MODULE $malgtd1ex10bis$

EXTENDS $Naturals$, $Integers$, TLC
CONSTANTS $x0$, $y0$
VARIABLES x, y, pc

Interpretation: w assume that the precondition can hold and we have to find possible values for $x0$,$y0$, $z0$ to validate or not

ASSUME $\land x0 \in Int \land y0 \in Int$
$\land \ x0 = 2^4 \land y0 = 2 \land x0 * y0 = 2^5$

Auxiliary definitions

$typeInt(u) \triangleq u \in Int$
$pre \triangleq \land x0 \in Int \land y0 \in Int$
$\land \ x0 = 2^4 \land y0 = 2 \land x0 * y0 = 2^5$

Action for transitioon of the algorithm

$al1l2 \triangleq$
$\land pc = \text{“l1”}$
$\land pc' = \text{“l2”}$
$\land x' = y + x + 2^x$
$\land y' = y$

Computations

$Next \triangleq al1l2 \lor \text{UNCHANGED } \langle x, y, pc \rangle$
$Init \triangleq pc = \text{“l1”} \land x = x0 \land y = y0 \land pre$

Checking the annotation by checking the invariant i derived from the annotation

$i \triangleq$
$\land typeInt(x) \land typeInt(y)$
$\land pc = \text{“l1”} \Rightarrow x = x0 \land y = y0 \land pre$
$\land pc = \text{“l2”} \Rightarrow x = 2^{10} \land y = 2 \land PrintT(x)$

$safe \triangleq i$

* Modification History
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