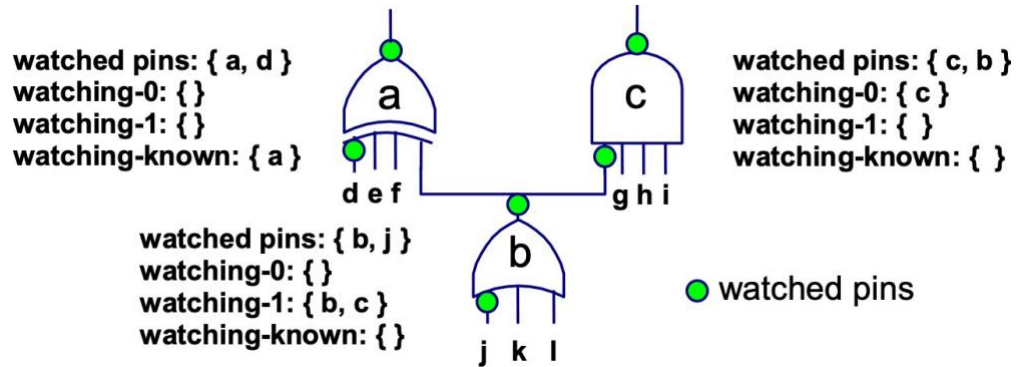


## SoC Verification HW4

Arvind Singh Rathore

R10943157

Q2)



(a)  $f \leftarrow 0$

a:  $f=0$

Directly implication: No, updateWatch(): No

(b)  $b \leftarrow 1$

a:  $f=0$ ,  $b=0$ ; b:  $b=1$ ; c:  $b=1$

Directly implication: No

updateWatch(b, j):

a: remain

b: update

c: update

watched pins: { a, d }

watched pins: { j, **k** }

watched pins: { c, **g** }

watching-0: { }

watching-0: { }

watching-0: { c }

watching-1: { }

watching-1: { }

watching-1: { }

watching-known: { a }

watching-known: { }

watching-known: { }

(c)  $e \leftarrow 0$

a:  $f=0$ ,  $b=0$ ,  $e=0$ ; b:  $b=1$ ; c:  $b=1$

Directly implication: No, updateWatch(): No

(d)  $a \leftarrow 1$

a: f=0, b=0, e=0, a=1; b: b=1; c: b=1

updateWatch(a, d):

a: no new pin	b: remain	c: remain
watched pins: { a, d }	watched pins: { j, k }	watched pins: { c, g }
watching-0: { }	watching-0: { }	watching-0: { c }
watching-1: { }	watching-1: { }	watching-1: { }
watching-known: {a}	watching-known: { }	watching-known: { }

implication: f=0, b=0, e=0, a=1 implies d=0

(e)  $l \leftarrow 1$

a: f=0, b=0, e=0, a=1 (imply: d=0); b: b=1, l=1; c: b=1

Directly implication: b=1, updateWatch(): No

(f)  $j \leftarrow 0$

a: f=0, b=0, e=0, a=1 (imply: d=0); b: b=1, l=1, j=0; c: b=1

updateWatch(j, k):

a: remain	b: update	c: remain
watched pins: { a, d }	watched pins: { k, <b>l</b> }	watched pins: { c, g }
watching-0: { }	watching-0: { }	watching-0: { c }
watching-1: { }	watching-1: { }	watching-1: { }
watching-known: {a}	watching-known: { }	watching-known: { }

(g)  $g \leftarrow 0$

a: f=0, b=0, e=0, a=1 (imply: d=0); b: b=1, l=1, j=0; c: b=1, g=0 (imply: c=0)

Directly implication: c=0

updateWatch(c, g):

a: remain	b: remain	c: update
watched pins: { a, d }	watched pins: { k, l }	watched pins: { g, <b>h</b> }
watching-0: { }	watching-0: { }	watching-0: { }
watching-1: { }	watching-1: { }	watching-1: { }
watching-known: {a}	watching-known: { }	watching-known: { }

(h)  $h \leftarrow 1$

a: f=0, b=0, e=0, a=1 (imp: d=0); b: b=1, l=1, j=0, h=1; c: b=1, g=0 (imp: c=0)

Directly implication: No

updateWatch(g, h):

a: remain

b: remain

c: update

watched pins: { a, d }

watched pins: { k, l }

watched pins: { g, **i** }

watching-0: { }

watching-0: { }

watching-0: { }

watching-1: { }

watching-1: { }

watching-1: { }

watching-known: {a}

watching-known: { }

watching-known: { }