2η Ομαδική Εργασία

Ομάδα DSD009

Ρηγάτος Διονύσιος - 3200262

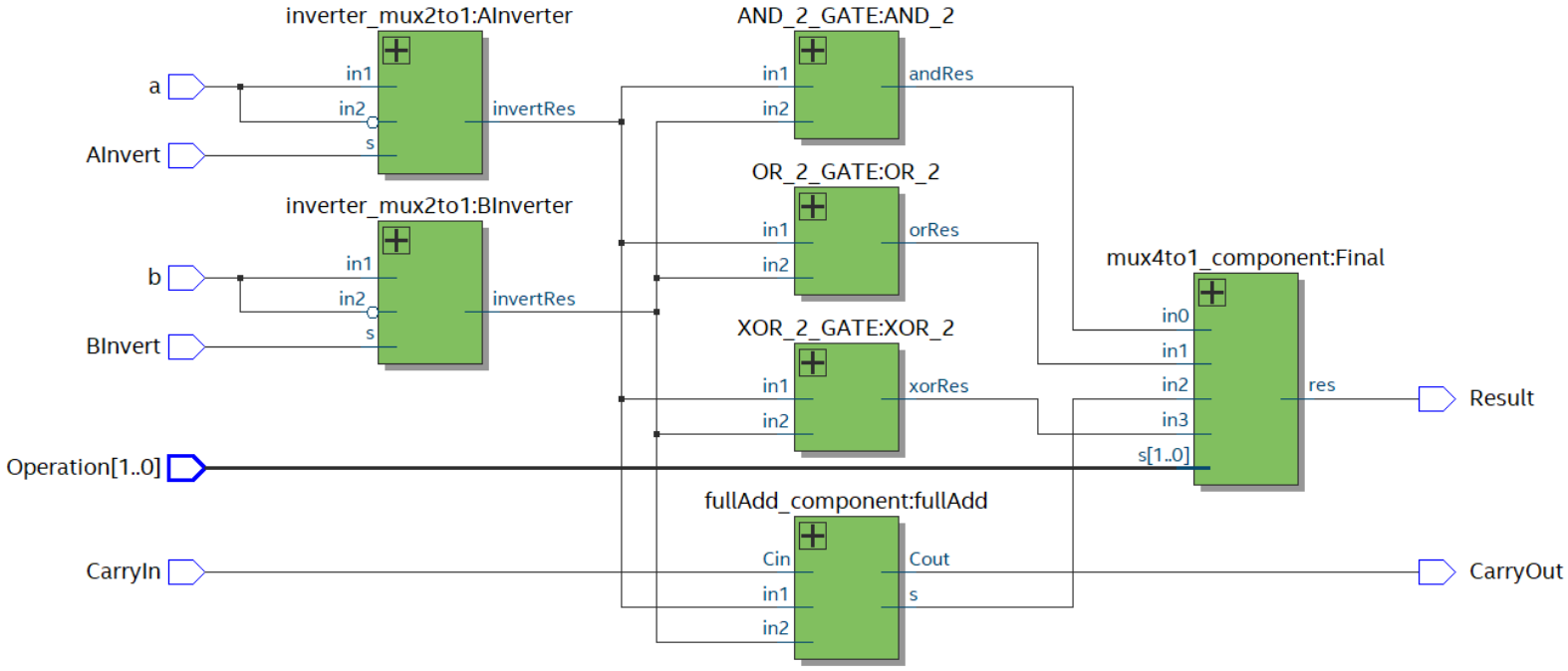
Παπαπαναγιώτου Αναστάσιος - 3200143

Παπαποστόλου Χριστόφορος - 3150208

Σχεδίαση Ψηφιακών Συστημάτων Εαρινό 2021

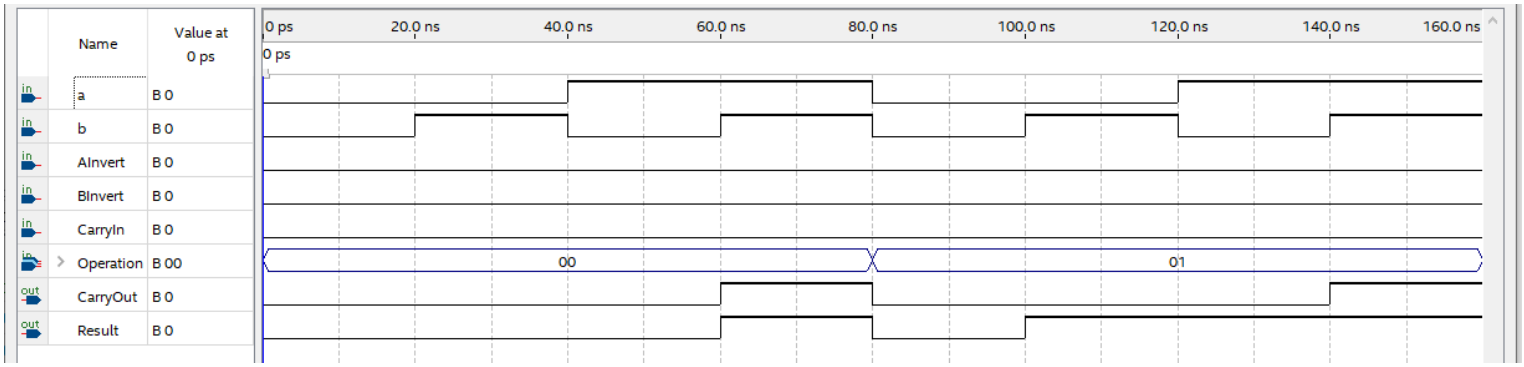
Part 1

RTL View

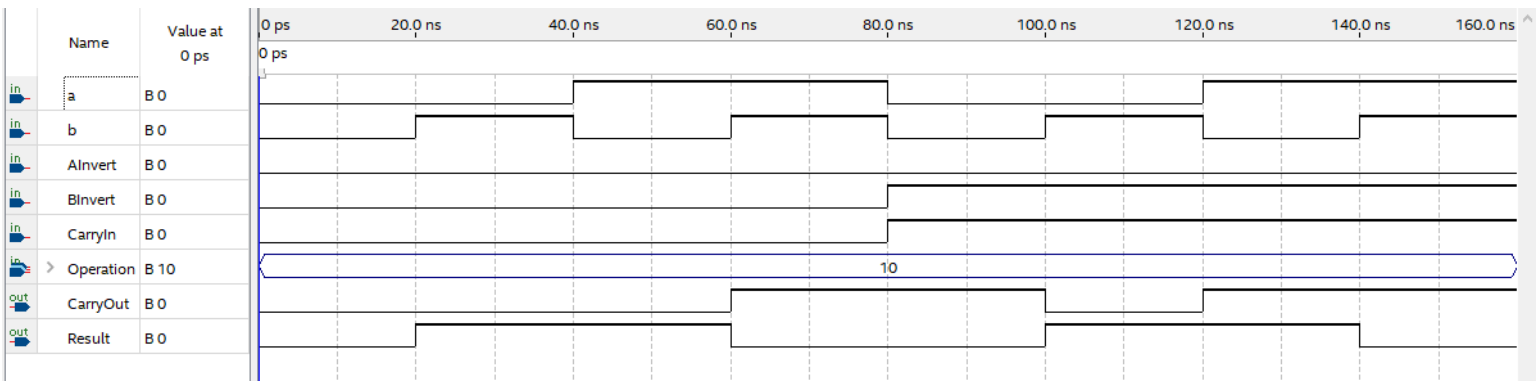


Waveforms

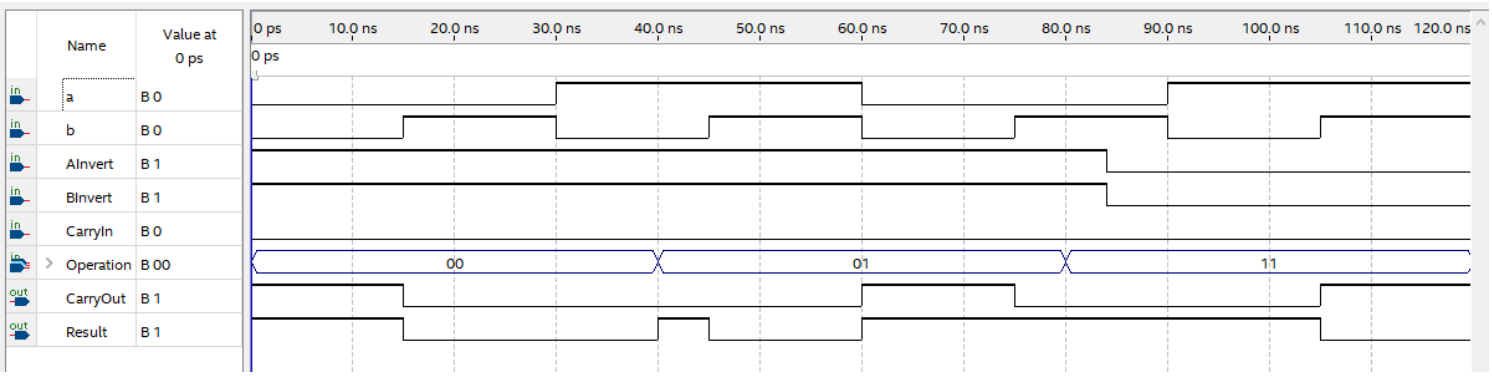
AND/OR Gates



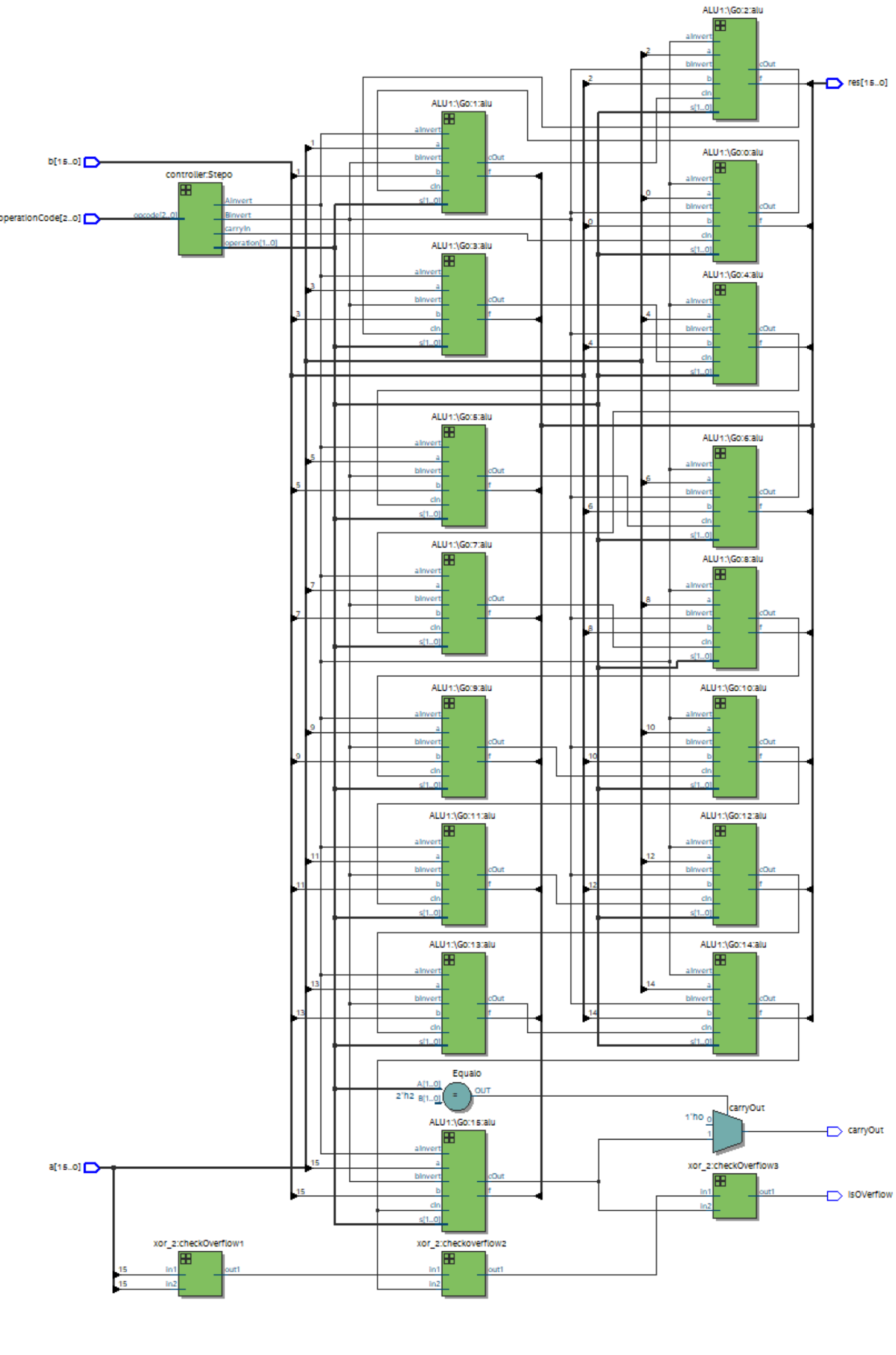
Adder ADD/SUB

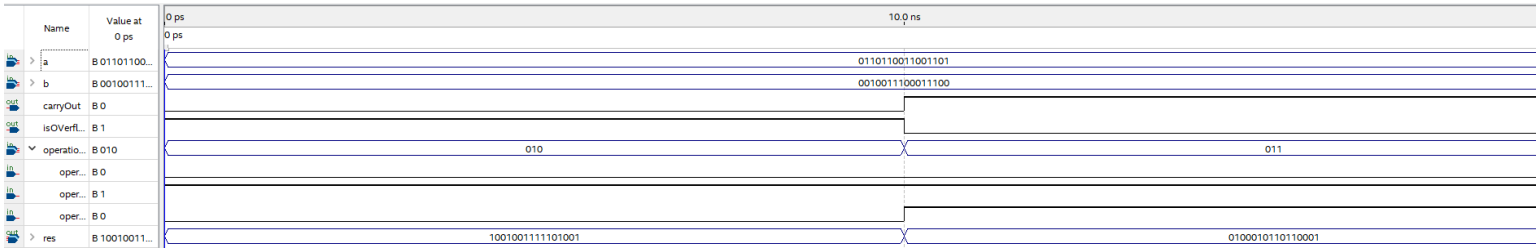


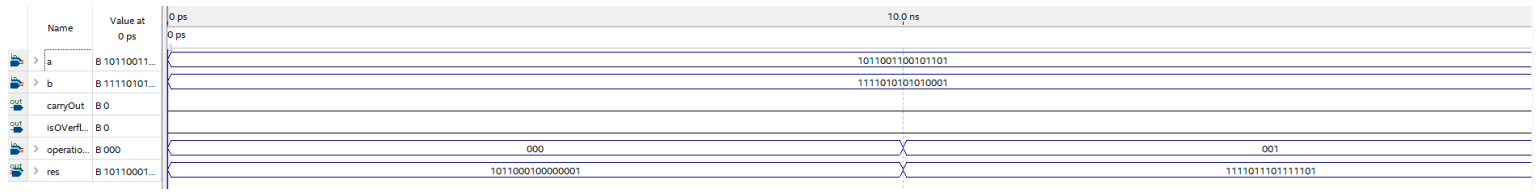
XOR Gate

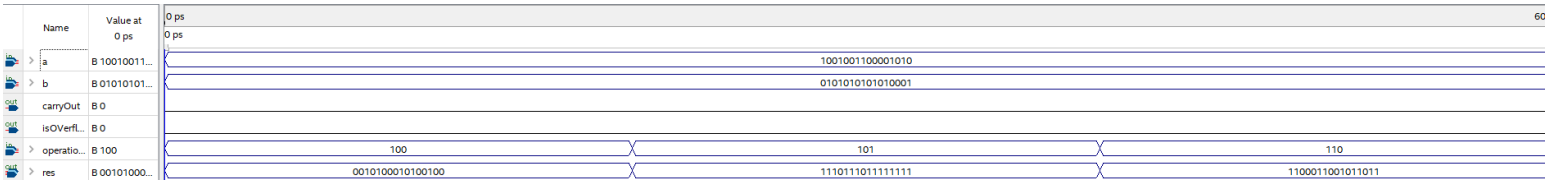


Part 2


b[15..0]
operationCode[2..0]
controller:Stepo
opcode[2..0]
AInvert
BInvert
carryIn
operation[1..0]
ALU1:\Go:0:alu
ALU1:\Go:1:alu
ALU1:\Go:2:alu
ALU1:\Go:3:alu
ALU1:\Go:4:alu
ALU1:\Go:5:alu
ALU1:\Go:6:alu
ALU1:\Go:7:alu
ALU1:\Go:8:alu
ALU1:\Go:9:alu
ALU1:\Go:10:alu
ALU1:\Go:11:alu
ALU1:\Go:12:alu
ALU1:\Go:13:alu
ALU1:\Go:14:alu
ALU1:\Go:15:alu
ainvert
a
binvert
b
cin
s[1..0]
cOut
f
res[15..0]
Equal0
A[1..0]
2'h2
B[1..0]
OUT
1'h0
carryOut
xor_2:checkOverflow1
xor_2:checkOverflow2
xor_2:checkOverflow3
in1
in2
out1
isOVerflow
a[15..0]


Name
Value at 0 ps
0 ps
10.0 ns
a
B 01101100...
01101100111001101
b
B 00100111...
00100111100011100
carryOut
B 0
isOVerfl...
B 1
operatio...
B 010
010
011
oper...
B 0
oper...
B 1
oper...
B 0
res
B 10010011...
1001001111101001
0100010110110001


Name
Value at 0 ps
0 ps
10.0 ns
a
B 10110011...
1011001100101101
b
B 11110101...
1111010101010001
carryOut
B 0
isOVerfl...
B 0
operatio...
B 000
000
001
res
B 10110001...
1011000100000001
1111011101111101


Name
Value at 0 ps
0 ps
60
a
B 10010011...
1001001100001010
b
B 01010101...
0101010101010001
carryOut
B 0
isOVerfl...
B 0
operatio...
B 100
100
101
110
res
B 00101000...
0010100010100100
1110111011111111
1100011001011011