
MODULE *SodaMachine*

EXTENDS *Integers, Sequences*

CONSTANT *SODA_COST, ACCEPTED_CHANGE*

VARIABLE *change*

$TypeOK \triangleq change \geq 0$

$Init \triangleq change = 0$

$AddMoney(m) \triangleq \wedge change' = change + m$

$DispenseAndReturnChange \triangleq \wedge change \geq SODA_COST$
 $\wedge change' = change - SODA_COST$

$Next \triangleq$
 $\vee \exists m \in ACCEPTED_CHANGE : AddMoney(m)$
 $\vee DispenseAndReturnChange$

$Invariant \triangleq change \neq 97$

$Spec \triangleq Init \wedge \square[Next]_{\langle change \rangle}$

THEOREM $Spec \Rightarrow \square(TypeOK)$

\ * Modification History
\ * Last modified *Fri Sep 27 22:50:46 PDT 2019* by *jasondebolt*
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