; Sum the integers from 1 to 13.
;
;   $1 ... holds the constant -1.
;   $2 ... counts down from 13 to 0.
;   $3 ... where the sum is accumulated.
;
; Initialization
    lis    $2            ; Load N (ie 13) into register 2.
    .word  13
    add    $3,    $0,    $0       ; Clear register 3 (the sum so far).

top:
    add    $3,    $3,    $2       ; Add next int to sum so far.
    lis    $1            ; Set $1 to -1.
    .word  -1            ; ...used to dec the ctr in the next instr.
    add    $2,    $2,    $1       ; Compute the next smaller int.
    bne    $2,    $0,    top     ; Loop until ctr is 0.

; Exit to the O/S
    jr     $31