

494 Express the program

$(x := 1. x := x + y) \parallel (y := 2. y := x + y)$

without using assignment, sequential composition, or concurrent composition, where t is time, and x and y are

- (a) boundary variables and assignment takes time 0 .
- (b) interactive variables and assignment takes time 1 .

After trying the question, scroll down to the solution.

(a) boundary variables and assignment takes time 0 .

$$\S \quad x' = y+1 \wedge y' = x+2 \wedge t'=t$$

(b) interactive variables and assignment takes time 1 .

$$\S \quad x(t+1)=1 \wedge x(t+2)=3 \wedge y(t+1)=2 \wedge y(t+2)=3 \wedge t'=t+2$$