

# t7\_stacks\_1 (TMbhqgEiHbR- CPZc77oJKViweW6KxXW2xhqw)

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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  $r1\_stacks.1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k9\_stacks.1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k5\_stacks.1 : \iota \Rightarrow \iota \Rightarrow \iota$  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. Let  $k1\_stacks.1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  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  $v1\_relat.1 : \iota \Rightarrow o$  be given. Let  $v1\_funct.1 : \iota \Rightarrow o$  be given. Let  $v1\_finseq.1 : \iota \Rightarrow o$  be given. Let  $k2\_finseq.3 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k7\_finseq.1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k9\_finseq.1 : \iota \Rightarrow \iota$  be given. Let  $k2\_nat.1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k3\_finseq.1 : \iota \Rightarrow \iota$  be given. Let  $v2\_xxreal.0 : \iota \Rightarrow o$  be given. Let  $m2\_subset.1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_numbers : \iota$  be given. Let  $k5\_numbers : \iota$  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  $k5\_finseq.1 : \iota \Rightarrow \iota$  be given. Let  $k4\_ordinal1 : \iota$  be given. Let  $v7\_ordinal1 : \iota \Rightarrow o$  be given. Let  $v1\_xboole.0 : \iota \Rightarrow o$  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.

$$\begin{aligned} & \forall X0. ((\neg v2\_struct.0 X0) \wedge ((\neg v11\_struct.0 X0) \wedge ((v2\_stacks.1 \\ & X0) \wedge ((v3\_stacks.1 X0) \wedge ((v4\_stacks.1 X0) \wedge ((v5\_stacks.1 X0) \wedge \\ & ((v6\_stacks.1 X0) \wedge (l1\_stacks.1 X0))))))) \Rightarrow (\forall X1. (m1\_subset.1 \\ & X1 (u4\_struct.0 X0)) \Rightarrow ((\neg r1\_stacks.1 X0 X1) \Rightarrow (k9\_stacks.1 X0 X1 = \\ & k1\_stacks.1 (u1\_struct.0 X0) (k12\_finseq.1 (u1\_struct.0 X0) ( \\ & k6\_stacks.1 X0 X1)) (k9\_stacks.1 X0 (k5\_stacks.1 X0 X1)))))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((v1\_relat.1 X0) \wedge ((v1\_funct.1 X0) \wedge (v1\_finseq.1 X0))) \Rightarrow \\ & (\forall X1. (k2\_finseq.3 np\_1 (k7\_finseq.1 (k9\_finseq.1 X1) \\ & X0) = X0) \wedge (k2\_finseq.3 (k2\_nat.1 (k3\_finseq.1 X0) np\_1) (k7\_finseq.1 \\ & X0 (k9\_finseq.1 X1)) = X0)) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & ((v2\_xxreal\_0 \ np\_1) \wedge (m2\_subset\_1 \ np\_1 \ k1\_numbers \ k5\_numbers)) \wedge \\ & ((m1\_subset\_1 \ np\_1 \ k5\_numbers) \wedge (m1\_subset\_1 \ np\_1 \ k1\_numbers)) \end{aligned} \quad (3)$$

Assume the following.

$$\forall X0. \forall X1. (m2\_finseq\_1 \ X1 \ X0) \Leftrightarrow (m1\_finseq\_1 \ X1 \ X0) \quad (4)$$

Assume the following.

$$\forall X0. k9\_finseq\_1 \ X0 = k5\_finseq\_1 \ X0 \quad (5)$$

Assume the following.

$$k5\_numbers = k4\_ordinal1 \quad (6)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. ((v7\_ordinal1 \ X1) \wedge (m1\_finseq\_1 \\ & X2 \ X0)) \Rightarrow (k2\_stacks\_1 \ X0 \ X1 \ X2 = k2\_finseq\_3 \ X1 \ X2) \end{aligned} \quad (7)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. ((m1\_finseq\_1 \ X1 \ X0) \wedge (m1\_finseq\_1 \\ & X2 \ X0)) \Rightarrow (k1\_stacks\_1 \ X0 \ X1 \ X2 = k7\_finseq\_1 \ X1 \ X2) \end{aligned} \quad (8)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. ((\neg v1\_xboole\_0 \ X0) \wedge (m1\_subset\_1 \ X1 \ X0)) \Rightarrow \\ & (k12\_finseq\_1 \ X0 \ X1 = k5\_finseq\_1 \ X1) \end{aligned} \quad (9)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2\_struct\_0 \ X0) \wedge (l1\_struct\_0 \ X0)) \Rightarrow (\neg v1\_xboole\_0 \\ & (u1\_struct\_0 \ X0)) \end{aligned} \quad (10)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (m1\_finseq\_2 \ X1 \ X0) \Rightarrow (\forall X2. (m2\_finseq\_2 \\ & X2 \ X0 \ X1) \Rightarrow (m2\_finseq\_1 \ X2 \ X0)) \end{aligned} \quad (11)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (m1\_finseq\_1 \ X1 \ X0) \Rightarrow ((v1\_relat\_1 \ X1) \wedge ( \\ & (v1\_funct\_1 \ X1) \wedge (v1\_finseq\_1 \ X1))) \end{aligned} \quad (12)$$

Assume the following.

$$\forall X0. (l5\_struct\_0 \ X0) \Rightarrow (l1\_struct\_0 \ X0) \quad (13)$$

Assume the following.

$$\forall X0.(l1\_stacks\_1 X0) \Rightarrow (l5\_struct\_0 X0) \quad (14)$$

Assume the following.

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

Assume the following.

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

Assume the following.

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

Assume the following.

$$\forall X0.m1\_finseq\_2 (k3\_finseq\_2 X0) X0 \quad (18)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.((\neg v1\_xboole\_0 X0) \wedge (m1\_subset\_1 X1 X0)) \Rightarrow \\ & (m2\_finseq\_1 (k12\_finseq\_1 X0 X1) X0) \end{aligned} \quad (19)$$

Assume the following.

$$\forall X0.(m1\_subset\_1 X0 k4\_ordinal1) \Rightarrow (v7\_ordinal1 X0) \quad (20)$$

**Theorem 1**

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge ((\neg v11\_struct\_0 X0) \wedge ((v2\_stacks\_1 \\ & X0) \wedge ((v3\_stacks\_1 X0) \wedge ((v4\_stacks\_1 X0) \wedge ((v5\_stacks\_1 X0) \wedge \\ & ((v6\_stacks\_1 X0) \wedge (l1\_stacks\_1 X0))))))) \Rightarrow (\forall X1.(m1\_subset\_1 \\ & X1 (u4\_struct\_0 X0)) \Rightarrow ((\neg v1\_stacks\_1 X0 X1) \Rightarrow (k9\_stacks\_1 X0 (k5\_stacks\_1 \\ & X0 X1) = k2\_stacks\_1 (u1\_struct\_0 X0) np\_1 (k9\_stacks\_1 X0 X1)))) \end{aligned}$$