

MODULE *Sqrs*

This file contains the abstract program *Sqrs* of Section 3.2.2 of the book “A Science of Concurrent Programs” by *Leslie Lamport*.

The formulas *Init* and *Next* describe the initial predicate and step predicate.

EXTENDS *Integers*

VARIABLES x, y

$Init \triangleq (x = 1) \wedge (y = 1)$

$Next \triangleq \begin{array}{l} \wedge x' = x + y + 2 \\ \wedge y' = y + 2 \end{array}$

Formula *Inv* is the inductive invariant defined in formula (3.7)

$Inv \triangleq \begin{array}{l} \wedge (x \in Nat) \wedge (y \in Nat) \\ \wedge y \% 2 = 1 \\ \wedge x = ((y + 1) \div 2)^2 \end{array}$

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