

Exercise

Apply the standard operational semantics, the concrete and the abstract operational semantics to the following program

$$P = \langle c1; c2; \dots; c5, \{x\}, \{y, z\} \rangle$$

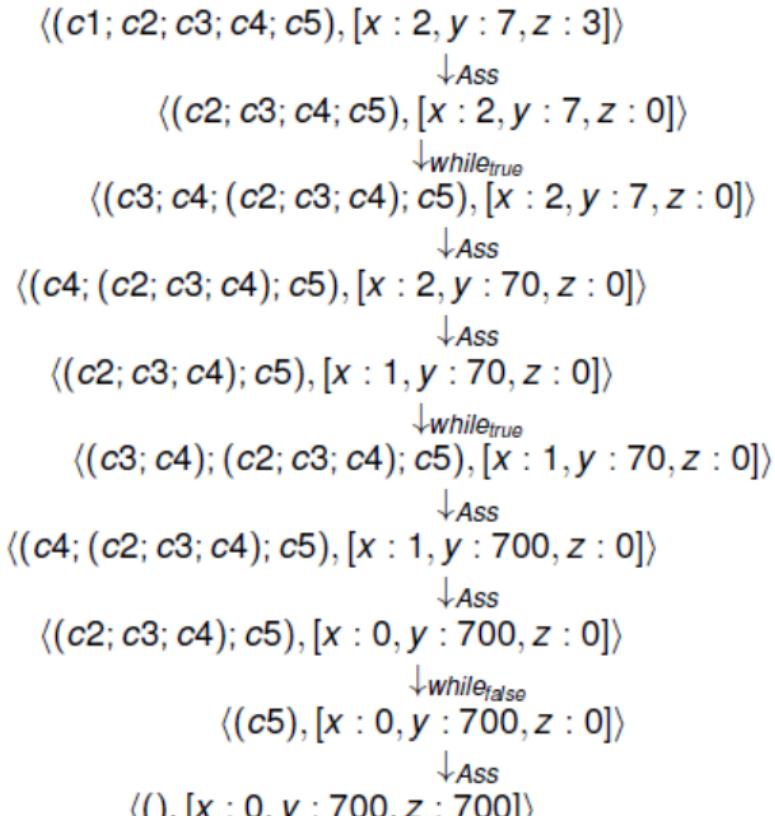
with $m(x) = 2$, $m(y) = 7$, $m(z) = 3$

c1: $z := 0;$
c2: while $(x > 0)$
c3: $y := y * 10;$
c4: $x := x - 1;$
c5: $z := y;$

Does P satisfy SIF? Why?

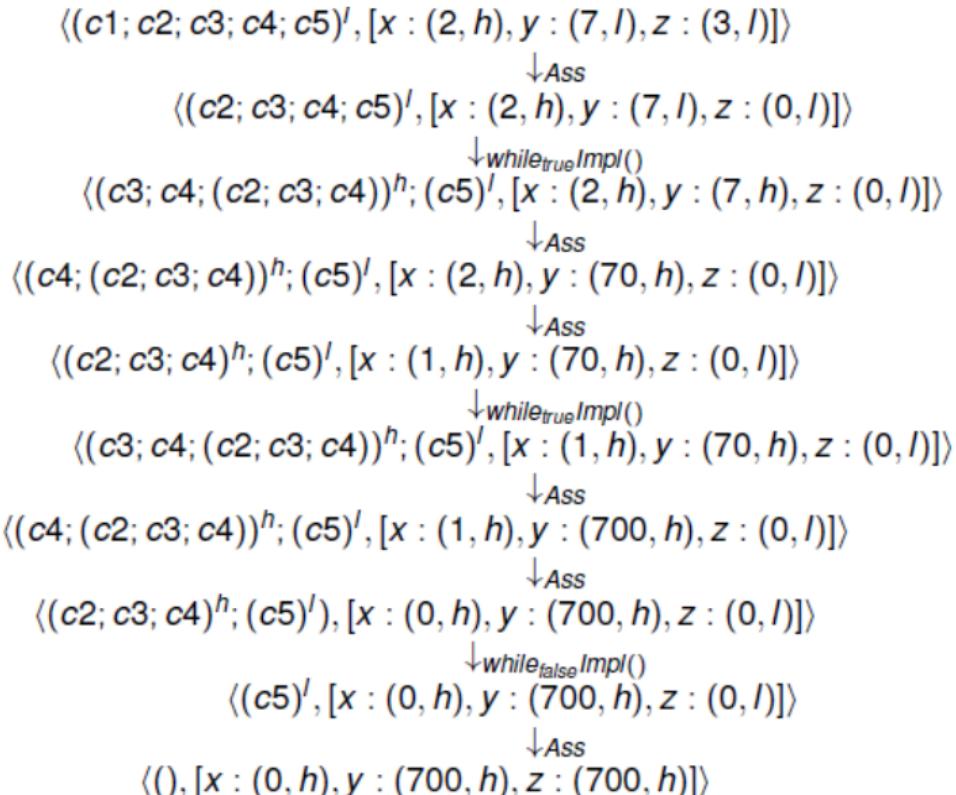
Standard semantics

$EP(P, m) \ m = [x : 2, y : 7, z : 3]$



Concrete semantics

$CP(P, M) \ m = [x : (2, h), y : (7, l), z : (3, l)]$



Abstract semantics

$AP(P, M^\#)$

$M^\# = [x : h, y : I, z : I]$

