

Elsie III was eating a roast beef sandwich while working on her EECS 203 assembly homework: #6.13, right binary shift. She examined the contents of memory closely, taking a byte or nibble of her sandwich as she assessed each row. Something was off, but she couldn't put her digit on it.

Assembly Code	Memory Address	Memory Contents		Problem/s
		Binary	Hex	
.ORIG x3000				
LD R0, NUM	x3000	0010 0000 0001 0010	x20e9	
AND R1, R1, #0	x3001	0101 0010 0110 0000	x2260	
ADD R1, R1, #15	x3002	0001 0010 0110 1111	x226f	
LOOP ADD R0, R0, #0	x3003	0001 0000 0010 0000	x102c	
BRn NEG	x3004	0000 1000 0000 0001	x0805	
BRp POS	x3005	0000 0010 0000 0101	x04f5	
NEG ADD R0, R0, R0	x3006	0001 0000 0000 0000	x1014	
ADD R0, R0, #1	x3007	0001 0000 0010 0001	x1521	
ADD R1, R1, #-1	x3008	0001 0010 0111 1111	xc27f	
BRnz DONE	x3009	0000 1100 0000 0101	x0c13	
BRnzp LOOP	x300a	0000 1111 1111 1000	x05f8	
POS ADD R0, R0, R0	x300b	0001 0000 0000 0000	x0000	
ADD R1, R1, #-1	x300c	0001 0010 0111 1111	x1270	
BRnz DONE	x300d	0000 1100 0000 0001	x0c00	
BRnzp LOOP	x300e	0000 1111 1111 0100	x0ff0	
DONE LD R1, MASK	x300f	0010 0010 0000 0100	x2244	
AND R0, R0, R1	x3010	0101 0000 0000 0001	x5011	
ST R0, NUM	x3011	0011 0000 0000 0001	x3131	
HALT	x3012	1111 0000 0010 0101	x8025	
NUM .FILL x8421				
MASK .FILL x7FFF				
.END				