

Owicki & Gries: An axiomatic proof technique for parallel programs I

Examples

Example |

{ $x = 0$ }

< $x := x + 1$ > || < $x := x + 2$ >

{ $x = 3$ }

Example |

$$\{ x = 0 \}$$

$$\{ (x = 0 \vee x = 2) \wedge (x = 0 \vee x = 1) \}$$

$$\{ x = 0 \vee x = 2 \}$$

$$\{ x = 0 \vee x = 1 \}$$

$$< x := x + 1 >$$

||

$$< x := x + 2 >$$

$$\{ x = 1 \vee x = 3 \}$$

$$\{ x = 2 \vee x = 3 \}$$

$$\{ (x = 1 \vee x = 3) \wedge (x = 2 \vee x = 3) \}$$

$$\{ x = 3 \}$$

Example |(b)

{ $x = 0$ }

< $x := x + 1$ >

||

< $x := x + 1$ >

{ $x = 2$ }

Example | (b)

{ $x = 0$ }

$y := 0 ; z := 0 ;$

< $x := x + 1 ;$
 $y := y + 1 >$

||

< $x := x + 1 ;$
 $z := z + 1 >$

{ $x = 2$ }

Example I (b)

$$\{ x = 0 \}$$
$$y := 0 ; z := 0 ;$$
$$\{ (x = y + z \wedge y = 0) \wedge (x = y + z \wedge z = 0) \}$$
$$\{ x = y + z \wedge y = 0 \} \quad \{ x = y + z \wedge z = 0 \}$$
$$< x := x + 1 ;$$
$$y := y + 1 >$$
$$||$$
$$< x := x + 1 ;$$
$$z := z + 1 >$$
$$\{ x = y + z \wedge y = 1 \}$$
$$\{ x = y + z \wedge z = 1 \}$$
$$\{ (x = y + z \wedge y = 1) \wedge (x = y + z \wedge z = 1) \}$$
$$\{ x = 2 \}$$