

Sens ER504

040200636

CRN:10093

Homework II

BLND

HW 2

1-

x	y	z	$x'y'z' + xy$	$((x+y+z)xy)$
0	0	0	1	1
0	0	1	0	1
0	1	0	1	1
0	1	1	1	1
1	0	0	1	1
1	0	1	1	1
0	1	0	1	1
1	1	1	1	0

Not equal

x	y	z	$x(x'+y+z)$	$xy+xz$
0	0	0	0	0
0	0	1	0	0
0	1	0	0	0
0	1	1	0	0
1	0	0	0	0
1	0	1	1	1
1	1	0	1	1
1	1	1	1	1

Equal

2-

a. $ABC + A'B + ABC'$

$$AB(C+C') + A'B$$

$$AB + A'B \rightarrow B(A+A') = \underline{\underline{B}}$$

b. $(x+y)(x'+y')$

$$(x'y') (x'+y') = \cancel{x} \cancel{y}$$

c. $xy + x(wz + wz') = xy + xw$

$$= x(y+w)$$

d. $(a'+c')(a+b'+c') = \cancel{a'a} + c'b + a'b' + c'b' + \cancel{a'c'} + c'c$

 $c'(a+a') + b'(a'+c') + c'$
 $\underline{c' + b'(a'+c')}$

3)

a. $a_1' a_0' b_1' b_0 \rightarrow m_1$ $c_0 = \sum_m (1, 3, 4, 6, 9, 11, 12, 16)$

$a_1' a_0' b_1' b_0 \rightarrow m_3$

$a_1' a_0' b_1' b_0' \rightarrow m_4$

$a_1' a_0' b_1' b_0' \rightarrow m_6$

$a_1' a_0' b_1' b_0' \rightarrow m_9$

$a_1' a_0' b_1' b_0 \rightarrow m_{11}$

$a_1' a_0' b_1' b_0' \rightarrow m_{12}$

$a_1' a_0' b_1' b_0 \rightarrow m_{14}$

$c_1 = \sum_m (2, 3, 5, 6, 8, 9, 12, 15)$

$c_2 = \sum_m (7, 10, 11, 13, 14, 15)$

b.	$a_1 a_0 b_1 b_0$	$a_1 a_0 b_1 b_0$	$a_1 a_0 b_1 b_0$
$\checkmark 1$	0 0 0 1	$\checkmark 1, 3$	0 0 -1
$\checkmark 4$	0 1 0 0	$\checkmark 1, 9$	- 0 0 1
$\checkmark 3$	0 0 1 1	$\checkmark 4, 6$	0 1 -0
$\checkmark 6$	0 1 1 0	$\checkmark 4, 12$	- 1 0 0
$\checkmark 9$	1 0 0 1	$\checkmark 3, 11$	- 0 1 1
$\checkmark 12$	1 1 0 0	$\checkmark 6, 14$	- 1 1 0
$\checkmark 11$	1 0 1 1	$\checkmark 9, 11$	1 0 -1
$\checkmark 14$	1 1 1 0	$\checkmark 12, 14$	1 1 -0

$$A \rightarrow 1, 9, 3, 11$$

$$B \rightarrow 1, 3, 9, 11$$

$$C \rightarrow 4, 12, 6, 14$$

$$D \rightarrow 6, 8, 12, 14$$

$$A + C$$

$$g(a_1, a_0, b_1, b_0) = a_0' b_0 + a_0 b_0' = c_0$$

	$a_1 a_0 b_1 b_0$		$a_1 a_0 b_1 b_0$	
$\checkmark 2$	0 0 1 0	$\checkmark 2, 3$	0 0 1 -	$A \rightarrow 5$
$\checkmark 8$	1 0 0 0	$\checkmark 2, 6$	0 - 1 0	$B \rightarrow 15$
$\checkmark 3$	0 0 1 1	$\checkmark 8, 3$	1 0 0 -	$C \rightarrow 2, 3$
$\checkmark 5$	0 1 0 1	$\checkmark 8, 12$	1 - 0 0	$D \rightarrow 2, 6$
$\checkmark 6$	0 1 1 0			$E \rightarrow 8, 9$
$\checkmark 9$	1 0 0 1			$F \rightarrow 8, 12$
$\checkmark 12$	1 1 0 0			
$\checkmark 15$	1 1 1 1			

$$C_1(a_1, a_0, b_1, b_0) = a_1' a_0 b_1' b_0 + a_1 a_0 b_1 b_0 + a_1' a_0' b_1'$$

$$+ a_1' b_1 b_0' + a_1 a_0' b_1' + a_1 b_1' b_0'$$

	$a_1 a_0 b_1 b_0$		$a_1 a_0 b_1 b_0$	
$\checkmark 10$	1 0 1 0	$\checkmark 10, 11$	1 0 1 -	$A \rightarrow 10, 11$
$\checkmark 7$	0 1 1 1	$\checkmark 10, 14$	1 - 1 0	$B \rightarrow 10, 14$
$\checkmark 11$	1 0 1 1	$\checkmark 7, 15$	- 1 1 1	$C \rightarrow 7, 15$
$\checkmark 13$	1 1 0 1	$\checkmark 13, 15$	1 1 - 0	$D \rightarrow 13, 15$
$\checkmark 14$	1 1 1 0			
$\checkmark 15$	1 1 1 1			

$$C_2(a_1 a_0, b_1, b_0) = a_1 a_0' b_1 + a_1 b_1 b_0' + a_0 b_1 b_0 + a_1 b_0 b_0'$$

[Dosya](#) [Makine](#) [Görünüm](#) [Giriş](#) [Aygıtlar](#) [Yardım](#)[Applications](#) [Places](#) [System](#)

Wed Oct 25, 11:33 PM



ISE Project Navigator (P.20131013) - /home/ise/Documents/LogHW1/LogHW1.xise - [Case_Statement (RTL1)]

File Edit View Project Source Process Tools Window Layout Help

Design

View: Implementation Simulation

Hierarchy

- LogHW1
 - xc3s400-4pq208
 - Case_Statement - Behavioral (Boole)

No Processes Running

Processes: Case_Statement - Behavioral

- Design Summary/Reports
- Design Utilities
- User Constraints
- Synthesize - XST
 - View RTL Schematic**
 - View Technology Schematic
 - Check Syntax
 - Generate Post-Synthesis Simul...
- Implement Design
- Translate

Start Design Files Libraries

Design Summary (Synthesized) Boolean_Function_Case_Statement.vhd Case_Statement.ngn:1 Case_Statement (RTL1)

View by Category

Design Objects of Top Level Block

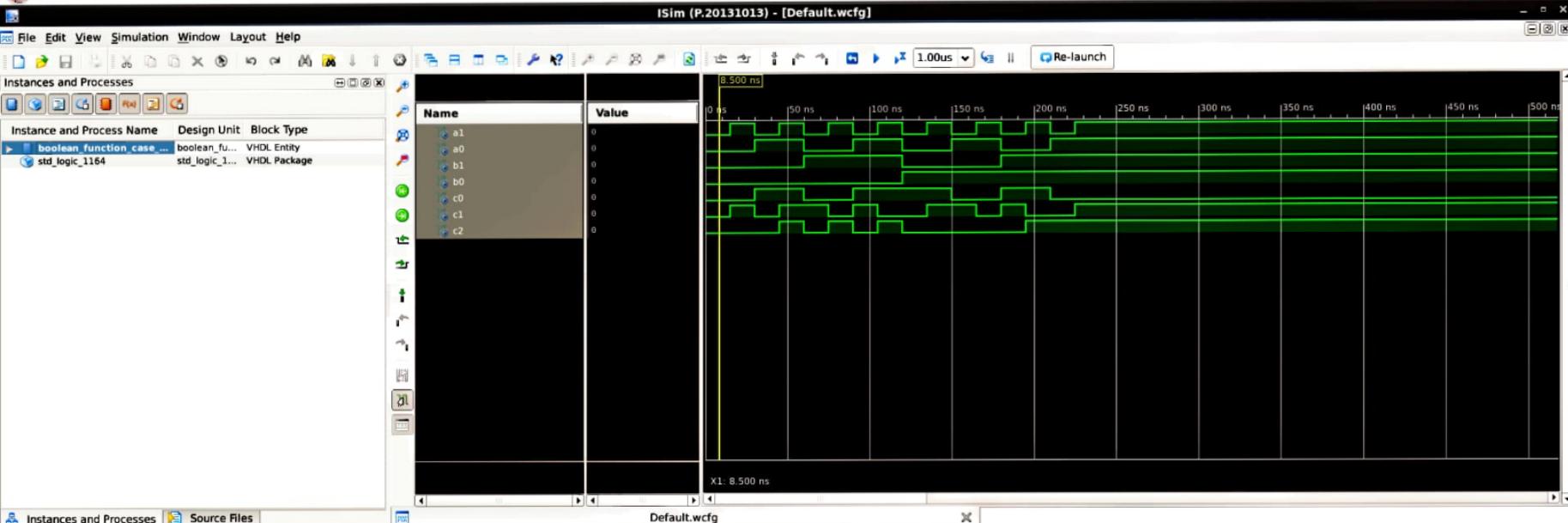
Instances	Pins	Signals	Name	Value
Case_Statement				

Properties: (No Selection)

Console Errors Warnings Find in Files Results View by Category [136,164]

```
graph TD; a[a] --> a0[a0]; a0 --> a1[a1]; a1 --> b0[b0]; b0 --> b1[b1]; a0 --> C0[C0]; a1 --> C1[C1]; b0 --> C2[C2]; C0 --> a; C1 --> a; C2 --> a;
```





Instances and Processes Source Files

Console

This is a Full version of ISim.
Time resolution is 1 ps
Simulator is doing circuit initialization process.
Finished circuit initialization process.

ISim>

Console Compilation Log Breakpoints Find in Files Results Search Results

Sim Time: 1,000,000 ps

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