

```
main:
addi x28, x28, 1
addi x29, x0, 2
beq x28, x29, printer
addi x18, x0, 1
#input
addi x16, x0, 8

#recursion method
recursion:
addi x2, x2, -16
sw x1, 0(x2)
sw x16, 8(x2)
bge x18,x16, Exit
addi x16, x16, -1
jal x1, recursion
add x18, x16, x0
lw x1, 0(x2)
lw x16, 8(x2)
addi x2, x2, 16
mul x16, x16, x18
jalr x0, 0(x1)

Exit:
jalr x0, 0(x1)

#label print
printer:
addi x10 x0 4
la x11 msg1
ecall

#print recursion output
add x11, x0, x16
addi x10, x0, 1
ecall
addi x11, x0, 32
addi x10, x0, 11
ecall
#input
addi x16, x0, 8

loop:
addi x18, x0, 0
addi x18, x18, 1
add x7, x16, x7

#iterative method
Iteration:
bge x18, x7, finishprint
addi x7, x7, -1
mul x16, x16, x7
jal x0, Iteration

#print iterative output
finishprint:
addi x10 x0 4
la x11 nline
ecall

#label print
addi x10 x0 4
la x11 msg2
ecall

add x11, x0, x16
addi x10, x0, 1
ecall

.data
nline:  .ascii "\n"
msg1:   .ascii "Recursive Output: "
msg2:   .ascii "Iterative Output: "
```