Test 3 Makeup

CS200 (Kelley)

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By

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1.

doFib proc

push ebp

mov ebp, esp

sub esp, 8

mov DWORD PTR [ebp-4]

push edx

push ebx

; store the passed variables in the local variables

mov ebx, [ebp + 8] ; store the level

mov level, ebx

mov ebx, [ebp + 12] ; store the string pointer

mov strPtr, ebx

; write out the string and current level

mov edx, strPtr

call WriteString

mov eax, level

call WriteInt

call Crlf

; see if we are at the base case

mov eax, level

cmp eax, 2

jb basecase ; 1 or 0 is the base case

jmp recurse ; otherwise do the recursion

basecase:

mov eax, 1

jmp goBack

recurse:

; prepare to call the recursive function

push strPtr ; pass on the output string

mov eax, level

dec eax

push eax ; and push the next level

; make the call and add to the current level

call doFib

add eax, level

goBack:

pop edx

pop ebx

ret 8

doFib endp

2.

|  |  |
| --- | --- |
| Start first frame | Offset of lvlStr [ebp+12] |
|  | 4 (00000004h) [ebp+8] |
|  | Return to main |
| ebp of first stack frame | ebp (before first call) |
|  | level [ebp – 4] |
| End first frame | strPtr [ebp – 8] |
|  | edx |
|  | ebx |
| Start second frame | Offset of lvlStr [ebp+12] |
|  | 3 (00000003h) [ebp+8] |
|  | Return to mthroughain |
| ebp of second stack frame | ebp (before first call) |
|  | level [ebp – 4] |
| End second frame | strPtr [ebp – 8] |
|  | edx |
|  | ebx |
| Start second frame | Offset of lvlStr [ebp+12] |
|  | 2 (00000002h) [ebp+8] |
|  | Return to main |
| ebp of second stack frame | ebp (before first call) |
|  | level [ebp – 4] |
| End second frame | strPtr [ebp – 8] |
|  | edx |
|  | ebx |
| Start second frame | Offset of lvlStr [ebp+12] |
|  | 1 (00000001h) [ebp+8] |
|  | Return to main |
| ebp of second stack frame | ebp (before first call) |
|  | level [ebp – 4] |
| End second frame | strPtr [ebp – 8] |
|  | edx |
|  | ebx |