Subject: Space Complexity
Posted by cdyancey on Mon, 23 Jan 2017 19:48:43 GMT

For questions 65-74 on the prereq I got constant space complexity. For questions 75-84 I got a space complexity equal to the time complexity of the function. So is this thinking correct?:

Any non-recursive code fragment that only prints an output and then increments a variable has a constant space complexity, since printing takes up no memory and the variable is always overwritten. (All of the examples were as such)

Therefore,

Any function recursive function has a space complexity equal to it's runtime, as long as the base function is operates as above.

---

Subject: Re: Space Complexity
Posted by jarobinson3 on Mon, 23 Jan 2017 20:04:53 GMT

Your thinking only works as long as no memory is allocated in a recursive call.

---

Subject: Re: Space Complexity
Posted by lusth on Mon, 23 Jan 2017 21:29:53 GMT

It also depends on if there is a linear recursion (say n * factorial(n-1)), in which case I believe your thinking is correct. However, for tree recursion (say fib(n-1) + fib(n-2)), time and space complexity differ (on a normal computer).