2024\13-codegen-riscv\riscv-in-class-2023\proc-fact.asm

```asm
.text
.global main

factorial:
beqz a0, base_case

addi sp, sp, -8
sw a0, 4(sp)
sw ra, 0(sp)

# n > 0: n * factorial(n - 1)
addi a0, a0, -1        # a0: n - 1
call factorial         # a0: factorial(n - 1)
mv t0, a0                      # t0: factorial(n - 1)

lw a0, 4(sp)                   # a0: n
lw ra, 0(sp)
addi sp, sp, 8

mul a0, a0, t0         # a0: n * factorial(n - 1)
j end

base_case:
        li a0, 1

end:
        ret


######### main ########
.data
n: .word 10

.text
main:
lw a0, n
call factorial
```