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MACHINE UnionMax**VARIABLES**

to_week
to_month
the_max

INVARIANTS

inv_1: $to_week \in \mathbb{N} \leftrightarrow \mathbb{N}$
 inv_2: $finite(ran(to_week))$
 inv_3: $to_month \in \mathbb{N} \leftrightarrow \mathbb{N}$
 inv_4: $finite(ran(to_month))$
 inv_5: $the_max \in \mathbb{N}$
 thm_1: $\langle \text{theorem} \rangle \forall s. \forall d. s \subseteq \mathbb{N} \wedge d \subseteq \mathbb{N} \wedge finite(s) \wedge finite(d) \Rightarrow finite(s \cup d)$

EVENTS**Initialisation****begin**

init_1: $to_week := \emptyset$
 init_2: $to_month := \emptyset$
 init_3: $the_max := 0$

end

Event calc $\langle \text{ordinary} \rangle \hat{=}$

any

m

where

grd_1: $to_week \neq \emptyset$
 grd_2: $to_month \neq \emptyset$
 grd_3: $m = (ran(to_week) \cup ran(to_month))$
 To have act_1_WD autoprove add the guard: @grd_4 finite(m)

then

act_1: $the_max := max(m)$

end**END**