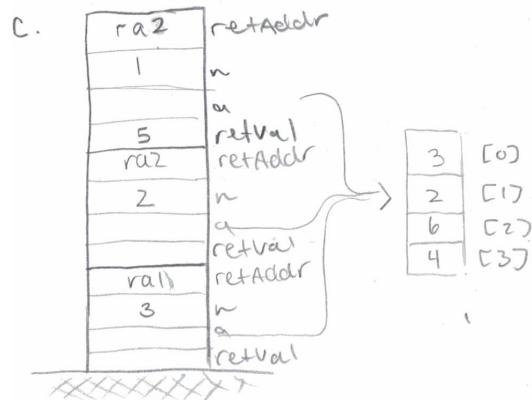
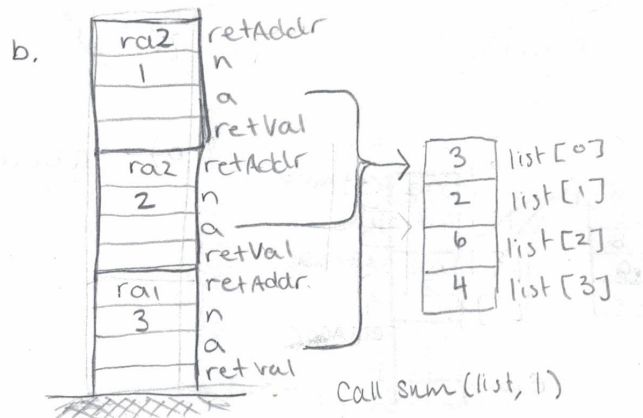


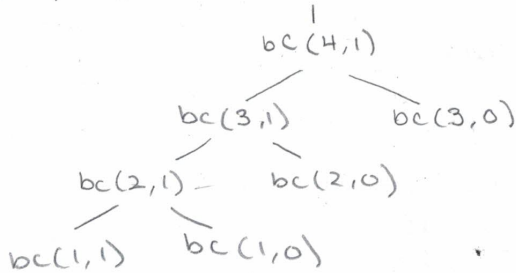
## Assignment 2

1. a. 4 times

main  $\rightarrow$  sum(a,3)  $\rightarrow$  sum(a,2)  $\rightarrow$  (a,1)  $\rightarrow$  (a,0)  $\rightarrow$  return main  
                                   ①                                  ②                                  ③                                  ④



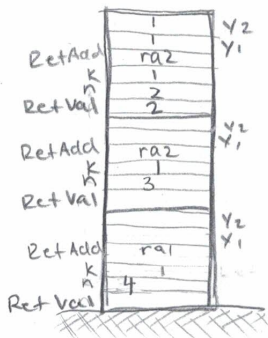
2. ) a) [2] Main Program



[3] Called 7 times

[4] 4 times Maximum

[5] @ bc(2,1)



[1] Main Program

• Call to bc(4,1)

Δ Call to bc(3,1)

- Call to bc(2,1)

■ Call to bc(1,1)

- Return to bc(2,1)

■ Call to bc(1,0)

- Return to bc(2,1)

Δ Return to bc(3,1)

- Call to bc(2,0)

Δ Return to bc(3,1)

• Return to bc(4,1)

Δ Call to bc(3,0)

• Return to bc(4,1)

Return to Main Program

b) [1] Main Program

• Call to bc(5,1)

Δ Call to bc(4,1)

- Call to bc(3,1)

■ Call to bc(2,1)

○ Call to bc(1,1)

■ Return to bc(2,1)

○ Call to bc(1,0)

■ Return to bc(2,1)

- Return to bc(3,1)

■ Call to bc(2,0)

- Return to bc(3,1)

Δ Return to bc(4,1)

- Call to bc(3,0)

Δ Return to bc(4,1)

• Return to bc(5,1)

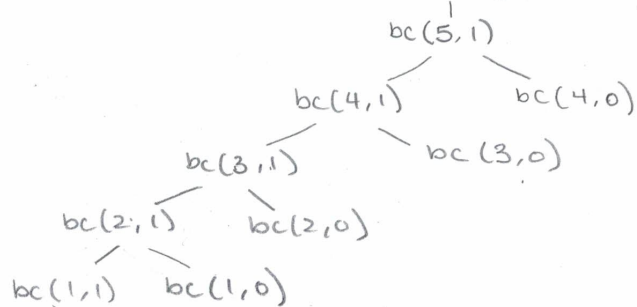
Δ Call to bc(4,0)

• Return to bc(5,1)

Return to Main Program

[2]

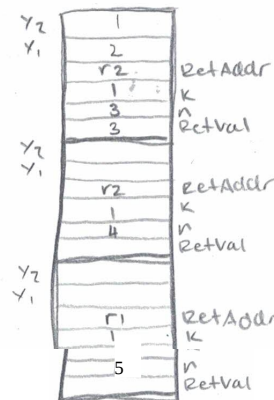
Main Program



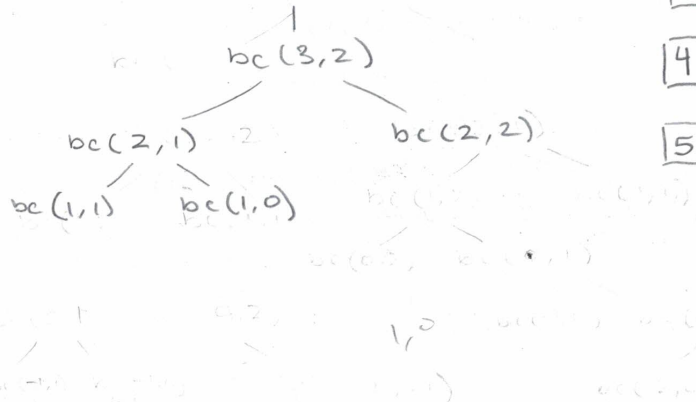
[3] 9 times

[5] @ bc(3,1)

[4] 5 times

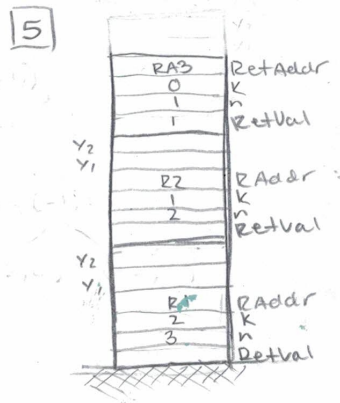


c) 1 Main Program



3 5 times.

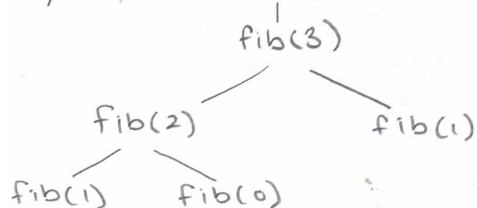
4 3 stacks.



2 Main Program

- Call to `bc(3,2)`
    - Δ Call to `bc(2,1)`
      - Call to `bc(1,1)`
    - Δ Return to `bc(2,1)`
      - Call to `bc(1,0)`
    - Δ Return to `bc(2,1)`
  - Return to `bc(3,2)`
    - Δ Call to `bc(2,2)`
  - Return to `bc(3,2)`
- Return Program

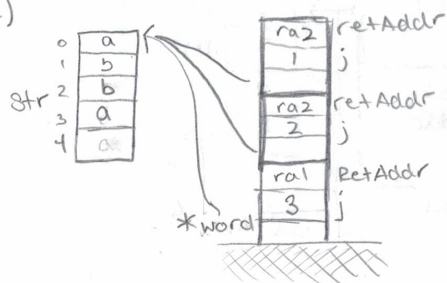
4. a) 1 Main Program



• Called 5 times

• 3 stack frames at one time  
`fib(3-2-1)`

7. a)



b) "abba\0\n"

a) • Main Program

