

t46_stacks_1

(TMRBTD4nc1uw9J2F4hqPJetqD9zZqzX1GtH)

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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 $r4_stacks_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_relat_1 : \iota \Rightarrow o$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $r3_stacks_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k3_relat_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((\neg v11_struct_0 X0) \wedge ((v2_stacks_1 \\
& X0) \wedge ((v3_stacks_1 X0) \wedge ((v4_stacks_1 X0) \wedge ((v5_stacks_1 X0) \wedge \\
& ((v6_stacks_1 X0) \wedge (l1_stacks_1 X0))))))) \Rightarrow (\forall X1.((\neg v2_struct_0 \\
& X1) \wedge ((\neg v11_struct_0 X1) \wedge ((v2_stacks_1 X1) \wedge ((v3_stacks_1 X1) \wedge \\
& ((v4_stacks_1 X1) \wedge ((v5_stacks_1 X1) \wedge ((v6_stacks_1 X1) \wedge (l1_stacks_1 \\
& X1))))))) \Rightarrow (\forall X2.((\neg v2_struct_0 X2) \wedge ((\neg v11_struct_0 \\
& X2) \wedge ((v2_stacks_1 X2) \wedge ((v3_stacks_1 X2) \wedge ((v4_stacks_1 X2) \wedge \\
& ((v5_stacks_1 X2) \wedge ((v6_stacks_1 X2) \wedge (l1_stacks_1 X2))))))) \Rightarrow \\
& (\forall X3.((v1_relat_1 X3) \wedge (v1_funct_1 X3)) \Rightarrow (\forall X4.(\\
& (v1_relat_1 X4) \wedge (v1_funct_1 X4)) \Rightarrow (\forall X5.((v1_relat_1 X5) \wedge \\
& (v1_funct_1 X5)) \Rightarrow (\forall X6.((v1_relat_1 X6) \wedge (v1_funct_1 X6)) \Rightarrow \\
& (((r3_stacks_1 X0 X1 X3 X4) \wedge (r3_stacks_1 X1 X2 X5 X6)) \Rightarrow (r3_stacks_1 \\
& X0 X2 (k3_relat_1 X3 X5) (k3_relat_1 X4 X6)))))))))
\end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. (((v1_relat_1 X0) \wedge (v1_funct_1 X0)) \wedge ((\\
& v1_relat_1 X1) \wedge (v1_funct_1 X1))) \Rightarrow ((v1_relat_1 (k3_relat_1 X0 \\
& X1)) \wedge (v1_funct_1 (k3_relat_1 X0 X1)))
\end{aligned} \tag{2}$$

Assume the following.

$$\forall X0. \forall X1. v1_relat_1 (k3_relat_1 X0 X1) \tag{3}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((\neg v11_struct_0 X0) \wedge ((v2_stacks_1 \\
& X0) \wedge ((v3_stacks_1 X0) \wedge ((v4_stacks_1 X0) \wedge ((v5_stacks_1 X0) \wedge \\
& ((v6_stacks_1 X0) \wedge (l1_stacks_1 X0))))))) \Rightarrow (\forall X1.((\neg v2_struct_0 \\
& X1) \wedge ((\neg v11_struct_0 X1) \wedge ((v2_stacks_1 X1) \wedge ((v3_stacks_1 X1) \wedge \\
& ((v4_stacks_1 X1) \wedge ((v5_stacks_1 X1) \wedge ((v6_stacks_1 X1) \wedge (l1_stacks_1 \\
& X1))))))) \Rightarrow ((r4_stacks_1 X0 X1) \Leftrightarrow (\exists X2.((v1_relat_1 X2) \wedge \\
& (v1_funct_1 X2)) \wedge (\exists X3.((v1_relat_1 X3) \wedge (v1_funct_1 X3)) \wedge \\
& (r3_stacks_1 X0 X1 X2 X3))))))
\end{aligned} \tag{4}$$

Theorem 1

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((\neg v11_struct_0 X0) \wedge ((v2_stacks_1 \\
& X0) \wedge ((v3_stacks_1 X0) \wedge ((v4_stacks_1 X0) \wedge ((v5_stacks_1 X0) \wedge \\
& ((v6_stacks_1 X0) \wedge (l1_stacks_1 X0))))))) \Rightarrow (\forall X1.((\neg v2_struct_0 \\
& X1) \wedge ((\neg v11_struct_0 X1) \wedge ((v2_stacks_1 X1) \wedge ((v3_stacks_1 X1) \wedge \\
& ((v4_stacks_1 X1) \wedge ((v5_stacks_1 X1) \wedge ((v6_stacks_1 X1) \wedge (l1_stacks_1 \\
& X1))))))) \Rightarrow (\forall X2.((\neg v2_struct_0 X2) \wedge ((\neg v11_struct_0 \\
& X2) \wedge ((v2_stacks_1 X2) \wedge ((v3_stacks_1 X2) \wedge ((v4_stacks_1 X2) \wedge \\
& ((v5_stacks_1 X2) \wedge ((v6_stacks_1 X2) \wedge (l1_stacks_1 X2))))))) \Rightarrow \\
& ((r4_stacks_1 X0 X1) \wedge (r4_stacks_1 X1 X2)) \Rightarrow (r4_stacks_1 X0 X2)))
\end{aligned}$$