# Lab 3.04 - Aliasing & Scope

## In Your Notebook

### Aliasing

1. Will updating b affect a? Explain why or why not?

* a = [1, 2, 4]  
  b = a

1. Predict what my\_list list will print out when this code is run. If you are not sure check the code by copying and running it.

* # input: a list of ints  
  # output: an int  
  def update\_list(a\_list):  
   a\_list[3] = "yo"  
   b = a\_list[4]  
   b = 100  
    
  my\_list = [1, 2, 3, 4, 5]  
  update\_list(my\_list)

### Scope

1. Draw a stack diagram for the following:

* var\_1 = "kittens"  
  var\_2 = "cookies"  
    
  # input: a string  
  # output: a string  
  def my\_function(my\_favorite\_things):  
   song\_lyrics = "rain drops on roses,"  
   combined\_song = song\_lyrics + my\_favorite\_things  
   return combined\_song  
    
  # input: a string  
  # output: a string  
  def my\_function\_2(item, item2):  
   full\_lyrics = item + "on " + item2  
   full\_song = my\_function(full\_lyrics)  
   return full\_song  
    
  my\_song = my\_function\_2(var\_1, var\_2)

## Complete the following on your own

1. Write down what (if anything) is wrong with the following code.
2. If there was an issue write out how to fix it.
3. If you are unsure copy and run the code and fix it

### Problem 1

var\_1 = 'cat'  
var\_2 = 'dog'  
  
def print\_out\_my\_favorite(favorite\_pet):  
 if favorite\_pet == var\_1:  
 print("My favorite pet is the cat.")  
 if favorite\_pet == var\_2:  
 print("My favorite pet is the dog.")  
 var\_2 = "cat"  
  
print\_out\_my\_favorite(var\_1)  
print(var\_2)

### Problem 2

var\_1 = 'cat'  
var\_2 = 'dog'  
  
def print\_out\_my\_favorite(favorite\_pet):  
 var\_1 = 'dog'  
 var\_2 = 'cat'  
 if favorite\_pet == var\_1:  
 print("My favorite pet is the cat.")  
 if favorite\_pet == var\_2:  
 print("My favorite pet is the dog.")  
  
print\_out\_my\_favorite(var\_1)  
print(var\_1 + " " + var\_2)

### Problem 3

var\_1 = 'cat'  
var\_2 = 'dog'  
  
def print\_out\_my\_favorite(favorite\_pet):  
 if favorite\_pet == var\_1:  
 print("My favorite pet is the cat.")  
 if favorite\_pet == var\_2:  
 print("My favorite pet is the dog.")  
  
print\_out\_my\_favorite(var\_1)  
print(var\_2)

## In your your console

### Write a program using the following specifications

1. That has a global variable, my\_num.
2. Create three functions that update my\_num
3. add2: this function adds 2 to my\_num
4. multiply\_num: this function takes in a parameter, multiplier, and multiplies my\_num by that parameter
5. add2\_and\_multiply: this function takes in a parameter, multiplier, and calls add2, then calls multiply\_num.

### Complete the program

Write the following code in the main part of the program.

1. sets my\_num to some initial value you choose
2. prints my\_num
3. calls add2\_and\_multiply() with some argument you choose
4. prints the final value of my\_num
5. Confirm that the printed values match what you expected.