

## CS:1210 Practice Problem Set 4

For Exam 1 on Feb 20th and Quiz 5 on Feb 24th

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1. Without executing this program on a computer, figure out what output it produces.

```
def foo1(x):
    return x*foo2(x+1)

def foo2(y):
    return y+3

# main program
print(foo1(3))
print(foo2(foo1(5)))
print(foo1(foo2(2)))
```

2. Without executing this program on a computer, figure out what output it produces.

```
def foo1(x):
    return x + y

def foo2(z):
    return x + y + z

#main program
x = 5
y = 3
z = 4
print(foo1(3))
print(foo2(1))
print(foo1(foo2(x)))
print(foo2(foo1(y+z)))
```

3. Without executing this program on a computer, figure out what output it produces.

```
def foo1(x):
    return x + y

def foo2(z):
    y = 2
    return x + y + z

#main program
x = 5
y = 3
z = 4
print(foo1(3))
print(foo2(1))
print(foo1(foo2(x)))
print(foo2(foo1(y+z)))
```

4. For each variable in each of the two functions in the above program, write down whether the variable is a (i) parameter, (ii) local variable (i.e., a variable defined in the function), or (iii) global variable (i.e., a variable defined in the main program).
5. Without executing this program on a computer, figure out what output it produces.

```
def foo1(x):
    global y
    y = 7
    return x + y

def foo2(z):
    return x + y + z

#main program
x = 5
y = 3
z = 4
print(foo1(3))
print(foo2(1))
print(foo1(foo2(x)))
print(foo2(foo1(y+z)))
```