ΟΙΚΟΝΟΜΙΚΟ ΠΑΝΕΠΙΣΤΗΜΙΟ ΑΘΗΝΩΝ

ATHENS UNIVERSITY OF ECONOMICS AND BUSINESS

Σχεδίαση Ψηφιακών Συστημάτων

2η ομαδική εργασία

Μέλη:

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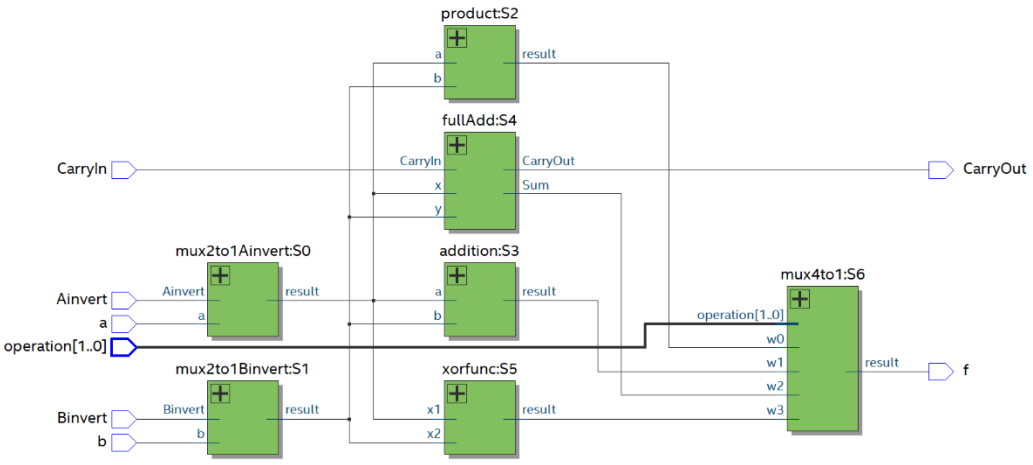
Ευάγγελος Μαρκουλάκης p3210115 p3210115@aueb.gr

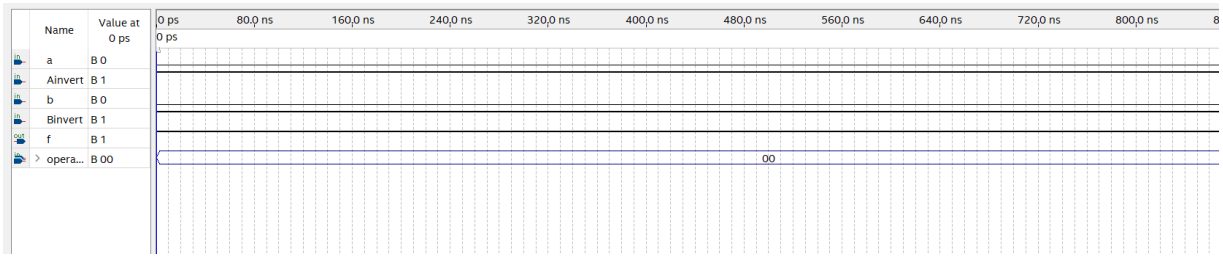
1ο μέρος:

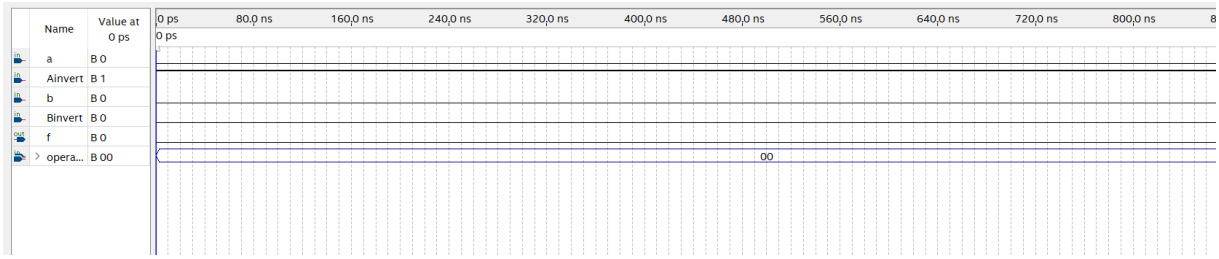
RTL viewer



Κυματομορφές:

AND

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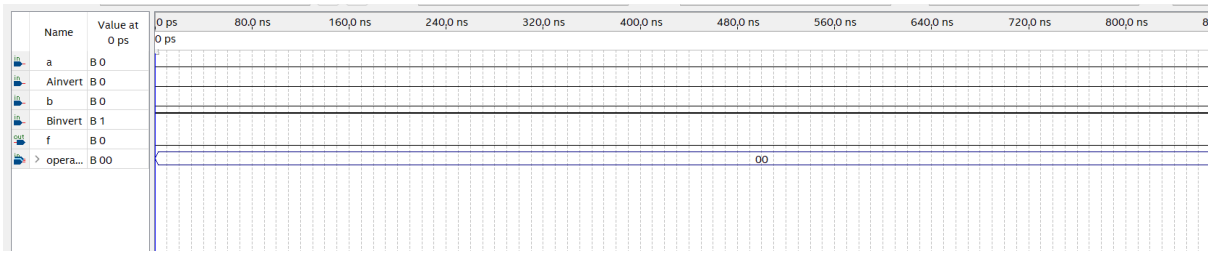
Ainvert B 1
b B 0
Binvert B 0
f B 0
opera... B 00
00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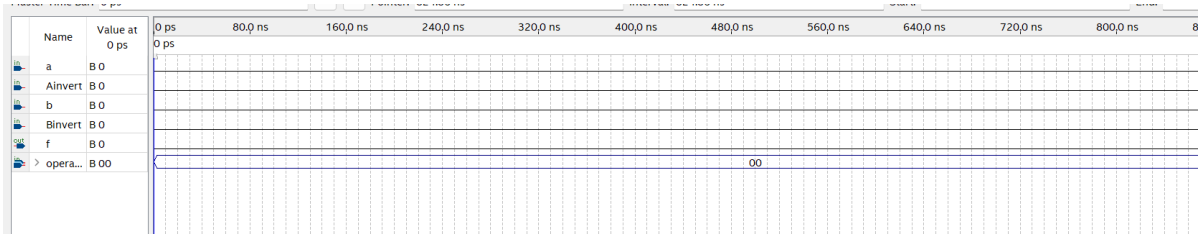
Ainvert B 0
b B 0
Binvert B 1
f B 0
opera... B 00
00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Value at 0 ps
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b B 0
Binvert B 0
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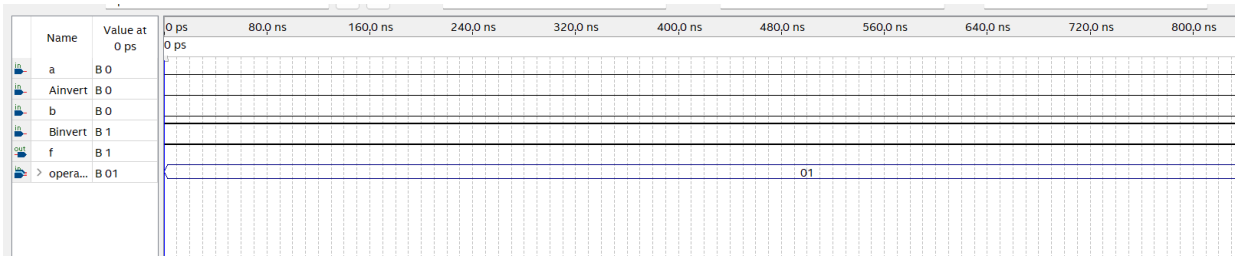
opera... B 00
00

OR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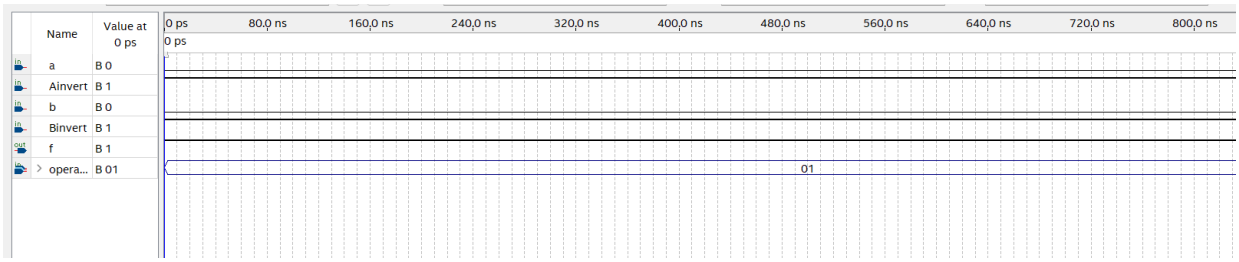
b B 0
Binvert B 1
f B 1
opera... B 01
01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Value at 0 ps
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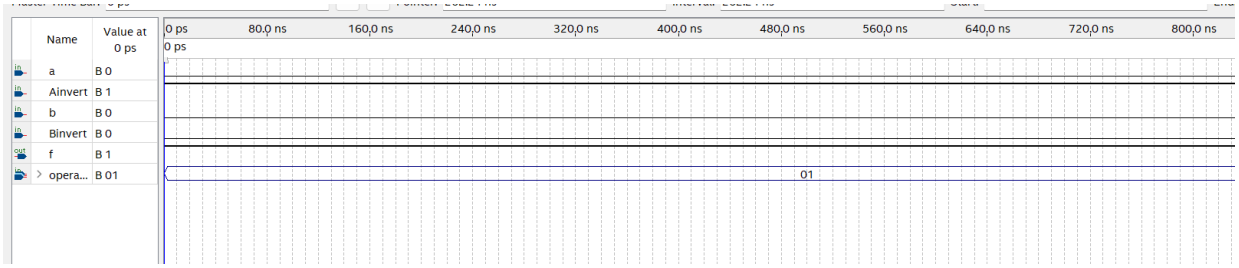
Ainvert B 1
b B 0
Binvert B 1
f B 1
opera... B 01
01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Value at 0 ps
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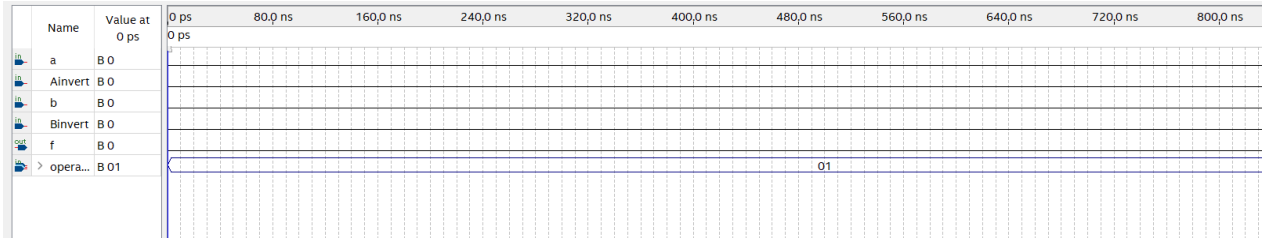
b B 0
Binvert B 0
f B 1
opera... B 01
01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240,0 ns
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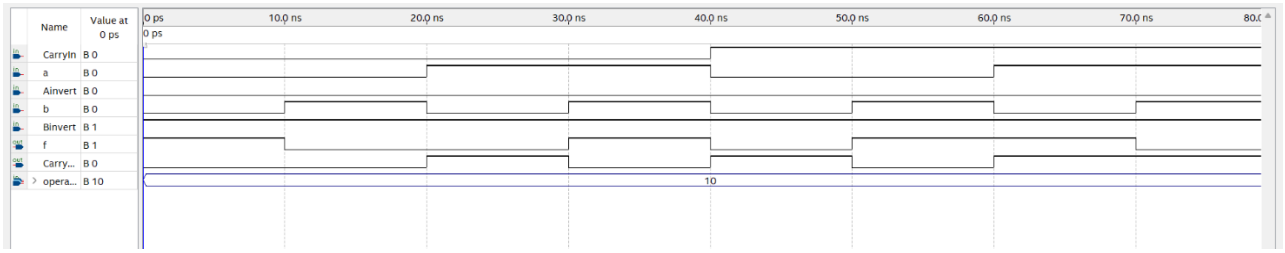
400,0 ns
480,0 ns
560,0 ns
640,0 ns
720,0 ns
800,0 ns
a B 0
Ainvert B 0
b B 0
Binvert B 0
f B 0
opera... B 01
01

FullAdder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Value at 0 ps
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20,0 ns
30,0 ns
40,0 ns
50,0 ns
60,0 ns
70,0 ns
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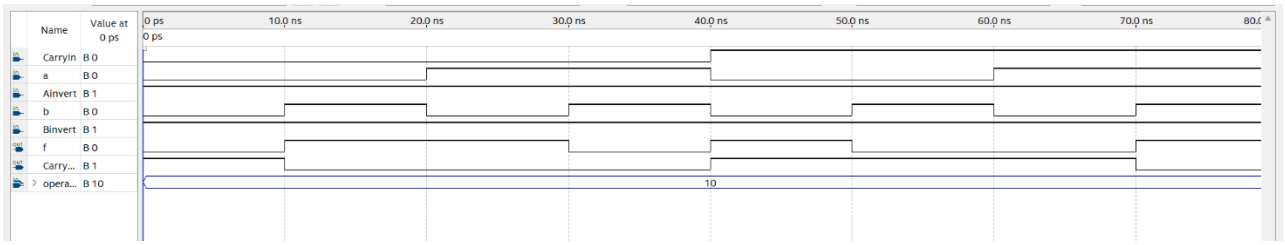
a B 0
Ainvert B 0
b B 0
Binvert B 1
f B 1
Carry... B 0
opera... B 10
10


Name
Value at 0 ps
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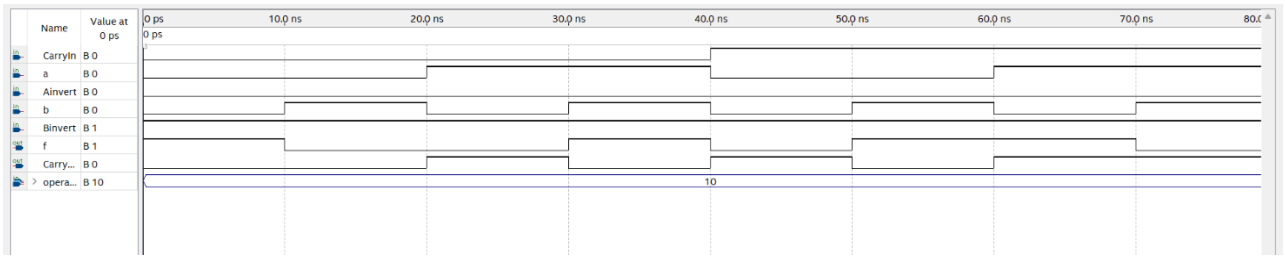
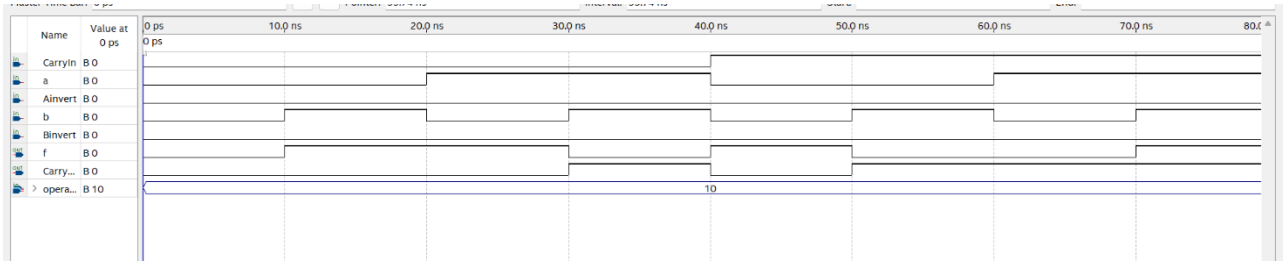
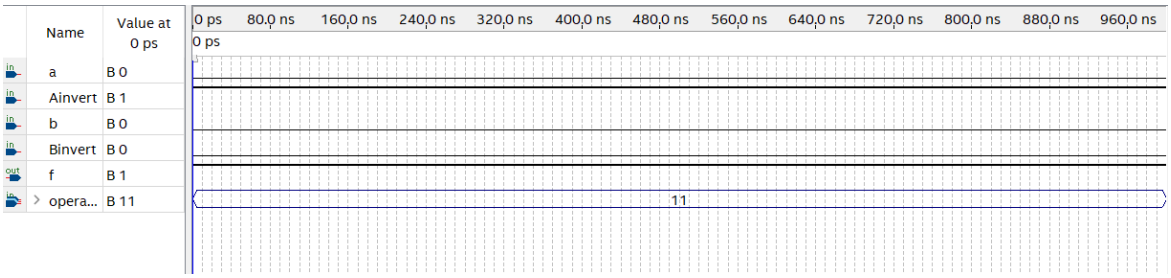
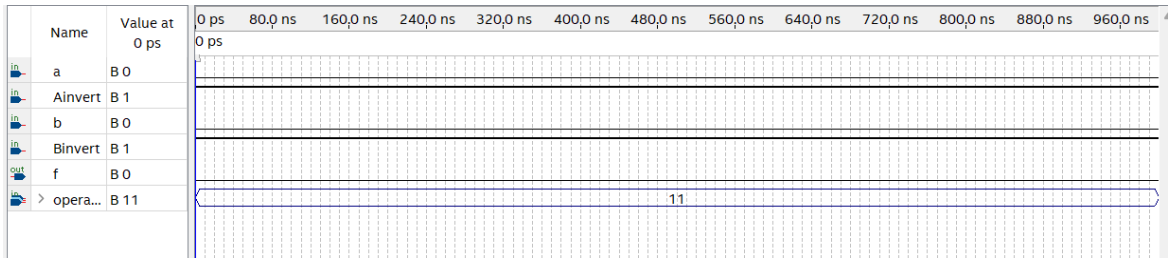
10,0 ns
20,0 ns
30,0 ns
40,0 ns
50,0 ns
60,0 ns
70,0 ns
CarryIn B 0
a B 0
Ainvert B 1
b B 0
Binvert B 1
f B 0
Carry... B 1
opera... B 10
10

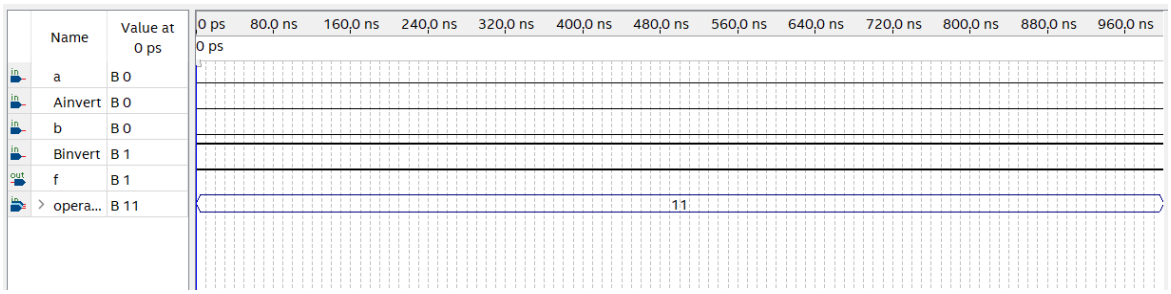

Name
Value at 0 ps
0 ps
10,0 ns
20,0 ns
30,0 ns
40,0 ns
50,0 ns
60,0 ns
70,0 ns
CarryIn B 0
a B 0
Ainvert B 0
b B 0
Binvert B 1
f B 1
Carry... B 0
opera... B 10
10

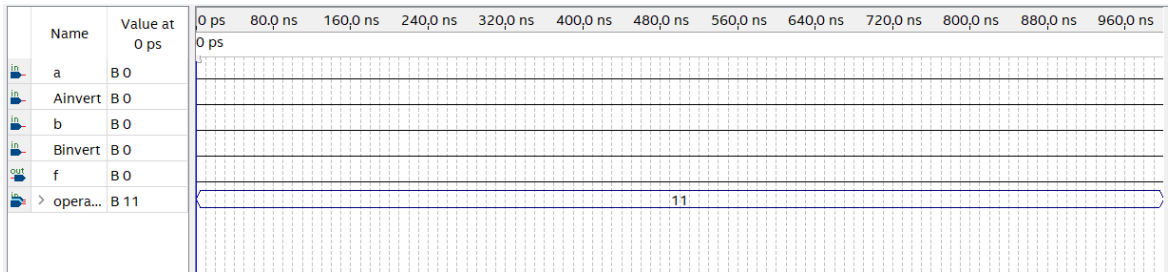

Name
Value at 0 ps
0 ps
10,0 ns
20,0 ns
30,0 ns
40,0 ns
50,0 ns
60,0 ns
70,0 ns
CarryIn B 0
a B 0
Ainvert B 0
b B 0
Binvert B 0
f B 0
Carry... B 0
opera... B 10
10

XOR



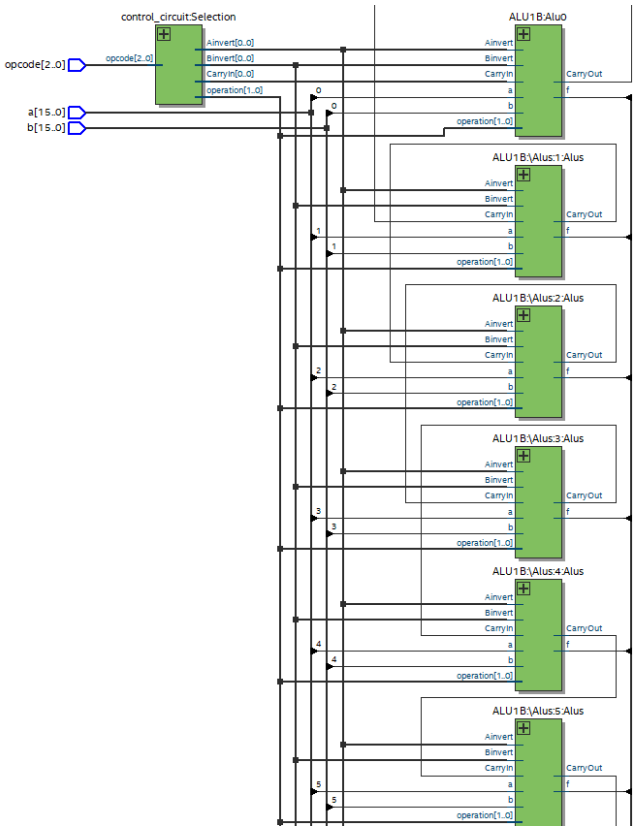


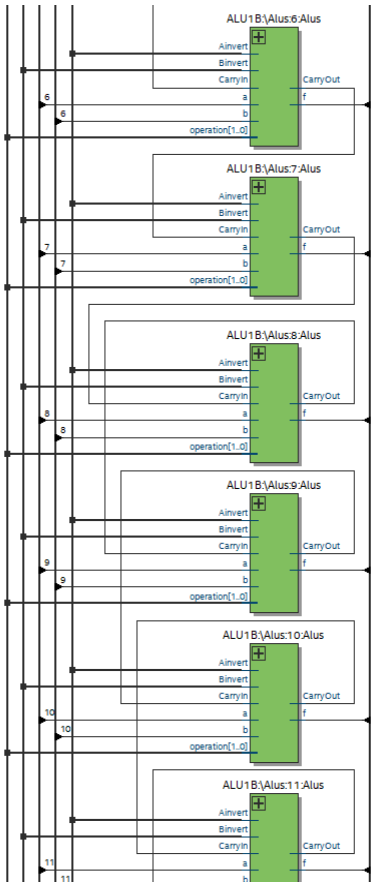




2ο μέρος:

RTL viewer


control_circuit:Selection
opcode[2..0]
Ainvert[0..0]
Binvert[0..0]
CarryIn[0..0]
operation[1..0]
a[15..0]
b[15..0]
ALU1B:Alu0
Ainvert
Binvert
CarryIn
a
b
operation[1..0]
CarryOut
f
ALU1B:\Alus:1:Alus
ALU1B:\Alus:2:Alus
ALU1B:\Alus:3:Alus
ALU1B:\Alus:4:Alus
ALU1B:\Alus:5:Alus


ALU1B:\Alus:6:Alus
ALU1B:\Alus:7:Alus
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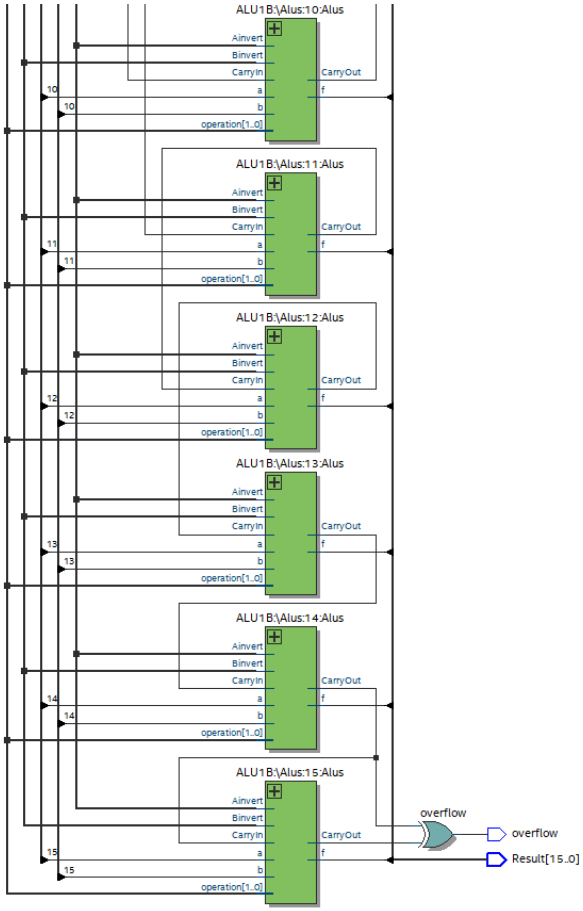
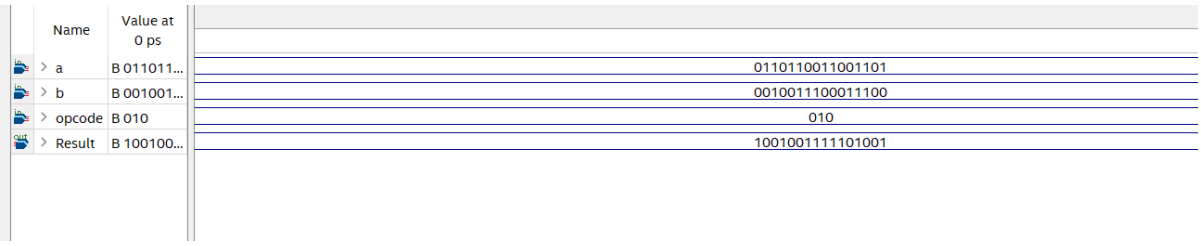
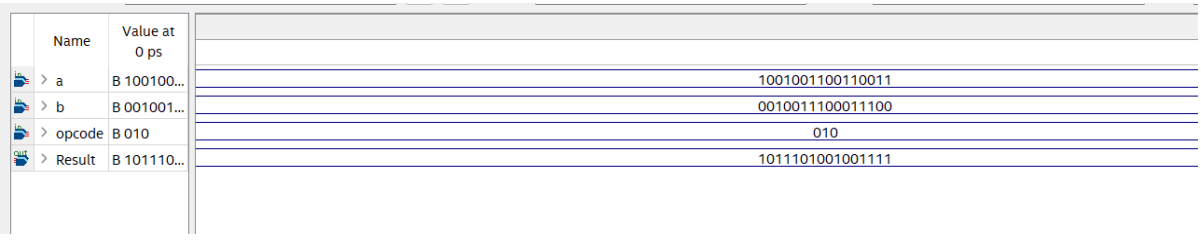
ALU1B:\Alus:9:Alus
ALU1B:\Alus:10:Alus
ALU1B:\Alus:11:Alus



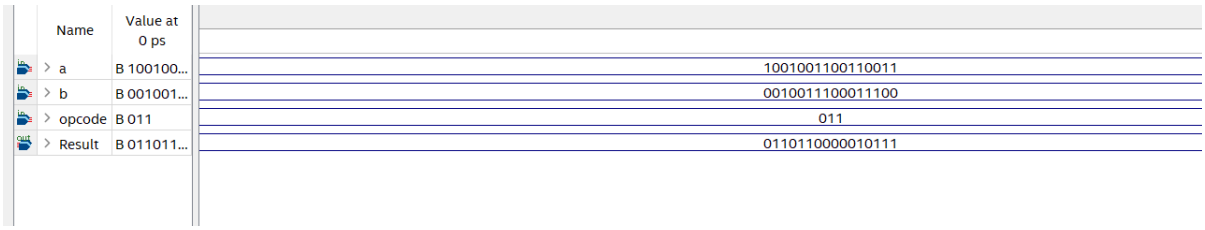
Κυματομορφές:

i)





Name	Value at 0 ps	
a	B 011011...	0110110011001101
b	B 001001...	0010011100011100
opcode	B 011	011
Result	B 010001...	0100010110110001



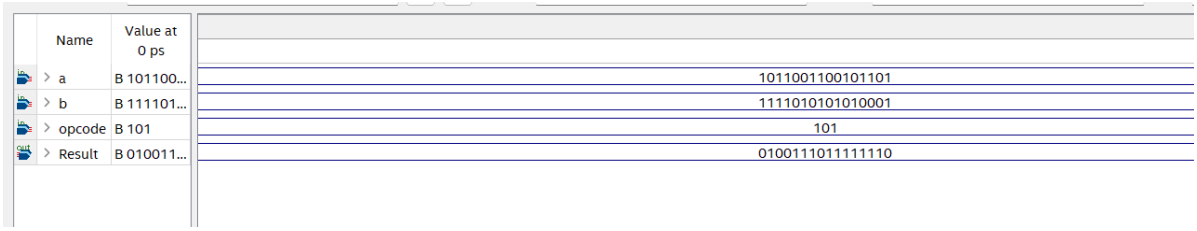
Name	Value at 0 ps	
a	B 100100...	1001001100110011
b	B 001001...	0010011100011100
opcode	B 011	011
Result	B 011011...	0110110000010111

ii)

Name	Value at 0 ps	
a	B 100100...	1001001100001010
b	B 010101...	0101010101010001
opcode	B 000	000
Result	B 000100...	0001000100000000

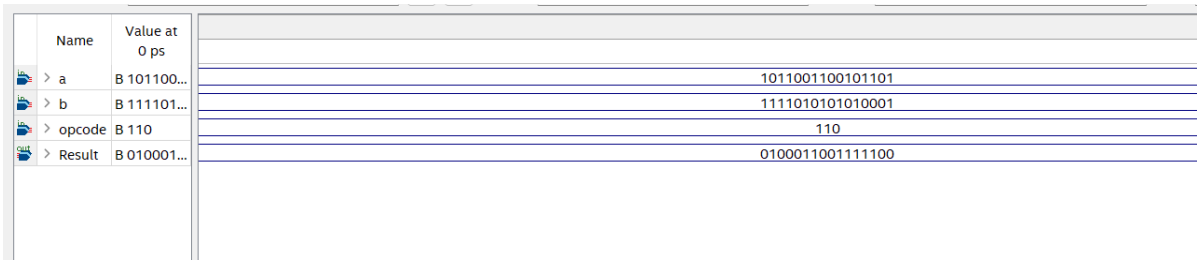
Name	Value at 0 ps	
a	B 100100...	1001001100001010
b	B 010101...	0101010101010001
opcode	B 001	001
Result	B 110101...	1101011101011011

iii)



Name	Value at 0 ps	
a	B 101100...	1011001100101101
b	B 111101...	1111010101010001
opcode	B 101	101
Result	B 010011...	0100111011111110

Name	Value at 0 ps	
a	B 101100...	1011001100101101
b	B 111101...	1111010101010001
opcode	B 100	100
Result	B 000010...	0000100010000010


Name
Value at 0 ps
a
B 101100...
1011001100101101
b
B 111101...
1111010101010001
opcode
B 110
110
Result
B 010001...
0100011001111100