

# thm\_2Estring\_2Echar\_nchotomy (TMdVE- qhBFThVg7mE6JD4JXxF63wksNpGjna)

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Let  $ty\_2Enum\_2Enum : \iota$  be given. Assume the following.

$$nonempty\ ty\_2Enum\_2Enum \tag{1}$$

**Definition 1** We define  $c\_2Emin\_2E\_40$  to be  $\lambda A.\lambda P \in 2^A$ . **if**  $(\exists x \in A.p (ap\ P\ x))$  **then** (the  $(\lambda x.x \in A \wedge p$  of type  $\iota \Rightarrow \iota$ ).

**Definition 2** 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 3** We define  $c\_2Ebool\_2E\_3F$  to be  $\lambda A\_27a : \iota.(\lambda V0P \in (2^{A\_27a}).(ap\ V0P\ (ap\ (c\_2Emin\_2E\_40\ A$

**Definition 4** We define  $c\_2Ebool\_2E\_2T$  to be  $(ap\ (ap\ (c\_2Emin\_2E\_3D\ (2^2))\ (\lambda V0x \in 2.V0x))\ (\lambda V1x \in 2.V$

Let  $ty\_2Estring\_2Echar : \iota$  be given. Assume the following.

$$nonempty\ ty\_2Estring\_2Echar \tag{2}$$

Let  $c\_2Estring\_2EORD : \iota$  be given. Assume the following.

$$c\_2Estring\_2EORD \in (ty\_2Enum\_2Enum^{ty\_2Estring\_2Echar}) \tag{3}$$

Let  $c\_2Estring\_2ECHR : \iota$  be given. Assume the following.

$$c\_2Estring\_2ECHR \in (ty\_2Estring\_2Echar^{ty\_2Enum\_2Enum}) \tag{4}$$

**Definition 5** We define  $c\_2Ebool\_2E\_21$  to be  $\lambda A\_27a : \iota.(\lambda V0P \in (2^{A\_27a}).(ap\ (ap\ (c\_2Emin\_2E\_3D\ (2^{A\_27a}$

Assume the following.

$$True \tag{5}$$

Assume the following.

$$\forall A\_27a.nonempty\ A\_27a \Rightarrow (\forall V0x \in A\_27a.((V0x = V0x) \Leftrightarrow True)) \tag{6}$$

Assume the following.

$$(\forall V0a \in ty\_2Estring\_2Echar.((ap\ c\_2Estring\_2ECHR\ (ap\ c\_2Estring\_2EORD\ V0a)) = V0a)) \tag{7}$$

**Theorem 1**

$(\forall V0c \in ty\_2Estring\_2Echar. (\exists V1n \in ty\_2Enum\_2Enum. (V0c = (ap\ c\_2Estring\_2ECHR\ V1n))))$