYPE\ A_27a)\ V0x)) \Leftrightarrow True)) \quad (5)$$

Theorem 1

$$\forall A_27a.nonempty\ A_27a \Rightarrow (\forall V0varmap \in ((2^{(((((ty_2Equote_2Evarmap\ A_27a)^{(ty_2Equote_2Evarmap\ A_27a)})^{(ty_2Equote_2Evarmap\ A_27a)})^{(ty_2Equote_2Evarmap\ A_27a)})^{(ty_2Equote_2Evarmap\ A_27a)}}))\ (p\ (ap\ (c_2Ebool_2EDATATYPE\ 2)\ (ap\ (ap\ V0varmap\ (c_2Equote_2ENode_vm\ A_27a))\ (c_2Equote_2ENode_vm\ A_27a))))))$$