

CSC 376

Exercise Assignment 3 (12 points)

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9-14-2018

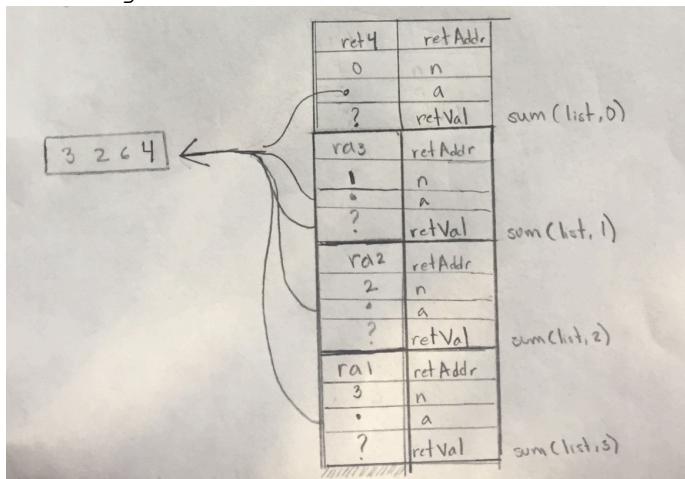
Please complete the following exercises at the end of Chapter 2, (4th edition). Exercises are to be submitted by uploading a pdf document. Please answer questions in the order of the problems given and label each part you are answering. Handwritten work must still be well organized, and legible. Please use your UIS username and ES3 for the file name. Mine is: mdavi03sES3.

2.1

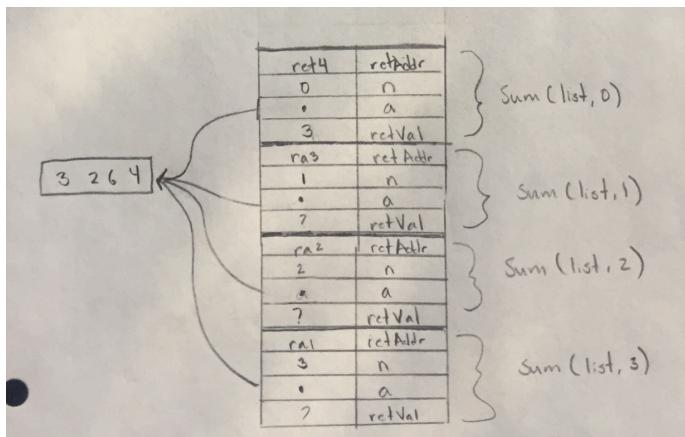
a. How many times is it called altogether?

Four Times

b. Draw a picture of the main program variables and run-time stack just after the function is called for the third time.

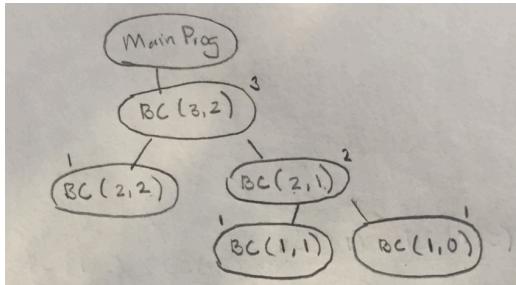


c.



2.2c 4pts (There are four parts)

- Part 1) Draw the call tree for the call statement from the main program.



- Part 2) How many times is the function called?

Five Times

- Part 3) What is the maximum number of stack frames on the run-time stack during the execution, including main).

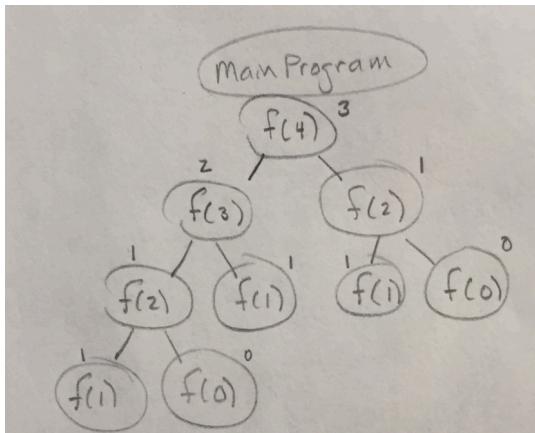
3 Stack Frames

- Part 4) In what order does the program make the calls and returns.

Main Program Calls → BC(3,2) Calls → BC(2,2) Returns →
BC(3,2) Calls → BC(2,1) Calls → BC(1,1) Returns → BC(2,1)
Calls → BC(1,0) Returns → BC(2,1) Returns → BC(3,2)
Returns → Main Program

2.5b 3pts (There are three parts)

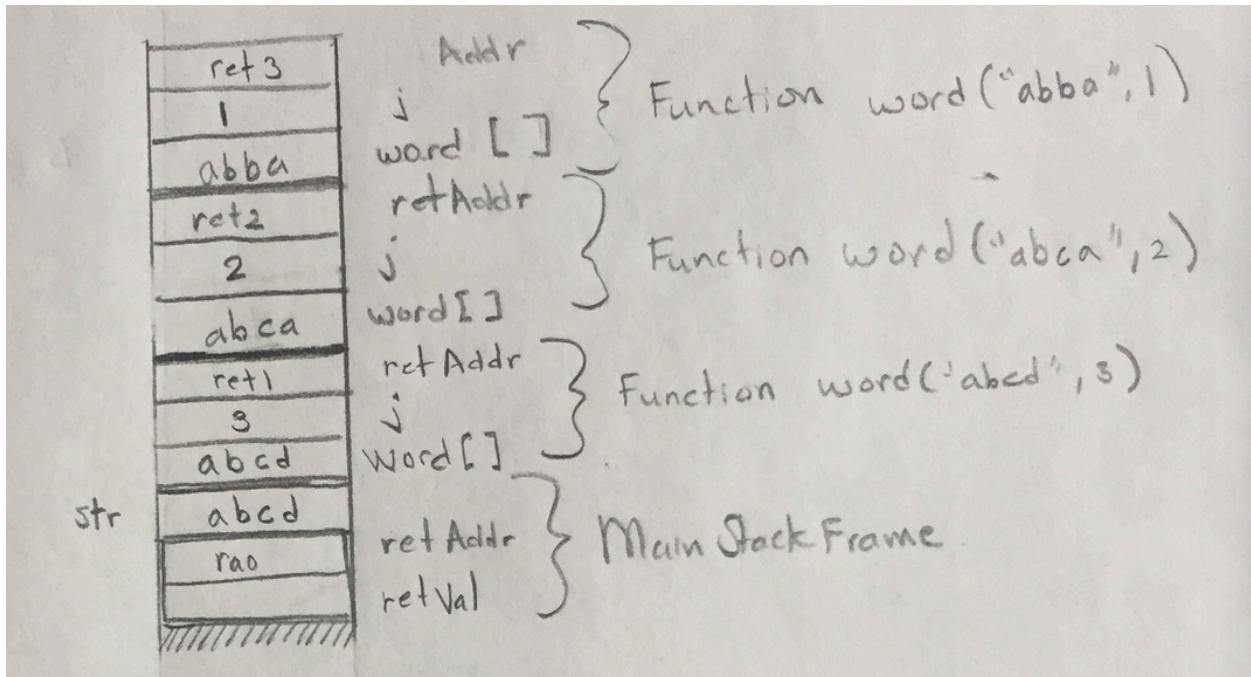
- Part 1) Draw the call tree for the Fibonacci number



- Part 2) How many time is *fib* called?
9 times
- Part 3) What is the maximum number of stack frames allocated on the run-time stack?
4 Stack Frames

2.8(a and b) 2pts

a. Draw the run-time stack just after the procedure is called for the last time.



b. What is the output of the program?

abba