```
(controller
    (assign continue (label fact-done))     ; set up final return address
 fact-loop
    (test (op =) (reg n) (const 1))
    (branch (label base-case))
    (save continue)                          ; Set up for the recursive call
    (save n)                                 ; by saving n and continue.
    (assign n (op -) (reg n) (const 1))      ; Set up continue so that the
    (assign continue (label after-fact))     ; computation will continue
    (goto (label fact-loop))                 ; at after-fact when the
 after-fact                                  ; subroutine returns.
    (restore n)
    (restore continue)
    (assign val (op *) (reg n) (reg val))    ; val now contains n(n - 1)!
    (goto (reg continue))                    ; return to caller
 base-case
    (assign val (const 1))                   ; base case: 1! = 1
    (goto (reg continue))                    ; return to caller
 fact-done)
```