

CS 315-02 RISC-V Assembly 5

Functions and recursion

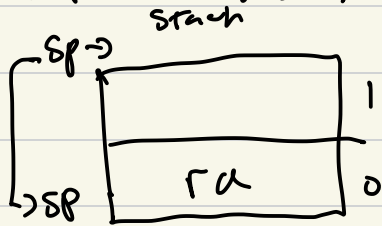
Project 02 due Mon Sep 16 11:57 pm

Project 02 exam problems

due Wed Sep 18 11:59 pm

Function Calls

caller-saved regs: $a0-a7, t0-t6$
 callee-saved regs: $s0-s11, sp$



foo:

add sp, sp, -16
 sd ra, (sp)
 # save callee saved regs

⋮

save caller saved regs

PC → call bar

RA = PC + 4 →
 # restore caller saved regs

⋮
 # restore callee saved regs

ld ra, (sp)
 add sp, sp, 16
 ret
 PC = ra
 (main)

bar:

PC → add a0, a0, a1

⋮

⋮

⋮

⋮

⋮

⋮

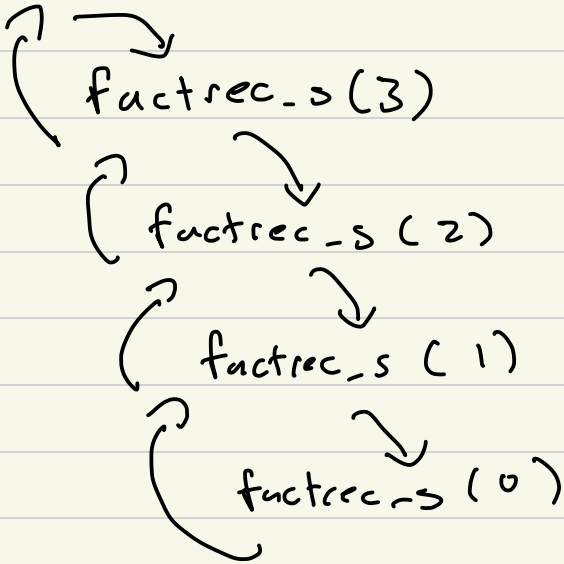
⋮

⋮

ret

PC = RA
 (foo)

factrec



Stack

3
ra
2
ra
1
ra
X
ra