Contents

MACHINE Collect

VARIABLES

coins

max_odd

INVARIANTS

inv_1: $coins \subseteq \mathbb{N}$

inv_2: $finite(coins)$

inv_3: $max\_odd \in \mathbb{N}$

EVENTS

Initialisation

begin

init_1: $coins := \varnothing$

init_2: $max\_odd := 0$

end

Event add ⟨ordinary⟩ $\widehat{=}$

any

c

where

grd_1: $c \in \mathbb{N}$

then

act_1: $coins := coins \cup \{c\}$

end

Event findMax ⟨ordinary⟩ $\widehat{=}$

any

odds

where

grd_1: $coins \neq \varnothing$

grd_2: $\exists x \cdot x \in coins \wedge x mod 2 = 1$

grd_3: $odds = \{x \cdot x \in coins \wedge x mod 2 = 1 | x\}$

then

act_1: $max\_odd := max(odds)$

end

END

MACHINE Collect1
REFINES Collect
VARIABLES
collected_odds
max_odd
INVARIANTS
inv1_1: $collected\_odds \subseteq \mathbb{N}$
inv1_2: $finite(collected\_odds)$
inv1_3: $collected\_odds = \{x \cdot x \in coins \land xmod2 = 1 | x\}$
EVENTS
Initialisation
begin
init1_1: $collected\_odds := \varnothing$
init1_2: $max\_odd := 0$
end
Event addOdd ⟨ordinary⟩ $\widehat{=}$
refines add
any
c
where
grd1_1: $c \in \mathbb{N}$
grd1_2: $cmod2 = 1$
then
act1_1: $collected\_odds := collected\_odds \cup \{c\}$
end
Event ignoreEven ⟨ordinary⟩ $\widehat{=}$
refines add
any
c
where
grd1_1: $c \in \mathbb{N}$
grd1_2: $cmod2 = 0$
then
skip
end
Event findMax ⟨ordinary⟩ $\widehat{=}$
refines findMax
when
grd1_2: $collected\_odds \neq \varnothing$
with
odds: $odds = collected\_odds$
then
act1_1: $max\_odd := max(collected\_odds)$
end
END