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;Description: Ask user for single-digit input and displays the largest

.ORIG x3000

AND R4, R4, #0 ;clear R4

LD R2, negasc ;load -48 to R2

LD R3, posasc ;load 48 to R3

loop LEA R0, msg ;load address of msg into R0

PUTS ;display msg

GETC ;get digit entered

OUT ;display digit

ADD R0, R0, R2 ;ADD -48 to R0 to check if digit zero was entered

BRz output ;check if digit is zero then stop program

NOT R0, R0 ;make R0 negative

ADD R0, R0, #1 ;make R0 2's complement

ADD R4, R1, R0 ;R0 = R0 + R1

BRn assign ;if R0 is larger go to swap

LD R0, NL ;load new line to R0

OUT ;display new line

BR loop ;go back to loop

assign AND R1, R1, #0 ;clear R1

NOT R0, R0 ;make R0 positive

ADD R0, R0, #1 ;make R0 2's complement

ADD R1, R0, #0 ;R1 = R0

LD R0, NL ;load new line to R0

OUT ;display new line

BR loop ;go back to loop

output LD R0, NL ;load new line to R0

OUT ;display new line

OUT ;display new line

LEA R0, msg2 ;load address of msg2 to R0

PUTS ;display msg2

AND R0, R0, #0 ;clear R0

ADD R0, R1, #0 ;make R0 = largest digit

ADD R0, R0, R3 ;add 48 to R0 to display character number asci

OUT ;display R0

HALT

msg .STRINGZ "Enter a single-digit integer> " ;display entry message

msg2 .STRINGZ "The largest integer is> " ;display output message

NL .FILL #10 ;new line

negasc .FILL #-48

posasc .FILL #48

.END