

## t35\_stacks\_1

(TMWrn3ryLvaLhU1J2SFCL3kkQ2qpUDPnVGu)

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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  $k6\_eqrel.1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k10\_stacks.1 : \iota \Rightarrow \iota$  be given. Let  $k14\_stacks.1 : \iota \Rightarrow \iota$  be given. Let  $v1\_xboole.0 : \iota \Rightarrow o$  be given. Let  $v3\_relat.2 : \iota \Rightarrow o$  be given. Let  $v8\_relat.2 : \iota \Rightarrow o$  be given. Let  $v1\_partfun1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_zfmisc.1 : \iota \Rightarrow \iota$  be given. Let  $k2\_zfmisc.1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k8\_eqrel.1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k7\_eqrel.1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $l5\_struct.0 : \iota \Rightarrow o$  be given. Let  $v1\_stacks.1 : \iota \Rightarrow o$  be given. Let  $u1\_struct.0 : \iota \Rightarrow \iota$  be given. Let  $u1\_stacks.1 : \iota \Rightarrow \iota$  be given. Let  $k6\_domain.1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $u2\_stacks.1 : \iota \Rightarrow \iota$  be given. Let  $k3\_stacks.1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $u3\_stacks.1 : \iota \Rightarrow \iota$  be given. Let  $k2\_filter.1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_stacks.1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k6\_partfun1 : \iota \Rightarrow \iota$  be given. Let  $m1\_orders.1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $u4\_stacks.1 : \iota \Rightarrow \iota$  be given. Let  $k2\_funct.7 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_partfun1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k3\_tarski : \iota \Rightarrow \iota$  be given. Assume the following.

$$\forall X0. \forall X1. (m1\_subset.1 X0 X1) \Rightarrow ((v1\_xboole.0 X1) \vee (X0 \in X1)) \quad (1)$$

Assume the following.

$$\forall X0. \forall X1. (X0 \in X1) \Rightarrow (m1\_subset.1 X0 X1) \quad (2)$$

Assume the following.

$$\forall X0. \forall X1. ((v3\_relat.2 X1) \wedge ((v8\_relat.2 X1) \wedge ((v1\_partfun1 X1 X0) \wedge (m1\_subset.1 X1 (k1\_zfmisc.1 (k2\_zfmisc.1 X0 X0)))))) \Rightarrow (k8\_eqrel.1 X0 X1 = k7\_eqrel.1 X0 X1) \quad (3)$$

Assume the following.

$$\forall X0. ((\neg v11\_struct.0 X0) \wedge (l5\_struct.0 X0)) \Rightarrow (\neg v1\_xboole.0 (u4\_struct.0 X0)) \quad (4)$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0 X0) \wedge ((\neg v11\_struct\_0 X0) \wedge ((v2\_stacks\_1 X0) \wedge ((v3\_stacks\_1 X0) \wedge ((v4\_stacks\_1 X0) \wedge ((v5\_stacks\_1 X0) \wedge ((v6\_stacks\_1 X0) \wedge (l1\_stacks\_1 X0)))))))) \Rightarrow ((v1\_partfun1 (k10\_stacks\_1 X0) (u4\_struct\_0 X0)) \wedge ((v3\_relat\_2 (k10\_stacks\_1 X0)) \wedge (v8\_relat\_2 (k10\_stacks\_1 X0)))) \quad (5)$$

Assume the following.

$$\forall X0.(l1\_stacks\_1 X0) \Rightarrow (l5\_struct\_0 X0) \quad (6)$$

Assume the following.

$$\forall X0.\forall X1.((v3\_relat\_2 X1) \wedge ((v8\_relat\_2 X1) \wedge ((v1\_partfun1 X1 X0) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X0)))))) \Rightarrow (m1\_subset\_1 (k7\_eqrel\_1 X0 X1) (k1\_zfmisc\_1 (k1\_zfmisc\_1 X0))) \quad (7)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.(m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1))) \Rightarrow (m1\_subset\_1 (k6\_eqrel\_1 X0 X1 X2 X3) (k1\_zfmisc\_1 X1)) \quad (8)$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0 X0) \wedge ((\neg v11\_struct\_0 X0) \wedge ((v2\_stacks\_1 X0) \wedge ((v3\_stacks\_1 X0) \wedge ((v4\_stacks\_1 X0) \wedge ((v5\_stacks\_1 X0) \wedge ((v6\_stacks\_1 X0) \wedge (l1\_stacks\_1 X0)))))))) \Rightarrow ((v1\_stacks\_1 (k14\_stacks\_1 X0)) \wedge (l1\_stacks\_1 (k14\_stacks\_1 X0))) \quad (9)$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0 X0) \wedge ((\neg v11\_struct\_0 X0) \wedge ((v2\_stacks\_1 X0) \wedge ((v3\_stacks\_1 X0) \wedge ((v4\_stacks\_1 X0) \wedge ((v5\_stacks\_1 X0) \wedge ((v6\_stacks\_1 X0) \wedge (l1\_stacks\_1 X0)))))))) \Rightarrow (m1\_subset\_1 (k10\_stacks\_1 X0) (k1\_zfmisc\_1 (k2\_zfmisc\_1 (u4\_struct\_0 X0) (u4\_struct\_0 X0)))) \quad (10)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.((v3\_relat\_2 X1) \wedge ((v8\_relat\_2 X1) \wedge ((v1\_partfun1 X1 X0) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X0)))))) \Rightarrow \\ & (\forall X2.(m1\_subset\_1 X2 (k1\_zfmisc\_1 (k1\_zfmisc\_1 X0))) \Rightarrow \\ & ((X2 = k7\_eqrel\_1 X0 X1) \Leftrightarrow (\forall X3.(m1\_subset\_1 X3 (k1\_zfmisc\_1 X0)) \Rightarrow \\ & ((X3 \in X2) \Leftrightarrow (\exists X4.(X4 \in X0) \wedge (X3 = k6\_eqrel\_1 X0 X0 X1 X4)))))) \end{aligned} \quad (11)$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2\_struct\_0 X0) \wedge ((\neg v11\_struct\_0 X0) \wedge ((v2\_stacks\_1 \\
& X0) \wedge ((v3\_stacks\_1 X0) \wedge ((v4\_stacks\_1 X0) \wedge ((v5\_stacks\_1 X0) \wedge \\
& ((v6\_stacks\_1 X0) \wedge (l1\_stacks\_1 X0))))))) \Rightarrow (\forall X1.((v1\_stacks\_1 \\
& X1) \wedge (l1\_stacks\_1 X1)) \Rightarrow ((X1 = k14\_stacks\_1 X0) \Leftrightarrow ((u1\_struct\_0 \\
& X1 = u1\_struct\_0 X0) \wedge ((u4\_struct\_0 X1 = k8\_eqrel\_1 (u4\_struct\_0 \\
& X0) (k10\_stacks\_1 X0)) \wedge ((u1\_stacks\_1 X1 = k6\_domain\_1 (k1\_zfmisc\_1 \\
& (u4\_struct\_0 X0) (u1\_stacks\_1 X0)) \wedge ((u2\_stacks\_1 X1 = k3\_stacks\_1 \\
& (u1\_struct\_0 X0) (u4\_struct\_0 X0) (k10\_stacks\_1 X0) (u2\_stacks\_1 \\
& X0)) \wedge ((u3\_stacks\_1 X1 = k2\_filter\_1 (u4\_struct\_0 X0) (k10\_stacks\_1 \\
& X0) (k4\_stacks\_1 (u4\_struct\_0 X0) (u4\_struct\_0 X0) (u1\_stacks\_1 \\
& X0) (u1\_stacks\_1 X0) (u3\_stacks\_1 X0) (k6\_partfun1 (u1\_stacks\_1 \\
& X0)))) \wedge (\forall X2.(m1\_orders\_1 X2 (k8\_eqrel\_1 (u4\_struct\_0 \\
& X0) (k10\_stacks\_1 X0))) \Rightarrow (u4\_stacks\_1 X1 = k2\_funct\_7 (k1\_partfun1 \\
& (k8\_eqrel\_1 (u4\_struct\_0 X0) (k10\_stacks\_1 X0)) (k3\_tarski (k8\_eqrel\_1 \\
& (u4\_struct\_0 X0) (k10\_stacks\_1 X0))) (u4\_struct\_0 X0) (u1\_struct\_0 \\
& X0) X2 (u4\_stacks\_1 X0) (u1\_stacks\_1 X0) (the (\lambda X3 : \iota.m1\_subset\_1 \\
& X3 (u1\_struct\_0 X0))))))))))
\end{aligned} \tag{12}$$

**Theorem 1**

$$\begin{aligned}
& \forall X0.((\neg v2\_struct\_0 X0) \wedge ((\neg v11\_struct\_0 X0) \wedge ((v2\_stacks\_1 \\
& X0) \wedge ((v3\_stacks\_1 X0) \wedge ((v4\_stacks\_1 X0) \wedge ((v5\_stacks\_1 X0) \wedge \\
& ((v6\_stacks\_1 X0) \wedge (l1\_stacks\_1 X0))))))) \Rightarrow (\forall X1.(m1\_subset\_1 \\
& X1 (u4\_struct\_0 X0)) \Rightarrow (m1\_subset\_1 (k6\_eqrel\_1 (u4\_struct\_0 X0) \\
& (u4\_struct\_0 X0) (k10\_stacks\_1 X0) X1) (u4\_struct\_0 (k14\_stacks\_1 \\
& X0))))
\end{aligned}$$