MODULE *flowchart_prime*

EXTENDS *Integers*, *TLC*
CONSTANTS x x is the input
VARIABLES y, z, l, d

$Init \triangleq \; y = 0 \; \land z = 0 \land l = \text{“start”} \land d = \{\}$
$L1 \triangleq \; l = \text{“start”} \land y' = 2 \land l' = \text{“loop”} \land \text{UNCHANGED} \; \langle \; z, \; d \rangle$
$L3 \triangleq \; l = \text{“loop”} \land y \geq \; x \land l' = \text{“inloop1”} \land \text{UNCHANGED} \; \langle y, \; z, \; d \rangle$
$L4 \triangleq \; l = \text{“inloop1”} \land \; z' = \text{TRUE} \land l' = \text{“halt”} \land \text{UNCHANGED} \; \langle y, \; d \rangle$
$L6 \triangleq \; l = \text{“loop”} \land y < x \land l' = \text{“inloop2”} \land \text{UNCHANGED} \; \langle y, \; \; z, \; d \rangle$
$L7 \triangleq \; l = \text{“inloop2”} \land \; (x \% y \; = \; 0) \; \land z' = \text{FALSE} \land \; d' = d \cup \{y\} \land l' = \text{“halt”} \land \text{UNCHANGED} \; \langle y \rangle$
$L8 \triangleq \; l = \text{“inloop2”} \land \; (x \% y \; \neq 0) \; \land y' = y + 1 \land \; l' = \text{“loop”} \land \text{UNCHANGED} \; \langle z, \; d \rangle$

$Next \triangleq \; \lor L1 \; \lor L3 \lor L4$
$\qquad \lor L6 \lor L7 \lor L8$

\ ∗ Modification History
\ ∗ Last modified *Mon Oct* 12 13:32:37 *CEST* 2015 by *mery*
\ ∗ Created Sun *Sep* 07 00:06:23 *CEST* 2014 by *mery*