

# Procedures in ULG01

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## 1. In calling context:

PUSH(argn)	Args put in inverse order
...	
PUSH(arg1)	
BR(f, LP)	Run procedure
DEALLOCATE(n)	Deallocate args space

## 2. Beginning of called procedure:

f: PUSH(LP)	
PUSH(BP)	
MOVE(SP, BP)	
ALLOCATE(m)	Reserve m local variables
PUSH(R1)	Save all registers
...	that are modified in f
PUSH(Rk)	
	Now procedure code comes here

Access local variable  $i$  (1..m) with:

- $ST(Ra, (i-1)*4, BP)$
- $LD(BP, (i-1)*4, Rc)$

Access argument  $i$  (1..n) with:

- $LD(BP, -4*(i+2), Rc)$

## 3. End of called procedure:

POP(Rk)	Restore modified registers
...	
POP(R1)	
MOVE(BP, SP)	Deallocate local variables; we can also do "DEALLOCATE(m)"
POP(BP)	Restore caller base pointer
POP(LP)	Restore return address
JMP(LP, R31)	Return to caller context