PS 2: Problems 0, 1, and 2

Problem 0: Reading and response

Put your response to the reading below.

1. What was the most interesting or important idea in this article for you – and why?
2. What is an application that (in your opinion) Watson's technology might be able to contribute to? Alternatively, do you feel Watson's capabilities will not make much of an impact?
3. Whether or not you had the chance to interact with Watson, comment on your sense of the similarities and/or differences between Watson-style and human-style thinking.

The most interesting idea to me is that Watson is not only just recalling facts, but Watson is also deciphering convoluted and often opaque statements. This is interesting to me because Watson's artificial intelligence is more complicated than I initially thought. An application of Watson's technology that could make in impact would be in a scientific research lab. Instead of scientists memorizing how to perform different reactions, Watson could just tell them. Watson thinks differently than humans in that Watson uses keywords to come up with answers/responses whereas humans don't really have a way to retrieve information in that manner.

Problem 1: Tracing function calls

global variables

a	b
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)

```
def mystery(a, b):
    if a * b == 0:
        return a
    else:
        myst_rest = mystery(a - 1, b - 2)
        return b + myst_rest
```

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

    mystery(2,5)
    -----------------
        a = 2
        b = 5
        myst_rest = mystery(1,3) = 3
        return 8

            mystery(1,3)
            -----------------
              a = 1
              b = 3
              myst_rest = mystery(0,2) = 0
              return 3

                  mystery(0,2)
                  -----------------
                    a = 0
                    b = 2
                    return 0
```

2-2) 15

2-3) 4

2-4) when a and b both never become 0, there is infinite recursion. This is because the base case is never reached. This would happen if both a and b were negative numbers.EX: a = -1, b = -1.