



Local Variable Layout on Stack

{local variables}

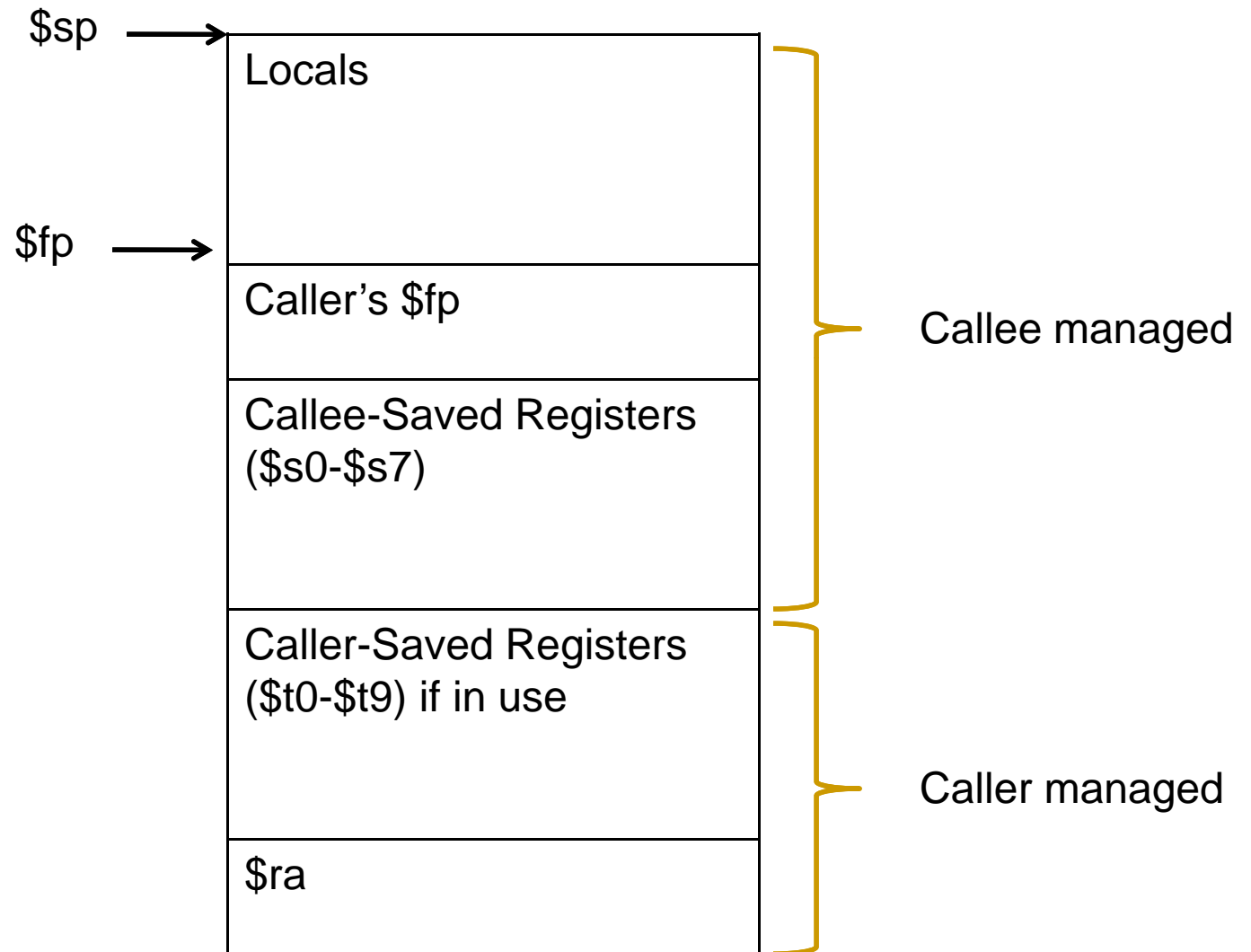
VAR a, b :INTEGER;

 c : ARRAY[2..5] OF INTEGER;

 d : INTEGER

		offset	Stack
\$sp		-28	d
		-24	c[2]
		-20	c[3]
		-16	c[4]
		-12	c[5]
		-8	b
\$fp		-4	a

Mips Calling Convention For Project 3



Important Instructions and Registers

- Caller Saved Registers
 - \$t0 - \$t9, \$ra
 - Save caller-saved registers, if in use, before call
 - Restore caller-saved registers after call
- Callee Saved Registers
 - \$s0-\$s7, \$fp
 - Save callee-saved registers including \$fp at the beginning of a function
 - Restore callee-saved registers including \$fp before the function returns
- jal funcname
 - call function “funcname”.
 - This instruction saves the return address at \$ra before jumping to the callee
- jr \$ra
 - return to caller
 - note that \$ra keeps the return address
- \$v0
 - keeps the return value
 - \$v1 is not needed for this project
- \$sp
 - Always points to the top of the stack
 - Allocate stack space by subtracting \$sp with the size needed
 - Restore \$sp when the space is not needed