

PS 2: Problems 0, 1, and 2

Problem 0: Reading and response

Put your response to the reading below.

1. The most interesting part was where Columbia University and the University of Maryland is creating a physician's assistant service that will allow doctors to query a cybernetic assistant. If this happens, a cybernetic assistant will be able to help doctors faster during surgeries. However, what happens if there is a situation where the cybernetic assistant can't understand?
2. I think Watson's technology can contribute to many places. One example can be front desk assistance in a hotel. Like the computer that won Jeopardy, they can build a front desk cybernetic assistant who has all the information in the hotel, where it can answer what people are curious about.
3. I think Watson-style is more like big data storage where it has all the information. Since they can store as much information they can, they don't have to think about it. However human-style thinking is more like critical thinking. Since humans can't memorize all the information around them, they have to think critically to solve a problem by connecting with each other.

Problem 1: Tracing function calls

global variables

a	b
7	3
7	3

bar's local variables

a	b
14	7
6	3
10	5

foo's local variables

a	b	c
3	7	6
3	16	6

output (the lines printed by the program)

7 3

bar: 14 7

7 3

bar: 6 3

bar: 10 5

16 3

Problem 2: Thinking recursively

2-1)

mystery(3, 7)

```
-----  
    a = 3  
    b = 7  
    myst_rest = mystery(2, 5) = 8  
    return 8 + 7 = 15  
    mystery(2, 5)  
    -----  
        a = 2  
        b = 5  
        myst_rest = mystery(1, 3) = 3  
        return 3 + 5 = 8  
        mystery(1, 3)  
        -----  
            a = 1  
            b = 3  
            myst_rest = mystery(0, 1) = 1  
            return 0 + 3 = 3  
            mystery(0, 1)  
            -----  
                a = 0  
                b = 1  
                return 0
```

2-2) 15

2-3) 4 stack frame

2-4) a = -1 and b = -1 would give a infinite recursion, since the numbers will go to negative infinitely.