

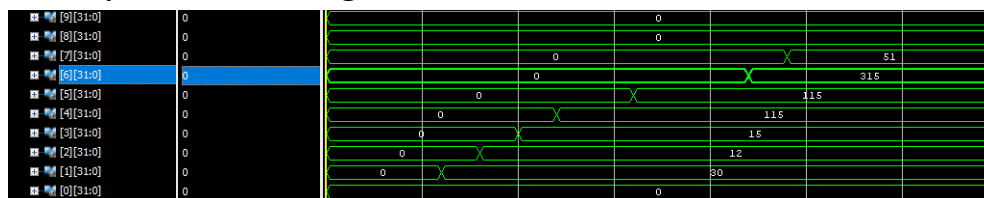
The Program:

Assembly	Machine Code	Effect
lw x1, 0(x0)	0x00002083	#x1 = 30
lw x2, 4(x0)	0x00402103	#x2 = 12
lw x3, 8(x0)	0x00802183	#x3 = 15
addi x4, x3, 100	0x06418213	#x4 = 115
sw x4, 12(x0)	0x00402623	#mem[15:12] = 115
lw x5, 12(x0)	0x00c02283	#x5 = 115
beq x4, x5, L1	0x00520663	taken
ecall	0x00000073	skipped
jal x1, L2	0x00c000ef	Skipped
L1: addi x6, x5, 200	0x0c828313	#x6 = 315
and x7, x6, x5	0x005373b3	#x7 = 51
L2: ecall	0x00000073	Program terminated

Memory:

mem[3:0]	30
mem[7:4]	12
mem[11:8]	15
mem[15:12]	115

























Memory Result in Testing:



Register File:

x0	0
x1	30
x2	12
x3	15
x4	115
x5	115
x6	315
x7	51

Register File Result in Testing:

 [215][7:0]	X	 X		0	
 [214][7:0]	X	 X		0	
 [213][7:0]	X	 X		0	
 [212][7:0]	X	 X		115	
 [211][7:0]	0		0		
 [210][7:0]	0		0		
 [209][7:0]	0		0		
 [208][7:0]	15		15		
 [207][7:0]	0		0		
 [206][7:0]	0		0		
 [205][7:0]	0		0		
 [204][7:0]	12		12		
 [203][7:0]	0		0		
 [202][7:0]	0		0		
 [201][7:0]	0		0		
 [200][7:0]	30		30		

Initialization Code:

initial begin

```
{mem[3],mem[2],mem[1],mem[0]}=32'b00000000_00000_00000_000_00000_0110011;  
{mem[7],mem[6],mem[5],mem[4]}= 32'h00002083;  
{mem[11],mem[10],mem[9],mem[8]}= 32'h00402103;  
{mem[15],mem[14],mem[13],mem[12]}=32'h00802183;  
{mem[19],mem[18],mem[17],mem[16]}=32'h06418213;  
{mem[23],mem[22],mem[21],mem[20]}=32'h00402623;  
{mem[27],mem[26],mem[25],mem[24]}=32'h00c02283;  
{mem[31],mem[30],mem[29],mem[28]}=32'h00520663;  
{mem[35],mem[34],mem[33],mem[32]}=32'h00000073;  
{mem[39],mem[38],mem[37],mem[36]}=32'h00c000ef;  
{mem[43],mem[42],mem[41],mem[40]}=32'h0c828313;  
{mem[47],mem[46],mem[45],mem[44]}=32'h005373b3;  
{mem[51],mem[50],mem[49],mem[48]}=32'h00000073;  
end
```

//Data:

initial begin

```
{mem[3+200],mem[2+200],mem[1+200],mem[0+200]}=32'd30;  
{mem[7+200],mem[6+200],mem[5+200],mem[4+200]}=32'd12;  
{mem[11+200],mem[10+200],mem[9+200],mem[8+200]}=32'd15;  
end
```