

## t16\_stacks\_1

(TMNND9P68F<sub>x2r</sub>GLNPh7CoSumQGVX<sub>xmf6n8Y</sub>)

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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  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $r2\_stacks\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k7\_stacks\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k9\_stacks\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_stacks\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k12\_finseq\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge ((\neg v11\_struct\_0 X0) \wedge ((v2\_stacks\_1 \\ & X0) \wedge ((v3\_stacks\_1 X0) \wedge ((v4\_stacks\_1 X0) \wedge ((v5\_stacks\_1 X0) \wedge \\ & ((v6\_stacks\_1 X0) \wedge (l1\_stacks\_1 X0)))))))) \Rightarrow (\forall X1.(m1\_subset\_1 \\ & X1 (u4\_struct\_0 X0)) \Rightarrow (\forall X2.(m1\_subset\_1 X2 (u1\_struct\_0 \\ & X0)) \Rightarrow (k9\_stacks\_1 X0 (k7\_stacks\_1 X0 X1 X2) = k1\_stacks\_1 (u1\_struct\_0 \\ & X0) (k12\_finseq\_1 (u1\_struct\_0 X0) X2) (k9\_stacks\_1 X0 X1)))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. (((\neg v2\_struct\_0 X0) \wedge ((\neg v11\_struct\_0 \\ & X0) \wedge (l1\_stacks\_1 X0))) \wedge ((m1\_subset\_1 X1 (u4\_struct\_0 X0)) \wedge \\ & m1\_subset\_1 X2 (u1\_struct\_0 X0))) \Rightarrow (m1\_subset\_1 (k7\_stacks\_1 \\ & X0 X1 X2) (u4\_struct\_0 X0)) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge ((\neg v11\_struct\_0 X0) \wedge ((v2\_stacks\_1 \\ & X0) \wedge ((v3\_stacks\_1 X0) \wedge ((v4\_stacks\_1 X0) \wedge ((v5\_stacks\_1 X0) \wedge \\ & ((v6\_stacks\_1 X0) \wedge (l1\_stacks\_1 X0)))))))) \Rightarrow (\forall X1.(m1\_subset\_1 \\ & X1 (u4\_struct\_0 X0)) \Rightarrow (\forall X2.(m1\_subset\_1 X2 (u4\_struct\_0 \\ & X0)) \Rightarrow ((r2\_stacks\_1 X0 X1 X2) \Leftrightarrow (k9\_stacks\_1 X0 X1 = k9\_stacks\_1 X0 \\ & X2)))) \end{aligned} \quad (3)$$

**Theorem 1**

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge ((\neg v11\_struct\_0 X0) \wedge ((v2\_stacks\_1 \\ & X0) \wedge ((v3\_stacks\_1 X0) \wedge ((v4\_stacks\_1 X0) \wedge ((v5\_stacks\_1 X0) \wedge \\ & ((v6\_stacks\_1 X0) \wedge (l1\_stacks\_1 X0))))))) \Rightarrow (\forall X1.(m1\_subset\_1 \\ & X1 (u4\_struct\_0 X0)) \Rightarrow (\forall X2.(m1\_subset\_1 X2 (u4\_struct\_0 \\ & X0)) \Rightarrow (\forall X3.(m1\_subset\_1 X3 (u1\_struct\_0 X0)) \Rightarrow ((r2\_stacks\_1 \\ & X0 X1 X2) \Rightarrow (r2\_stacks\_1 X0 (k7\_stacks\_1 X0 X1 X3) (k7\_stacks\_1 X0 \\ & X2 X3)))))) \end{aligned}$$