

;Lab#8: LC-3 Assembly Programming
;Laboratory Exercises for Monday, November 18
;Zane Wonsey

10/10

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.ORIG x3000          ; start program here

ORIGINAL .FILL xD10B  ; 1101 0001 0000 1101
AMOUNT   .FILL #5
ROTATED  .BLKW 1      ; = 0010 0001 1011 1010

AND R0, R0, 00000    ; clear R0, use it for orig #
AND R1, R0, 00000    ; clear R1, use for amount counter
AND R2, R0, 00000

LD R0 ORIGINAL      ;load orig # to R0
LD R1 AMOUNT        ;load amount for counter to R1

;check if MSB is 1, if true continue, if false skip 2 lines
START      ADD R3, R0, 00000
           BRzp IF_ZERO
IF_ONE     ADD R0, R0, R0      ;add numer to rotate to itself
           ADD R0, R0, #1     ;add 1 to rotated number
           BR DEC
IF_ZERO    ADD R0, R0, R0      ;add numer to rotate to itself

DEC        ADD R1, R1, #-1     ;--amount
           BRz STORE         ;check if amount is 0, if it is skip next line
           BR START          ;jump up to start of loop
STORE      ST R0 ROTATED      ;store

.END
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LD R0, ONE
OUT

ONE .FILL x31
ZERO .FILL x30