t17_stacks_1 (TMG-bEo2UDn8aVoMyTj9dBLA6gsGwnzEqzLa)

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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 $r2\_stacks\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r1\_stacks\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k5\_stacks\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k9\_stacks\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2\_stacks\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $u1\_struct\_0 : \iota \Rightarrow \iota$ be given. Let $np\_\_1 : \iota$ be given. Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0) \wedge ((\neg v11\_struct\_0\ X0) \wedge ((v2\_stacks\_1\ X0) \wedge ((v3\_stacks\_1\ X0) \wedge ((v4\_stacks\_1\ X0) \wedge ((v5\_stacks\_1\ X0) \wedge ((v6\_stacks\_1\ X0) \wedge (l1\_stacks\_1\ X0))))))) \Rightarrow (\forall X1.(m1\_subset\_1\ X1\ (u4\_struct\_0\ X0)) \Rightarrow ((\neg r1\_stacks\_1\ X0\ X1) \Rightarrow (k9\_stacks\_1\ X0\ (k5\_stacks\_1\ X0\ X1) = k2\_stacks\_1\ (u1\_struct\_0\ X0)\ np\_\_1\ (k9\_stacks\_1\ X0\ X1)))) \tag{1}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0) \wedge ((\neg v11\_struct\_0\ X0) \wedge ((v2\_stacks\_1\ X0) \wedge ((v3\_stacks\_1\ X0) \wedge ((v4\_stacks\_1\ X0) \wedge ((v5\_stacks\_1\ X0) \wedge ((v6\_stacks\_1\ X0) \wedge (l1\_stacks\_1\ X0))))))) \Rightarrow (\forall X1.(m1\_subset\_1\ X1\ (u4\_struct\_0\ X0)) \Rightarrow (\forall X2.(m1\_subset\_1\ X2\ (u4\_struct\_0\ X0)) \Rightarrow (((r2\_stacks\_1\ X0\ X1\ X2) \wedge (r1\_stacks\_1\ X0\ X1)) \Rightarrow (r1\_stacks\_1\ X0\ X2)))) \tag{2}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(((\neg v2\_struct\_0\ X0) \wedge ((\neg v11\_struct\_0\ X0) \wedge ((v2\_stacks\_1\ X0) \wedge ((v3\_stacks\_1\ X0) \wedge ((v4\_stacks\_1\ X0) \wedge ((v5\_stacks\_1\ X0) \wedge ((v6\_stacks\_1\ X0) \wedge (l1\_stacks\_1\ X0))))))) \wedge ((m1\_subset\_1\ X1\ (u4\_struct\_0\ X0)) \wedge (m1\_subset\_1\ X2\ (u4\_struct\_0\ X0)))) \Rightarrow ((r2\_stacks\_1\ X0\ X1\ X2) \Rightarrow (r2\_stacks\_1\ X0\ X2\ X1)) \tag{3}$$

Assume the following.

$$\forall X0.\forall X1.(((\neg v11\_struct\_0\ X0)\wedge(l1\_stacks\_1\ X0))\wedge (m1\_subset\_1\ X1\ (u4\_struct\_0\ X0)))\Rightarrow(m1\_subset\_1\ (k5\_stacks\_1\ X0\ X1)\ (u4\_struct\_0\ X0)) \tag{4}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge((\neg v11\_struct\_0\ X0)\wedge((v2\_stacks\_1\ X0)\wedge((v3\_stacks\_1\ X0)\wedge((v4\_stacks\_1\ X0)\wedge((v5\_stacks\_1\ X0)\wedge((v6\_stacks\_1\ X0)\wedge(l1\_stacks\_1\ X0)))))))\Rightarrow(\forall X1.(m1\_subset\_1\ X1\ (u4\_struct\_0\ X0))\Rightarrow(\forall X2.(m1\_subset\_1\ X2\ (u4\_struct\_0\ X0))\Rightarrow((r2\_stacks\_1\ X0\ X1\ X2)\Leftrightarrow(k9\_stacks\_1\ X0\ X1 = k9\_stacks\_1\ X0\ X2)))) \tag{5}$$

Theorem 1

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge((\neg v11\_struct\_0\ X0)\wedge((v2\_stacks\_1\ X0)\wedge((v3\_stacks\_1\ X0)\wedge((v4\_stacks\_1\ X0)\wedge((v5\_stacks\_1\ X0)\wedge((v6\_stacks\_1\ X0)\wedge(l1\_stacks\_1\ X0)))))))\Rightarrow(\forall X1.(m1\_subset\_1\ X1\ (u4\_struct\_0\ X0))\Rightarrow(\forall X2.(m1\_subset\_1\ X2\ (u4\_struct\_0\ X0))\Rightarrow((r2\_stacks\_1\ X0\ X1\ X2)\Rightarrow((r1\_stacks\_1\ X0\ X1)\vee(r2\_stacks\_1\ X0\ (k5\_stacks\_1\ X0\ X1)\ (k5\_stacks\_1\ X0\ X2))))))$$