

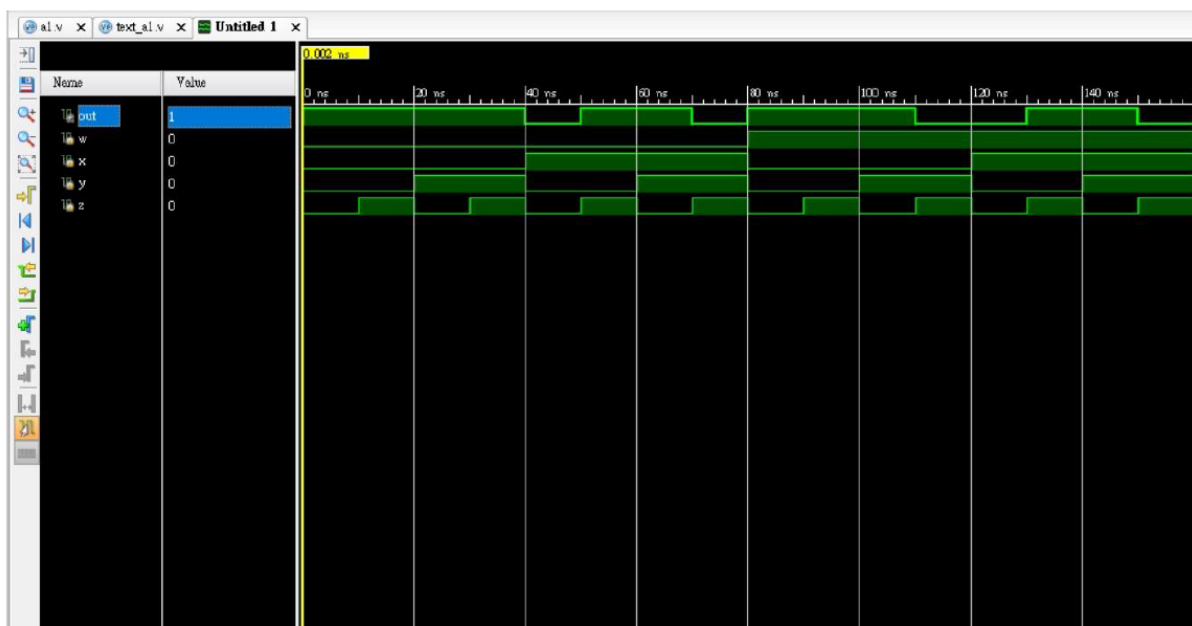
邏輯設計 HW2_solution

(a.)

化簡前: $(x(yz' + y'z)' + wy(y' + x'z))'$

Truth table:

w	x	y	z	F
0	0	0	0	1
0	0	0	1	1
0	0	1	0	1
0	0	1	1	1
0	1	0	0	0
0	1	0	1	1
0	1	1	0	1
0	1	1	1	0
1	0	0	0	1
1	0	0	1	1
1	0	1	0	1
1	0	1	1	0
1	1	0	0	0
1	1	0	1	1
1	1	1	0	1
1	1	1	1	0



化簡後: $(x' + yz' + y'z)(w' + y' + xy + yz')$

$$= (x' + y + z)(x' + y' + z')(w' + x + y' + z')$$

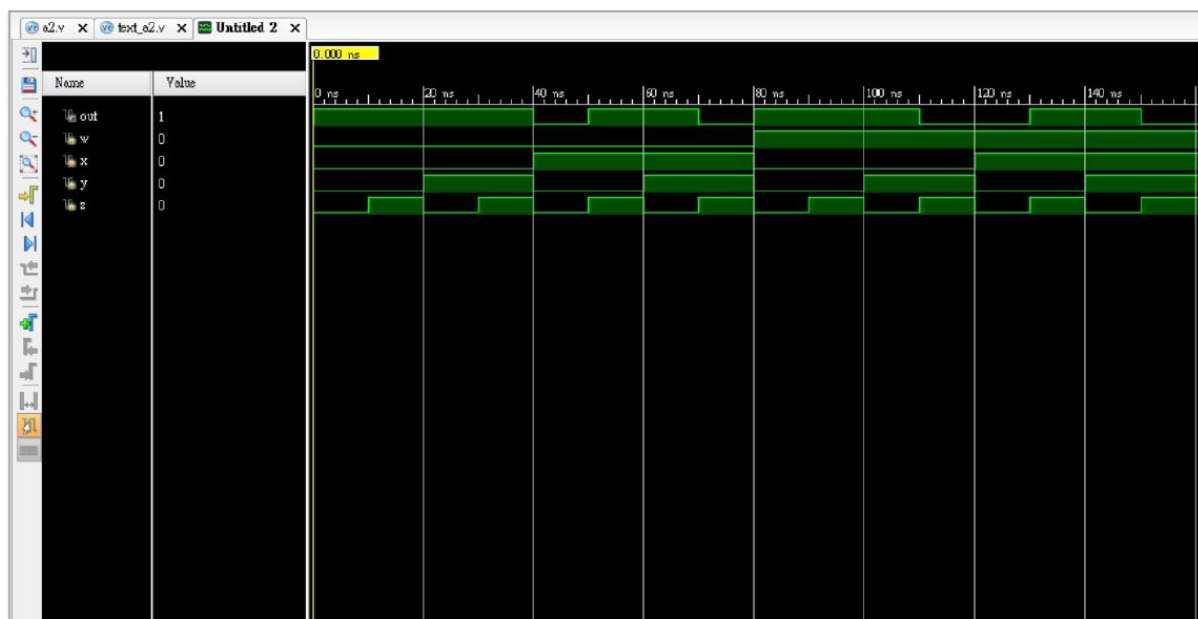
$$= w'x' + x'y' + yz' + y'z$$

$$= (x' + yz' + y'z)(w' + y' + xy + z')$$

三種化簡都對

Truth table:

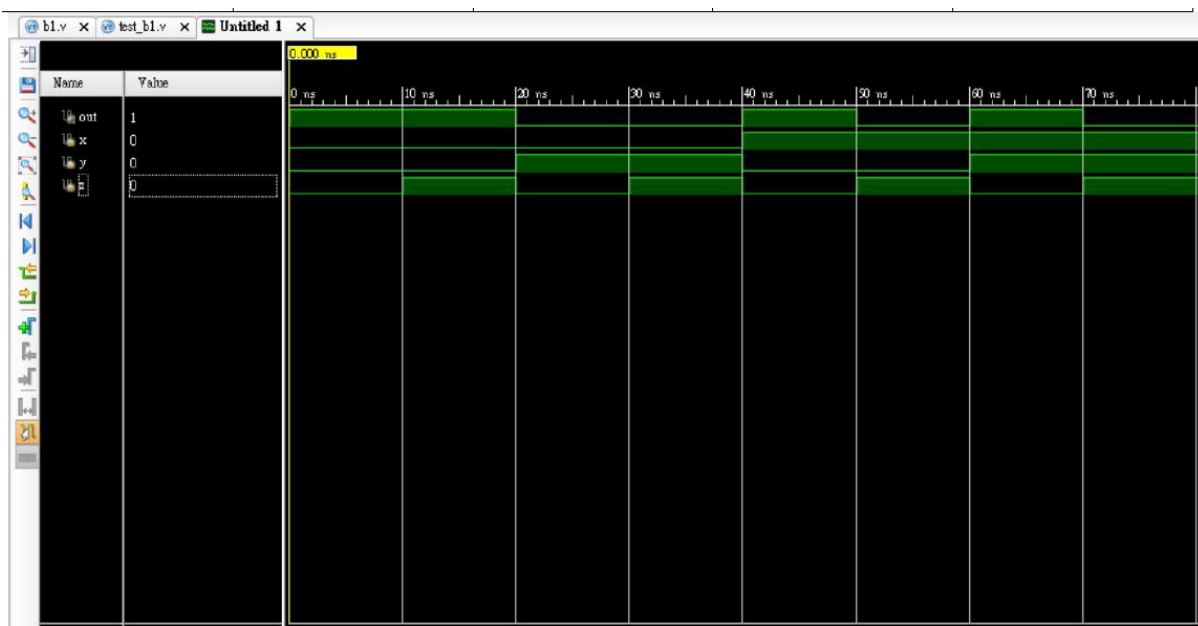
w	x	y	z	F
0	0	0	0	1
0	0	0	1	1
0	0	1	0	1
0	0	1	1	1
0	1	0	0	0
0	1	0	1	1
0	1	1	0	1
0	1	1	1	0
1	0	0	0	1
1	0	0	1	1
1	0	1	0	1
1	0	1	1	0
1	1	0	0	0
1	1	0	1	1
1	1	1	0	1
1	1	1	1	0



(b)

化簡前: $(x+y)' + z'(x'+z)'$

x	y	z	F
0	0	0	1
0	0	1	1
0	1	0	0
0	1	1	0
1	0	0	1
1	0	1	0
1	1	0	1
1	1	1	0



化簡後: $x'y' + xz'$

x	y	z	F
0	0	0	1
0	0	1	1
0	1	0	0
0	1	1	0
1	0	0	1
1	0	1	0
1	1	0	1
1	1	1	0

