

## t25\_memstr\_0

(TMS4UK7zKoksKGGQgBEbDvGjzD2fGNSdZ7Pb)

October 27, 2020

Let  $v1\_setfam\_1 : \iota \Rightarrow o$  be given. Let  $v2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v2\_memstr\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v3\_memstr\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $l1\_memstr\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v1\_relat\_1 : \iota \Rightarrow o$  be given. Let  $v4\_relat\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $v1\_funct\_1 : \iota \Rightarrow o$  be given. Let  $v5\_funct\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k2\_memstr\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_partfun1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k9\_xtuple\_0 : \iota \Rightarrow \iota$  be given. Let  $k2\_xboole\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k6\_domain\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $k6\_memstr\_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

$$\begin{aligned} & \forall X0. (\neg v1\_setfam\_1 X0) \Rightarrow (\forall X1. ((\neg v2\_struct\_0 X1) \wedge \\ & ((v2\_memstr\_0 X1 X0) \wedge (l1\_memstr\_0 X1 X0))) \Rightarrow (\forall X2. ((v1\_relat\_1 \\ & X2) \wedge ((v4\_relat\_1 X2 (u1\_struct\_0 X1)) \wedge ((v1\_funct\_1 X2) \wedge ((v5\_funct\_1 \\ & X2 (k2\_memstr\_0 X0 X1)) \wedge (v1\_partfun1 X2 (u1\_struct\_0 X1)))))) \Rightarrow \\ & (k4\_struct\_0 X1 \in k9\_xtuple\_0 X2))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} & \forall X0. (\neg v1\_setfam\_1 X0) \Rightarrow (\forall X1. ((\neg v2\_struct\_0 X1) \wedge \\ & ((v2\_memstr\_0 X1 X0) \wedge ((v3\_memstr\_0 X1 X0) \wedge (l1\_memstr\_0 X1 X0)))) \Rightarrow \\ & (\forall X2. ((v1\_relat\_1 X2) \wedge ((v4\_relat\_1 X2 (u1\_struct\_0 X1)) \wedge \\ & ((v1\_funct\_1 X2) \wedge (v5\_funct\_1 X2 (k2\_memstr\_0 X0 X1)))))) \Rightarrow ((k4\_struct\_0 \\ & X1 \in k9\_xtuple\_0 X2) \Rightarrow (k9\_xtuple\_0 X2 = k2\_xboole\_0 (k6\_domain\_1 \\ & (u1\_struct\_0 X1) (k4\_struct\_0 X1) (k9\_xtuple\_0 (k6\_memstr\_0 \\ & X0 X1 X2)))))) \end{aligned} \tag{2}$$

**Theorem 1**

$$\begin{aligned} & \forall X0.(\neg v1\_setfam\_1 X0) \Rightarrow (\forall X1.((\neg v2\_struct\_0 X1) \wedge \\ & ((v2\_memstr\_0 X1 X0) \wedge ((v3\_memstr\_0 X1 X0) \wedge (l1\_memstr\_0 X1 X0)))) \Rightarrow \\ & (\forall X2.((v1\_relat\_1 X2) \wedge ((v4\_relat\_1 X2 (u1\_struct\_0 X1)) \wedge \\ & ((v1\_funct\_1 X2) \wedge ((v5\_funct\_1 X2 (k2\_memstr\_0 X0 X1)) \wedge (v1\_partfun1 \\ & X2 (u1\_struct\_0 X1)))))) \Rightarrow (k9\_xtuple\_0 X2 = k2\_xboole\_0 (k6\_domain\_1 \\ & (u1\_struct\_0 X1) (k4\_struct\_0 X1)) (k9\_xtuple\_0 (k6\_memstr\_0 \\ & X0 X1 X2)))))) \end{aligned}$$