# t10_stacks_1 (TMMJ4PSedww53Gxnz1m37peAnmFBKU3Q4Pv)

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Let $v2\_struct\_0 : \iota \Rightarrow o$ be given. Let $v11\_struct\_0 : \iota \Rightarrow o$ be given. Let $v2\_stacks\_1 : \iota \Rightarrow o$ be given. Let $v3\_stacks\_1 : \iota \Rightarrow o$ be given. Let $v4\_stacks\_1 : \iota \Rightarrow o$ be given. Let $v5\_stacks\_1 : \iota \Rightarrow o$ be given. Let $v6\_stacks\_1 : \iota \Rightarrow o$ be given. Let $l1\_stacks\_1 : \iota \Rightarrow o$ be given. Let $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u4\_struct\_0 : \iota \Rightarrow \iota$ be given. Let $k9\_stacks\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1\_xboole\_0 : \iota$ be given. Let $r1\_stacks\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1\_stacks\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $u1\_struct\_0 : \iota \Rightarrow \iota$ be given. Let $k12\_finseq\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6\_stacks\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5\_stacks\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $m2\_finseq\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m1\_finseq\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k7\_finseq\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1\_xboole\_0 : \iota \Rightarrow o$ be given. Let $k5\_finseq\_1 : \iota \Rightarrow \iota$ be given. Let $v1\_finseq\_1 : \iota \Rightarrow o$ be given. Let $v1\_relat\_1 : \iota \Rightarrow o$ be given. Let $v1\_funct\_1 : \iota \Rightarrow o$ be given. Let $l1\_struct\_0 : \iota \Rightarrow o$ be given. Let $m1\_finseq\_2 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m2\_finseq\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $l5\_struct\_0 : \iota \Rightarrow o$ be given. Let $k3\_finseq\_2 : \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0) \wedge ((\neg v11\_struct\_0\ X0) \wedge ((v2\_stacks\_1\ X0) \wedge ((v3\_stacks\_1\ X0) \wedge ((v4\_stacks\_1\ X0) \wedge ((v5\_stacks\_1\ X0) \wedge ((v6\_stacks\_1\ X0) \wedge (l1\_stacks\_1\ X0)))))))) \Rightarrow (\forall X1.(m1\_subset\_1\ X1\ (u4\_struct\_0\ X0)) \Rightarrow ((\neg r1\_stacks\_1\ X0\ X1) \Rightarrow (k9\_stacks\_1\ X0\ X1 = k1\_stacks\_1\ (u1\_struct\_0\ X0)\ (k12\_finseq\_1\ (u1\_struct\_0\ X0)\ (k6\_stacks\_1\ X0\ X1))\ (k9\_stacks\_1\ X0\ (k5\_stacks\_1\ X0\ X1))))) \tag{1}$$

Assume the following.

$$\forall X0.\forall X1.(m2\_finseq\_1\ X1\ X0) \Leftrightarrow (m1\_finseq\_1\ X1\ X0) \tag{2}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((m1\_finseq\_1\ X1\ X0) \wedge (m1\_finseq\_1\ X2\ X0)) \Rightarrow (k1\_stacks\_1\ X0\ X1\ X2 = k7\_finseq\_1\ X1\ X2) \tag{3}$$

Assume the following.

$$\forall X0.\forall X1.((\neg v1\_xboole\_0\ X0) \wedge (m1\_subset\_1\ X1\ X0)) \Rightarrow (k12\_finseq\_1\ X0\ X1 = k5\_finseq\_1\ X1) \tag{4}$$

Assume the following.

$$\forall X0.v1\_finseq\_1\ (k5\_finseq\_1\ X0) \tag{5}$$

Assume the following.

$$\forall X0.(v1\_relat\_1\ (k5\_finseq\_1\ X0))\wedge(v1\_funct\_1\ (k5\_finseq\_1\ X0)) \tag{6}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge(l1\_struct\_0\ X0))\Rightarrow(\neg v1\_xboole\_0\ (u1\_struct\_0\ X0)) \tag{7}$$

Assume the following.

$$v1\_xboole\_0\ k1\_xboole\_0 \tag{8}$$

Assume the following.

$$\forall X0.\forall X1.(((v1\_relat\_1\ X0)\wedge((v1\_funct\_1\ X0)\wedge(v1\_finseq\_1\ X0)))\wedge((v1\_relat\_1\ X1)\wedge((v1\_funct\_1\ X1)\wedge((\neg v1\_xboole\_0\ X1)\wedge(v1\_finseq\_1\ X1)))))\Rightarrow((v1\_relat\_1\ (k7\_finseq\_1\ X1\ X0))\wedge((v1\_funct\_1\ (k7\_finseq\_1\ X1\ X0))\wedge((\neg v1\_xboole\_0\ (k7\_finseq\_1\ X1\ X0))\wedge(v1\_finseq\_1\ (k7\_finseq\_1\ X1\ X0))))) \tag{9}$$

Assume the following.

$$\forall X0.\neg v1\_xboole\_0\ (k5\_finseq\_1\ X0) \tag{10}$$

Assume the following.

$$\forall X0.\forall X1.(m1\_finseq\_2\ X1\ X0)\Rightarrow(\forall X2.(m2\_finseq\_2\ X2\ X0\ X1)\Rightarrow(m2\_finseq\_1\ X2\ X0)) \tag{11}$$

Assume the following.

$$\forall X0.\forall X1.(m1\_finseq\_1\ X1\ X0)\Rightarrow((v1\_relat\_1\ X1)\wedge((v1\_funct\_1\ X1)\wedge(v1\_finseq\_1\ X1))) \tag{12}$$

Assume the following.

$$\forall X0.(l5\_struct\_0\ X0)\Rightarrow(l1\_struct\_0\ X0) \tag{13}$$

Assume the following.

$$\forall X0.(l1\_stacks\_1\ X0)\Rightarrow(l5\_struct\_0\ X0) \tag{14}$$

Assume the following.

$$\forall X0.\forall X1.(((\neg v2\_struct\_0\ X0)\wedge((\neg v11\_struct\_0\ X0)\wedge((v2\_stacks\_1\ X0)\wedge((v3\_stacks\_1\ X0)\wedge((v4\_stacks\_1\ X0)\wedge((v5\_stacks\_1\ X0)\wedge((v6\_stacks\_1\ X0)\wedge(l1\_stacks\_1\ X0))))))))\wedge(m1\_subset\_1\ X1\ (u4\_struct\_0\ X0)))\Rightarrow(m2\_finseq\_2\ (k9\_stacks\_1\ X0\ X1)\ (u1\_struct\_0\ X0)\ (k3\_finseq\_2\ (u1\_struct\_0\ X0))) \tag{15}$$

Assume the following.

$$\forall X0.\forall X1.(((\neg v11\_struct\_0\ X0)\wedge(l1\_stacks\_1\ X0))\wedge (m1\_subset\_1\ X1\ (u4\_struct\_0\ X0)))\Rightarrow(m1\_subset\_1\ (k6\_stacks\_1\ X0\ X1)\ (u1\_struct\_0\ X0)) \tag{16}$$

Assume the following.

$$\forall X0.\forall X1.(((\neg v11\_struct\_0\ X0)\wedge(l1\_stacks\_1\ X0))\wedge (m1\_subset\_1\ X1\ (u4\_struct\_0\ X0)))\Rightarrow(m1\_subset\_1\ (k5\_stacks\_1\ X0\ X1)\ (u4\_struct\_0\ X0)) \tag{17}$$

Assume the following.

$$\forall X0.m1\_finseq\_2\ (k3\_finseq\_2\ X0)\ X0 \tag{18}$$

Assume the following.

$$\forall X0.\forall X1.((\neg v1\_xboole\_0\ X0)\wedge(m1\_subset\_1\ X1\ X0))\Rightarrow (m2\_finseq\_1\ (k12\_finseq\_1\ X0\ X1)\ X0) \tag{19}$$

**Theorem 1**

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge((\neg v11\_struct\_0\ X0)\wedge((v2\_stacks\_1\ X0)\wedge((v3\_stacks\_1\ X0)\wedge((v4\_stacks\_1\ X0)\wedge((v5\_stacks\_1\ X0)\wedge((v6\_stacks\_1\ X0)\wedge(l1\_stacks\_1\ X0)))))))\Rightarrow(\forall X1.(m1\_subset\_1\ X1\ (u4\_struct\_0\ X0))\Rightarrow((k9\_stacks\_1\ X0\ X1 = k1\_xboole\_0)\Rightarrow(r1\_stacks\_1\ X0\ X1)))$$