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; Example 6b: A procedure
; sumOneToN: sum the integers from 1 to N
; input: $2 is N
; output: $3 is the sum
sumOneToN:
sw $1, -4($30)      ; save $1 on stack
sw $2, -8($30)      ; save $2 on stack
lis $1
.word 8
sub $30, $30, $1

add $3, $0, $0      ; clear $3
beginLoop:
add $3, $3, $2      ; add $2 to $3
lis $1              ; decrement $2
.word -1
add $2, $2, $1
bne $2, $0, beginLoop

lis $1
.word 8
add $30, $30, $1
lw $1, -4($30)      ; restore $1 from stack
lw $2, -8($30)      ; restore $2 from stack

jr $31              ; return from sumOneToN
```

save

body

restore